Kearifan Kesehatan Lokal: indigenous medical knowledge and practice for integrated nursing of the elderly with cardiovascular disease in Sumedang, West Java: towards transcultural nursing in Indonesia

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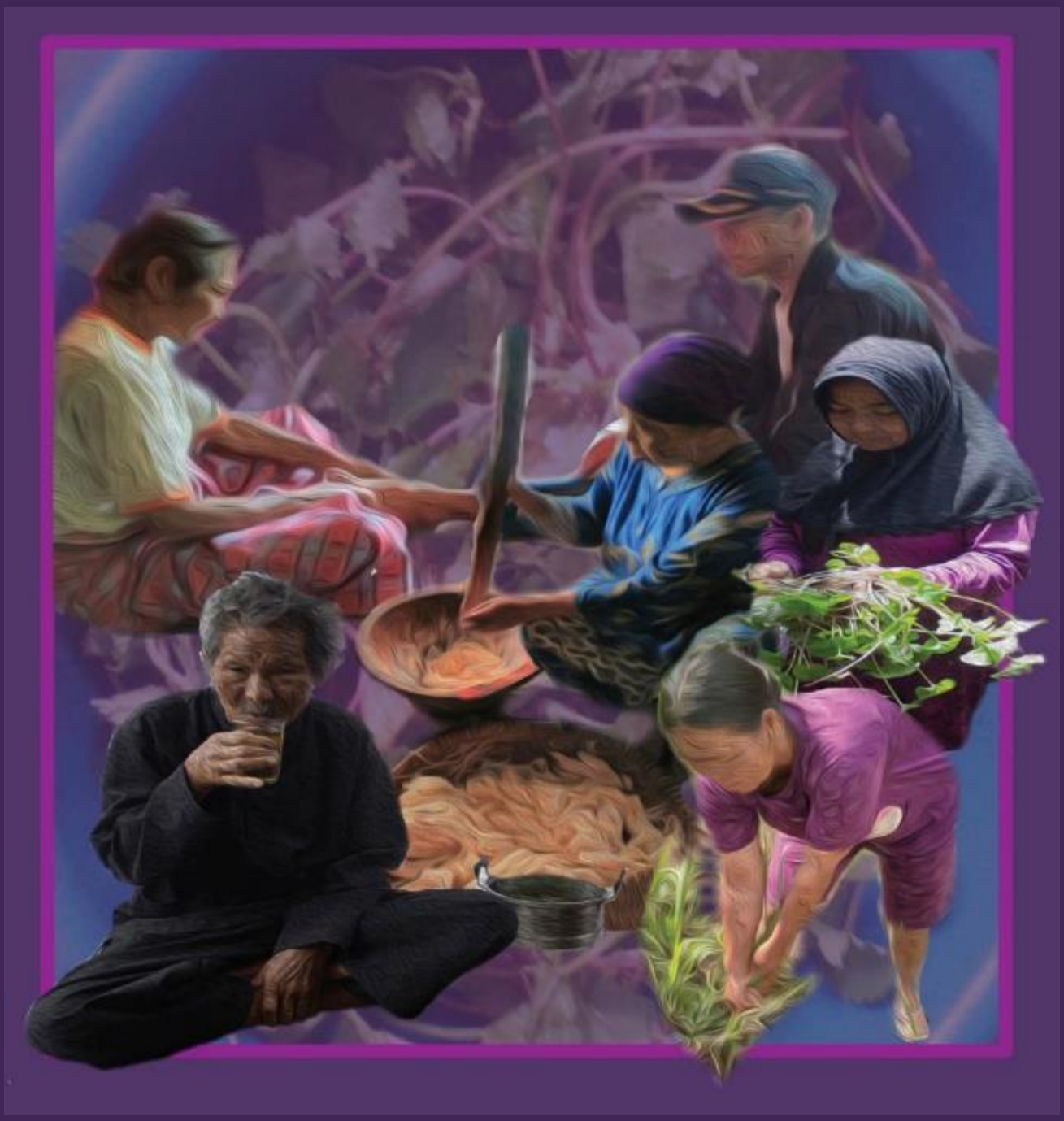
Towards Transcultural Nursing in Indonesia



Raini Diah Susanti

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Kearifan Kesehatan Lokal: Indigenous Medical Knowledge and Practice for Integrated Nursing of the Elderly with Cardiovascular Disease in Sumedang, West Java: *Towards Transcultural Nursing in Indonesia*

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The Cover symbolises various way of indigenous medical knowledge application in the community's daily life.
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This dissertation is dedicated to my late beloved parents who are already happy in heaven, and to my beloved husband, Budi Satia Nugraha, who kindly accepted the temporary absence of his wife and children during my studies at Leiden and for his continued support and love throughout my PhD journey, and to my two dear children, Fatimah Kamila Luthfiah and Muhammad Hasan Nasrullah, who were so understanding and independent when their mother was conducting her PhD research, and to my extended family, who always prayed and encouraged me.

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Abbreviations

BMI	Body Mass Index
BMKG	Meteorology Climatology and Geophysics Council
BPS	Central Statistic Agency
CAM	Complementary Alternative Medicine
CHD	Coronary Hearth Disease
CHF	Congestive Health Failure
CIKARD	Center for Indigenous Knowledge for Agriculture and Development
CIRAN	Center for International Research and Advisory Networks
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular Disease
Depkes RI	Indonesian Ministry of Health
EEZ	Exclusive Economic Zone
EGF	Epidermal Growth Factor
FES	Field of Ethnological Study
HD	Historical Dimension
HIC	High Income Country
IKS	Indigenous Knowledge System
KMS *Lansia*	Health Card for the Eldery
LAX	Left Axis Deviation
LEAD	Leiden Ethnosystems And Development Programme
LMIC	Low and Middle Income Country
LV	Left Ventricle of the Heart
MAC	Medical Aromatic Medicine
MDG	Millennial Development Goals
MI	Myocardial Infarction
NHCS	National Health Care Delivery System
NIAS	*Nederlands Indische Artsan School*
MNO	Modern Nursing Organisation
OTC	Over-the-Counter
PGR	Personal Growth Rate
PKK	Family Planning and Welfare Education Programme
PMKD	Village Community Health Development
PMS	Plural Medical System
PR	PR Interval Wave on Electrocardiogram

PTM	*Penyakit Tidak Menular* (‘Non Communicable Disease’)
PV	Participant’s View
QRS	Complex Wave on Electrocardiogram
QT	Interval Wave on Electrocardiogram
RPJP-K	Health Long Term Development Plan
RPJP-N	National Long Term Development Plan
SDG	Sustainable Development Goals
SES	Socio Economic Status
SIRS	Hospital Information System
SKN	National Health Care Delivery System
SPSS	Statistical Package for the Social Sciences
STOVIA	*School Tot Opleiding van Indische Artsen*
TCNS	Transcultural Nursing Society
TGF	Transforming Growth Factor
P4K	Maternity Complication Planning and Prevention Programme
TM	Traditional Medicine
TNI	Traditional Nursing Institution
TNO	Transitional Nursing Organisations
TOGA	Family Medicine Garden
UHH	Life Expectancy
UNFPA	United Nations Population Fund
WHO	World Health Organisation

CHAPTER I INTRODUCTION

1.1 The Development of Community Nursing in Indonesia

1.1.1 The Development from Public Health to Community Health

The early introduction of the Western medical system into Indonesia through the training of health personnel goes back to the establishment in 1853 in Batavia (today Jakarta) of the *School ter Opleiding van Inlandsche Geneeskundigen* (STOVIA) ('School for the Education of Native Doctors'), from where trained local medical doctors and nurses spread the knowledge and practice of public health gradually among the population. At that time, public health practice largely aimed at preventing smallpox and cholera by training *mantri* ('health workers') to administer vaccination programmes to the local population, which largely depended on their *kearifan kesehatan lokal* ('indigenous medical knowledge') and *jamu* ('traditional herbal medicine') for maintaining their health and well-being.

In 1875, as Hesselink (2011) documents, the doctor training programme was reformed, having consequences for the position of the graduates on the medical market. In 1902 further revisions were introduced to train local medical doctors – *dokter djawa* – leading to a change in the name of the school into *School tot Opleiding van Inlandsche Artsen'* (STOVIA) ('School for the Education of Native Doctors'). In the following years, in order to give students more practice, several outpatient clinics were opened for surgery, eye diseases and internal diseases, which, in turn, disseminated the Western health services to the general public. Soon, similar medical training schools were established elsewhere in Indonesia, such as in Surabaya and Nias.

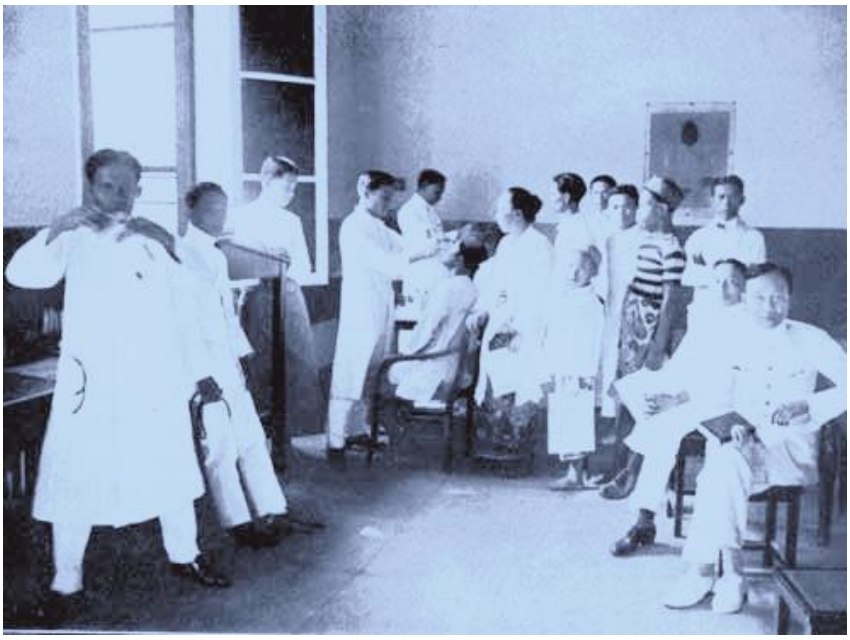


Illustration 1.1 Outpatient eye clinic in Weltevreden around 1920
Source: De Waart 1926b: 365 in Hesselink 2011.

Later on, the newly-trained *dokter djawa* (medics) played a significant role in bringing the people in closer contact with Dutch, *i.e.* Western forms of public health. As Engelenberg (1926:274) notes*: 'To conduct prudent propaganda to encourage the people's trust in Western medicine, surgery and obstetrics, the native doctors along with good nurses and orderlies are the appropriate agents' (cf.* Hesselink 2011).

Figure 1.1 shows the growing number of patients in the outpatient clinics between 1890-1920, who received the early public health services by the locally-trained medical doctors, expanding their mission to achieve an equitable distribution of health for the total population.

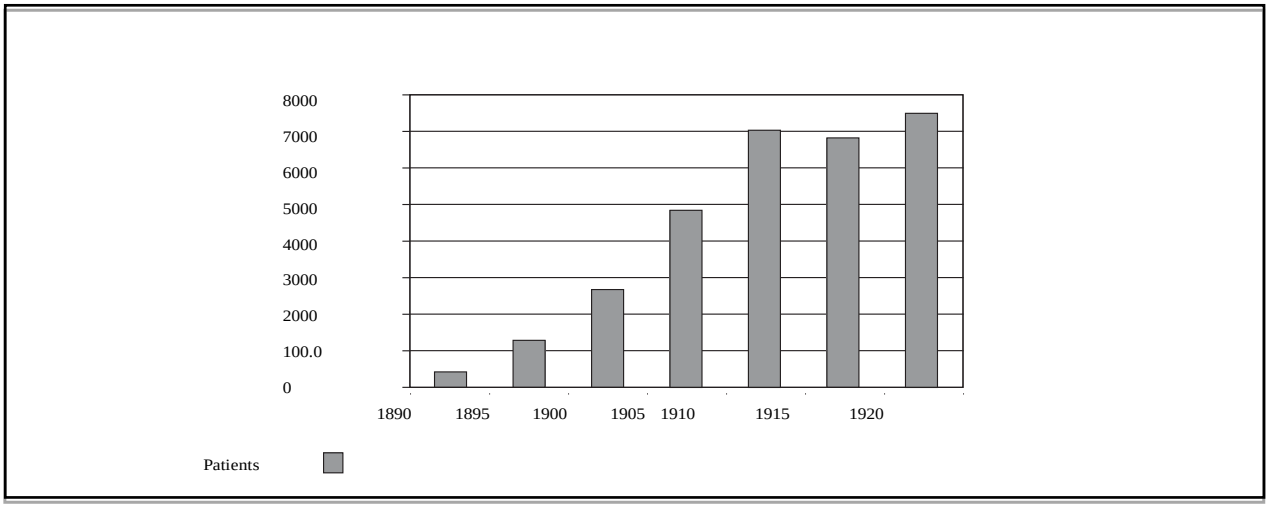


Figure 1.1 Number of Patients in the Outpatient Clinics of STOVIA, 1890-1920
Source: De Waart 1926b:365 in Hesselink 2011.

Meanwhile, the strategy of public health developed into a special field in Western medicine, defined by Wislow (1920:12) as: '*the science and art of preventing disease, prolonging life and promoting health through the organised efforts and informed choices of society, organizations, public and private, communities and individuals'.* Later on, with the shift of the provision of public health for the entire population to focus on the general situation of health and disease in the communities, a new strategy of 'community health' emerged. In 1936, Hydrick established the *Sekolah Mantri Hygiene* ('School of Hygiene Community Practitioners') which served as community health educators in the villages by teaching the community about health matters and healthy lifestyles for many years, until Indonesia gained Independence in 1945 (*cf.* Riyadi 1981).

Thereafter, the *Bandung Health Programme* started to introduce the integrated preventive and curative principles in medical services. In 1952, several years after Independence, Indonesia became one of the first developing countries which integrated the *dukun bayi* ('traditional birth attendant' - TBA) into the modern nursing system and trained these TBAs to become the supporters of *Keluarga Berencana dan Programme Kesejahteraan Keluarga* (PKK) ('Family Planning and Welfare Education Programme') (*cf.* Riyadi 1981; Ambaretnani 2012). This concept of PKK was later changed into ten sub-programmes, and the *Puskesmas* ('Community Health Center') became in 1968 the service unit to deliver integrated preventive and curative services to all clients and patients at the village and district levels. The *Puskemas* have at least 13 programmes, such as medical treatment, Maternal and Child Health (MCH), eradication of contagious diseases, community health and sanitation, health education, dental care, school health programme, laboratory services, mental health, and health communication with local communities. It is needless to underscore that the role of the *Puskemas* has been crucial to community health care development, in addition to its position as the center for medical treatment at the community level.

The *puskesmas* has always been cooperating with the local government in order to ensure affordable nursing, medical treatment, and health education for the community members, irrespective of their income and social status. The development from 'public health' to 'community health' has become part of the national development process with the aim to maintain a healthy and productive environment for the population through preventive and promotive health action at the community level. One of the main supporting strategies is community empowerment, which seeks to encourage the community members to maintain their health and provide minor treatment of illness.

According to the legislation from the Indonesian Ministry of Health No. 8/2019, community empowerment in the health sector is a process to increase knowledge and individual/communal awareness, as well as the capacity to actively participate in the efforts to elevate the healthy lifestyle through education and participation, based on the local needs. Thus, the community has to be actively involved in the provision of nursing, planning, organising, and providing nursing services, as well as self-administered nursing. Community empowerment will also serve as the foundation for community independence as specified in the definition of *Health for All* by WHO – SEARO (2009) as actively trying to attain good health or to pay attention to self-care. Community health care development seeks to maximise the local resources in order to mobilise its potential. The strategy by WHO (2009) indicates that the national nursing system has to provide access for all community members individually, providing health resources as basic human needs.

In this way, the practice of nursing, as part of the recent community health strategy, has to be sustainable. Every individual has the right to have access to quality nursing services and to administer self-nursing at a minimum cost to avoid excessive nursing expenses, which may lead to financial constraints (*cf.*Yusuf *et.al* 2018). Moreover, there is much local knowledge available in the communities which can be utilised to implement an improved nursing programme. The community needs to work in partnership with the government, where both work hand in hand as equal partners through the *Pemberdayaan Kesehatan Masyarakat Desa* (PKMD) ('Village Community Health Care Development' – PKMD). The PKMD programme is an operational form of public health in the villages, which has been implemented since the establishment of the New Order in 1965, and has become an integral part of the national community development programme (*cf.* Logo 1980).

Despite such a long history of community health programmes, efforts to define the meaning and scope of 'community health' have remained rather limited. Embarking on the general characterisation of a 'community' as a group of inhabitants living in a localised area under the same general regulations and sharing common knowledge, norms, values, institutions and organisations, McKenzie (2005: 12) introduces his definition: '*Community Health refers to the health status of a defined group of people and the actions and conditions, both private and public (governmental), to promote, protect, and preserve their health*'. Although this definition certainly provides a useful conceptualisation, the approach may be useful in constructing a study design and a programme implementation, but it does not reflect, as Goodman, Bunnell & Posner (2014) argue, the reality of the situation. According to these scientists, the greatest challenge for the field of 'community health' is to develop innovative methods, which take into account the complexity of communities, the variability of how health in communities is defined, and how evidence can be generated which reflects the reality of the communities in which people live, work, and play. They make a plea for a better integration of 'practice-based' evidence in order to enable community health scientists to better understand the community and generate evidence which will be relevant to the practice. Their call for such an integration of 'practice-based' evidence is providing a crucial direction to this study in Sumedang, West-Java, Indonesia (cf. Goodman, Bunnell & Posner 2014).

However, for the assessment of the interaction between a particular configuration of health and disease, and the provision of special medical services at the community level, an appropriate definition of 'community health' is provided by Sofoluwe (1985: 3): *'Community health is that branch of health service which aims at achieving the highest level of physical, mental, social, moral and spiritual health for all citizens on a community basis'.* According to Sofoluwe (1985: 3) such an aim is then realised by: *'identifying the prevalent diseases and by dealing with a judicious utilization of governmental, private, and especially community resources';* the pluralistic orientation of his definition towards different community nursing resources provides the dynamic context of this study in Sumedang.

As in many developing countries, after more than half of a century, Indonesia is also becoming aware of the fact that the relations between the providers and the receivers of modern medical services have not been able to meet the basic medical needs of all citizens. By consequence, the Government of Indonesia has recently encouraged community participation in programmes in order to improve community health.

The *Depkes Republik Indonesia* ('Indonesian Ministry of Health') (1990) introduced the development of 'community health' as: *'a distinctive feature of community members' involvement and engagement in the health care development programme'*.

1.1.2 The Epidemiological Transition and Primary Health Care

The recent trends in the development of 'community health' in Indonesia are dominated by two factors: the 'epidemiological transition' among the population, and the continued inability of the modern medical system to provide appropriate nursing for all communty members of the many ethno-cultural groups throughout the country, particularly special groups in need of basic health services such as the elderly. It was Maurice King (1966) who in his classical study on *Medical Care in Developing Countries* pointed out the consequences of the sharp difference in disease patterns between the developing and developed nations for medical care; Omran (1971: 2) later on introduced his model of the 'epidemiological transition' as: *'the change in disease patterns and causes of death within a population because of various demographic, economic, industrial, and sociological factors'.* The transition is directly related to global trends such as population growth, climate change, change in lifestyle and the advance of non-sustainable environmental innovations and technologies, and is not limited to Indonesia, but has been experienced in many other developing countries.

In addition, Indonesia has also been facing hazardous health conditions with the emergence of not only new strains of infectious diseases, but also with the emergence of 'cultural diseases' such as CVD (Cardiovascular Disease), obesity, diabetes, traffic accidents and mental disorders on a massive scale. The country's changing epidemiological profile, related to socio-cultural and environmental changes, calls for immediate action on a national level, especially in terms of the development of an effective public health programme. As regards the process of globalisation, however, there exists an ambiguity in the implementation and effect of public health services, particularly as to how these are designed to reach out to all population groups at different levels. Waters (2006) argues that globalisation will hardly reach the local commmuities as a whole, as it depends on the balance of the risks and benefits of the local resources. Although the recent global movement has shown to develop in the same direction, diversity in the design and implementation of appropriate community health programmes would enable the realisation of improved and sustainable health for all citizens. Since 'community health' and 'nursing' are both implementing closely-related health services, where 'community nursing' in particular is providing health services directly to clients and patients, their programmes have to be adjusted to the interplay between the local and global processes of development and change. Effendy (1995) argues that changes and trends in the community with regard to nursing can best be analysed through the study of processes involving several categories of factors, which are furher elaborated in the following Chapter II.

While in Indonesia, the problems of the 'epidemiological transition' among the population can largely be monitored at the national level through special attention to the global-local interaction in public education, advanced health personnel training, policies, programmes, and adaptations in the health care delivery system, the continued inability of the medical system to provide appropriate nursing services to the communities needs special attention. Nursing in particularly which is attuned to all communty members of the different ethno-cultural groups seems more complicated, where so far, a 'top-down' approach has been implemented. A programme to increase the level and sustainability of the quality of community health care development requires an understanding of the local dynamics in order to use the local resources wisely (*cf.* Quah & Slikkerveer 2003). However, health care development which is based on the local communities' needs requires a rather holistic and comprehensive approach, which also includes scientific research and monitoring to ensure its sustainability (*cf.* Sudrajat & Purwasasmita 2004). Moreover, the central policies regarding the providers of community nursing are in need of a 'bottom-up' approach, where local peoples' knowledge, beliefs, practices and institutions in the field of health and healing are seriously taken into account. As Slikkerveer (1990; 2017) underscores, more attention should be paid to the cultural dimension of development, specifically in health care development where local peoples' views and

experiences are to be integrated into national development projects and programmes in order to extend the health care coverage of services. One of the important demographic issues in Indonesia, as in any developing country, is aging. The population of the elderly in Indonesia has reached above 7%, wherein in 2012 it reached 7.56%. It is estimated that in 2050, the elderly population in Indonesia will reach 28.68% (*cf.* Pusdatin 2013). According to Adioetomo & Mujahid (2014), the population of Indonesia can be regarded as 'old population' if the proportion of the elderly population (age 60+ years) has reached 10% or more. Indonesia is one of the countries which will soon enter the category of 'old population', because the percentage of elderly people has already reached 7.6% of the total population (Population Census BPS 2010). According to Bappenas, BPS, and UNFPA (2013) the projections will continue to increase in 2020-2035 in conjunction with Indonesia's Life Expectancy (UHH), which will continue to increase from 69.8 in 2010 to 72.4 in 2035. This process results in the demographic and epidemiological transition in Indonesia.

Epidemiological transitions are complex changes in patterns of health and disease-causing death. This happens along with changing lifestyles, socio-economics and increasing life expectancy, which means a higher incidence of degenerative diseases, such as heart disease, diabetes mellitus, hypertension, etc. Such transition means that there are changes in diseases causing death, for example from infectious diseases to Non-Communicable Diseases (NCD) [1]. In reality, Indonesia faces a triple burden, namely: infectious diseases, non-communicable and emerging diseases [2]. Data from 1995 to 2007 show that in Indonesia the proportion of infectious diseases had declined by a third from 44.2% to 28.1%, but the proportion of non-communicable diseases had increased significantly from 41.7% to 59.5% (*cf.* Pusdatin 2012). The data of the National Economic Survey (Susenas) of 2012 show that more than half of the elderly (52.1%) experienced health complaints in the preceding month. The most common health complaints experienced by the elderly are Hypertension, Rheumatism, Hypotension, and Diabetes Mellitus (32.99%) (*cf.* Guessous *et al*. 2012). The Indonesian Hospital Association (2009) mentions that about 74% of the elderly in Indonesia suffer from chronic diseases, so they have to consume medicines during their lifetime. Reports from hospitals in Indonesia through the Hospital Information System (SIRS) in 2010 showed that the ten ranks for outpatient diseases in the 45-64 year-old and 65+ year-old age groups essentially had to do with hypertension (*cf.* Pusdatin 2013).

The results of the study indicate that the problem associated with the high prevalence of chronic diseases among the elderly is the increasing uncontrolled condition of chronic elderly diseases, in line with the results of the Guessous *et al.* (2012) which show that around 50% of hypertensive patients do not take action and are not controlled.

Likewise, the results of *Riskesdas* (2013) ('Basic Health Research') show that most (63.2%) cases of hypertension in the community remained undiagnosed, while 42.1% of stroke cases in the community were undiagnosed, and even 88.1% of cases of rheumatism in the community are not diagnosed (*cf.* Ministry of Health RI 2013). In addition, data from the Ministry of Health (2013) show that in Indonesia the prevalence of smoking in elderly people aged 55 years and over is quite high, above 30%, with the highest in the 55-64 year-old age group, which is 37.5%. Although there is a change in the prevalence of the population with high blood pressure nationally by 30.9%, the prevalence of high blood pressure in women (32.9%) is higher than that of men (28.7%). The prevalence in urban areas is slightly higher (31.7%) compared to rural areas (30.2%). Prevalence increases with age (*cf.* Ministry of Health 2018). Following the consequences of the 'epidemiological transition' of the 1970s for the changing heath and disease profiles of many countries around the world, new initiatives were taken worldwide to develop adequate responses on several levels. Thus, the international World Health Organisation (1978) introduced the timely concept of 'Primary Heath Care' to improve the health and well-being of all people around the globe. At the Conference of Alma Ata, WHO (1978: 5), 'primary health care' was defined as: *'essential health made universally accessible to individuals and families in the community by means acceptable to them, through their full participation and at a cost that the community and country can afford.'* The concept of 'primary health care' soon became a leading approach to introduce new forms of health care services to all

citizens by health manpower, ranging from medical assitants, birth attendants, nurses, medical doctors and specialists.

1.1.3 The Impact of Increasing Cardiovascular Disease on the Elderly

In Indonesia, the impact of the epidemiological transition became particularly manifest in the above-mentioned changing disease patterns among the elderly, who became specifically vulnerable to the increase of non-communicable diseases, from 41.7% to 59.5% (*cf.* Pusdatin 2012). Similarly, data from the National Economic Survey (Susenas) of 2012 document that more than half of the elderly (52.1%) experienced health complaints in the preceding month, in particular Hypertension, Rheumatism, Hypotension, and Diabetes Mellitus (32.99%) *(cf.* Guessous et al. 2012).

Among the elderly, hypertension as an important factor leading to CVD is known as the 'silent killer', being one of the major causes of death. CVD refers to cardiovascular disease and is contributing to around 17,3 million annually death worldwide. In developing countries, from 1990-2020, the number of deaths caused by coronary heart disease is expected to increase by 13.7% in men and 12% in women. Based on the results of the 2013 Basic Health Research by the Ministry of Health, the prevalence of CVD is shown to increase according to age. The highest prevalence was found in the ages between 65-74 years (0.5%) and ≥75 years (1.1%). The prevalence is higher in women (0.2%) than in men (0.1%). Similarly, the results of the Basic Health Research (*Riskesdas* 2018) indicate that the prevalence of hypertension based on the doctors' diagnoses increases with age, where the percentage for women is higher than for men, while cases of hypertension in urban areas were more than in rural areas.

Likewise, with the prevalence of CVD increasing with age, the prevalence of CVD is increasing in general as well. In the 55-64 year-old age group, it is 3.9%, in the 65-74 year-old age group 4.6% and in the 75+ year-old age group, it is 4.7%, with a greater percentage of women (1.6%) than men (3%), and 1.6% in urban areas and 1.3% in rural areas. Furthermore, Menz & Langlois (2013) report that the increase in the incidence of CVD among the elderly in a South Australian Region was related to age. It is evident that the elderly change in the structure and function of their body system, including their cardiovascular system. The change varies among the elderly, but that does not mean that it refers to a disease. However, it is rather difficult to assess changes which occur among the elderly, especially in the cardiovascular system, whether as an effect of the aging process or as a consequence of CVD (*cf.* Halter *et al*. 2009).

Data from the Health Research and Development Agency (Balitbangkes) (2011) show that in 15 districts/cities, the proportion of elderly deaths from non-communicable chronic diseases was 58.8% between 55-64 years, and 55.5% at the age of 65 and above. Meanwhile, the highest proportion of causes of death among the elderly group is stroke and ischaemic heart disease, as a result of uncontrolled hypertension (*cf.* Pusdatin 2013; Riskesdas 2013, 2018). Ample studies show that there are six categories of chronic diseases which are closely related to the aging process, namely: CVD (heart, hypertension, and vascular disorders), endocrine and metabolic diseases (diabetes mellitus and thyroid imbalance), bone and joint disease (rheumatoid arthritis, gout arthritis, and osteoporosis), Chronic Obstructive Pulmonary Disease (COPD), and cancer (*cf.* Barondess 2008; Barondess *et al* 2013; Chouinard *et al* 2013; Gonzalez & Norris 2013; Mafuya 2013). In addition to these factors in the aging process, other risk factors result in a similarly high prevalence of various chronic diseases, being the result of unhealthy lifestyles, such as smoking, excessive alcohol consumption, unhealthy eating patterns, and lack of exercise (*cf.* Vathesatogkit 2012; Hunter & Reddy 2013; Elwood *et.al* 2013). These studies show that if there is no appropriate management provided for the epidemiological transition process, it will have a serious impact on reducing the quality of life of the elderly, even increasing their mortality rates in Indonesia.

The World Health Organisation (WHO) argues that deaths from chronic non-communicable diseases are expected to continue to increase throughout the world, including Indonesia (*cf.* Pusdatin 2013). Fortin *et al.* (2013) explain that as much as 59% of deaths are caused by chronic diseases, while Hunter & Reddy (2013) underscore that more than two thirds (about 80%) of the global

population will die from chronic non-communicable diseases. Since the same conditions also occur in Indonesia, the care of chronic disease among the elderly group has to consider a wider set of aspects, including self-efficacy, empowerment, comorbidity, health behaviour, functional health status, quality of life for the elderly, psychosocial and spiritual welfare, characteristics of the elderly and their families, and appropriate types of intervention and management strategies. In particular, it has to be provided in a comprehensive way by designing policies which pay attention to the socio-cultural medical context of the elderly at the community level, close to their homes.

In cases of serious diseases such as CVD among the elderly, the relationship with aspects of the local culture is very strong and becomes manifest in the provision of nursing practice, which aims to provide optimal care to help patients dealing with the disease.

In general, however, the current nursing practice as part of the national 'primary nursing approach' in Indonesia has not given sufficient attention to the important role that these culturally sensitive nursing practices are playing in the provision of overall nursing in Indonesia, causing difficulties in achieving patient satisfaction with their services (*cf.* Hariyati & Sahar 2012). While nursing practices for the elderly with CVD in Indonesia mostly remain largely focused on the modern medical system, the cultural aspects of patients are hardly taken into consideration. By consequence, the cultural gap between providers and users of nursing, and in particular nursing of the elderly, is missing in the planning of comprehensive nursing of the elderly at the community level. It is evident that a research-based approach on integrated nursing practices is needed in order to reduce these limitations and lead to successful nursing efforts to promote health, treating disease and improving welfare among these target groups in the community. So far, however, the political approaches in health care delivery which have been widely used in Indonesia are posing particular problems to the povision of basic health care for all citizens, when such policies are not only missing their basis of accepted scientific principles, but also ignoring the soio-cultural context in terms of indigenous knowledge, beliefs, practices and institutions. Similarly, indigenous medical knowedge and pratices, including the widespread use of *jamu* have to be regarded as a significant complemenatry way to solve local health problems in the community (*cf.* Slikkerveer & Slikkerveer 1995). Indeed, as is amply shown by a growing number of evidence-based studies, the integration between global and local knowledge systems in many sectors of the community, incuding health, will not only lead to increased utilisation of such integrated systems, but will also encourage an increase in the utilisation of nursing by specific target groups in the community, particularly the elderly, and as such improve the overall health of the population.

By consequence, the research on traditional nursing institutions at the community level – so far grossly neglected – needs to be further extended in order to prepare, document, analyse and promote their integration into an integrated nursing system, also kown as the approach of transcultural nursing. Indeed, every ethno-cultural group in Indonesia has developed up until today its alterntive approaches to health and healing over many generations, going back to the times before the introduction of Western medicine during the Dutch colonial administration. The study, analysis and re-vitalisation of these systems for the development of a comprehensive nursing system has to have priority in sustainable policy planning and implementation of integrated nursing for the benefit of health for all.

The present research specifically aims at studying the various forms of nursing knowledge and practices for the elderly with CVD, with special attention to the role of the traditional nursing institutions of the elderly with CVD in the plural nursing system in Sumedang, West-Java. Thus, it is particularly important to document and study how the local communities are dealing with the changes among the elderly with CVD by the utilisation of traditional, pharmaceutical and/or modern medical systems. Such applied-oriented research for future policy planning should focus on the study of the overall interaction and the relationship between the relevant background factors of the patients and their utilisation behaviour of the available medical resources for the treatment of the elderly with CVD at the community level.

1.1.4 From Community Nursing to Nursing of the Elderly

Parallel to the development of public health towards the strategy of 'community health', a similar process emerged in the related field of nursing. In the course of the 1990s, the concept of 'public health nursing' was introduced within the framework of public health, encompassing a combination of the practices of nursing and public health, with a focus on issues of equal access to medical services, social justice and health policy planning and implementation for all citizens. These services are largely implemented through the general application of theory, evidence, and a general commitment to equity in health.

Nursing, in its historical context, can be traced back to the 5th century BC where, for example, the Hippocratic Collection describes skilled care and observation of patients by traditional male 'attendants', who may be called early nurses. It was Florence Nightingale who in the 19th century laid the foundations of professional nursing after the Crimean War. In her famous publication *Notes on Nursing,* Nightingale (1859) argued that nursing was both a social freedom and a mission for women, and that educated women can help to improve the care of patients. More recently, 'nursing' is well-conceptualised in the definition of the International Council of Nurses (2002:1) as follows: *'autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people, and includes different traditional, transitional and modern systems*'.

In contrast, however, 'nursing care', is defined only within the context of the modern medical system by the International Council of Nurses (2002:1) *'nursing care' means the practice of nursing by a licensed nurse, including tasks and functions relating to the provision of "nursing care" that are taught or delegated under specified conditions by a registered nurse to a person other than licensed nursing personnel, as governed by the state*'.

The definition of the above-mentioned strategy of 'public health nursing' is provided by the American Public Health Association, Public Health Nursing Section (1996: 3): '*the practice of promoting and protecting the health of populations using knowledge from nursing, social, and public health sciences'.* Today, this definition, albeit up-graded, is still the guiding principle for the strategy of 'public health nursing' around the globe.

Meanwhile, since the community members showed a preference and need for the delivery of nursing outside acute hospitals within the community, for example in their home, or within general practice facilities, in community centers, at schools or in a care home, the strategy of 'community nursing' was developed to improve the delivery of health services in the community. Based on a combination of primary health care and nursing in the community, 'community nursing', also known as 'community health nursing', became an important task of nurses who started to provide health services, preventive care, intervention and health education to the community.

The World Health Organisation Expert Committee of Nursing (WHO 1995: 3) defines 'community nursing' in a broader sense as: *'a field of nursing that combines the skills of nursing, public health and some phases of social assistance and functions as part of the total public health programme for the promotion of health, the improvement of the conditions in the social and physical environment, rehabilitation of illness and disability'.*

As a special field, 'community nursing' is provided to the community within the general framework of 'primary health care' as the key to achieving the goal of *'Health For All*', particularly in developing countries.

As Clark (2014) indicates, the strategy of 'community nursing' was further elaborated by the American Nurses Association (ANA) as a general term for all nurses who work for a facility, but practice only in the community itself outside of institutional settings. In this context, ANA (2000:5) underscores that: *'Community nurses often use health indicators, such as mortality rates, disease prevalence, levels of physical activity, obesity, etc. to describe the health status of a community and serve as targets for the improvement of a community's health'* (*cf.* Clark 2014).

In Indonesia, as a result of the recent epidemiological transition which – as in many other developing countries – has recently taken place in the country, where in particular CVD among the older population has increased dramatically, the role of 'community nursing' with a focus on the gerontological population is very important and needs readily available nursing for the older clients in the community, specifically for blood pressure and glucose monitoring facilities for the elderly.

Such a strategy of 'nursing for the elderly' has the challenging task of caring for the older population—a population with its own set of complex needs which require well-trained nurses to properly address the needs of the elderly in the community. As Mayhew (2000: 3) notes: *'elderly care services are defined to include personal and social services such as social care in the home or in an institution such as a nursing or residential home. These services may include help with daily living, advice on financial affairs, companionship, and so forth'*. It includes home care, assisted living, day care, long-term care, nursing homes, and hospice care.

Similarly, there exists a wide variety of needs of care for the elderly, based on the cultural background of the elderly, for which a broad range of practices and institutions have been developed. Interestingly, the government organisations for elderly care are seldom used, where the younger generations provide the nursing for their older family members. An important aspect of the care of the elderly in Indonesia is adherence to their specific socio-cultural needs as they receive nursing care with dignity in daily activities as well as in health care. Such traditional forms of nursing care are mainly unpaid. Kennedy & Ramukumba (2020) underscore that the nurse has to be educated in community issues in order to deliver care and meet the patient's needs. Nurses working at these facilities which focus on the needs of the elderly have to be educated in common issues of the elderly.

One of the largest international websites on nursing, *Nurseslabs*, has developed an advanced nursing care plan for nursing of the elderly (older adults) or 'geriatric nursing' for modern Western health care delivery systems. Nurseslabs (2022:1) conceptualises 'nursing of the elderly' as: *'a specialism in the care of older or elderly adults, where nursing addresses the physiological, developmental, psychological, socio-economic, cultural and spiritual needs of aging individuals in a community.'* Since aging is a normal part of human life, nursing for elderly clients should not only be isolated to one field, but is best given through a collaborative effort which includes their family, community, and other members of a health team.

In Indonesia, the use of the term 'nursing care' is also only reserved for the licenced practice of nursing in the modern medical system, regulated by the state. For the study in Sumedang, where various forms of nursing sub-systems are provided, it means that 'nursing' has to be conceptualised in the broader sense of 'nursing' as defined above. In the research, special focus will be placed on nursing of the elderly with CVD, and as such operationalised in the broader conceptualisation of 'nursing' at the community level, also encompassing indigenous knowledge, beliefs, practices and institutions of nursing provided to the elderly, known as the 'indigenous nursing institutions', which is an important component of the 'plural nursing sub-system' in the research area.

In the context of the specific focus on nursing of the elderly, it is appropriate to mention that, in order to reach the overarching objective of *Health for All* , the strategy of Primary Health Care of the World Health Organisation (1978) has recently shifted towards the *Millenium Development Goals* (MDGs) of the United Nations (UN 2015), which, in turn, have recently been extended to the *Sustainable Development Goals* (SDGs) of the United Nations (UN 2030). The SDGs aim at the realisation of 17 objectives with 169 success indicators, being more complex than the MDGs. In principle, the MDGs (2015) focus on the broad issues of sustainable development in developing countries, including Indonesia, whereas developed countries are regarded as the donor countries. The basic concept of the SDGs (UN 2030) is development with a focus on a balance in the economy, the social system, the environment, and good governance (*cf.* Sachs 2015; UN 2015).

The distinctive attention for such a balanced process of development is a useful extension of the MDGs (UN 2015) (*cf.* Le Blanc 2015). Indonesia is one of the countries which has adopted the SDGs (UN 2030), and has undertaken its role in national development in order to render better health for people living in rural communities and create better living conditions for everyone.

1.2 The Plural Medical System (PMS) in Indonesia

1.2.1 Complementary Medical Systems and Nursing Sub-Systems

Scientific interest in the study of indigenous knowledge systems in relation to various sectors of rural communities has increased substantially in the course of the second half of the 20th century, including medicine alongside agriculture, forestry, fisheries, natural resources, etc. A growing number of academic studies have been carried out by scientists of anthropology, medicine and economics, in which the focus is laid on the role of the indigenous systems of knowledge, beliefs, practices and institutions in the process of achieving sustainable development of the communities concerned.

At Leiden University, the Leiden Ethnosystems And Development Programme (LEAD) was established in 1987 later entering a successful collaboration with the *Center for Indigenous Knowledge for Agriculture and Rural Development* (CIKARD) at Iowa State University (USA) and the *Center for International Research and Advisory Networks* (CIRAN) in The Netherlands. At LEAD, several studies were successfully conducted in different culture areas including East Africa: Buschkens & Slikkerveer (1982); Slikkerveer (1982, 1990; 1995); Ibui (2007); Chirangi (2013); and De Bekker (2020); the Mediterranean Region by Slikkerveer (1996); and Aiglsperger (2014); and South-East Asia by Agung (2005); Angerler (2009); Leurs (2010); Djen Amar (2010); Ambaretnani (2012); Saefullah (2019); and Ferbriyanti (2021). Some of these studies have documented and analysed the often co-existing different medical systems in developing countries; the plural medical system in Indonesia has also equally been documented to encompass traditional, transitional and modern organisations, all often providing complementary medical care to the population. A central theme in most of these studies is the health and illness behaviour of clients and patients, who seek to promote their health, or in the case of symptoms, tend to seek medical care from the available different components of the plural medical system.

In addition to the study of clients' 'health behaviour' in seeking promotive and preventive health care, an understanding of the 'illness behaviour' of patients in terms of their utilisation of medical resources is needed for the design of future health care services in a particular region or country. The existing medical configuration of different systems and sub-systems of medical care in virtually all developing and developed countries, ranging from indigenous healers, traditional nurses, birth attendants, herbalists, faith healers, commercial drug vendors, and modern health personnel in hospitals and private clinics, has been providing clients and patients with a wide variety of medicines and treatments to improve health and treat illness.

As further elaborated in Chapter II, the related concept of 'medical pluralism' was introduced by Leslie (1976, 1978, 1980) in his research in Asian societies with a view to differentiating between traditional and modern medical systems. The underlying concept of the plural society in the medical sector was developed by Furnivall (1939) and later by Van Lier (1971). The paradigm of a plural society is described by Furnival (1939: 14) to identify the political process in plural societies by: *'the presence of two or more separate communities living side by side, but separately, in the same political unit; economic divisions also coincide with cultural divisions'.* The concept was thereafter elaborated by Slikkerveer (1982; 1990; 1995) in the field of ethnomedicine through the concept he introduced of 'transcultural health care utilisation' in the Horn of Africa. In addition to the documentation of the co-existing medical systems and sub-systems, the concept of 'medical pluralism' also provides a unique approach to studying the patterns of utilisation behaviour by the local population of different medical systems for future health planning, and was successfully implemented in various regions (*cf.* Slikkerveer 1995; Agung 2005; Ibui 2007; Leurs 2010; Djen Amar 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014; Saefullah 2019; De Bekker 2020; and Ferbriyanti 2021). However, the ethnomedical documentations of the emic view on these systems in Indonesia are relatively few, and include recent studies by Slikkerveer & Slikkerveer (1990), Agung (2005), Leurs (2010), Djen Amar (2010), Ambaretnani (2012) and Ferbriyanti (2021). The current study in Sumedang links up with this important theoretical school of applied ethnoscience, specifically in ethnomedicine in West-Java, Indonesia. Along the cultural differentiation of the many ethno-cultural groups living in

Indonesia, the complex medical configuration shows the plural medical system in the country encompassing three main medical systems: traditional, transitional and modern medical systems, which are sub-divided by three comparative nursing sub-systems that include, respectively, 'traditional nursing institutions', 'transitional nursing institutions' and 'modern nursing institutions' (*cf.* Figure 1.2).

Since these systems and sub-systems have shown that they not only share a mission to jointly provide medical services to patients, but also seek to complete their mutual needs in the service of their patients**,** they are 'complementary' in the sense that these different components of the plural medical system join forces in order to improve their services. Moreover, patients often seek treatment for their complaints among different medical systems.

Plural Medical System	Traditional Medical System	Traditional Nursing Sub-System	Traditional Nursing Institutions
	Transitional Medical System	Transitional Nursing Sub-System	Transitional Nursing Organisations
	Modern Medical System	Modern Nursing Sub-System	Modern Nursing Organisations

Figure 1.2 Model of the Plural Medical System, Nursing Sub-Systems & Nursing Institutions/ Organisations in Indonesia
Source: Adapted from Slikkerveer (1990).

As an important component of the plural medical system, the traditional medical system has evolved over many centuries, where its roots go back to prehistorical times. As Kyomya (1994: 87) notes: "*historically, traditional medical systems and the use of traditional plant materials may be deemed to have started soon after the appearance of mankind*". Through the ages, the body of knowledge, use and experience of natural medical resources evolved into traditional medical systems up until today. Traditional medical systems include non-commercial indigenous knowledge, beliefs and practices, mainly plant-based, such as *kearifan kesehatan lokal, ubar kampung* and *jamu*, being the traditional *materia medica*, also known as plant-based *'home remedies'*. Traditional medicine is defined by WHO (1976) as: "*a total of all knowledge and practices, whether explicable or not, used in diagnosing, preventing or eliminating a physical, mental or social disequilibrium, which rely exclusively on past experience and observation handed down from generation to generation*". With the general realisation that modern medicine cannot cure all diseases, traditional medicine, particularly for common illnesses and mental disorders, has not only provided the majority of people with their primary medical needs, but has also been adopted worldwide by other populations (outside indigenous cultures), often labelled 'alternative medicine'. Several scientists have conducted applied-oriented research, guiding global trends in the recognition and dissemination of traditional medicine, not only among the national population groups in developing countries, but also in a wider context of the developed nations (*cf.* Bannerman, Burton & Chen 1978; Warren, Slikkerveer & Brokensha 1995; WHO 1978; 2002; Slikkerveer 2006).

Representatives of the traditional medical system are the *dukun* and the *paraji*. Their healing practices differ among the numerous ethno-cultural groups in the country, where the traditional healers use their extensive knowledge of *jamu* to invoke a supernatural context for their practices.

The transitional medical system as the hybrid component of the plural medical system includes an intermediate medical system characterised by the use of commercial drugs which operates between traditional and modern medical systems (*cf.* Slikkerveer 1990; Ambaretnani 2009). Slikkerveer (1982, 1990) introduces the concept of a transitional medical system, describing the medical system which is in transition from a traditional to a modern medical system.

As Slikkerveer (1982: 1863) elaborates: *'Transitional medical systems can be defined as involving large-scale commercial production and sale of authentic pharmaceutical drugs and [modern] pharmaceuticals. Initially this institution referred to drug sales activities in developing countries,*

often illegally, where urban communities were generally in contact with modern medical systems which have become standard practice, while rural communities continue to depend on traditional medical systems'. The commercial activities of the drug vendors are taking place independently and unofficially on the basis of profit-making, and are functioning between traditional and modern medical systems (*cf.* Buschkens & Slikkerveer 1982 and Slikkerveer 1990). In addition, there are also non-government commercial clinics, which are operating between the traditional and modern medical system by selling over-the-counter medicines which seek to combine traditional medical knowledge and practice with the efficacy of industrially produced medicines.

Representatives of the transitional medical system are the *penjual obat* ('drug vendor'), who are selling their *obat* ('medicines') without prescription mainly in their *warung* ('stall') in the market place. Such 'medicines' are usually industrially packed plant-based products, food supplements, gender-enhancing remedies, and bleaches for lightening the skin.

The modern medical system as the cosmopolitan component of the plural medical system is also known as the 'scientific', or 'Western' medical system, which originates in the West in most globally-oriented countries, based on scientific principles of research, education and training, and which applies modern pharmaceutical medicines, most of which were developed in experimental research in laboratories and research universities on an industrial basis (*cf.* Aiglsperger 2014). As Slikkerveer (1982: 1863) notes: '*The modern medical system includes elements of scientific medicine originating in Europe in the late middle ages and eventually forming a cosmopolitan medical system which later evolved throughout the world'.*

Modern medical science as an applied-oriented field embarks on biomedical research and medical technology with the aim to diagnose an illness and treat the disease. In general, the doctor starts with a review of the patient's medical history, followed by an interview and physical examination. Sometimes, doctors can order clinical tests and prescribe pharmaceutical medicines or special therapies (*cf.* Ambaretnani 2009). In Indonesia, the modern medical system includes government health services, foreign medical aid agencies, profit-making health organisations, religious organisations, and private clinics. The representatives include Western trained medical doctors and specialists, nurses and health workers, who are providing modern medicine from Indonesia's health-service infrastructure.

1.2.2 The Plural Nursing Sub-System: Nursing Institutions & Organisations

Although the providers of nursing care are joining with other medical personnel in a complementary way to provide adequate medical care within the framework of the medical system concerned – traditional, transitional or modern – they are at the same time forming their own plural nursing sub-system, as other categories of care providers do, such as the 'general practice sub-system', the 'medical specialisation sub-system', and the 'medical auxiliary sub-system'. In view of the fact that the three medical systems of the 'plural medical system' in Indonesia provide the overarching theoretical and practical framework of the directly related 'nursing sub-systems', the latter are similarly encompassing the 'traditional nursing institutions', the 'transitional nursing organisations' and the 'modern nursing organisations' of the country.

For the study of the 'plural nursing system' in Sumedang, it is appropriate to link up with the international theory of the study and analysis of institutions and organisations in different dynamic settings of sustainable development, differentiating between the concepts of institutions and organisations in line with the theoretical foundations of applied ethnoscience. As mentioned above, the ethno-scientific approach delineates useful working definitions from the emic, *i.e.* the participants' point of view, which is playing a crucial role in their process of utilisation behaviour. As will be further elaborated in Chapter II on the theoretical orientation of this study, the point of embarkation is based on the working definitions underlying the research and analysis of the data collected in the household surveys in Sumedang.

Recently, endless disputes over the definitions of key terms in this field seem to dominate the literature, particularly regarding 'institutions' and 'organisations'; it is therefore not possible, as Hodgson (2006: 1) argues: *'to carry out any empirical or theoretical analysis of how institutions or organizations work without having some adequate conception of what an institution or an organization is.'* As regards such an empirical definition of a 'traditional nursing institution', the classical definition of institutions by Leach *et al*. (1999: 238) states that they refer to: *'regularized patterns of behaviour that emerge from underlying structures of sets of "rules"'*. Horton & Hunt (1984) define an institution as: '*an organised system of social relationships which embodies certain common values and procedures and meets certain basic needs of society'.*

A more practical ethnoscience-based definition of 'institutions' in relation with 'organisations' is provided by Blunt & Warren (1996: viii): *'those often invisible local-level institutions which are indigenous as opposed to exogenous organisations in the community and which are based on the principles of non-profit mutual aid and communal work at the community level'*. These scientists clearly define the differentiation with 'organisations': *'exogenous organisations established through forces external in the community, which are characterised by profit-making objectives'*.

Furthermore, Slikkerveer, Baourakis & Saefullah (2017: 18) refer in particular to exogenous organisations as: *'profit-making externally-introduced associations of Western-oriented credit unions, cooperatives, rotary clubs etc. in the role of technical assistance in the economic development process.'* Their conceptualisation of 'institutions' is rather useful for the study in Sumedang, as they also elaborate on the characteristics of traditional institutions: *'those local-level institutions – informal and sometimes invisible to the outsider – rooted in the history of the community, which embody the local systems of knowledge, beliefs, practices, values and norms, and are based on strong communal principles of mutual aid, neighbourhood cooperation and collective action, where the interests, resources and capacities of many community members are structurally joined together in order to achieve common goods and services for the entire community in a non-commercial way.*' Moreover, Slikkerveer (2017) points at the overriding significance of the underlying traditional emic principles of *gotong royong* ('mutual assistance and communal work') of non-profit mutual assistance and communal work at the community level.

In line with these underlying traditional emic principles of *gotong royong*, encompassing the two above-mentioned principles of non-profit mutual aid and communal work of the local people in the communities, the conceptualisation of *perawatan tradisional* ('indigenous system of nursing knowledge, beliefs and practices') can similarly be traced back to both local principles within the context of medical care, which in turn are crucial in the differentiation between 'nursing institutions' and 'nursing organisations' in the research area of West-Java.

An important theoretical innovation which has been introduced in this kind of ethnoscience research at the community level is that the recent international debate on the role of indigenous institutions in development is seeking ways to compare them with exogenous organisations, with a focus on the opposition of the indigenous *versus* the endogenous origin of activities and events, which possesses rather important implications for sustainable community development in several sectors, including nursing. Based on the above-mentioned conceptualisations, the differentiation of the three components of the 'plural nursing sub-system' in West-Java, *i.e*. the 'traditional nursing sub-system', and the 'transitional nursing sub-system' and 'modern nursing sub-system', can be subdivided in the following three working definitions of this important subject matter, as selected for the research in Sumedang:

- The Traditional Nursing Institution (TNI), which refers to regularised behaviour of traditional nurses towards their patients which embody their traditional system of nursing knowledge, beliefs, practices, values and norms, based on non-commercial principles of mutual aid and communal action to achieve the common goal of the community's improved health. The traditional nursing practices are usually taking place in a traditional location in the family homestead in the community, characterised by the endogenous provision of nursing to families and fellow community members, accompanied by the implementation of non-profit principles;

- The Transitional Nursing Organisation (TNO), which refers to regularised behaviour of transitional nurses towards their patients which embody their transitional system of nursing knowledge, beliefs, practices, values and norms, based on commercial principles of assistance to achieve the goal of the community's improved health . The transitional nursing practices are usually taking place in a transitional location at the market places near the community, characterised by the hybrid provision of nursing, based on an exogenous influx of organisations into the communities, accompanied by the implementation of profit-making principles; and

- The Modern Nursing Organisation (MNO), which refers to regularised behaviour of modern nurses towards their patients which embody their modern system of nursing knowledge, beliefs, practices, values and norms, based on commercial principles of assistance to achieve the goal of the community's improved health. Modern nursing practices usually take place in a modern location away from the patients' homestead, characterised by the exogenous provision of nursing by modern trained nurses in hospitals, health centers and clinics to their clients and patients, accompanied by the implementation of profit principles.

These three components as part of the 'plural nursing sub-system' are also represented in the analytical model, where they are established in three separate 'blocks' of dependent variables, *i.e.* traditional nursing institutions, transitional nursing organisations and modern nursing organisations. The stepwise analysis measures the reported utilisation behaviour of each 'block' by the participants over the preceding years of the research in relation with the independent and intervening variables. These three components of the 'plural nursing sub-system' will be described in the next Paragraph. Chapter III further elaborates on the design of the related conceptual analytical model, selected for the study in Sumedang.

1.2.3 The Traditional Nursing Institution: *Perawatan Traditional* (TNI)

The above-mentioned elaboration of the concept of traditional institutions by Slikkerveer, Baourakis & Saefullah (2017: 18) is useful for the study of the 'traditional nursing institutions' in Indonesia, as they provide the basis for the working definition of the research in Sumedang. The traditional nursing institutions refer to regularised behaviour of traditional nurses towards their patients, which embody their traditional system of nursing knowledge, beliefs, practices, values and norms; traditional nurses implement their acquired traditional nursing skills *kearifan kesehatan lokal* as non-commercial providers of care, specifically for the elderly in the community. In this way, they are able to apply *perawatan tradisional* ('indigenous system of nursing knowledge, beliefs and practices') for their clients and patients. The traditional nursing practices usually take place in a traditional location in their family homestead in the community, characterised by the endogenous provision of nursing to families and fellow community members, accompanied by the implementation of non-profit principles.

The *Basic Health Survey of Indonesia* (2013) states that the related traditional medical system is to a large extent used by the population and consists of four types of treatment. Complementary to the traditional medical system, the 'traditional nursing institution' is similarly characterised by these four basic types of treatment, used by traditional nurses, such as *jamu*, *gurah* ('herbal therapy'), homeopathy and spa, and traditional practices with instruments, including acupuncture, chiropractic, *becam* ('cupping'), *ceragem* ('massage'), and acupressure. Treatments without instruments include massage-sequencing, mother/baby massage-sequencing, fracture treatment, and reflection. Traditional treatments for mental disorders include hypnotherapy, *prana* ('meditation'), and concentration on the inner energy. De Padua *et al.* (1999) indicate that in traditional medicine, herbal medicine refers mainly to the use of indigenous medicinal plants in the home countries. Zhang (1998) defines 'herbal medicine' as any plant, such as herbs, shrubs, trees or fungi, which are used alone or in combination with other plants for health and healing.

Slikkerveer (1995) introduced the rather inclusive concept of Medicinal, Aromatic and Cosmetic (MAC) plants, providing an emic-oriented view of indigenous healers and theior clients. In general, the concept of herbal medicine includes raw and processed plant ingredients with therapeutic or health benefits, as well as unique herbal products. As Riskesdas (2013) reports, a total of 89.753 of the 294.962 (30.4%) households in Indonesia have utilised the 'traditional nursing system' in the past year. The traditional nursing system utilised by the majority of households is providing treatment without instruments (77.8%) and potions (49.0%). The data show that in the traditional nursing system, there is also a tendency of 'going back to nature', documenting a high interest in traditional ways of maintaining health and well-being. The use of herbal medicines is increasingly popular, especially in rural areas because of its affordability, easy accessibility and cultural attachment. Furthermore, the growing disappointment with the failure of modern medicine to provide adequate and affordable treatment for certain diseases has also aroused renewed interest in the use of herbal medicine, in both developing and developed countries.

Used as a form of safe self-care, herbal medicines have also been identified as rapidly growing components of Complementary and Alternative Medicine (CAM) in Western countries, recently gaining a strong position in the world market (*cf.* Eisenberg 1993; WHO *et al.* 1993; Zhang 1998; WHO 2002a; Slikkerveer 2006; Lynch & Berry 2007; WHO 2012). Indonesia's health profile, released by the Ministry of Health (2012), documents that the number of districts/cities which use alternative, complementary and traditional treatments in Indonesia amounted to 103 districts/cities or around 20.7% of 497 districts/cities. The figure indicates that in Indonesia as primarily a multicultural country, indigenous medical knowledge plays a significant role in the 'traditional nursing system', which should be further developed to achieve an improved nursing system.

Warren, Slikkerveer & Brokensha (1995: xv) have defined Indigenous Knowledge as local knowledge: '*unique to a particular culture or society and in contrast to the international knowledge system produced through a global network of universities and research institutions'*. Modern knowledge systems are often identified as scientific and opposed to traditional knowledge systems.

Nevertheless, this research follows a line of reasoning, in which the practice of science, coupled with trust and magic, forms the universal characteristics of human society where both local and international knowledge systems can be considered scientific. Slikkerveer (1995), Molenaar (1999) and Aiglsperger (2014) provide examples of local classifications of diseases and local MAC plants, rooted in evidence-based concepts which are understood together, and as such equally qualify as scientific doctrine. In his research in ethnobiology, Berlin (1994) is well known in the field of ethnobiology, or the study of how people name, use, and organise the names and knowledge about plants and animals in their environment. He also developed Folk biology, a sub-field of ethnobiology which refers to the biological classification in a cultural group, widely regarded as a major theory in ethnoscience.

Kearifan kesehatan local, or the system of traditional medical knowledge, is a manifestation of the local medical wisdom used by people as well as by the traditional healers and nurses in a community. According to Sedyawati (2006), the term 'local wisdom' should be interpreted as the wisdom of traditional ethno-cultural groups. In natural resources management, *Kearifan local* ('traditional knowledge') has shown to be the best form of environmental conservation (*cf.* Hidayat 2000). The word "wisdom" itself should also be understood in its broadest sense, not only as cultural norms and values, but also as elements of ideas, including those underlying technology and aesthetics.

Indrawardana (2012) shows that the *kearifan kesehatan lokal* of the Sundanese people with regard to their health is basically taken from the worldview of older Sundanese people who are living in farming communities. Saefullah (2020) has shown the significance of such worldviews in sustainable community development in Subang. As the main part of the traditional medical system of knowledge, beliefs and practices in the context of the traditional nursing sub-system, *kearifan kesehatan lokal* is the focus of this research, forming the basis of the traditional nursing institutions, specifically among the elderly who have CVD in the Sundanese ethno-cultural groups in Sumedang. As mentioned before, most elderly prefer to continue to stay and live with their families, or in senior housing facilities in the community. A special role of the traditional nursing institutions is their advice and

guidance to the elderly with CVD in their housing and daily life in their communities. In this way, the traditional nurses seek to focus their treatment of the elderly on the traditional knowledge, beliefs and practices which they have experienced during their lifetime, and as such, to promote the elderly to stay in their own houses or with their families in the community. In a broader context, the provision of traditional nursing for the elderly with CVD is an integral part of comprehensive health services aimed at individuals, groups, and communities with physical, mental, and social disorders in different nursing settings.

1.2.4 The Transitional Nursing Organisations (TNO)

Based on the above-mentioned working definition of the 'transitional nursing institution' which refers to regularised behaviour of transitional nurses towards their patients, embodying the transitional system of nursing knowledge, beliefs, practices, values and norms, it is similarly useful for the study in Sumedang, as such behaviour is based on the commercial principles of providing services to achieve the goal of the improved health of their clients and patients. Since the transitional nursing practices usually take place in a transitional location at market places near the community, the hybrid provision of nursing, based on the exogenous influx of organisations in the communities, is accompanied by the provision of largely modern packages with pharmaceutical medicines or drugs, promoted with traditional knowledge and experience in order to popularise their services among their clients (*cf.* Figure 1.3).

The transitional locations from where transitional nursing are usually practiced near the family homesteads in the community, characterised by the hybrid provision of nursing by traditional indigenous institutions and modern exogenous organisations. These orgnisations have emerged from an exogenous influx of health agencies into the communities, accompanied by the transition from non-profit to profit principles. These transitional nursing organisations are often introduced as nursing agencies from outside which seek to provide their services on a commercial basis. As regards their practice, transitional nurses are usually not certified, and have no formal training, but their practice is partly based on traditional medical knowledge and experience, and partly on their knowledge of pharmaceutical medicines, often in combination with traditional medicines.

Illustration 1.2. Samples of Transitional Medicines for Backache and Rheumatism Found in the Market and Sold by Drug Vendors.
Source: Ambaretnani (2012).

De Padua *et al.* (1999) note that such pharmaceutical drugs refer to medicinal plants from which active components have been isolated and mixed. As regards the provision of transitional nursing to the elderly with CVD, the treatment is not only focused on the administration of common medicines with general efficacy on the patients' health and disease condition, but specifically on the promotion of the health of the elderly with CVD through the provision of the individually-oriented socio-cultural and mental care of connectivity and affiliation with their cultural customs, norms, values, expectations, and worldviews.

As indicated above, most elderly prefer to continue to stay and live with their families, or in senior housing facilities referred to as 'traditional nursing institutions' in the community. The main role of the traditional nursing institutions is the advice and guidance of the elderly with CVD in their housing and daily life. In this way, transitional nurses seek to find a balance in their treatment of the elderly between, on the one hand, their traditional knowledge, beliefs and practices, and on the other, the benefits of treatments with modern medicines.

1.2.5 The Modern Nursing Organisations (MNO)

Embarking on the above-mentioned working definition of the modern nursing organisations being a set of regularised behaviours of modern nurses towards their patients which embody their modern system of nursing knowledge, beliefs, practices, values and norms, their practical framework is provided by Western medical knowledge and practice, sometimes called 'cosmopolitan medicine'. In line with the worldwide principle of primary health care, the modern nursing organisations operate on commercial principles of assistance to achieve the goal of improved health for all citizens. The modern nursing practices are usually taking place in a modern location away from the patients' homestead, characterised by the exogenous provision of nursing by modern trained nurses in hospitals, health centers and clinics to their clients and patients, accompanied by the implementation of profit principles.

In Indonesia, the implementation of nursing practice is carried out in accordance with a nursing care plan which has usually been agreed between the client and his/her family and the nurse. The implementation of nursing practice is carried out by formally trained nurses with appropriate levels of authority and must be guided by professional standards which include competency standards, practices, education, and ethics. The process and results of nursing must always be evaluated and monitored continuously, followed by revisions and modifications in accordance with the results of the evaluation and monitoring, in which the objectives have been formulated with the client. The objectives can be the disappearance of symptoms, reducing risk, preventing complications, increasing the knowledge of skills and health, including preparing for the death of the client with peace and dignity. Nursing provisions focus on clients' needs and expectations which can be held in all nursing facilities/settings, both in general and specialized hospitals, health centers, home nursing practices (home health nursing), nursing practice groups, and individual and cellular/ambulatory nursing practices. Nursing practice is carried out by paying attention to the affordability of the community to obtain nursing services. In this case, the nurse plays a professional role in the universal health system. Community health nurses in charge of the community act as coordinators of all efforts in the primary health centers and provide public health services including facilitating the community in optimizing all the capabilities of the community to improve their health status.

The development of referral behaviour in the community in determining treatment search decisions requires the *puskesmas* to become a service system which can incorporate referral systems that occur in the community. As stated by Wachjoe, Sutedjo & Abisudjak (1980) in Logo (1980), *puskesmas* as a modern nursing organisation plays a role in a fraction of the results achieved in the overall *development* of public health, the rest of which have been achieved by other health institutions developed by the community, both through self-medication and traditional medicine, while others may also play an important role. The practice of nursing to solve health problems for individuals, families, or communities can be done through independent nursing interventions or collaborative working with a health team or across sectors. Nursing care services can be provided at health facilities

and independent nursing practices. Independent nursing interventions include therapeutic nursing interventions, complementary therapy, and health counselling. Providing education and advocacy in the context of solving health problems through fulfilling basic human needs and client independence is an effort to overcome health problems in line with government programmes. A comprehensive nursing assessment is conducted with the intention to identify the health conditions faced by the client and the cause of the disorder. Recognising the disorder and its causes appropriately will support the preparation of nursing interventions effectively and efficiently. Hence, the nursing action plan is based on the client's needs.

Thus, the present description of the development of 'community health nurses' in Indonesia links only with the government's modern nursing delivery system, which has sought to extend the modern health programmes of the *puskesmas* with community-oriented nursing care, known as 'community health nursing'. As mentioned above, the term 'community health nursing' has been defined by WHO (1959, 1974) and the *American Nurses Association* (1973), as well as by scholars including Freeman (1960), Chang (1982), Azwar (1983) and Depkes Republik Indonesia (1985, 1990, in Effendi 1995). Within the context of Indonesia, Effendi (1995) summarises 'community health nursing' by referring to special nursing services combining nursing, community health and social services which are an integral part of the health treatment of individuals, families and the community through the provision of promotive, preventive, curative, rehabilitation and socialisation services. The main objective of 'community health nursing' is to undertake as much as possible the modern medical treatment in the community itself, instead of in the hospital. As elaborated in the next Paragraph, the Ministry of Health introduced in 1993 a special 'primary nursing approach' for the care of chronic diseases among the elderly.

1.3 The Challenge of Transcultural Nursing of the Elderly

1.3.1 The Primary Nursing Approach of the Elderly

The existence of various health problems among the elderly as a result of the demographic expansion, the recent epidemiological transition and, of course, their age is posing a specific challenge for the Government of Indonesia. The Ministry of Health has formulated a policy related to a special programme for the management of chronic diseases among the elderly with a special 'primary nursing approach'. The legal basis in the need for the special management of elderly groups in Indonesia is provided in subsequent laws, including Law Number 23, Article 19 (1992), Law Number 13 (1998), Government Regulation Number 43 (2004), Law Number 36, Article 138 paragraph 1 and 2 (2009).

In 1993, the 'primary nursing approach' was further developed in the form of early detection and health examinations of the elderly by using the *Kartu Menuju Sehat Lansia* ('Health Card for the Eldery') as a document to record the results of the examinations at the *Posyandu Lansia* ('Elderly Integrated Service Post'/'Integrated Development Post for Seniors'). In 2005, the Ministry of Health compiled the '*Guidance for Elderly Community Health Centers'*, which aims at improving the quality of life of the elderly and their independence in preventing and overcoming health problems. These activities are part of the 'primary nursing approach' with the objective to increase the targeted planning and the implementation of health services for the elderly, in order to provide proactive, comprehensive, and high-quality care. The new approach was designed to facilitate older people to obtain health services, reduce their morbidity and mortality resulting from various diseases, especially chronic degenerative diseases, and improve the quality of life of the elderly, enabling them to be productive and happy (*cf.* Ministry of Health 2012; Hunter & Reddy 2013).

The 'primary nursing approach' emphasises health promotion and protection of the elderly, especially in various chronic diseases, known as *penyakit tidak menular* (PTM) ('non-communicable diseases'). The implementation of the 'primary nursing approach' through a well-managed health center for the elderly must have adequate, quality services, providing convenience in health services to the elderly. Moreover, it should provide relief or elimination of nursing costs for the elderly who cannot afford paid/expensive care, provide support and guidance through various promotional

activities, and health protection in maintaining and improving their health in order to stay healthy and independent, carry out proactive services so as to reach as many elderly patients as possible through the *puskesmas*, and conduct cross-sector cooperation at a certain regional level with the partnership principle to jointly conduct guidance in order to improve the quality life of the elderly. The various approaches of primary nursing are focused on early detection efforts, empowerment of families, and to carry out holistic and comprehensive care through strategies, including health education, group processes, family empowerment, cross-sectoral partnerships, and the use of effective financial management (*cf.* Stanhope & Lancaster 2004; Ministry of Health 2009; 2010). Similarly, the 'primary nursing approach' can improve self-care and self-management in health and social life every day.

In line with the WHO declaration of Alma Atta (1978) on 'primary health care', the 'primary nursing approach' places more emphasis on health promotion efforts, health policy formation, and prevention of diseases of the elderly (*cf.* Potter & Perry 2010). Stanley & Beare (2007) show that the elderly themselves were very interested in health promotion. Elderly groups predominantly apply behavioural outcomes to health promotion compared to younger ages. It is important to use a creative approach in health promotion activities and to include these activities in all health service environments, including the family environment, and the community (*cf.* Ministry of Health 2010). Similarly, the 'primary nursing approach' can improve self-care and self-management in daily health and social life. The elderly people and their family are educated in being able to use knowledge, attitudes, and behaviour in their activities to improve their own health and that of their community. The 'primary nursing approach' also aims at improving the ability of clients – ranging from the level of individuals, families, and community groups – to be self-reliant in preventing and overcoming the health problems which they experience and protect the elderly from various chronic diseases (*cf.* Stanhope & Lancaster 2004). Landon (2007) explains that an increase in a healthy lifestyle can prevent the occurrence of severity and complications of chronic diseases by 40%, so that it can improve the quality of life of the elderly until the end of their lives. The implementation of various primary health service activities in the form of nursing for the elderly with the strategy of a well-organised health center for the elderly needs to refer to the principles of effective and efficient management, starting from planning, implementation, monitoring, and evaluation.

The expected results can be achieved from the 'primary nursing approach' in the management of chronic diseases among the elderly which include: a) decreased use of health services for treatment, especially in severe conditions, b) increased functional status, c) improved quality of life for the elderly, and d) decreased mortality due to chronic uncontrolled diseases among the elderly. Indicators of prevention and control of non-communicable diseases are contained in the *Strategic Plan* of the Ministry of Health 2015-2019.

Indonesia is one of the countries with a very rich biodiversity. Out of the 40,000 species of flora existing in the world, as many as 30,000 species are found in Indonesia. About 940 of these species are known to be efficacious as medicines and have been used in traditional medicine for generations by various ethno-cultural groups in Indonesia. The rich biodiversity of MAC plants is a national asset of high value for the development of the pharmaceutical industry around the world. Today, there is a tendency in the philosophy of life to return to nature ('back to nature') which is also manifest in the belief that the consumption of natural medicinal ingredients is relatively safer than the consumption of industrial medicines. The WHO (1985) predicted that around 80% of the world's population had used medicinal plants (herbal medicine, phytotherapy, phytomedicine or botanical medicine) for their nursing needs (*cf.* Peters & Whitehouse 2000 in Aswani 2016), thus affecting the world's high demand for natural medicinal ingredients; thus, market prospects of medicinal plants in Indonesia both domestically and abroad have greater opportunities.

The use of MAC plants with the aim of healing is among the oldest forms of treatment in the world. Every culture in the world has a unique system of traditional medicine, and in every region, there are also many kinds of plants that can cure some health problems. Today the use of traditional medicine by the community is used as a way of treating themselves. Traditional medicines applied to combat folk diseases in formal health services is still lacking or has not been used in formal health services such as health professionals and doctors who are generally still reluctant to prescribe or use

these medicines. Such practice, however, is different from the use of traditional medicines in several neighbouring countries such as China, Korea, and India, which integrate traditional methods and treatments within the formal health service system.

The main reason for the reluctance by modern health personnel to prescribe or use traditional medicines is because scientific evidence of the efficacy and safety of traditional medicines in humans is in many cases still lacking (*cf.* Pramono 2002 in Aswani 2016). The unfamiliarity of traditional medicine by modern health personnel renders them to prioritise client safety and security and protect patients from possible side effects. Indonesia being a tropical country, is well-known as a producer of various agricultural products, including MAC plants. The fertile soil conditions and tropical climate, supported by the diversity of the flora has promoted the production of medicinal ingredients of natural origin. In everyday life, the use of plants with medicinal properties is often practiced by the community as readily available traditional medicine.

There are so many types of MAC plants with many properties and different compounds. Indonesia's rich biodiversity has also the potential to discover new medicines, including antioxidants. Many plants have medicinal, aromatic and cosmetic properties with a preventive function to protect the human body so that it does not get sick or the disease becomes severe. In some cases, the use of MAC plants as drugs has the potential to make the body less susceptible to disease; thus, if there are symptoms of illness, it could prevent further development of the illness.

Several government programmes and plans have been carried out including traditional nursing providers; unfortunately, they have not looked specifically at how the cultural aspects of the community influence health behaviour patterns, or health practices based on the local health wisdom that the community adheres to. Although there has recently been growing interest among the younger generation in Indonesia's national cultural heritage, such obedience to and practices of indigenous traditions are found mainly among the elderly or old members of society. Indigenous medical knowledge systems tend to persist and become evident in their health behaviour and the handling of their diseases. They tend to maintain their noble values and attitudes as part of their local system of knowledge, beliefs, and practices in many sectors of society, including health and disease. In Indonesia, the values, beliefs, norms, and practices of individuals or groups tend to play an important role in the use of culturally appropriate nursing in health centers or hospitals. Traditional beliefs and practices among the elderly are often a manifestation of their loyalty to their traditions and respect for their ancestors as part of the cosmology of society, and they have important psychological significance in health. Healing is their commitment to secure that cultural heritage is able to create satisfaction in their lives. Thus, it is vital to recognise and understand this psychological view and develop it into a determining factor in nursing practice, especially among the elderly with CVD. In the end, it has a strong influence on achieving a better quality of life for the elderly. In this context, it is crucial to study what factors play an essential role in providing traditional, transitional and modern nursing practices in the management of CVD with special attention to aspects of indigenous knowledge, beliefs and practices in patients from different ethno-cultural background in Indonesia, especially in the Sundanese ethno-cultural groups in Sumedang.

Basically, efforts to improve health and prevent disease, as well as community empowerment, can be met by traditional health services which are oriented towards efforts to nourish and maintain the body while increasing the quality of life of a person. Increased awareness, motivation, and the ability of the community to live healthy will accelerate the achievement of optimal health status. By conducting independent care, this means that the community has tried to change the paradigm of curative medicine to be promotive and preventive, which is beneficial in the efficiency and effectiveness of families to maintain the health of themselves and their families.

In accordance with the advice of the Minister of Health, it is expected that community visits to the *puskesmas* are in the context of a health consultation and not to treat the illness. In an effort to treat the pain or illness, the community can use all the resources around them, including using traditional medicines made from natural ingredients which can be obtained from the home yard, commonly referred to as TOGA (‘Family Medicine Garden’). TOGA is usually producing a group of MAC plants which are grown in small gardens near the home, (*cf.* Slikkerveer & Slikkerveer 1995 in Waren,

Slikkerveer & Brokensha 1995; Hampp 1999). The community can practice independent health nursing by utilising TOGA. Independent health nursing is an effort to maintain and improve health, and prevent and treat minor health problems independently by individuals in families, groups, or communities by utilising TOGA.

1.3.2 The Need for Integration of Transcultural Nursing

From the perspective of integration, the *puskesmas* should provide a form of hybridisation between modern and traditional health care. Thus, in order to bring these two systems together, changes are needed in the characteristics of the providers and the community itself, so that the health services are acceptable to both systems. In other words, the existing medical system has to be adapted to the cultural system of the community so that changes in the health care system can be carried out by the community itself, where community health nurses will act as a catalyst and change agents. In response, the community health nurses as representatives of the *puskesmas* must understand and try to bridge the concepts of knowledge, beliefs, and practices existing in the community with modern concepts implemented along their mission to improve community health. As Slikkerveer (1990) documents, in the past, medical doctors in the West only focused their attention on biomedical, technical and modern nursing organisations, without considering the relationship between culture, society, and traditional medicine. Such approach is in contrast to the anthropological view of studying the socio-cultural aspects of health and disease in different groups. Subsequently, by improving the health service system, an integrated and interdisciplinary approach to the study of health systems, which developed into a new, holistic approach through ethnomedical practice, which provides useful information on different systems based on indigenous knowledge, beliefs, and practices in the context of health and healing. These patterns of human care and healing can be identified if an anthropological and nursing perspective is integrated.

There are 1,340 recognised ethno-cultural groups in Indonesia, of which the vast majority belongs to the Austronesian peoples, with a large minority of Melanesian peoples, spread over more than 17,000 islands (*cf.* Na'im, A. & Syaputra, H. (2011). Such cultural diversity represents a large variety of local knowledge systems and lifestyles of various population groups. There are different kinds of cultural perspectives on health and disease related to knowledge, beliefs, values and practices manifest in various forms of lifestyles and livelihoods in Indonesia. The cultural diversity of the population is also related to the differences in health behaviour (*cf.* Loredan & Prosen 2013). Sharon (2008) states that health inequality can occur as a result of several factors, including distrust of the relationship between the nursing providers and patients (*cf.* Betancourt *et al.* 2003; Cort 2004; Perloff *et al.* 2006; Kennedy *et al.* 2007). In response to the call from patients with CVD mainly living in local communities to pay attention to traditional knowledge and practices regarding the management of CVD, a non-pharmaceutical approach has been introduced as part of an advanced complementary CVD management system. Further research is needed on the role of socio-cultural factors and their overall influence, as well as the relationship between relevant factors which determine the behaviour of elderly people with CVD in terms of utilisation patterns of the plural medical systems. Ineffective communication has been widely documented between nursing personnel and patients (*cf.* Kaplan *et al.* 2006; Saha *et al.* 2003; Sheppard *et al.* 2004). Cooper-Patrick *et al.* (1999) mention not only the lack of active participation between patients and nursing professionals in determining decisions, but also the negative behaviour by nursing providers in interpersonal relationships. According to Smedley *et al.* (2003) health inequality occurs when there are differences in the provision of nursing services to certain ethno-cultural groups, both individuals and groups, or organisations in terms of quality nursing; access to nursing at various levels and clinical conditions are inadequate in various groups, including for women, children, the elderly, rural residents, and those who have special limitations and needs. However, nursing as a profession has to be able to advocate support for clients to obtain holistic care in an effort to meet the needs of all, regardless of their ethno-cultural background and their diverse beliefs and values about health and nursing (*cf.* Prosen 2003; Sharon 2008). There is an evident need for a cadre of nurses capable of providing their services which take the cultural

background of the clients into consideration. Nurses must have culturally sensitive nursing competencies as a strategy to deal with health inequalities and to improve nursing outcomes for their clients (*cf.* Sharon 2008). As Prosen (2015) argues, nurses should be able to recognise the cultural background of their patients so that the treatment is culturally appropriate to their needs. Nurses' skills in viewing the integration of culture differences in more critical thinking about nursing will increase their knowledge and abilities as a basis for providing a transcultural form of nursing services (*cf.* Andrews & Boyle 2002; Leininger & McFarland, 2002). According to Jeffreys (2006), patients have the right to receive culturally competent nursing services; the concept was firstly introduced in 1954 by Leininger (1977) as the instigator of the theory of transcultural nursing.

Reynolds & Leininger (1993) state that nurses must be able to provide culturally sensitive nursing services to patients in order to achieve patient satisfaction. Douglas *et al.* (2011: 319) argue that: *'Understanding the cultural values and beliefs of a person and other people's cultures is important; the nursing provided has to not only be appropriate, but it has to be considered sufficient to meet the needs of patients, families, communities, and residents'* Carr & Knutson (2015) underscore that in order to achieve cultural competence, nurses must be able to understand the views and culture of patients and avoid stereotypes or misuse of scientific knowledge. Thus, it is important to study indigenous medical knowledge systems among diverse ethno-cultural groups in Indonesia as a foundation for nurses in providing their services to clients on the basis of their culture and beliefs in order to achieve the goal of nursing on an optimal level of client satisfaction.

Every effort to improve cultural competency among nursing practitioners who work with diverse clients from 1.340 ethno-cultural groups in Indonesia is a challenging effort. One step which can be taken is to learn and understand the Sundanese people as an important cultural group in West-Java. The Sundanese population of more than 35.5 million people has increased significantly, rendering it the second-largest in Indonesia after the Javanese (*cf.* Ambaretnani 2012). It certainly requires special skills to include local traditions such as *kearifan kesehatan local* ('local medical knowledge') for an in-depth understanding of social behaviour and public health. Thus, a more in-depth description and analysis of transcultural nursing practices of the elderly in the community is needed to analyse and integrate traditional knowledge, beliefs and practices for improved nursing. Research on indigenous medical knowledge systems in the provision of culturally sensitive nursing practices for the elderly with CVD in Sumedang provides evidence of the importance of socio-cultural factors in the behaviour of their diseases, and the importance of integrating these factors into transcultural nursing practices into a comprehensive system of nursing care of the elderly with CVD. In this way, this research contributes to the development of transcultural nursing knowledge and practices for the benefit of the elderly with CVD. The results of the study will also form the basis for the development of appropriate guidelines for nursing education and training, especially nursing for the elderly with CVD in West-Java and other regions in Indonesia. By consequence, this study embarks on a comprehensive understanding of how community nursing practices of the elderly link up with the traditions concerning the care of the elderly among the Sudanese population. Recent studies show that the use of Indigenous Knowledge Systems provide the basis for a transcultural model of nursing utilisation introduced by Slikkerveer in his research in the Horn of Africa (1990; 2005), and further elaborated and implemented by several scientists, including Ibui (2007) in Kenya; Agung (2005) and Leurs (2010) in Bali; Djen Amar (2010), Ambaretnani (2012), Saefullah (2019) and Febriyanti (2021) in West Java; Aiglsperger (2014) in Crete, and Chirangi (2013) and De Bekker (2020) in Tanzania.

The transcultural health care utilisation model significantly introduces a dynamic approach to create sustainable cultural awareness to local communities (*cf.* Slikkerveer & Dechering 1995). The integration approach is also implemented in the Presidential Decree No. 72/2012 which regulates the National Health Care Delivery System in Indonesia. The Decree states that the National Health Delivery System in a region has to prioritise the local potential and resources in order to obtain positive results which can be measured quantitatively, and to increase community participation in maintaining the physical and mental health of the community members. Thus, each regional policy has to comply with this decision, although in practice, it can be more flexible to adapt to the local customs, practices, needs and resources.

1.3.3 Comparative Nursing Utilisation Research for Policy Planning

For the planning of these different forms of nursing care of the elderly with CVD, the study and analysis of the illness behaviour of patients in the nursing sub-systems is important. Such research seeks to answer the central question of what actions the elderly with CVD will undertake in order to find appropriate nursing care, conceptualised in patterns of utilisation behaviour. In his classical study, Suchman (1963) describes this process of illness behaviour, in which the individual undertakes subsequent steps from one medical system to another – known as the referral system – and in which progress is made from the client to the patient. Although not all patients take the same subsequent steps through the referral system, some utilise more than one medical system simultaneously, known as 'healer shopping'. Some early studies underscore that it has become evident that this health care utilisation process is influenced by several categories of background and intervening factors, in which psycho-social and cultural factors are playing a dominant role. The consideration of these factors for improved health care are specifically important in nursing, where direct contact and communication are operational between the nurses and the clients or patients with CVD in the community.

In Indonesia, generally, if community members discover symptoms of illness, they will firstly try to find a solution through 'self-treatment', which is then communicated with members of the nuclear family. If the symptoms do not disappear, they will be communicated with the members of the extended family or with neighbours. If the symptoms still have not disappeared, the patient will proceed to seek professional help, often from a *dukun* ('traditional healer') representing the traditional medical system. Often, the last resort is sought from experts of the available transitional or modern medical system.

Moreover, in Sumedang, as one of the Regencies in West-Java, the local population still adheres to the local customs and beliefs in the community, especially the elderly. Likewise, the illness behaviour shown by the elderly community members with CVD shows the use of the different nursing institutions and organisations in the region for the treatment of their illness. Various nursing institutions and organisations in Sumedang can be found in the area, where traditional nursing of the elderly is practiced by *orang pintar* ('traditional healer'), *ajengan* ('shaman'), and *paraji* ('TBA') (*cf.* Ambaretnani 2012). In general, patients seek to overcome their illnesses or disease by using home remedies derived from MAC plants from *Tanaman Obat Keluarga*-TOGA ('Family Medical Home Gardens') (*cf.* Slikkerveer & Slikkerveer 1995). These *jamu* can be consumed directly as *lalab* ('salad'), or processed, blended or boiled into herbal drinks, or ground to be applied as an ointment on specific body parts. In addition, there are also traditional techniques such as *pijat* and *urut* ('massage'), often accompanied by *jampi* ('prayers'), and specific readings, usually conducted by the *dukun* ('traditional healers'). Such mostly non-profit practices of traditional knowledge and beliefs in nursing are defined as the basis for the indigenous nursing institutions. Other available nursing organisations are represented by the *Warung Obat* ('Drug Store') which are providing a mix of herbal medicines and pharmaceutical medicines packaged in sachets as manufactures, and sold over the counter without a doctor's prescription. These profit-making organisations in the research area are defined as Transitional Nursing Organisations (TNO).

In addition, there are several facilities of modern nursing organisations available to the community which can be obtained from the government *Pusat Kesehatan Masyarakat* (*Puskesmas)* ('Community Health Centers'), and similar private nursing clinics which are managed by professional health workers. These modern nursing facilities are defined as the modern nursing organisations (MNO) in Sumedang. Several categories of factors among the community members influence their choice and utilisation of the available nursing institutions or organisations for the treatment of their health problems or illnesses. Important factors such as values, norms, and beliefs, as well as previous experience with medical care, tend to determine the utilisation of the nursing institutions or organisations. In addition, other factors, such as availability of resources, ease of access, geographical location, and the costs incurred for treatment still influence the utilisation behaviour by the patients of a specific nursing institution or organisation.

As is the case among most elderly people with CVD in Sumedang, they seem to prefer utilising indigenous nursing practices among the elderly, which in their view are more in line with the local traditions and culture, their norms, values, and expectations, to fulfil their expectations and satisfaction. Their use of indigenous knowledge, beliefs and practices is a means of maintaining their traditions and customs, expressing their devotion to their ancestors. As regards the local culture of Sumedang, people do not only have different views on health, disease and treatment, but also different opinions on the expertise of health workers, including *dukun*, doctors, nurses, midwives and the quality of available health facilities. The diversity in habits and expectations on health, disease and treatment among the members of the different sub-cultures in Indonesia, expressed in their health and illness behaviour, requires a nursing system which is culturally competent and responsive to the different needs and expectations of each patient, in particular the elderly with CVD.

There is, however, a lack of applied-oriented research on the extent of the utilisation of the different nursing institutions and organisations in the community, especially by the elderly with CVD. Providing culturally appropriate nursing for specific population groups is an effective way to improve the utilisation of available institutions and organisations. It can also increase the trust and knowledge of nurses, providing them with the skills and education necessary to provide special care to specific groups of patients including the elderly, taking into account their local language, traditions, culture, and/or ethnicity (*cf.* Jovanovic 2012). In particular, applied research on culturally competent nursing institutions and organisations, especially in the nursing of the elderly with CVD in Sumedang, requires research which focusses on the patient's point of view. In addition, nurses need to learn from those patients who benefit most directly from the use of nursing practices in order to enhance the cultural competence of nurses. Although several studies analyse cultural competence in nursing, yet no studies are focussing on the role and influence of several categories of selected factors on the utilisation by the elderly with CVD of the different co-existing traditional, transitional and modern nursing institutions and organisations in Sumedang. It is clear that in order to realise such objectives, there is a need for community-based ethno-medical research which observes, describes, collects, analyses and explains relevant data, including in-depth information on the role of indigenous medical knowledge in relation to the utilisation of nursing of the elderly with CVD in Sumedang.

This ethnomedical community-based study also builds on the strengths of previous research conducted by Slikkerveer (1995) in the Horn of Africa. His approach was later used successfully by Agung (2005); Ibui (2007); Leurs (2010); Djen Amar (2010; Ambaretnani (2012); Aiglsperger (2014);Erwina (2019); Chirangi (2013) and De Bekker (2020) and Febriyanti (2021), all focusing on the utilisation of various knowledge systems by the local population. The implications of this kind of ethnomedical research also contribute to the development of transcultural nursing, analysing the differences and similarities among clients and patients of different sub-cultures regarding their health and illness behaviour, as expressed in their utilisation of nursing institutions and organisations based on human cultural values, beliefs and actions (*cf* Leininger 2002). The results of this study in Sumedang seek in particular to contribute to the development of transcultural nursing of the elderly with CVD, in order to provide improved health and well-being of clients and patients with different ethnic and cultural backgrounds at the community level, as such ensuring that all cultural groups have equal access to integrated health services.

1.4 Aim, Objectives and Structure of the Study

1.4.1 General Aim

This study aims to document, study and analyse the relevant determinants of the patterns of utilisation by the elderly with CVD of the plural nursing system in Sumedang, West-Java, with a particular focus on the role of indigenous medical knowledge, beliefs and practices, known as *kearifan kesehatan local* (´traditional medical knowledge') in the choice of nursing institutions or organisations, with a view to contribute to the development of transcultural nursing in West-Java and elsewhere in Indonesia.

1.4.2 Specific Objectives

In order to operationalise the above-mentioned general aim, a number of specific objectives have been formulated as follows:

Firstly, to briefly describe Sumedang as a rich cultural center of West-Java in Indonesia;

Secondly, to describe the daily life of people in the selected four rural communities as research locations in Sumedang of West-Java;

Thirdly, to describe the prevalence of reported CVD among the elderly in the research area;

Fourthly, to describe the plural nursing system, encompassing the traditional, transitional and modern nursing institutions and organisations in Sumedang in West-Java,

Fifthly, to document and analyse the reported utilisation patterns by the elderly with CVD of the plural nursing system in the research area;

Sixthly, to present and explain the results of the stepwise analysis of the reported utilisation patterns of the plural nursing system by the elderly with CVD in the research area; and finally,

Seventhly, to formulate policy recommendations for the integration of the nursing institutions and organisations as a contribution to the development of transcultural nursing in Indonesia.

1.4.3 Structure and Organisation of the Study

In order to realise the general aim and specific objectives, the structure of this research has been divided into nine chapters as follows:

Chapter I describes the development of community nursing in Indonesia, including the development of nursing and community empowerment through rural health care development, and the trends in the development of nursing institutions and organisations. In addition, this chapter discusses the challenge of nursing in cultural diversity, the importance of transcultural nursing, and the epidemiological transition in Indonesia. In addition, the need for the study of culture-specific nursing is underscored by the use of the plural medical system.

The Chapter also describes *kearifan kesehatan local* (‘indigenous medical knowledge’), and the complementarity between nursing systems and medical systems. It concludes with underscoring the significance of nursing utilisation research with regard to the elderly with CVD for the development of transcultural nursing in Indonesia.

Chapter II discusses the theoretical orientation of this study by explaining the selection of appropriate ethnomedical concepts, working definitions and processes of the research components, including plural medical systems and plural nursing systems, Indigenous Knowledge Systems (IKS), the concept of transcultural nursing, and the conceptualisation of nursing of the elderly with CVD. Special attention is given to the utilisation of the plural nursing system, encompassing indigenous nursing institutions, and transitional and modern nursing organisations,

Chapter III defines the appropriate research methodology and analytical methods, both qualitative and quantitative based on the *‘Leiden Ethnosystems Approach’* and the model of nursing behaviour,

Chapter IV provides comprehensive information about the research area of the Sumedang Regency as part of the Tatar Sunda Region of West-Java, Indonesia, as a country with a rich cultural diversity.

Chapter V focuses on the description of people's lives in Sumedang, especially in the four villages where the research is located, including the characteristics of the sample population and the plural medical system available in the region.

Chapter VI describes nursing of the elderly with CVD and the plural nursing system in Indonesia, encompassing traditional nursing institutions, transitional nursing organisations, and modern nursing organisations.

Chapter VII describes the traditional nursing institutions in the Sundanese community including cosmology, life views, and culture about health and healing through *ubar kampung*.

Chapter VIII presents the results of the quantitative analysis and the interpretation of the utilisation patterns of the plural nursing system as reported by the participants in the research area using the bivariate, mutual relations, multivariate, and multiple regression analysis. And finally,

Chapter IX presents the theoretical, methodological and practical conclusions and recommendations based on the results of the study in Sumedang, West-Java, Indonesia.

Notes

1. Non-Communicable Diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors. The main types of NCD are cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.

2. The term 'emerging disease' has been in use in scientific publications since the beginning of the 1960s and is used in the modern sense by David Sencer (1971) in his article '*Emerging Diseases of Man and Animals'* where in the first sentence of the introduction he implicitly defines emerging diseases as: *'infectious diseases of man and animals currently emerging as public health problems'* and as a consequence also includes re-emerging disease.

CHAPTER II THEORETICAL ORIENTATION

2.1 Medical Pluralism and Nursing Utilisation

2.1.1 The Concept of Medical Pluralism

The purpose of this Chapter is to discuss related concepts, definitions and theories as the first step in conducting a study of the role of local health wisdom – indigenous medical knowledge systems in nursing for CVD among the elderly in Sumedang, West-Java, towards the development of transcultural nursing in Indonesia. This Chapter will discuss Medical Pluralism and Nursing Utilisation including the concept of Medical Pluralism, Ethnoscience and Indigenous Knowledge Systems, the importance of Indigenous Knowledge Systems, the concepts of Transcultural Nursing and the Evolution of Transcultural Nursing Theory, Cultural Competence in Nursing, Transcultural Perspectives in the Nursing of the Elderly, and the Study of the Plural Medical System. Special attention is given to the working definitions of traditional nursing institutions, transitional nursing organisations, and modern nursing organisations for the elderly with CVD, and help-seeking behaviour through local health wisdom. The topics will be discussed one by one based on literary sources, including: journal articles, monographs, computer databases, dissertations, conference processes, empirical studies, reports from community leaders, government and other organisations, as well as historical documents.

The concept of 'medical pluralism' was introduced by Leslie (1976, 1978, 1980) in his research in Asian societies as an elaboration of the general concept of the plural society, developed by Furnivall (1939) and Van Lier (1971). The paradigm of a plural society is described by Furnival (1939) to identify the political process in plural societies by: *'the presence of two or more separate communities living side by side, but separately, in the same political unit; economic divisions also coincide with cultural divisions'.* The concept was thereafter elaborated by Slikkerveer (1995) in the field of ethnomedicine in his concept of transcultural nursing utilisation in the Horn of Africa. The concept of medical pluralism provides a unique approach to studying patterns of utilisation behaviour of transcultural nursing services and has been successfully implemented in various regions (*cf.* Slikkerveer 1990, 1995; Agung 2005; Ibui 2017; Leurs 2010; Djen Amar 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014; Saefullah 2019; De Bekker 2020; Febriyanti 2021).

Leslie (1978) states that the medical system uses categories of thoughts and attitudes that are common in society and inherently in cultural and social aspects through special specifications in aspects of community infrastructure. Leslie (1977: 9) defines the concept of medical pluralism as follows: "*pluralistic structures of various types of practitioners and institutional norms"*. Baer (2003: 11) added that: '*Medical pluralism develops in all societies divided into classes and tends to reflect a broader scope of class and social relations* [...].' The plural medical systems can be described as the dominant medical system for other medical systems. In other words, the dominant medical system, which has the support of the social elite, is more dominant than other medical systems. Slikkerveer (1990) notes that this approach has recently attracted scientific interest within the discussion of the role of diversity in human survival. Just as cultural pluralism, where two or more cultural systems are in constant contact, they maintain and exchange different ways of living, including their way of handling health and disease.

While the concept of medical pluralism is most contributive to the study of the existing indigenous medical knowledge and utilisation of care of the elderly with CVD in Sumedang, some criticism has been made on the concept since its introduction. Such criticism has come from supporters who emphasise the hierarchical patterns and the biomedical dominance in the modern world *(cf.* Baer, Singer, & Susser 2003; Baer 2004). However, according to Hsu (2008) in Penkala-Gawecka & Rajtar (2016), criticism on the concept of medical pluralism puts forward the perspective of professionals and not that of patients, creating 'awareness of wrong choice'. In addition, Hsu (2008) underscores that the critics of medical pluralism ignore the political, economic, structural and power issues and

reproduce the concept of a 'monolithic' biomedical system. The term *'medical pluralism'* is now becoming more popular in applied health systems research, partly inspired by the growing worldwide attention in the need for bio-cultural diversity and the recognition of the democratic rights of minority groups and indigenous peoples to utilise their own medical traditions in the modern word.

Through the growing popularity of Complementary and Alternative Medicine (CAM) and Traditional Medicine (TM) *vis-a-vis* the nursing funding crisis, the public is putting pressure on their governments to change the policies of nursing services, giving rise to the 'awakening' of the concept of medical pluralism (*cf.* Cant & Sharma 1999). Derived from the concept of medical pluralism, Gawecka & Rajtar (2016) explain that some scholars introduce other terms that are actually similar to medical pluralism, for example "*global assemblages*" (*cf.* Collier & Ong 2005), "*medicoscapes"* (*cf.* Horbst & Wolf 2014), "*medical landscape"* (*cf.* Hsu 2008), and "*medical diversity*" (*cf.* Parkin 2013). In addition, new terms have been proposed recently such as *'superdiversity'* (*cf.* Vertovec 2007) and '*hyperdiversity*' (*cf.* Hannah 2011). This happens because of the explosion of diverse immigrants with different socio-cultural backgrounds in European countries, which provides a challenge for scholars to develop the concept of hyper/superdiversity in nursing. Further research is needed to understand how the new reality of superdiversity influences nursing institutions and organisations, and patient attitudes (*cf.* Penkala-Gaweka & Rajtar 2016). Foster & Anderson (1978), McLean (1987) and Slikkerveer (1995) who all conducted various forms of health systems research in Sub-Sahara Africa document that health, illness and death are often related with magic and supernatural forces. Dichotomies in disease causation commonly refer to 'personalistic' and 'naturalistic' illnesses, previously described by Sigerist (1951) as 'magico-religious' and 'empirical-rational' illnesses.

As regards the relation between illnesses and beliefs that exist in Indonesia, several studies show that if a person is exposed to a disease, it is caused by an imbalance between the physical and spiritual conditions, so that treatment will focus on the restoration of the balance. For example, *mutih,* which refers to fasting, includes abstinence from eating and drinking in addition to only consuming white rice and mineral water (*cf.* Dove 1985 in Fatimah & Indrawasih 2010). Thus, such socio-cultural factors cannot be ignored as they are important considerations in the confidence of the public in the available medical systems. In addition, other factors of community life, level of education, socio-economic status, values etc. also affect people's behaviour patterns of medical systems. The Transcultural Nursing Utilisation Model, originally developed by Slikkerveer (1999), accommodates the various categories of factors which influence the utilisation behaviour of different medical systems in a region. This model has later been applied in subsequent studies in applied ethnoscience by Agung (2005); Ibui (2007); Leurs (2010); Djen Amar (2010); Ambaretnani (2012); Chirangi (2013); Aiglsperger (2014); Erwina (2019); Saefullah (2019); De Bekker (2020); Febriyanti (2021). In this model, which will also be applied in the present study in Sumedang, Slikkerveer (1999) documents and analyses the determinants influencing transcultural nursing utilisation behaviour through the analysis of predisposing factors, namely those related to the patient's socio-demographic and psychosocial factors, enabling factors in the form of socioeconomic factors, perceived needs and perceived morbidity factors, institutional and organisational factors and environmental factors. In addition, external factors are also included in the form of intervention factors influencing the patients' utilisation behaviour.

Diverse communities in terms of ethnicity, language, culture, customs, value systems, beliefs and religion are also characterised by variations in their dealing with various problems in daily life, including health and disease, especially in peoples' choice of health care provided by different co-existing medical systems, including traditional, transitional and modern medical systems. As Rienks & Iskandar (1985) in Dove (1988) mention, humans do not only rely on a medical system, but also on their religion and cosmology to cope with their problems of weakness or vulnerability. Religion and cosmology are institutions influencing human attitudes and behaviour to make their choices.
As Slikkerveer (1999b:171) underscores: '*Cosmovision refers specifically to the way in which members of certain cultures view their world, cosmos or universe,*' rendering cosmovisions to guide peoples' relationships with their natural, human and supernatural world.

2.1.2 Ethnoscience and Indigenous Knowledge Systems (IKS)

Ethnoscience is related to the perspective of Indigenous Knowledge in contributing to society. Indigenous knowledge has been defined by Warren, Slikkerveer & Brokensha (1995: xv) as: *'local knowledge that is unique to a particular culture or society* [*and*] *in contrast to international knowledge systems produced through global networks of universities and research institutions*.' Focusing on Indigenous Knowledge Systems (IKS), this study distinguishes between indigenous, traditional and/or local knowledge systems and international or modern knowledge systems, where the latter is often identified as scientific as opposed to traditional knowledge systems.

However, this research follows a line of reasoning, in which the practice of science, coupled with belief and magic, forms the universal characteristics of all human societies where both indigenous and international knowledge systems can be considered scientific. IKS is largely rooted in experience, which people gain from interactions with the natural, social and spiritual environment of their communities, which is transferred verbally from generation to generation. In general, IKS involves intangible socio-cultural aspects, which are related to the worldview or cosmovision of certain population groups. This is the basis for local-level decision-making in various sectors of society, including in the health sector. IKS can be defined as a dynamic, sustainable and adaptive knowledge, practice and belief system. IKS also advocates behaviour patterns that can be culturally adaptable to local settings and involve ways of continuous human interaction with the natural, social and spiritual environment (*cf.* Slikkerveer 1997; 1998; 1999; 2003).

The incorporation of indigenous knowledge into science is called *'ethnoscience*'; basically, indigenous knowledge is rational and rooted in the process of empirical research and scientific testing from generation to generation. Furthermore, Slikkerveer (2006) explains that 'ethnoscience' developed from the discipline of cognitive anthropology in the 1950s as a complement to science, which was introduced on the basis of ideas, perceptions, practices, experiences, and the wisdom of indigenous peoples themselves; the continuation of the emic view, the use of the language of the local people, the original classification of plants, animals, religion and life, as well as their native cosmology and philosophy about nature and the environment are the subject of 'ethnoscience' research (*cf.* Slikkerveer 2016 in Saefullah 2019). Ethnoscience is an interdisciplinary knowledge orientation that can be interpreted as a way of learning to understand how humans perceive their environment and how they make adaptations to their environment as reflected in their daily words and actions (*cf.* Saefullah 2019). Ethnoscience uses an emic perspective relating to the behaviour of a native population, which has been implemented from generation to generation and has benefited the community. On the other hand, (modern) science uses the researcher's perspective or etic view. Indigenous knowledge is often criticized by modern scientists who consider indigenous knowledge to be something that is unsystematic, irrational, superstitious, ethno-cultural, less progressive, and unable to meet the development needs of the modern world (*cf.* Scott 1998). This assumption results in the younger generation of indigenous groups generally underestimating their local culture and tending to follow modern lifestyles and technologies; thus, that indigenous knowledge is threatened and difficult to be preserved. Slikkerveer (1999) seeks to further operationalise ethnoscience into practice by proposing a methodological approach, the *'Leiden Ethnosystems Approach'* which will be further elaborated in Chapter III of this book. This methodology was established under the Leiden Tradition of Structural Anthropology where the approach integrates culture through local wisdom and development by identifying interrelated factors that cause people's behaviour in society. Thus, development policies, in this case, health care development, can be suggested not only based on an understanding of resource gaps between developing and developed countries, for example, but also by identifying people's behaviour in society, including their traditions, beliefs and actions based on emic views in local communities.

The *'Leiden Ethnosystems Approach'* was developed by Slikkerveer (1990; 1995) as an advanced ethnoscience research methodology and has been applied at the community level. It includes research by Agung (2005) on *Tri Hita Karana* in Bali, Ibui (2007) on MAC plants in Kenya, Leurs (2010) on MAC plants in Bali, Djen Amar (2010) on *Gunem Catur* in Lembang, Ambaretnani (2012) on *Paraji*

and *Bidan* in Rancaekek, Chirangi (2013) on Cooperation between Traditional and Modern Health Practitioners in Tanzania, Aiglsperger (2014) on Rural Health Care Development in Crete, Erwina (2019) on Health Communication and Information Systems in Sukamiskin, West-Java, Saefullah (2019) on *Gintingan* in Subang, West-Java, De Bekker (2020) on Transcultural Health Care Utilisation in Tanzania, and Febriyanti (2021) on MAC Plants for Diabetes Mellitus in the Tatar Sunda Region of West-Java.

These studies are highlighting the importance of indigenous knowledge, beliefs and institutions, involved in community-based development, which has been suggested as an ethnoscientific implementation of the emic approach of development. As mentioned before, the concept of 'institution' refers to a general set of norms, values and behaviours, which are formally or informally organised and practised over many generations at different levels (*cf.* Keohane 1988; Blunt & Warren 1996; Watson 2003; Slikkerveer 2019). It encompasses various levels of institutions, ranging from a community to a national and global level. At the community level, a specific norm such as the principle and practice of reciprocity is categorised as the basis of an institution, as it guides local people's behaviour and management of resources in various situations. Any general pattern of activity involving persistent and connected sets of informal and formal rules, which prescribe behavioural roles, constrain activity and shape expectations, are also part of such institutions.

By distinguishing between institutions and organisations, Slikkerveer (2019:30) states that institutions generally refer to: '*any regularised practices or patterns of behaviour structured by rules and norms of the society, which are widely used, either formal or informal*'. Similarly, Metha *et al.* (1999) also provide a broader perspective of institutions, by incorporating all community structures and practices, which have access to and control over resources, including arbitrarily contested resource claims. As regards indigenous institutions, Watson (2003) suggests that the concept of institutions includes conventional knowledge, 'regularised practices', indigenous knowledge systems and practices (*cf.* Keohane 1988; Watson 2003; Slikkerveer 2019). The importance of institutions in ethnoscience has been underscored in several studies (Warren, Slikkerveer & Brokensha 1995; Agung 2005; Blunt & Warren 1996; Seibel 2008). It can be concluded that institutions are part of ethnosystems where indigenous people use them as part of the local community systems, as such supporting the approach of 'development from the bottom' in sustainable development programmes.

Furthermore, Slikkerveer (1989: 19) defines 'ethnosystems' as: '*a set of conceptions and practices that are specific to an ethno-cultural group and are generally localised on the outskirts of the countryside, as opposed to a centralized urban system, which often originates from* [*modern society*].' In this way, Slikkerveer (1989) and Slikkerveer & Dechering (1995) also explain that ethnosystems which contrast with cosmopolitan systems or 'cosmosystems' go beyond the general understanding of indigenous knowledge systems to encompass the concept of indigenous culture, which includes beliefs, perceptions and practices, as well as local communication channels and decision-making patterns. Rooted in the long-term experience and wisdom of the society, ethnosystems provide a solid basis for building certain patterns of behaviour in relation to various sectors of the society, such as linguistics, education, medicine, agriculture, craftsmanship skills, and kinship and social structure, while promoting technological development and innovation original.

In this way, the *'Leiden Ethnosystems Approach'* broadens previous perspectives on IKS to include cognitive and behavioural components and to conduct research in a more holistic way. This approach allows for a more dynamic assessment of IKS in terms of including: historical processes of transculturation and acculturation; forms of interaction between local and international knowledge systems and the ethno- and cosmosystems; and the socio-economic development process (*cf.* Slikkerveer 1989; Slikkerveer & Dechering 1995; Slikkerveer 1999a; 1999b; 2003). Slikkerveer (1989), Ellen & Harris (1999), Slikkerveer & Dechering (1995) and Slikkerveer (1999b) argue that the behavioural *'Leiden Ethnosystems Approach'* for IKS studies adopts a 'bottom-up approach', which is largely based on participation among the populations under study and focused on the cultural dimension of development in the context of international cooperation.

While advocating a 'development from below' strategy, Slikkerveer & Dechering (1995: 436) identified the following five principles underlying the study of ethnosystems:

- (pre-)historical assessment of a particular community in its natural and cultural background;
- references to terms which are culturally specific or culturally bound;
- a holistic approach to the inclusion of various sub-systems of knowledge and technology in sectors such as medicine, agriculture, environment, education, and so on;
- a more dynamic assessment of the concept of "culture" in terms of the interaction of international and indigenous knowledge systems; and
- comparative orientation – rather than normative – towards the development process in a particular region or 'culture area'.

Thus, the 'Ethnosystems Approach' for IKS studies also encourages researchers to adopt an emic or insiders' view, which contrasts with an etic or outsider's perspective (*cf.* Slikkerveer 1989; 1999). The present research seeks to extend the focus of IKS geographically to Sumedang, West-Java, and to analyse indigenous knowledge systems, practices, and beliefs among elderly population groups with CVD living in Indonesia. As mentioned before, IKS has provided a solid basis for the formation of a traditional medical system. Specifically, this study adopted the *'Leiden Ethnosystems Approach'*

2.1.3 The Importance of Indigenous Medical Knowledge Systems

The majority of communities throughout the world have adapted to the challenges of disease by creating a broad system of medical knowledge and by developing behavioural patterns aimed at the treatment and prevention of disease, as well as in health promotion. The importance of Indigenous Knowledge Systems (IKS) in the context of overall nursing is rooted in ethnobotany and indigenous medical knowledge systems, both of which are specific examples of IKS. In general, IKS manifests itself in the form of traditional medicine and herbal medicine. Concepts and strategies related to the study of indigenous peoples' knowledge systems, practices, and beliefs are emphasised in the realm of ethnobotany, ethnomedical disciplines and medical anthropology. Traditional health and healing practices, which have been recorded as part of the initial ethnographic record on IKS, underwent a revitalisation during the second half of the 20th century in the new field of ethnoscience and its sub-fields (*cf.* Foster & Anderson 1978). Hughes (1968: 87) defines 'ethnomedicine' as: *'beliefs and practices relating to diseases which are the product of the development of indigenous cultures and are not explicitly derived from the conceptual framework of modern medicine'*. The definition is in line with Hahn (1995: 77), who defines 'ethnomedicine' as: *'the cultural reality of a community concerned with illness and healing'*. Slikkerveer (1990) argues that ethnomedical studies largely focus on traditional forms of medicines and the systems of knowledge, practices and beliefs of indigenous peoples with regard to health and disease, while they are often interpreted as 'illegitimate' and 'non-professional' forms of medicine. According to Foster & Anderson (1978), Foster (1983) and Slikkerveer (1990), ethnomedical research and medical anthropology are both involved in comparative studies – particularly cross-cultural and temporal – of bio-ecological and socio-cultural factors, which influence the concepts of health and disease.

Through the study of IKS, the behaviour process of health care utilisation can de documented and analysed, because they are directly related to the causal relationships among factors in their respective communities (*cf.* Aiglsperger 2014). Such knowledge of the socio-cultural factors which affect health and disease is also important for the design of strategies for improving nursing care. According to Slikkerveer (1990: 11), these factors: '*…have made a direct connection between medical knowledge systems and disease behaviour, which provide a more realistic basis for health planning'*. The statement is in line with the view of Foster & Anderson (1978) that efforts are needed to address inefficiencies in nursing services, especially in developing countries in the broader socio-cultural context of health and disease of population groups, rather than based on modern medical doctrines. By consequence, ethnomedical studies started to pay more attention to the study of patterns of the process of seeking institution-based nursing *(cf.* Foster & Anderson 1978; Slikkerveer 1990; WHO 2012). As Slikkerveer (1990: 3) concludes: *'Such perspectives on the pluralistic character of the nursing delivery system have provided a new scope for the development of comparative studies of the*

socio-cultural contexts of medical systems, now referred to as new approaches to medical systems, also known as neo-ethnomedical research.' Utilisation of plants for medical purposes has been identified as an important component of the utilisation patterns of health services in different communities. As a result, scholars of ethnoscience often combine ethnobotany and ethnomedical strategies in an effort to study the original concepts of health and disease in different cultures (*cf.* Slikkerveer 1999b; 2006).

Given the expanding research in herbal medicine, which involves the study of MAC plants as a widening subject in this field, also includes nursing studies (*cf.* Slikkerveer 1995; Ambaretnani 2009; Aiglsperger 2014). As such, theses studies have shown their potential to contribute to promoting the development of public health by bridging the gap between traditional and modern medical systems at the community level (*cf.* Slikkerveer 2006). In general, Slikkerveer (2006) observes that the scientific interest in the use of MAC plants has further developed across disciplines since the discovery and recognition of their crucial role in the industrial development of modern medicines.

Several scientists, including Balick (1994), Cotton (1996), Bodeker (1999), Skoula (2003), Slikkerveer (2006) and Aiglsperger (2014), argue that the ethnoscientific approach to the study of MAC plants significantly contributes not only to a general understanding of forms of medical care and increasing health care delivery, but also to the recovery and documentation of knowledge and classification of plants, and the cultivation and sustainable use of natural resources pertaining to biodiversity conservation through the involvement of local communities. As Slikkerveer (1999b: 42) stresses: *'The study of the categories of fundamental perceptions and the cosmovision of different cultures* [...] *is very important because it will not only encourage local use and possible exploitation of alternative crops which may be economically feasible, but we also can learn more about alternative philosophies related to nature and the environment which exist in the regions'.*

Slikkerveer (2003; 2006) also claims that ethnoscientific cross-cultural research approaches, which are mainly based on non-experimental validation techniques, advocate the analysis of plant effects at the individual level by analysing human factors, such as energy, activity, sleep and eating behaviour, and symptoms of disease. The ethnoscientific research approach also involves ethno-directed sampling techniques, where plants are collected on the basis of recommendations given by local healers, traditional birth attendants or patients (*cf.* Slikkerveer 1999). In addition, because this approach is culturally appropriate, it adds the human dimension to the validation process of MAC plant species for biochemical activity, which, in turn, supports the overall success of the ethnobotanical research.

However, recent patterns of overexploitation of natural plant resources and the loss of biodiversity, not least caused by the unlimited search for new pharmaceutical medicines, tend to threaten and eliminate the potential benefits of MAC plants for the local population (*cf.* Ayensu 1983; Balick 1994; Farnsworth 1994; Bodeker 1999; Slikkerveer 2003; 2006). In this regard, Balick (1994), Alcorn (1995), Balick & Cox (1996), Cotton (1996) and Bodeker (1999) observe that research conducted on IKS in relation to MAC plants has contributed valuable information for the conservation of biocultural diversity. As Bodeker (1999: 266) points out: '*Customary practice offers new directions in planning for conservation of medicinal plant biodiversity* '. In addition, the ethnoscience approach to the study of the use of MAC plants increases the general understanding of the local concepts of health and disease, which are needed to improve the structure of nursing and community welfare, strengthening the position of indigenous peoples in general (*cf.* Alcorn 1995; Balick & Cox 1996; Cotton 1996; Slikkerveer 2006). In this way, Balick & Cox (1996) and Slikkerveer (2017) suggest that ethnoscientific research on MAC plants provides a potential basis for the successful integration of traditional and modern medical systems. Given the rather significant contribution made by ethnobotanical studies in MAC plants in the fields of plant validation, biodiversity conservation, improvement of nursing and integration of traditional and modern medicine, many scholars stress the need for additional research for the protection of MAC plants and related IKS, especially regarding the application, efficacy and safety of MAC plants. Furthermore, ethnobotanical research could improve the collaboration between experts on local herbal medicine, and between national and international herbal industries.

This kind of research could also promote international pharmaceutical industries to apply the principles of sustainability and a justified distribution of benefits through the protection of the intellectual property rights of indigenous peoples (*cf.* Balick 1994; Alcorn 1995; Balick & Cox 1996; Cotton 1996; Skoula 2003; Slikkerveer 2006).

2.2 The Concept of Transcultural Nursing

2.2.1 The Development of Transcultural Nursing

As the development of anthropology in the 1950s included ethnoscience, in nursing and anthropology, Leininger first pioneered the concept of transcultural nursing. Transcultural nursing is defined as a field of study, research, and practices, which focuses on beliefs, culture, values, and practices in carrying out and maintaining nursing in cultural groups (*cf.* Leininger 1999). This is in line with what was expressed by Andrew and Boyle (2002) and McFarland & Wehbe-Alamah (2011) who help develop transcultural nursing and interpret it as a matter of sensitivity to the provision of nursing according to the needs of individuals, families, and groups in diverse cultural populations in the community and between communities. Leininger (1988) began this concept due to concerns about how nurses provide nursing services or carry out nursing practices which will describe or reflect their nursing knowledge. Nursing and culture are always related and cannot be separated in determining nursing decisions and actions. Transcultural nursing aims to understand and help various cultural groups and group members meet their nursing needs. A holistic assessment of aspects of culture, beliefs, and lifestyle or client behaviour will reduce the possibility of stress and conflict due to cultural misunderstandings. Leininger observes that medical practice is oriented towards healing, whereas nursing practice is oriented to actions and treatment processes which focus on various factors which affect health and disease (*cf.* Leininger 1980).

This pattern of human care and healing can be identified if the anthropological and nursing perspectives are integrated. The combination of treatment and healing patterns was initiated by Leininger with a knowledge base to develop and build concepts and hypotheses for cultural care theories (*cf.* Leininger 1980; 1984; 1988; 1988; 1989; 1991). Leininger acknowledges that there are deficiencies in nurses who are not prepared to face such challenges and their belief that patients have the right to be understood according to their socio-cultural background (*cf.* Leininger 1970). Courses and programmes were developed which came to be known as cross-cultural nursing (*cf.* Leininger 1984). Leininger's best-known topics are cultural care theory, concepts of care and caring, transcultural nursing concepts and qualitative research methods. Components of the cultural theory of diversity and care for universality and the Sunrise Model have been developed for more than three decades (*cf.* Figure 2.1). Leininger (1984) discovered at least 10 versions of the model. Although there are many versions of the model, there are two main articles which present the theory of Leininger's cultural care, published in 1985 and 1988. The development of the concept of care and attention is important to understanding the model and the evolution of Leininger's theory.

In the early 1970s, Leininger identified care and healing as nursing traits and how nursing and anthropology could complement each other. Treatment was first defined as a noun which implies *"the provision of personal services and those needed to help humans maintain their health condition or recover from illness"* (*cf.* Leininger, 1970: 30). Caring is a partner verb for nouns and Leininger believes it implies "*people's feelings of compassion, interest, attention, and concern for people"* (*cf.* Leininger 1970: 30). In the mid-1970s, Leininger began to develop a dichotomous idea between caring and healing. Concern is seen as the most important component of the consequences of preservation (*cf.* Leininger 1977).

In 1984, Leininger extended this idea to maintain that there could be no cure without treatment but that treatment could occur without healing. This became a strong foundation in healing and human well-being, so this statement was followed by a deepening of transcultural studies (*cf.* Andrew 2006; McFarland 2002 in McFarland & Wehbe-Alamah 2011). In the late 1970s, Leininger (1977) focused on the difference between general and professional care.

General care is defined as "*actions which help, support, or facilitate against or for other individuals or groups with clear or anticipated needs or improvements"* (*cf.* Leininger 1981: 9). In addition, professional nursing is also defined as "*humanistic and scientific modes which are learned cognitively to help individuals, families, or the community to receive personalized services"* (*cf.* Leininger 1981: 9). Leininger's focus on differentiating between treatments from the perspective of a layman in a culture known by professionals reflects her background in anthropology. A prominent theme is the importance of understanding the difference between emotional and ethical views. Emics refer to language expression, perceptions, beliefs, and certain cultural practices in terms of certain phenomena in the view of individuals or groups (*cf.* Leininger 1984; Slikkerveer & Dechering 1995). Etics refer to the expression of universal language, beliefs, and practices in the case of certain phenomena associated with multiple cultures or groups as external views (*cf.* Leininger 1984; Slikkerveer & Dechering 1995).

In the late 1980s, Leininger developed the concept of general care by identifying the concept of generic treatment knowledge, which is defined as referring to "*epistemological and theoretically derived sources which mark the nature of human phenomena" (cf.* Leininger 1988: 16). The concept of professional care knowledge is also being developed currently, referring to "*the application of generic knowledge, using professional knowledge about care, in creative and practical ways to alleviate [pain]*" (*cf.* Leininger 1988: 17). In the early 1980s, Leininger was known as the originator of the idea that nursing is synonymous with caring, with supported statements such as "*care is central to nursing, unique, dominant, and a uniting focus"* (*cf.* Leininger 1984: 92) and "*care is nursing*" (*cf.* Leininger 1984: 83). These themes remain to this day. Leininger also distinguishes between human concern and scientific concern. Humanistic concerns are characterized as "*behaviour, experience, and interactivity between two or more people or groups in which the action of accompaniment or empowerment is carried out in general*" (*cf.* Leininger 1981: 101).

Such non-empirical ideas are in line with the terms of the original knowledge system. Scientific care differs from being tested on activities and assessments in helping individuals or groups based on verified and measurable knowledge related to certain variables, such as empirical studies (*cf.* Leininger 1981). Diversity and care are other concerns that Leininger defines as comparative transcultural nursing (*cf.* Leininger 1981). Thus, it is important to study culturally congruent care and analyse similarities and differences in care/caring between cultures. This theme is the basis for the diversity of cultural care theories and universality.

The diversity of cultural care is defined as variability and differences in meanings, patterns, values, life, and symbols of caring within or between collectivity, related to assistance, support and facilitation, or allowing expression of human care. Meanwhile, the universality of cultural concern refers to the same, dominant concern over the meanings, patterns, values, life, or symbols which are manifested, help, support, facilitate, or allow a way to help people, other individuals, or groups originating from certain cultures to improve the conditions of humans or ways of life (*cf.* Leininger 1991). Leininger further developed the concept of care by describing ethnocaring and cultural care. Ethnocaring is defined as an emic cognitive assistive, facilitating, or supporting action which is valued and practiced to help individuals, families, or groups. Cultural care is defined as the values, beliefs, and lifestyles which are studied subjectively and objectively, which help, support, facilitate, or allow other individuals or groups to maintain their well-being and health, to improve human conditions and their way of life in dealing with illness, disability, or death (*cf.* Leininger 1991).

Thus, the concepts of ethnocaring and cultural care are very closely related and can sometimes be used interchangeably. Many of Leininger's concepts overlap, for example: diversity of cultural care, universality of cultural care, cultural care accommodation, preservation of cultural care, repatterning of cultural care, and new cultural care practices. Leininger (1995a, 2002a, 2002b, 2006a) developed the ethnonursing method, a unique qualitative method which includes ethnography, reflecting the richness of mixed preparations in nursing and anthropology. Leininger (1995) emphasizes not only learning from people but also learning from them in an environment they know.

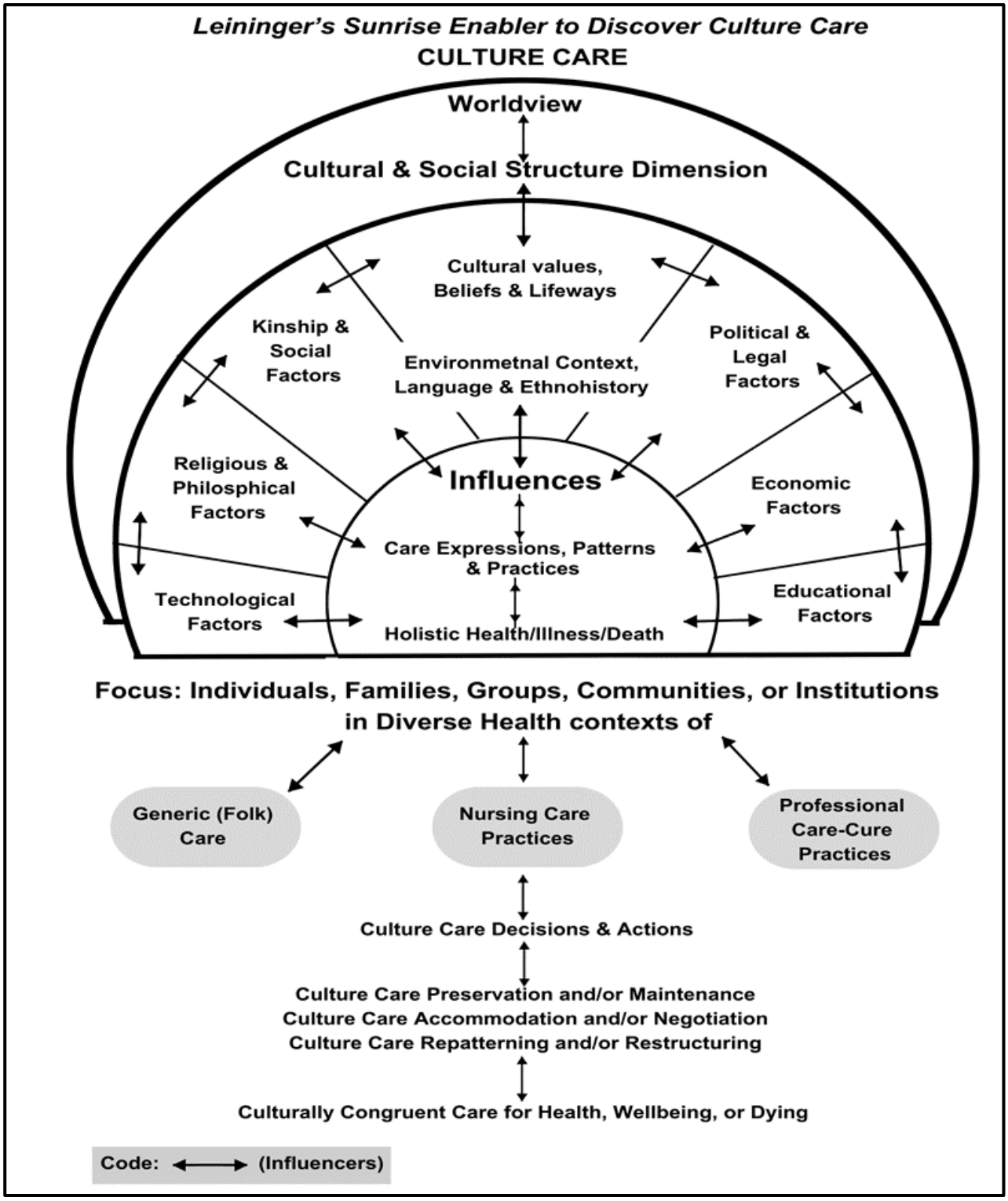


Figure 2. The Sunrise Enabler Model
Source: Adapted from Leininger (2002).

Many nurses have conducted research using the ethnonursing method, adding to the body of knowledge in transcultural nursing. Disregarding tools and instruments as "*impersonal and mechanistic and in accordance with objectification,*" Leininger (2006: 58) prefers to use enablers to demonstrate participatory approaches and friendliness in the research process. Leininger calls this enabler a foreign-friend enabler and an observation-participation-reflection enabler. When researchers move from strangers (ethics) to friends during the ethnonursing process, it is more likely to collect accurate and meaningful data. This model applies to research conducted in a variety of

settings where nurses explore interesting phenomena (*cf.* Leininger 2006a). Basing it on anthropology, Leininger (2006a) develops an observation-participation-reflection enabler in the 1960s, but added reflection to fit the ethnonursing method. Analysing data when using the ethnonursing method is a very detailed process. In this way, research will meet the criteria of *"credibility, repetitive patterns, confirmability, meaning in context"* (*cf.* Leininger 2006a: 62) and other requirements of qualitative research.

Based on Leininger's concepts, theories, and transcultural nursing models, there are several scholars that have developed theories related to other aspects in the context of culturally appropriate nursing, including: Purnell (1995) who developed the Model for Cultural Competence, Andrews-Boyle (1999) who created the Transcultural Nursing Assessment Guide for Individuals and Families, Giger & Davidhizar (2002) who developed the Transcultural Assessment Model, Campinha-Bacote (2003) who introduced the Process of Cultural Competence in the Delivery of Nursing Services and Biblically Based Models of Cultural Competence, and Spector (2004) who developed the Health Traditions Model. Many scholars have an interest in developing the concept of transcultural nursing, so they gather in an organisation called the Transcultural Nursing Society (TCNS). Leuning, Swiggum, and Wiegert. McCollough-Zander (2002) in Sagar (2012) use the theory of Cultural Diversity and Leininger's Universality, along with the cultural competency model of Campinha-Bacote (2003), to develop Transcultural Nursing Standards and foster excellence in transcultural nursing (*cf.* Sagar 2012). These standards are useful in practice but can also help in curriculum development, hospital programmes and accreditation, and in research (*cf.* Leuning 2002). There are also many research nurses who are active in exploring new nursing phenomena, such as Gunn & Davis (2011), Mixer (2011), Morris (2012), Schumacher (2010), and Wehbe-Alamah (2011) (*cf.* McFarland & Wehbe-Alamah 2011).

Thus, the theory of Cultural Care and Universality can be applied in nursing practice, education, administration, and research. Transcultural nursing anticipates similarities and differences in nursing and medical systems and nursing practices in diverse cultural and community contexts. The global development of the transcultural nursing discipline depends on international collaborative research efforts and the dissemination of knowledge throughout the world to advance and improve care in ways which are culturally meaningful to clients, families and communities. This is intended to make a major contribution to the dissemination of transcultural nursing knowledge locally and internationally (*cf.* Omeri & Raymond 2009). This research on local health wisdom, and indigenous medical knowledge systems in elderly care with CVDs, are expected to contribute to the development of transcultural nursing practice in Indonesia.

2.2.2 Cultural Competencies in Nursing

The diversity which is developing in Indonesia requires that the national nursing system must care about cultural aspects and be responsive to the needs of each individual. Nursing providers have to be competent in culture to effectively, professionally and sensitively deal with a variety of different cultures and to diagnose, recommend and implement nursing strategies which coincide with the client's cultural preferences. Skills in cultural competencies are important for all nursing providers at all levels of institutions, organisations and disciplines. Every health worker has to take personal responsibility to ensure their own level of cultural competence (*cf.* Brathwaite 2003; Campinha-Bacote 2002b; Giger & Davidhizar 2002; HRSA 2001a; Jeffreys 2010a; Leininger 2002b, 2002c; Lipson & DeSantis 2007; Purnell 2008; Willis 1999, and Sagar 2012, in Shen 2015). The following are assumptions about cultural competence in nursing:

- Cultural competence in nursing is basically about ensuring that people are open to respecting and knowing about cultural differences between people, having knowledge of these differences;

- Cultural competence in nursing is not the ultimate goal for nursing providers but it is an ongoing reflexive journey which includes diverse and complex initiatives at both the personal and organizational level; and
- After the ability is achieved in one aspect of cultural competence, there will always be new culture, a new tradition, or a set of skills which require learning or renewal, so that the learning process never stops.

It is generally recognised that ethnicity and culture cannot be easily shared. There is recognition that similar people's innate desires, wishes, hopes, and fears are more similar than those who are different to them. People want to be loved and they expect good health, death and fear of people who are dying and are generally afraid of pain and the unknown. Because culture can influence one's health decisions, it is the duty of health practitioners to be as culturally competent as possible when dealing with diverse populations. If this is ignored, it is likely that cultural clashes will occur due to the level of cultural competence (*cf.* Leininger 2002; Jovanovic 2012).

2.3 The Plural Nursing System of the Elderly with Cardiovascular Disease

Older adults are forming a heterogeneous sector of the population and will have various strengths and needs which require different levels of nursing, assistance, and social support. The continuing care needs of older adults will be met through various services provided in home-based care in the community, retirement communities, shared care facilities, assisted care centers, and acute and long-term care facilities. Nurses plan and implement treatments which facilitate the independence of the elderly and improve the quality of life and well-being through the development of elderly clients from self-care to extended care arrangements. Nurses in their many roles also treat adults who are hospitalized, showing consistent and ongoing patient contact and coordination of acute care and extended care resources (*cf.* Chang *et.al* 2007; Kim *et. al* 2010).

Culture influences the way people view aging; thus, groups of older clients vary in their adjustment to aging and in behaviours and practices related to health and illness. Culture is not the only determinant of behaviour but it is also an important dimension in understanding the interactions of older clients in their families and in encompassing social context. When nurses pay attention to the client's cultural background, they tend to apply more personal care to the needs of each client in order to take each individual's circumstances into consideration. Resources available at the community, funding for long-term care, and community-level interventions will influence the choice of older clients in their care and utilisation of a series of treatments. By understanding that older clients as participants in the utilisation of nursing are influenced by the culture of the family, nurses can also consider the family as a resource for providing nursing in their home. The traditions and cultural values of older clients will influence their preference for the place of residence. Social and economic factors, including acculturation, also influence the retention of traditional cultural values and practices. In assessing older adults, nurses have to consider individuals in the context of society, their cultural background, and their families, who have various strengths, resources, and capacities to care for elderly family members.

In order to develop culturally appropriate care for adults, nurses first must consider that the context for providing care to clients is governed by how the available national, regional and local nursing resources are affordable for older people. Rural and urban locations influence differences in the reach of information and referral sources, acute and extended care facilities, and community-based services which are available for older adults to support their quality of life (*cf.* Kaakinen 2010; Jovanovic 2012). There are three parts which emphasise the dimensions which nurses regard as relevant to the planning of care for the elderly, including the following:

1. *social and economic factors*, which affect older adults in finding long-term behaviours and care plans, as these factors influence the eligibility or limitation of older adults to receive preventive or acute care, or care from the nursing system. Moreover, interventions to control cost spending on

medical care tend to shorten hospital stays and to close gaps in nursing services. Health institutions generally exert a greater burden on older patients for their home- and community-based care;

2. *community-level factors*, which include cultural values, practices, care patterns, and resources, including resources of formal and informal assistance available to older clients. Different cultural traditions include values such as age, which influence the patterns of caring for older adult family members, who often ask for further assistance. Younger family members may become acculturated and change their traditional behaviours, which may differ from the expectations of older adults to be treated at home; and

3. *factors in the interaction of needs and resources*, which affect older adults and their families who cope with illness and take decisions in the continuum of care and services. Female family members, who are traditionally considered as primary providers of care to older family members, may enter the workforce and as such are no longer available to provide home care. The economic situation of the family, the closeness to older adults, and the available resources of formal support in the community to a large extent determine the choice of care of the elderly.

As explained at the beginning of this Chapter, in the context of medical pluralism, Indonesia has a diversity of nursing systems available in the community, as utilised by its members. This study departs from the framework of the community's understanding of traditional medicine, which cannot be separated from the socio-cultural system of the surrounding communities, so that each community has a certain way of using traditional medicine for the different types of diseases they are facing. Traditional medicine is still one of the primary options for treatment in the community (*cf.* Fatimah & Indrawasih 2010). Ample evidence shows that many Indonesians still choose to use traditional medicine to solve their health problems, either by first trying to self-medicate if they feel sick, using natural ingredients from *jamu* found in their homes. They also seek help from *orang pintar* ('smart people') or from *kyai* or *ajengan* ('treatment providers'), or from the *dukun* ('traditional haler'). Katno (2009), Nursiyah (2013), and Situmorang & Harianja (2014) support these phenomena, and agree that the increasing interest of the community in utilising traditional medicine is because people feel that traditional medicine is based on natural ingredients which are cheaper, while the raw materials are easier to obtain, especialy from plants grown by themselves. Moreover, generally, a plant has more than one pharmacological component, that is beneficial for the treatment of certain degenerative and metabolic diseases.

In addition, the local wisdom of the community promotes the use of traditional medicines. The discussion about traditional medicine will, of course, take place in relation with modern medicine. The different concepts are the result of the process of changing concepts of health and disease in society. These changes produce a condition in which people are free to choose the type of treatment they want. If this traditional treatment effort is unsuccessful, then they begin to move by utilizing modern health services, whether going to the *puskesmas*, clinical doctors or hospitals (*cf.* Djen Amar 2010; Ambaretnani 2012; Erwina 2019). Indonesia, representing a plural society, is different in terms of ethnicity, language, culture, customs, value systems, beliefs and religions, and has a variety of systems in dealing with various problems in daily life, including in terms of health, especially in terms of choosing the nursing services which are considered suitable. This is indicated by the existence of various types of nursing institutions and organisations available in the community, defined as the Plural Nursing Systems, including; traditional nursing institutions, transitional nursing organisations, as well as modern nursing organisations.

Slikkerveer (2016) states that an institution refers to a complex of roles, rules and behaviours adhered to by a group of individuals in the society which have been in place for a long period of time, often over many generations, and can operate formally or informally. As Saefullah (2019) explains, the behaviour of the use of each service provided by an institution is an action which results from a complex decision-making process, where the process cannot avoid psychological, cultural, economic, internal and external environment aspects related to individuals representing the perspective of the

household, because it involves the services of various community institutions and organisations, especially in nursing.

Nursing refers to the maintenance and restoration of health at a more organizational level, namely the provision of medical care by trained professionals or related institutions to individuals or communities (*cf.* Aiglsperger 2014). According to Slikkerveer (1990: 27*): Nursing is becoming increasingly linked to socio-economic and political considerations, where emphasis is placed on an integrated approach to development from within the community itself*'. Subjective interpretation and social response to disease events experienced by local residents, in this case CVD, and conducting detailed analyses of the forms of care sought, were the focus of this study. In addition to combining all forms of contact between patients and the various medical systems available in the study area, this analysis distinguishes between forms of internal and external care. Slikkerveer (1990) describes the different forms of internal and external care, where internal care refers to the practice of 'self-care', which is defined as an action. It is generally carried out by the patient himself, covering all forms of contact between the patient and the provider of non-professional health services, such as family members or friends, who have been established in such a way as to receive treatment. In contrast, external care refers to the practice of individuals, who, as noted by Slikkerveer (1990: 225): "*actually leave their homes and seek some form of external medical care in one of the available medical systems*". External care is associated with intermediaries for professional nursing providers, which have been determined by Eisenberg (1993: 2) as: "*someone who gives care or gives advice and is paid for his services".*

The term 'health behaviour' refers to actions taken by people without disease with a view to determine or strengthen their health status; it hereby refers to disease prevention and health promotion activities, as well as consultation. The utilisation behaviour of nursing services includes all actions taken by individuals in the community aimed at health recovery (*cf.* Suchman 1963; Foster & Anderson 1978; Kleinman 1978; 1980; Helman 1981; Foster 1983; Slikkerveer 1990). Slikkerveer (1990: 2) states that: '*Health behaviour, illness behaviour, and the use of health services as important elements in this process have become major problems in the study of medicine, nursing, culture, and society'*. Many researchers advocate new and more realistic strategies for studying diverse patterns of behaviour in the use of health services in an area through the approach of the concept of medical pluralism (*cf.* Slikkerveer 1990; Leurs 2010; Djen Amar 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014; De Bekker 2021). In other words, medical pluralism is a concept of utilising transcultural nursing, which refers to the use of different nursing sub-systems for the same disease or disorder. Initially this concept was introduced as 'transcultural health care utilisation' in the Horn of Africa by Slikkerveer (1990) and has been operationalised and expanded to meet the rather complex configuration of nursing institutions and organisations in the study area. This study focuses on the pattern of nursing utilisation behaviour by the elderly with CVD of the plural nursing system in the Sumedang research area, based on a multidimensional perspective which is essential for building the analytical model of the research.

This study extends a community-based research approach to analyse transcultural behaviour patterns of the elderly with CVD, which incorporates all forms of nursing of the plural nursing system in an effort to cope with the illness episodes of CVD. In the next Paragraph, the components of the Plural Nursing Systems will be discussed as the focus of this study.

2.3.1 Traditional Nursing Institutions of the Elderly with CVD

As explained earlier in this Chapter, the concept of traditional medicine is closely related to the idea of the Indigenous Knowledge System (IKS) as underscored by Warren, Slikkerveer & Brokensha (1995) as unique knowledge rooted in the culture of society that differs from the international knowledge system generated through a network of research institutions. In the field of health, the Indigenous Knowledge System has been referred to as the Indigenous Medical Knowledge System and has been defined as an empirical and sacred framework for understanding health and healing, which includes the special cosmovision and order which is felt in nature (*cf.* WHO 1993; Warren,

Slikkerveer & Brokensha 1995; Balick & Cox 1996; Hanepen 1997; Bodeker 1999; WHO 2002a in Aiglsperger 2014).

According to Slikkerveer (2006: 2): *'Traditional medicine in terms of a body that is bound to a culture of authentic medical knowledge, beliefs, and practices has provided the main plant-based foundation for many ethnomedical systems that existed long before "scientific" development or cosmopolitan medicine.*' Overall, traditional medicine is embedded in the history, attitudes and personal philosophies of certain communities and combines knowledge and practices of various medical systems (*cf.* WHO 2002a). Until the beginning of the 19th century, most medicines could be defined as traditional medicine which refers to practice; this is largely culture-specific and existed long before the application of modern scientific experiments and statistical validation to medical theories (*cf.* Bannerman 1978; 1983). As WHO (2012) explains: *'Traditional medicine is the total amount of knowledge, skills and practice based on theories, beliefs and experiences from different cultures, whether they can be explained or not, used in nursing and in the prevention, diagnosis, improvement or treatment of physical illness and mentality.'* The traditional medical practice which is the main focus of ethnomedicine is basically interpreted as beliefs and practices with respect to diseases which are the result of the development of indigenous cultures and explicitly derived from the conceptual framework of modern medicine (*cf.* Hughes in Foster 1978).

Traditional herbal medicine, known as *jamu* is based on concoctions derived from flora and fauna which are mixed and used as medicine, both to maintain health and as an antidote to disease. Knowledge of these ingredients is inherited from generation to generation based on the results of experience and not on scientific explanation. In this case, the use of herbal plants and herbal concoctions in the form of herbal medicine is part of health practices in Indonesian society. Quoting De Padua (1999) and Slikkerveer (2006), we can distinguish the following types of herbal medicines: (1) traditional medicine, which refers to the utilisation of indigenous MAC plants in their country of origin; (2) herbal medicine, which refers to the planting and preparation of indigenous MAC plants for external sales; and (3) pharmaceutical drugs, which refer to indigenous MAC plants which could provide certain active components in pharmaceutical products. On the other hand, Zhang (1998) defines 'vegetable' or 'herbal medicine' as any plant, which is an herb, bush, tree or fungus, is used alone or in combination with other plants, for the purposes of health recovery and maintenance. In general, the concept of herbal medicine includes raw and processed plant ingredients with therapeutic or other human health benefits, as well as special herbal products.

The concept, however, does not include plant material which has been identified as an active component through modern scientific techniques and has been isolated or synthesized as a chemical (*cf.* Zhang 1998; WHO 2002a). Slikkerveer (2003; 2006) also mentioned that natural and environmental alternative philosophies and original health and healing practices, which generally underlie the application of herbal medicine, also contribute to the increasing popularity of the global vegetable medicines throughout the world today. Known as 'holistic herbalism', the use of herbal medicine rebuilds the relationship between humans and the natural environment, because it has long provided the basis for medical care and enables treatment methods within the social and spiritual environment of patients (*cf.* Slikkerveer 2006). Foster & Anderson (1987), Bodeker (1999), Agung (2005) and Leurs (2010) observe that traditional medical systems generally use the concept of holistic health, which refers to a balanced relationship between individuals and nature, the social and spiritual environment, where illness is considered as a result of imbalances in relationships.

The practice of traditional medicine can be understood as the practice of prevention, treatment, and healing practiced by a group of citizens who have the expertise to use traditional ingredients, without going through formal educational institutions of anthropologists and ethnologists, paying attention to aspects related to the practice of shamanism, beliefs and so on, as has been described by them (*cf.* Ulain 1999). As Brelet (1983) argues, traditional medical systems usually include forms of self-medication or forms of care which are managed by members of the non-professional community.

In addition, the traditional medical system embodies the activities of caring for various traditional health service providers, such as traditional healers, herbalists, bone regulators and divine physicians (*cf.* Foster & Anderson 1987; WHO 2002a). Traditional medicine, whether it is formulated by the

user or through a care practitioner (*dukun*) in the initial observation, is the first choice before using the services of medical personnel, as well as being the final choice after failing to use medical services. Not infrequently, the choice to use the services of a shaman invites doubt, when related to the religion/belief held by the user (*cf.* Ulain 1999; Fatimah and Indrawasih 2010). The practice of traditional medicine and the repertoire of traditional medicines is an area of research which has not been widely revealed, so that socio-cultural studies need to be conducted in an interdisciplinary mode.

Based on Government Regulation No. 103 of 2014, concerning Traditional Health Services in Indonesia, Traditional Health Services integration consists of three categories, namely: 1) traditional health services integration by using skills; 2) traditional health services integration using herbs; and 3) traditional health services integration by using a combination of skills and ingredients in a unified traditional health system. In traditional health services integration which uses skills, one can use manual techniques in the form of manipulation and movement techniques from one or several parts of the body; energy therapy techniques which are treatments using energy fields both from outside and from within the body itself; and/or sports therapy techniques by utilising the ability of the mind to improve bodily functions.

As regards traditional health services integration which uses herbs, one can use natural ingredients, namely in the form of plants, animal ingredients, mineral materials, *sarian* ('Galenic') preparations, or mixtures of these materials. The integration of traditional health services has to have in common harmony and compatibility, which is a scientific unity carried out in a traditional health system in the provision of complementary traditional health services to patients/clients (*cf.* Aswani 2016). However, the concept of the integration of traditional health services is still a major subject of the current debate.

It is well known that Complentary Alternative Medicine (CAM) is also used, according to the WHO (2002a), to refer to a broad set of nursing practices which are not part of the country's own tradition, or are not integrated into its dominant nursing system. In the same way, Slikkerveer (2003) notes that CAM combines foreign philosophies about health and healing, therapy and professionals, which provide alternatives to modern medical doctrines. Ernst & Dixon (2004: 308) also define '*complementary medicine as: diagnosis, treatment and/or prevention that complements general treatment by contributing to the same whole, by meeting demands that are not met by orthodoxy or by diversifying the conceptual framework of a dru*g'. The WHO (2002a) claims that CAM is largely based on a holistic approach to medicine, which emphasizes a person's health in general, rather than disease alone. In some WHO literature, it is mentioned that Traditional Medicine or traditional health services have the same meaning as Complementary and Alternative Medicine (CAM). Although the official WHO outline (2002a) reveals a general tendency to combine the concept of CAM with the concept of Traditional Medicine (TM), most scientists disagree because it generally refers to medical practices which are outside the scope of *adat* and international knowledge systems (*cf.* Aiglsperger 2014).

Accordingly, traditional medicine is an institution in society, not merely a curative effort for a disease, but also including disease prevention and health promotion efforts in the form of different forms of knowledge, practices and skills. Since this study focuses on the role of the traditional nursing institutions in the care of the elderly with CVD at the community level, the institutional aspect of the traditional nursing system will be expressed in the concept of the Traditional Nursing Institutions (TNI). Lately, these traditional nursing institutions have increasingly received attention from various parties. Several advertisements which offer *jamu* and traditional medical practices with various advantages are provided in print or electronic media, billboards etc., often seen in public places. Traditional nursing institutions are now popular, often chosen by the community, and getting attention from various groups for several reasons, including the following:

Firstly, people feel that traditional nursing institutions are based on natural ingredients of MAC plants, which are cheaper and easier to obtain as raw materials when these plants are grown by the people themselves. In general, one plant has more pharmacological components, rendering them beneficial for the treatment of degenerative and metabolic diseases;

Secondly, the success factor of the *dukun* (‘traditional healers’) to provide herbal medicine and recipes often proves to be effective with hardly any side effects;

Thirdly, there is the difficulty of the *dukun* (‘traditional healers’) in obtaining raw herbal materials which is causing a scarcity of *jamu* in the market, thereby encouraging competent parties in health services to look at the use of traditional herbs and recipes as alternative ingredients/medicines;

Fourthly, there is dissatisfaction due to the failure to use modern therapy on the one hand and the success of alternative medicine on the other;

Fifthly, there is a philosophical conformity with spiritual views, beliefs or values of the client regarding the meaning and nature of health and disease;

Sixthly, there is a need for personal control, where the client is given autonomy to decide the right nursing for himself; and finally,

Seventhly, there is a readiness among a number of medical officers (doctors, pharmacists and nurses) to use traditional herbs. There are even those who combine modern medical treatments and traditional herbs/therapies for special cases (*cf.* Astin 1998 in Aiglsperger 2014; Ulain 1999; Fatimah & Indrawasih 2010).

2.3.2 Transitional Nursing Institutions of the Elderly with CVD

In the concept of the Plural Nursing Systems, there is no rigid differentiation between a traditional nursing institution and a modern nursing organisation, but the transitional process which has developed from their interaction renders the plural nursing systems to encompass various systems. In such pluralistic configuration, the transitional components are defined as ‘transitional nursing organisations’ These organisations are cterised by the commercil sale of ’Over-the-Counter’ (OTC) drugs, which include not only medicines without prescription, but also illegal drugs.sold by commercial drug vendors.

Figueiras (2001: 223) confirms that: ‘[*drug*] *therapy is one of the most widely used treatment methods in primary care.*' Thus, people often buy OTC drugs without a prescription, often based on their experience with medicines from modern nursing organisations for the same symptoms of the disease. It often happens since it is more economical than paying higher prices for the services of modern health practitioners. Aiglsperger (2014) and Sleath (2001) mention that OTC drugs are largely used for 'self-medication' or ‘self-care practices’, often performed by the patients themselves. In this context, Hughes (2003: 1) states that they are: *'as a management of minor ailments using pharmaceutical products that are available without a prescription'.* The availability of such drugs is quite abundant (*cf.* Berry 2004; Bond 2004; Wazaify 2005; and Lynch & Berry 2007).

However, the provision of OTC drugs often encourages the public to use drugs incorrectly. The abuse of OTC drugs can be related to such factors as non-compliance with instructions, lack of communication patterns between patients and doctors, and lack of patient control in the general practice of self-medication with inappropriate doses or use over long periods of time and with simultaneous intake of more than one drug (*cf.* Tzimis & Kafatos 1999; Hughes 2003; Berry 2004; Bond 2004; Filipetto 2008). Figueiras (2001) and Filipetto (2008) state that abuse of OTC drugs and the habit of using them regularly have caused a number of problems. It can mask symptoms of the disease, increase misdiagnosis, cause delays in treating serious medical conditions, increase the risk of adverse drug reactions, increase disease caused by drugs, produce bacterial resistance and parasitic immunity, foster a feeling of 'chemophobia' due to negative side effects among clients, and impose financial burdens on community members who cannot afford to pay for medicines.

2.3.3 Modern Nursing Organisations of the Elderly with CVD

Modern Nursing Organisations (MNO) are also known as' scientific', or Western' or 'cosmopolitan' organisations, originating in the West in most globally-oriented countries, based on scientific principles, scientific education and training, and developing the application of modern pharmaceutical drugs, most of which were developed in experimental research in laboratories and research universities (*cf.* Aiglsperger 2014).

As Slikkerveer (1982: 1863) notes: '[*The modern medical system] includes elements of scientific medicine originating in Europe in the late middle ages and eventually forming a cosmopolitan medical system throughout the world'.* Modern medical science as applied in health science, biomedical research and medical technology aims to diagnose and treat disease. Modern treatment and surgical procedures are common practice in modern health care. Medical doctors diagnose the patient's symptoms using clinical observations to determine the disease. The interaction between the doctor and the patient begins with a review of the patient's medical history, followed by an interview and physical examination. To get more detailed information about patient-specific symptoms, doctors can order clinical tests (such as biopsies) or prescribe pharmaceutical drugs or other therapies (*cf.* Ambaretnani 2009). In contrast to traditional nursing institutions, modern nursing organisations are dominated by forms of nursing which involve consultations with modern health service providers. Modern nursing organisations are based on a system of Western medical knowledge, technology and medicine, which is dominant among modern doctors, because such knowledge is generally given greater validity than the knowledge of other medical personnel, such as nurses or medical auxiliary staff, as well as the 'lay' medical knowledge of patients (*cf.* Hahn 1995). Modern healing practices generally involve the following elements:

a) ideas about pathogens which refer to natural phenomena, being the cause of disease;

b) pathology, which discusses the nature of the disease;

c) a focus on curative care directed at the control or elimination of pathological conditions;

d) nosology based on the International Classification of Diseases designed by WHO; and

e) a practice which is divided into many specialisations (*cf.* Hahn 1995).

In general, modern nursing organisations follow the Primary Nursing Model, generally implemented when a single nurse is identified as the point of contact to patients during their illness episode. This model was introduced by nurses working under a licensed nurse practitioner in a team at the University of Minnesota in 1969. In this model, teamwork is critical to the primary nursing care delivery system. A culture of "helpfulness" based on a shared commitment to all patients and team members is implemented to achieve quality care (*cf.* Ferrura, *et al.* 2016).

Modern types of nursing organisations in Indonesia include the nursing services at the *puskesmas*, hospitals, clinics, medical centers, the maternity and midwife clinics, and so forth. The treatment methods used in modern nursing organisations are mostly in the form of recommendations offered by modern nursing providers in patients' environmental and social activities in the form of consultations, including the recording of their medical history and patient morbidity data, physical examination and statistical measurements, with a view to support subsequent diagnosis and treatment (*cf.* Canary 1983).

CHAPTER III RESEARCH METHODOLOGY AND ANALYTICAL MODEL

3.1 Research Methods & Techniques

3.1.1 The *'Leiden Ethnosystems Approach'*

As described in the previous Chapter, ethnonursing is a research method often used in conjunction with nursing research about culture. Many nursing researchers have undertaken ethnographic studies. Indeed, Leininger coined the phrase 'ethnonursing research', which she defines as "*the study and analysis of the local or indigenous people's viewpoints, beliefs, and practices about nursing behaviour and processes of designated cultures"* (1985:38). In conducting an ethnonursing study, the investigator uses a broad theoretical framework to guide the research, such as Leininger's theory of culture care. Leininger (1991;2006)) developed a number of enablers to help guide researchers in conducting ethnonursing research. Enablers are ways to help discover complex phenomena like human care. Some of the enablers include the Sunrise Enabler, Stranger-Friend Enabler, Observation-Participation-Reflection Enabler, and Acculturation Enabler Guide or Ethnodemographic Enabler.

Ethnonursing, like ethnography, is a qualitative strategy in which the researcher collects data through personal observation and interviews and learns from the members of the cultural group to understand their world. It focuses on the culture of the ethnographic method to investigate the relationship between culture and care (*cf.* Creswell 2009; Leininger 2006; Polit & Beck 2008). Meanwhile ethnoscience as a cognitive anthropology defines culture in purely mentalistic terms. This type of ethnography concentrates on understanding cultural knowledge through an emphasis on relationships between words.

Cognitive anthropologists assume that a group's cultural knowledge is reflected in its language. One of the purposes of cognitive anthropology or ethnoscience is to produce a map of the cognitive world of a culture which addresses its semantic rules. Ethnoscience often relies on quantitative as well as qualitative data (*cf.* Polit & Beck 2008). As Bernard (2002: 364) notes: '*Ethnography and survey data combined produce more insight than either one alone*'. Slikkerveer (1989) describes the configuration of the term 'ethnosystems', which can be viewed in four different ways:

1) a more dynamic concept of appropriate, in-depth culture assessment;
2) a culture-specific or cultural-bound reference of the term;
3) a more realistic instead of a normative, Western inspired orientation; and
4) a (pre-)historical assessment of a community-bound reference of the term.

Slikkerveer (1999) introduces the 'Ethnosystems Approach' as a new strategy towards the study of an Indigenous Knowledge System (IKS) by linking the cognitive aspect of investigating locals' knowledge, practices and beliefs to the behavioural components involved in the dynamic processes of culture and knowledge exchange, as well as in the development of indigenous technologies. In this way, it is the overall aim of the *'Leiden Ethnosystems Approach'* to develop practical models designed for the study of cognitive factors in relation to patterns of behaviour and provide a sound basis for the integration of indigenous and international knowledge systems.

The research strategies implemented by the Leiden Ethnosystems And Development Programme (LEAD) of Leiden University in The Netherlands since the late 1980s resulted in an increased focus on the practical implications involved in the study of IKS within the context of development, laying the foundation for an innovative ethnoscience-based research approach, with a clear applied-oriented vision.

In other words, the LEAD programme proved most useful for the new ethnoscientific research methods and techniques, based on an *emic* research approach, which resulted in the application of a specific emic methodology, called the *'Leiden Ethnosystems Approach'* to the study of IKS

(*cf.* Slikkerveer 1989; Slikkerveer & Dechering 1995). The *'Leiden Ethnosystems Approach'* has hereafter successfully been applied to numerous studies conducted in Sub-Saharan Africa, South-East Asia and the Mediterranean Region, focused on IKS, in relation to different sub-disciplines, such as ethnomedicine, ethno-economics, ethno-agriculture, ethno-ecology, ethnobotany, and ethno-communication in various sectors of society (*cf.* Agung 2005; Ibui 2007; Djen Amar 2010; Leurs 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014; Erwina 2019; Saefullah 2019; De Bekker 2020; Febriyanti 2021).

Similarly, this study follows the *'Leiden Ethnosystems Approach'* to study local people's utilisation behaviour, which allows for a rather detailed analysis of the point of view of the participants, the cultural characteristics of the research area and the historical processes involved in current behavioural patterns. The *'Leiden Ethnosystems Approach'* relates to the multi-dimensionality of different models of nursing institution utilisation, which have been developed and designed in an attempt to explain patterns of utilisation behaviour on the basis of individual, institutional or organisational factors.

The present study adopts the so-called multivariate model of transcultural nursing utilisation, which has been adapted from previous research conducted on patterns of behaviour in different sectors of the society and across a variety of geographical areas. According to Slikkerveer (1990:7), the multivariate model of transcultural nursing utilisation serves the purposes of: '*accommodating a number of predisposing and enabling factors together with perceived morbidity and, secondly, taking into account the role of the plural character of available forms of nursing institutions and organisations' utilisation behaviour*'. The *'Leiden Ethnosystems Approach'* facilitates the particular study of patterns of plural medical systems utilisation by means of identifying *i.a.* a number of individual, socio-cultural and historical factors, which are analysed for their influence on people's behaviour.

Since the approach furthermore contributes to the establishment of a common ground for comparison between local and global medical knowledge systems, its principles can be extended to the concept of the plural nursing systems in which non-profit traditional institutions and profit-making transitional and modern nursing organisations are identified and compared. Eventually, the comparison between different nursing institutions and organisations further enhances the understanding of particular determinants of peoples' utilisation behaviour. The ability to identify in a comparative way the possible profit *versus* non-profit factors, which influence local patterns of nursing institutions' and organisations' utilisation not only on an individual level, provides a sound basis to the *'Leiden Ethnosystems Approach'* for the implementation of a practical model of nursing utilisation (*cf.* Aiglsperger 2014).

In order to achieve the specific objectives of this study, the research approach used is the *'Leiden Ethnosystems Approach'* to document, study and analyze the role of indigenous nursing knowledge in the provision of cultural-specific nursing for elderly CVD patients in West-Java, Indonesia. It is intending to contribute to the development of transcultural nursing practices in Indonesia. Unquestionably, the methodological implementation of the ethnosystems approach, in an endeavour to attain the goal of a description of the Indigenous Knowledge Systems of a particular population, introduces a more dynamic character into the research and is a useful tool to encapsulate the *emic* view of the approach into the analysis of the historical interaction processes between local and global systems. In this way, it extends the research to include the component of patterns of human behaviour in the overall process (*cf.* Djen Amar 2010). In practice, the *'Leiden Ethnosystems Approach'* follows three methodological principles:

1. the 'Historical Dimension' (HD);
2. the 'Participant's View' (PV); and
3. the 'Field of Ethnological Study' (FES).

Overall, the *'Leiden Ethnosystems Approach'* adopts both a vertical and a horizontal perspective. It has demonstrated that it is a very useful instrument to study Indigenous Knowledge Systems (IKS) in relation to patterns of behaviour in various sectors of society, including human health. The '*Leiden Ethnosystems Approach'* has been applied to the study of IKS and to the subsequent analysis of behavioural patterns within the context of nursing utilisation (*cf.* Slikkerveer & Dechering 1995; Slikkerveer 1999b). The three methodological principles of the *'Leiden Ethnosystems Approach'* are as follows:

Historical Dimension (HD)

The concept of the '*Historical Dimension'* (HD) is useful in any study of present-day situations in the context of the *'Leiden Ethnosystems Approach'* and refers specifically to the (pre-)historical analysis of complex contemporary configurations, including religion, agriculture, natural resource management, conservation and nursing. Particularly in development research on transcultural settings of interacting inside and outside forces, contemporary-oriented approaches have largely failed to unravel the dynamics of the origin and development of processes which have led to present-day complexes. In their efforts to understand the complex processes of development and change in various sectors of indigenous communities, anthropologists and historians have been working in close collaboration to substantiate the 'Historical Perspective', in which both the historically-oriented methodology is complementary to the method of the ethnographic analogy more solidly (*cf.* Wigboldus & Slikkerveer 1991).

It is often difficult to comprehend present-day complexes in such cultural institutions as natural resources management. This can be attributed largely to the lack of adequate evidence from the past which might explain the evolution of the different ways of exploitation of resources in the study area. More than anywhere else, the application of the famous *dictum* of Leakey (1992): *'the past is the key to the future'* is relevant to the study in transcultural nursing in West-Java, Indonesia. In the Horn of Africa, the application of this concept in the historical analysis of the nursing traditions among the various cultures has facilitated the reconstruction of the current complex plural nursing system configuration of interacting local, regional and global systems in the region in order to provide the population with a wider range of nursing care services (*cf.* Slikkerveer 1982; 1990).

Participants' View (PV)

The '*Participant's View'* (PV) focuses in particular on the people within their historical-geographical context (Slikkerveer 1990). PV evolved from strategies adopted within the Leiden Tradition of Structural Anthropology and refers to the transformation of subjective perceptions and attitudes into objective social institutions. The principle of the PV undertakes an assessment of local cosmovisions, philosophies of nature, attitudes, opinions, perceptions and decision-making institutions within the greater context of a specific culture. The PV principle provides a non-normative, local assessment of indigenous systems of knowledge, beliefs and practices, thereby corresponding to an *emic* research approach from the standpoint of the participant.

This concept is further used in relation to the overall nursing institutions, as defined by Dunn (1976: 135*): 'The patterns of social institutions and cultural traditions evolve from deliberate behaviours to enhance health, whether or not the outcome of particular items of behaviour is ill or healthy'*. Following the methodological principle of PV, the approach allows for a realistic assessment of local institutions of knowledge, practices and beliefs related to concepts of health and healing within a particular community. Based on the ethnosystems methodology, it has been possible to quantify individual perceptions, cosmovisions, attitudes and opinions and to transform these into objective social factors which can be studied for their influence on patterns of nursing utilisation behaviour.

Field of Ethnological Study (FES)

The concept of the '*Field of Ethnological Study'* (FES) emerged as the result of significant ethnological fieldwork by Leiden University researchers in Structural Anthropology. It has been

observed that in different ethnic groups, certain sub-cultures within a larger culture are characterised by certain common cultural features, such as similar worldviews, values, beliefs, social organisations, languages, kinship, dietary habits, and clothing, as well as practices in nursing, agriculture and animal husbandry (*cf.* Van Wouden 1935; 1968; De Josselin de Jong 1984; Schefold 1988; Slikkerveer 1999). These are spread over a particular geographical region which has later been redefined as *a culture area* (*cf.* Hunter & Whitten 1975). It means that within a dynamic context of processes of development and change, the advantage of regional comparative studies of sub-cultures within a larger culture brings a more realistic evaluation of mutually comparable sub-cultures within the culture area.

The principle of FES highlights the extent to which common features of nursing knowledge, practices and beliefs appear in the research area and indicate the borders of a culture area, which is determined by its common concepts of health and healing. This research applies this concept by assessing the sub-cultures of each district of one larger culture area known as West-Java and their contributions to the way in which the modern nursing practitioners view the traditional nursing practitioners as their counterparts and vice versa.

3.1.2 The Selection of the Research Setting

The location of this study comprised four villages in Sumedang, namely Situ and Jatimulya, Sumedang Utara, and Jayamekar and Cipasang in Cibugel. The selection of research settings is based on the literature search which shows where there are previous studies related to the utilisation of traditional nursing institutions; meanwhile, the local communities still use traditional nursing to deal with the disease. According to the *puskesmas* Recording and Reporting Institutions in 2016 in the Health Profile of *Kabupaten* ('Regency/Municipality') Sumedang 2016, it was shown that CVD was included in the disease group with a prevalence of 32.32% of the top ten diseases, based on the number of visits to *puskesmas*.

Surprisingly, the life expectancy of the Sumedang population is increasing. In addition, the results of interviews during the preliminaries of several community leaders and the local government stated that the Sumedang Regency was the center of Sundanese cultural heritage which still adhered to local traditions and wisdom even though modernization took place in the Sumedang Regency. The research was conducted in the Sumedang Regency, especially in those four villages, which are representing the characteristics of the local community.

3.1.3 The Selection of the Sample Surveys

This study uses a questionnaire introduced by Slikkerveer (1990) and has thereafter been used by researchers including Agung (2005); Ibui (2007); Djen Amar (2010); Leurs (2010); Ambaretnani (2012); Chirangi (2013); Aiglsperger (2014); Erwina (2019); Saefullah (2019), De Bekker (2020) and Febriyanti (2021) in the field of ethnoscience and indigenous knowledge. The researcher conducted several discussions and adapted the content of the questionnaire in accordance with the focus of the research until it was ready to be distributed in this survey from September to November 2017.

The sample of this study includes families who have elderly members with CVD in the four villages of selected research areas of the Sumedang Regency. Jayamekar and Cipasang are representing the rural northern highland areas, while Situ Village represents the urban southern lowland area and Jatimulya the urban southern highland area of the Sumedang Regency.

Table 3.1 Distribution of the Questionnaire over the Four Selected Villages

Village	Number of Questionaires	Surveyor	Time of Interview
Jayamekar	60	Raini, Listia, Oselia, Rizky, Fajar	7 September- 30 November 2017
Cipasang	56	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Situ	60	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Jatimulya	56	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Total	232		

Source: Household Survey (2017).

3.2 Complementary Qualitative and Quantitative Surveys

3.2.1 Preparation of the Research Instrument

Embarking on the field research, both qualitative and quantitative, the researchers made a review of villages as a preparation selection, as well as preliminary data collection. Since the Sumedang Regency covers 283 villages, the researchers distinguish villages into two categories: the northern and southern regions of the Sumedang Regency, as well as the availability of several nursing institutions and organisations in the region. As reference material, researchers looked at each *Buku Profil Desa* ('village profile book') to determine the area and number of samples. In the *Buku Profil Desa*, there are various data on village demographic characteristics, which help researchers in determining the research area.

The research instruments applied in this study have been designed with a view to collect information on the utilisation of the Plural Nursing System by the respondents and include both qualitative questions and quantitative questionnaires. The complementary approach of combined qualitative and quantitative surveys aims at confirming the findings of both surveys in terms of measuring the depth and spread of related factors, and assessing the interactive processes involved in the reported differential behaviour of the community members regarding the utilisation of the Nursing System in Sumedang. In addition, other supporting data about Sumedang have been obtained from available public information, text notes, digital sources, images, sounds or combinations and the Profile of the Sumedang Regency, as well as a preliminary study with community leaders. As emphasized by Ozor & Nwanko (2008) in Saefullah (2019), the role of leaders is very important and must be considered in community development.

3.2.2 The Qualitative Study in the Research Setting

This approach is the first stage of data collection before designing the quantitative structured questionnaires. The qualitative approach aims to discover important themes, categories, dimensions and inter-relationships between variables. The word 'qualitative' implies that emphasis is placed on processes and meanings which are not measured in terms of quantity, amount, intensity or frequency. It reflects the socially constructed nature of intimate relationships between the researcher and the subject studied. The researcher seeks answers to explain how social experiences come about and acquire meaning. Polit & Beck (2008) mention the three broad types of information which are usually sought by ethnographers: cultural behaviour (what members of the culture do), cultural artifacts (what members of the culture make and use), and cultural speech (what people say). This implies that ethnographers rely on a wide variety of data sources, including observations, in-depth interviews, records, charts, and other types of physical evidence (*e.g.,* photographs, diaries, letters). The data collection in this qualitative study is based on the three methodological principles of the '*Leiden*

Ethnosystems Approach': the historical dimension, the participant's view, and the field of ethnological study (*cf.* Slikkerveer 1995). In this qualitative study, the researcher seeks to learn from (rather than to study) the members of a cultural group in order to understand their worldview concerning indigenous institutions with nursing knowledge in the provision of nursing practices for the elderly with CVD in Sumedang. Qualitative methods through observation, in-depth interviews and open-ended interviews with key informants, such as community leaders, traditional healers, villagers, community organizers, health staff, local government and Sundanese experts, was accomplished in four villages from 1 September to 30 November 2017 and an additional visit in June 2018. The interviews and observations have been conducted to obtain data related to the historical dimension of local villages, and the linguistic expressions of people to obtain the emic perspective of local people about the utilisation of indigenous nursing knowledge and institutions as part of the plural nursing system. During the research, the researchers stayed with the community leaders so that they would find it easier to collect data about daily life in the village and research subjects, including knowledge, belief and practices, which have been measured through the household surveys.

3.2.3 The Quantitative Study in the Research Setting

The quantitative method of this study consists of household surveys in order to measure the distribution of indigenous nursing institutions' utilisation particularly in elderly CVD patients in the rural and urban areas in Sumedang. Two areas were selected to compare data, while the characteristics and sample size were determined based on the number of the population and geographical characteristics. Quantitative surveys using a structured questionnaire underpin the analytical model of behaviour patterns of the utilisation of the plural nursing system, respectively for the traditional nursing institution, and the transitional and modern nursing organisations by the elderly with CVD in Sumedang, adapted from Slikkerveer (1990). The same model has been used by other researchers such as Agung (2005); Ibui (2007); Djen Amar (2010); Leurs (2010); Ambaretnani (2012); Chirangi (2013); Aiglsperger (2014); Erwina (2019); Saefullah (201); De Bekker (2020) and Febriyanti (2021).

In this study, the non-probability sampling strategy type was conducted. It is purposive sampling with a specific clustering of four sample villages. The main goal of purposive sampling is to focus on particular characteristics of a population of interest, which will enable us to answer the predetermined research questions in an optimal mode. Furthermore, the study involves two geographic areas and four sample villages. The sample is representative of the parent population, and has as such reported its utilisation of the services of the plural nursing system (*cf.* Moser & Kalton 1971; Slikkerveer 1995; Bernard 2002; Creswell 2014; Aiglsperger 2014; Erwina 2019 in Saefullah 2019, De Bekker 2020).

3.2.4 The Conceptual Model of Utilisation Behaviour Analysis

As Polit & Beck (2014) refer to the dichotomy between quantitative and qualitative data, it represents the key epistemologic and methodological distinction within the social, behavioural, and health sciences. Although some authors argue that qualitative and quantitative studies are based on totally incompatible paradigms, some areas of inquiry can be enriched through the judicious blending of qualitative and quantitative data by undertaking what is usually referred to as multi-method or mixed-method research. *In other words,* there are many noteworthy advantages of combining various types of collected data in an investigation which includes complementarity, incrementality, enhanced validity, enhanced theoretical insights and the creation of new frontiers. A strong argument for blending qualitative and quantitative data in a study is that they are complementary; they represent words and numbers, the two fundamental languages of human communication (*cf.* Polit & Beck 2008; Djen Amar 2010). By integrating different methods and techniques of analysis, the weaknesses of one single approach may be diminished. Quantitative data from large or representative samples have much strength. Quantitative studies are often strong, not only for generalising specific findings, but also for precision and control over specific variables.

However, sometimes the validity of such research is called into question. By introducing tight controls, quantitative studies may fail to capture the situational context. Moreover, by reducing factors such as complex human experiences, behaviour and characteristics solely to numbers, such studies sometimes seem superficial. Similarly, the use of tightly structured methods can sometimes lead to biases in capturing constructs under study. All these weaknesses are aspects of the study's ability to yield valid and meaningful answers to the research questions.

Qualitative research, by contrast, also has strengths and weaknesses which are diametrically opposite. The strength of qualitative research lies in its flexibility and its potential to yield insights into the true nature of complex phenomena through in-depth scrutiny. However, qualitative research is almost always based on small, unrepresentative samples, and is often undertaken by a single researcher or small research teams, using data collection and analytic procedures which tend to rely on subjective judgments. Thus, qualitative research is sometimes criticised for its problems with reliability and generalizability (*cf.* Streubert & Carpenter 1999).

However, the strengths and weaknesses of quantitative and qualitative data are complementary, and combined in a single study; qualitative and quantitative data can "*supply each other's lack*." By using multiple methods, researchers can allow each method to do what it does best, with the possibility of avoiding the limitations of one single approach (*cf.* Polit & Beck 2008). It is sometimes argued that different approaches are especially appropriate for different phases in the evolution of knowledge. In particular, it has been argued that qualitative methods are well suited for exploratory or hypothesis-generating research early in the development phase of a problem area, while quantitative methods are needed as the problem area makes progress for the purposes of verification. However, the evolution of a theory or problem area is rarely linear and unidirectional. The need for exploration and in-depth insights is rarely confined to the beginning of an area of research inquiry, and subjective insights may need to be evaluated early and continually.

By consequence, progress in developing a body of evidence for nursing practices tends to be incremental and rely on multiple feedback loops. It can be productive to build a loop into the design of a single study, which may potentially speed up the progress towards understanding the configuration. Another advantage of designing multi-methods or mixed-method research lies in the potential for enhancing the validity of the findings of the study. When the researchers' hypotheses or models are supported by multiple and complementary types of collected data, they can be more confident about the validity of the results. Scientists are basically critical, constantly seeking evidence to validate their theories and models. Evidence derived from different approaches can be especially persuasive. As Brewer & Hunter (1989:51) note: '*Although each type of method is relatively stronger than the others in certain respects, none of the methods is so perfect even in its area of greatest strength that it cannot benefit from corroboration by other methods' findings*'. The integration of qualitative and quantitative data cannot only provide better opportunities for testing alternative interpretations of the data, but it can also assist in examining the extent to which the context has helped to shape the results.

The major nursing theories embrace four broad concepts: (1) person, (2) environment, (3) health, and (4) nursing. There is nothing inherent in these concepts which demands (or excludes) a qualitative or quantitative orientation. The world in which people live is complex and multidimensional, as are most theories developed to make sense out of it. Qualitative and quantitative research constitutes alternative ways of viewing and interpreting the world. These alternatives are not necessarily correct or incorrect; rather, they reflect and reveal different aspects of the reality. To be maximally useful, nursing research should strive to understand these multiple aspects. Most scientists believe that the blending of quantitative and qualitative data in a single analysis can lead to insights on these multiple aspects, which might be unattainable without such integration. Denzin (1989), a staunch advocate of combining methods, coined the term triangulation to refer to the use of multiple sources in order to converge on the truth. Sometimes, qualitative and quantitative data are found to be inconsistent with each other. Such a lack of congruity, when it happens in the context of a single investigation, can lead to insights which can push a line of inquiry further than would otherwise would have been possible.

When separate investigations yield inconsistent results, the differences are difficult to reconcile and interpret because they may reflect differences in the people being studied and in the circumstances under which they were studied, rather than theoretically meaningful distinctions which merit further investigation. In a single study, discrepancies can be tackled head on. By probing into the reasons for any observed incongruities, researchers can help to rethink the constructs under investigation and possibly to redirect the research process. Incongruent findings, in other words, can be used as a springboard for exploring reasons for discrepancies and for a thoughtful analysis of the study's methodological and theoretical foundations.

3.3 The Conceptual Model of Utilisation Behaviour Analysis

3.3.1 The Analysis of Nursing Utilisation Behaviour

In order to gather data on the basis of the '*Leiden Ethnosystems Approach*' and the multivariate model of utilisation of plural nursing systems, the present study employs a demonstrably profitable, combination of qualitative and quantitative research methods by Slikkerveer (1990). This approach encompasses three methodological principles: (1) 'the 'Historical Dimension' (HD); (2) the Participant's View' (PV); and (3) the 'Field of Ethnological Study' (FES) in the research, so as to collect further in-depth information for the understanding and explanation of the patterns of utilisation behaviour by the participants of indigenous nursing institutions and transitional and modern nursing organisations as components of the plural nursing systems, in particular the traditional nursing institutions for elderly patients with CVD in Sumedang. In this way, the study seeks to provide a contribution to the development of a transcultural nursing practice in Indonesia. The questionnaire used as the main research instrument in the quantitative household surveys is based on the questionnaire developed by Slikkerveer (1995) and encompasses five main sections A – E, which have been developed on the basis of the design of the conceptual model of the study described in the following Paragraph. It describes the sections of each questionnaire as they are structured in a way that they record data on the respective blocks of factors determined in the multivariate model of the plural nursing system, analogous to the multivariate model of the plural medical system, introduced by Slikkerveer (1990; 1995). By implementing the above-mentioned working definitions, the multivariate model of the plural nursing system used in Sumedang is similarly sub-divided into the 3 components, *i.e*. the traditional nursing institutions, and the transitional and modern nursing organisations. In this way, the respondents from the sample surveys were interviewed about their utilisation of these three institutions and organisations in order to assess and compare the level of significance between the independent and intervening variables in relation to the dependent variables of the reported utilisation of the different components of the plural nursing system in the research area.

The number of questions from Part A to Part E as mentioned above amounts to a total of 135, each of which is numbered and provided with pre-coded answer categories, organised and rank-ordered on the basis of the information gathered from the preceding qualitative research component and the subsequent pre-testing of the draft questionnaire. The validation of the questionnaire included the establishment of face validity in order to see if the test is measuring what it is supposed to measure, followed by a pilot test on a sub-set of the target population. After collection of the pilot data, the responses were inserted into a spreadsheet, and cleaned, allowing a control of minimum and maximum values for the entire dataset. Each set of answer categories also includes an 'other' category which allows for the collection of additional information on topics related to the respective question. In the case of frequent recording, the 'other' category may become an additional pre-coded answer to the related question. The different parts deal with the following information from each respondent:

Preface	: guiding the interviewers with explanations and directions for the interviews
Part A	: general information of the respondent
Part B	: independent background variables
B.1 predisposing factors	: socio-demographic variables, psycho-social variables
B.2 perceived morbidity factors	: respondents' perception of actual state of illness variables
B.3 enabling factors	: socio-economic status variables
B.4 institutional factors	: nursing institution variables
B.5 environmental factors	: environment of nursing institution variables
Part C: intervening variables	: government and private intervention variables
Part D: dependent variables	: utilisation of the traditional nursing institutions variables utilisation of the transitional nursing organisations variables utilisation of modern nursing organisations variables
Part E	: additional questions and recording of the respondents' opinions and expectations.

3.3.2 The Conceptual Model of the Utilisation of the Plural Nursing System

In view of the general applicability of the model of transcultural nursing utilisation and the results of previous studies conducted on the determinants of patterns of transcultural nursing utilisation behaviour in different areas, the model was also applied in the present research with a view to distinguishing between the following blocks of factors: the independent predisposing factors composed of socio-demographic variables and psycho-social variables on the individual level; the independent perceived morbidity variables on the individual level; the independent enabling variables on the individual level; the independent institutional variables on the institution level; and the environment variables. The intervening factors on the institution level and the dependent factors are divided between the utilisation of, respectively, the traditional nursing institutions, the transitional nursing organisations and the modern nursing organisations (*cf.* Figure 3.1). The factors measured at the individual level, namely the socio-demographic, psychosocial, perceived morbidity and enabling factors, refer to person-specific concepts. The psychosocial and perceived morbidity factors both measure cognitive aspects, which relate to institutions of knowledge, beliefs and practices. While the psychosocial factors are measured on a rather general basis, the perceived morbidity factors assess people's knowledge, beliefs and practices specifically in relation to their experience of illness. The factors measured at the institution level, *i.e.* the institutional, environmental, intervening and utilisation factors, relate to official components of the plural nursing system operating in the research area as well as to external phenomena.

The characteristics of the '*Leiden Ethnosystem Approach'* correspond with the multidimensional approach to the study of the determinants of utilisation of the plural nursing system, which has been advanced on the substantial evidence of how people's behaviour is influenced *i.a.* by a number of socio-cultural, economic and situational background factors. As Suchman (1963: 115) explains: '*We hypothesize that the selection of the source of care will reflect the knowledge, availability, and convenience of such services and social group influences upon the individual*'. The individual is identified as being related to both a physical and social environment, whereby a state of illness and its subsequent patterns of behaviour provoke variations in both the physical and social environment. Research has shown that the geographical distribution and aetiology of certain diseases, as well as the forms of nursing delivery, including public health programmes, are determined by a select number of predisposing, contributing and precipitating social and socio-demographic factors (*cf.* Suchman 1963). Early approaches to the study of nursing utilisation determinants have, however, focused rather isolated attention on the presumed influence of economic, socio-psychological, geographic and organisational factors (*cf.* Greenlick *et al.* 1968; McKinlay 1972; Slikkerveer 1990).

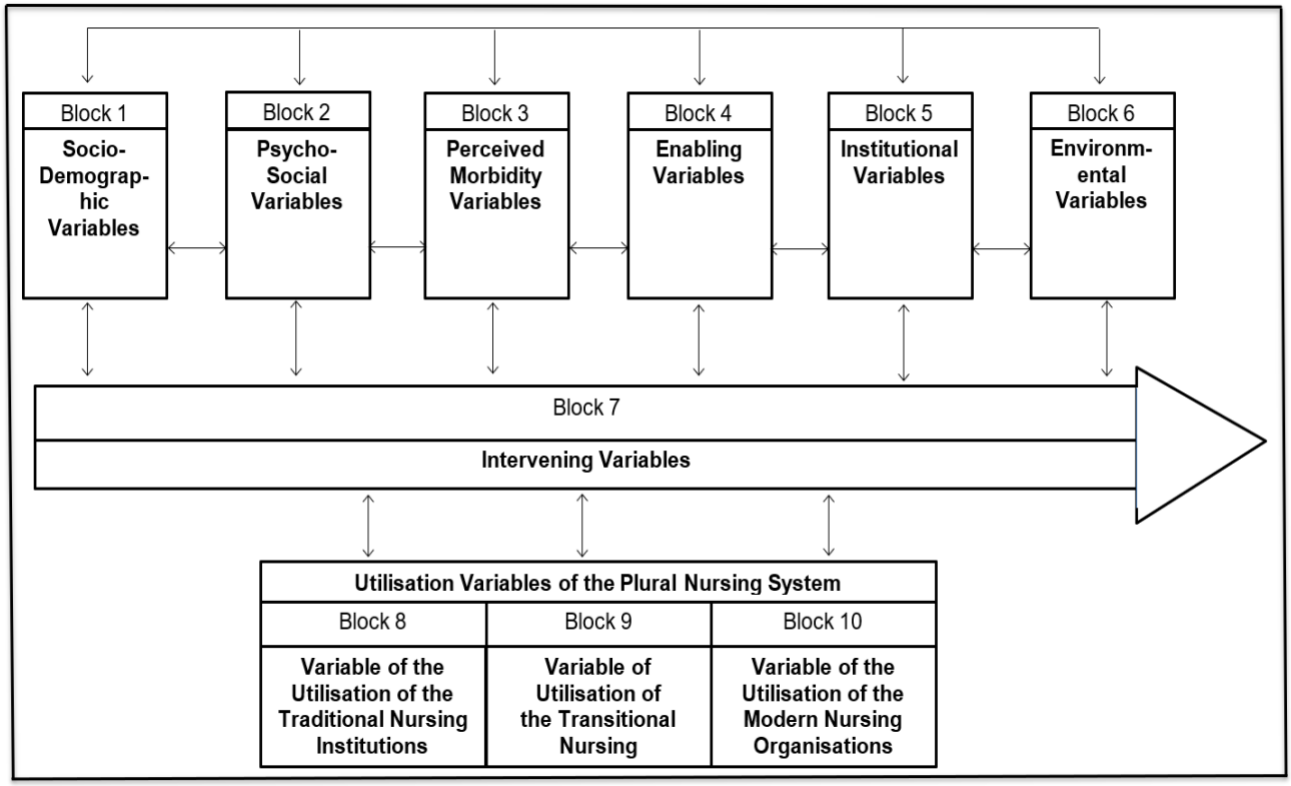


Figure 3.1 The Conceptual Model of the Utilisation of the Plural Nursing System in *Sumedang*
Source: Adapted from Slikkerveer (1990; 1995).

In line with Aday & Anderson (1974), who state that for the community to be able to reach health services, it needs considering four dimensions of access to health, as follows:

1. access to service facilities in terms of geographical travel, whether far or near,
2. availability: types of services required, if they are available or not, and how long the waiting time required is,
3. financial accessibility: types of services provided in accordance with the individual's ability to pay or whether they are covered by insurance, and
4. acceptability: suitability of whether the nursing types given to the individual's expectations are socially and culturally appropriate.

Ethnography is a type of qualitative inquiry which involves the description and interpretation of cultural behaviour. Ethnographies are a blend of a process and a product, fieldwork, and a written text. Fieldwork is the process by which the ethnographer inevitably comes to understand a culture, and the ethnographic text is how that culture is communicated and portrayed. Because culture is, in itself, not visible or tangible, it has to be constructed through ethnographic writing. Culture is inferred from the words, actions, and products of members of a group. An underlying assumption of the ethnographer is that every human group eventually evolves a culture which guides the members' view of the world and the way they structure their experiences (*cf.* Polit &Beck 2014). Ethnographers seek to learn from (rather than to study) members of a cultural group to understand their worldview. Ethnographic researchers sometimes refer to *emic* and *etic* perspectives (the terms originate in linguistics, i.e., phon*emic* versus phon*etic*).

An emic perspective refers to the way the members of the culture envision their world; it is the insiders' view. The emic perspective refers to the local language, concepts, or means of expression which are used by the members of the group under study to name and characterize their experiences. The etic perspective, by contrast, is the outsiders' interpretation of the experiences of that culture; it

is the language used by those doing the research to refer to the same phenomena (*cf.* Slikkerveer & Dechering 1995; Polit & Beck 2008). Ethnographers strive to acquire an emic perspective of a culture under study. Moreover, they strive to reveal what has been referred to as tacit knowledge, information about the culture which is so deeply embedded in cultural experiences which members do not talk about, or they may not even be consciously aware of it. Although it is important to grasp the insider's perspective, it is also important for the ethnographer to illuminate the connection between the emic and the interpretational concepts which advance the aims of the knowledge. Ethnographers almost invariably undertake extensive fieldwork to learn about the cultural group in which they are interested. Ethnographic research typically is a labour-intensive endeavour which requires long periods of time in the field. In most cases, researchers strive to participate actively in cultural events and activities.

The study of a culture requires a certain level of intimacy with members of the cultural group, and such intimacy can be developed only over time and by working directly with those members as active participants. The Stranger-Friend enabler and Observation-Participation-Reflection Enabler help guide researchers in conducting ethnonursing research (*cf.* Leininger 1991; 2006). The concept of the researcher as an instrument is frequently used by anthropologists to describe the significant role ethnographers play in analysing and interpreting a culture.

3.3.3 Operationalisation of the Model of the Plural Nursing System

The model in Figure 3.1 identifies the variables which interact in a differential mode with the reported utilisation of the available nursing institutions and organisations in the research area. The variables can be sub-divided into a number of categories or 'blocks' of variables at the individual level and at the institution level, as represented in the analytical model:

At the individual level, as independent variables:
Predisposing variables:
Block 1: Socio-demographic variables
Block 2: Psycho-social variables
Block 3: Perceived morbidity variables
Block 4: Enabling variables

At the institution level, as independent variables:
Block 5: Institutional variables
Block 6: Environmental variables
Block 7: Intervening variables

At the individual level as dependent variables of utilisation variables of the Plural Nursing System:
Block 8: Variable of utilisation factors of the traditional nursing institutions
Block 9: Variable of utilisation factors of the transitional nursing organisations
Block10: Variable of utilisation factors of the modern nursing organisations

The context of the various blocks of the model will be described separately, together with the concepts, variables, indicators, and categories, in the operationalisation of the study. In this respect, the multivariate model developed by Slikkerveer (1990) facilitates the description and explanation of how an individual or social institution changes over time and provides the basis of the operationalisation of the conceptual model designed for this research.

Independent Predisposing Factors

The independent variables refer to a series of socio-cultural background characteristics as a combination of socio-demographic and psycho-social factors, which operate at the level of individual

respondents, representing the household samples (*cf.* Slikkerveer 1990; Ambaretnani 2010; Aiglsperger 2014). The concept of socio-demographic factors is represented by variables, such as 'household type', 'household composition', 'gender', 'age', 'marital status', 'education', 'religion', 'profession', 'ethnocultural group', 'place of birth', 'vaccination', etc.

The 'soft' factors such as knowledge, perceptions, beliefs and opinions are best understood by means of quantitative household surveys as represented in the questionnaire which was distributed to the respondents in the four villages of the research area. Tables 3.2 and 3.3 pesent the operationalisation of socio-demographic and psycho-social factors into variables, indicators and categories.

Table 3.2 Block 1 Predisposing Factors: Socio-Demographic Factors

Concept	Variable	Indicator	Categories
Socio-Demographic	Household type	Type of household	nuclear; extended; other
	Household composition	Relationship to household head	household head; spouse; son; daughter; father; mother father-in-law; grandfather; grandmother; grandson; granddaughter; brother; sister; cousin; nephew; niece; son in law; brother in law; sister in law; father in law mother in law; other kin
	Gender	Gender definition	male; female; other
	Age	Number of years alive	less than 5; 6-10; 11-15; 15-20; 21-25; 26-30; 31-35; 41-45; 46-50; 51-55; 56-60; 61-65; 66-70; 71-75; 76-80; 81-85; more than 86
	Marital Status	Present marital status	don't know; single; married monogamy; married; polygamy; divorced; widow; widower; concubine; other
	Education	Latest school attended	don't know; no education; primary school; secondary education; tertiary education; other
	Religion	Adherence to religion	don't know; none; animism; Islam; Catholic; Hinduism; Budhism; Confucianism; other
	Profession	Current main occupation	don't know; unemployed; house wife; peasant; farmer; industrious labourer; entrepreneur; government officer; private employee; security and defense; driver; retired; other

Table 3.2 Block 1 (*continued*) Predisposing Factors: Socio-Demographic Factors

Concept	Variable	Indicator	Categories
	Ethno-cultural group	Ethnic origin	don't know; Sundanese; Javanese; Minang; Batak; Manado; Bugis; Chinese; other
	Place of birth	Location of the place	don't know; this place; elsewhere
	Vaccination	Vaccination history	don't know; none; Diphtery; Pertusis; Tetanus; Measles, Mumps; Rubella; Polio; Chickenpox; other
	CVD	Precedent CVD	don't know; no; yes
	CVD Type	Type of CVD	don't know; none; Ischemic heart disease; stroke; hypertensive heart disease; rheumatic heart disease; aortic aneurysm; cardiomyopathy; atrial fibrillation; congenital heart disease; endocarditis peripheral; artery disease; other
	CVD length	Length of CVD	don't know; none; 1-2weeks; 3-4 weeks; 5-6 weeks; 6 weeks or more
	Actual status	Actual status of illness	don't know; recovered; under treatment

Source: Household Survey (2017).

Table 3.3 Block 1 Predisposing Factors: Psycho-Social Factors

Concept	Variable	Indicator	Categories
	Knowledge of CVD	Level of knowledge of CVD	don't know; none; very little; little; average; much; very much
	Knowledge of home remedies	Level of knowledge of home remedies for CVD	don't know; none; very little; little; average; much; very much
	Knowledge of traditional nursing institutions	Level of knowledge of traditional nursing institutions	don't know; none; very little; little; average; much; very much
	Knowledge of traditional nursing institutions for CVD	Level of knowledge of traditional nursing institutions for CVD	don't know, none; very little; little; average; much; very much
	Knowledge of transitional nursing organisations	Level of knowledge of transitional nursing organisations	don't know; none; very little; little; average; much; very much
	Knowledge of transitional nursing for CVD	Level of knowledge of transitional nursing for CVD	don't know; none; very little; little; average; much; very much

Table 3.2 Block 1 (*continued*) Predisposing Factors: Psycho-Social Factors

Concept	Variable	Indicator	Categories
	Knowledge of modern nursing organisations	Level of knowledge of modern nursing	don't know; none; very little; little; average; much; very much
	Knowledge of modern nursing for CVD	Level of knowledge of modern nursing for CVD	don't know; none; very; little; average; much; very much
	Belief in home remedies as a prevention for CVD	Level of belief in home remedies as a prevention for CVD	don't know; none; very little belief; a little belief; average; much belief; very much belief
	Belief in home remedies as a treatment for CVD	Level of belief in home remedies as treatment for CVD	don't know; none; very little belief; a little belief; average; much belief; very much belief
	Belief in traditional nursing institutions as prevention for CVD	Level of belief in traditional nursing institutions as prevention for CVD	don't know; none; very little belief; a little belief; average; much belief; very much belief
	Belief intraditional Nursing institutions as a treatment for CVD	Level of belief in traditional nursing institutions as a treatment for CVD	don't know; none; very little belief; a little belief; average; much belief; very much belief
	Belief in transitional nursing as a treatment for CVD	Level of belief in transitional nursin as a treatment for CVD	don't know; none; very little belief; a little belief; average; much belief; very much belief
	Belief in modern nursing organisations as a prevention for CVD	Level of belief in modern nursing organisations as a prevention for CVD	don't know; very little belief; a little belief; average; much belief; very much belief
	Belief inmodern nursing organisations as a treatment for CVD	Level of belief in modern nursing organisations as a treatment for CVD-	don't know; none; very little belief; a little belief; very much belief

Source: Household Survey (2017).

Independent Perceived Morbidity Variables

Among community cultural groups, there is one factor which influences people's behaviour in the utilisation of the available nursing institutions and organisations. It is known as the 'perceived morbidity' factor. It is an inherent variable within people, which motivates them to act with a particular behaviour. As Ambaretnani (2012: 73) underscores: '*These factors are difficult to quantify because they are less overtly tangible*'.

Measured at the individual level, the variables, which have been selected in the block for perceived morbidity of the disease factors, refer to: 'perception of health status', 'perception of symptoms', and 'perception of main cause of the disease'. Table 3.4 presents the selected perceived needs factors: health status, symptoms, and main cause, vulnerability, precautions, seek nursing institutions and organisations, and the best treatment of CVD.

Table 3.4 Block 3 Perceived Morbidity Factors

Concept	Variable	Indicator	Categories
Perceived morbidity	Health status	Level of health status	don't know; very bad; bad; average; good; excellent
	Symptoms the last 12 months	Symptoms during	don't know; shortness of breath; chest pain; pain in the neck; weakness; other
	Main cause CVD	Main cause of CVD	don't know; overweight/ obesity; inactivity exercise; high cholesterol;
	Vulnerabilty to CVD	Person who is vulnerable	don't know; everybody; infant; elderly; hereditary people; other
	Precautions CVD	Precautions against CVD	don't know; avoiding smoking; avoiding high cholesterol food; doing exercise; praying to Allah; other
	Seek nursing institutions and organisations	Seek nursing institutions and organisations for CVD	don't know; highly importance of health; following patient's ow diagnosis; because of pain, discomfort; because of cost, because of distance
	The best treatment of CVD	The best nursing institution and organisation	don't know; home remedies; traditional healer; drug vendor; private clinic; public health center; hospital; other reason

Source: Household Survey (2017).

Independent Enabling Factors

At the conceptual consideration, Slikkerveer (1990) has proven that factors at the individual level can be 'elevated' to the institutional level to allow the comparative analysis between factors related to both individuals and institutions *(cf.* Slikkerveer & Dechering 1995; Slikkerveer 2002; Quah & Slikkerveer 2003). The variables in the block of enabling factors are: family income, family expenses, and socio-economic status (SES).

The enabling factors (Table 3.5) of socio-economic status are determined with subjective and objective perceptions; the objective ones are measured by a range of variables of ownership of material goods plus income and expenses, whereas subjective perceptions use the respondents' own opinions on their economic status in the community.

Table 3.5 Block 4 Enabling Factors

Concept	Variable	Indicator	Categories
Enabling	Household head income	Total amount of household head income monthly	don't know; none; Rp 0-500.000; Rp 501.000-1.000.000; Rp1.001.000-1.500.000; Rp 1.501.000-2.000.000; more than Rp 2.001.000

Table 3.5 Block 4 (*continued*) Enabling Factors

Concept	Variable	Indicator	Categories
	Household wife income	Total amount of household wife income monthly	don't know; none; Rp 0-500.000; Rp501.000-1.000.000; Rp 1.001.000 -1.500.000; Rp1.501.000-2.000.000; more than Rp 2.001.000
	Other members' income	Total amount of household income monthly	don't know; none; Rp 0-500.000; Rp 501.000-1.000.000; Rp1.001.000-1.500.000; Rp 1.501.000-2.000.000; more than Rp 2.001.000
	Socio-economic status by respondent	Level of economic status by respondent	don't know; none; very poor; poor; average; rich; very rich
	Socio-economic status by interviewer	Level of economic status by interviewer	don't know; none; very poor; poor; average; rich; very rich
	Cost to use traditional nursing institutions	Cost level of using traditional nursing organisations	don't know; none; very little; little; medium; much; very much
	Cost to use transitional nursing organisations	Cost level of using transitional nursing organisations	don't know; none; very little; little; medium; much; very much
	Annual transport cost to reach transitional nursing organisations	Cost level of using transitional nursing organisations annually	don't know; none; very little; little; medium; much; very much
	Annual transport cost to reach modern nursing	Cost level of using modern nursing annually	don't know; none; very little; little; medium; much; very much
	Health insurance	Health insurance	don't know; no; yes
	Health insurance type	Type of health insurance	don't know; none; private insurance; BPJS; other
	Save money	Money saving	don't know; no; yes

Source: Household Survey (2017).

Independent Institutional Variables

The institutional factors are actually represented in the model to make information available on the nursing institutions and organisations in the community. The specific variables presented in Table 3.6 are the types of existing traditional nursing institutions and transtitional or modern nursing organisations available in the community.

Table 3.6 Block 5 Institutional Factors

Concept	Variable	Indicator	Categories
Institutional	Traditional nursing institutions	Traditional nursing institutions available	don't know; none; traditional healer; herbalist; *dukun;* other

Table 3.6 Block 5 (*continued*) Institutional Factors

Concept	Variable	Indicator	Categories
	Geographical distance traditional nursing institutions	Distance to a traditional nursing institution	don't know; 0 km; 0,1-2 km; 2,1-4 km; 4,1-6 km; 6,1-8 km; more than 8,1 km
	Transitional nursing organisations	Transitional nursing organisations available	don't know; none; apothecary; *warung*; *mini market*; drug vendor; other
	Modern nursing organisations	Modern nursing organisations available	don't know; none; private clinic; public health center; hospital; other
	Geographical distance to transitional nursing organisations	Distance to transitional organisation avalaible	don't know; 0 km; 1-2 km; 2,1-4 km; 4,1-6 km; 6,1-8 km; more than 8,1 km
	Geographical distance modern nursing institutions	Distance to a modern organisations available	don't know; 0 km; 1-2 km; 2,1-4 km; 4,1-6 km; 6,1-8 km; more than 8,1 km
	Health insurance	Accepts health insurance	traditional nursing institution; trasitional nursing organisations; modern nursing organisations

Source: Household Survey (2017).

Independent Environmental Variables

The environmental factors are actually taken into the model to give information about the physical location of the village and how it is related to the presence of the Plural Nursing System in the community.

Variables such as the environmental locations, zonation locations and family residential status in the community represent the relative location of the village and the respondent in regards to the presence of the nearest traditional nursing institutions, and transitional and modern nursing organisations (*cf.* Table 3.7).

Table 3.7 Block 6 Environmental Factors

Concept	Variable	Indicator	Categories
Environment	Environment-friendly	Type of health Institutions: environmentally friendly	don't know; none; home remedies; traditional nursing institutions; transitional nursing organisations; modern nursing organisations
	Social acceptance	Type of health Institutions: socially acceptable	don't know; none; home remedies; traditional nursing institutions; transitional nursing organisations; modern nursing organisations

Table 3.7 Block 6 (*continued*) Environmental Factors

Concept	Variable	Indicator	Categories
	Economic efficiency	Type of health institutions: economicaly efficient	don't know; none; home remedies; traditional nursing institutions; transitional nursing organisations; modern nursing organisations
	Environmental	Type of environmental	don't know; none;
	Location	Location of community	rural; semi-urban; urban; other
	Zonation location	Type of zonation location of community	don't know; none; mountainous; plain; low land
	Family residential	Type of family status in the community	don't know; none; indigenous status in the community; migrant/non-local status in the community; other status
	Plants	Type of plant in the garden	don't know; ginger; turmeric; garlic; *salam; seledri; mahkota dewa*

Source: Household Survey (2017).

Intervening Variables

Intervening factors actually depict the characteristics related to external dynamic interventions at the local community level. At the theoretical level, there are two most powerful players determining the dynamics of the development of a community: firstly, the power of the state, represented by the intervention of the government; and secondly, the power of the market represented by the intervention of the commercial private sector.

Such dynamism is generally regarded as impacts on external factors or external agencies, at both the individual and institution levels, which may influence or possibly create new behaviour which is different from the previous traditional ways of life (*cf.* Leurs 2010; Djen Amar 2010). The influx of interventions entering a community of villages is determined by the creation and implementation of policy, regulations and promotions from the sides of government and commercial private interventions. Details of the intervening variables, indicators and categories are shown in Tables 3.8.

Table 3.8 Block 7 Intervening Factors: Public and Private

Concept	Variable	Indicator	Categories
Public	Government/public regulation of home remedies	Government/public regulation influenced home remedies	don't know; yes; no
	Government/public regulation of home remedies	Type of government/ public regulation influenced utilisation of home remedies	don't know; Ministry of Health regulation; Local government regulation; BPJS; other

Table 3.8 Block 7 (*continued*) Intervening Factors: Public and Private

Concept	Variable	Indicator	Categories
	Source of government/ public regulation of home remedies for CVD	Government/public regulation source about home remedies for electronic campaign	don't know; paper advertising, brochure, flyer, billboard; (TV, radio, internet); health education/ campaigns from health officer; other
	The best form of government/public regulation of home remedies for CVD	Government/public regulation best form of home remedies for CVD	don't know; Ministry of Health regulation; local government; BPJS; other.
	Impact of government/ public regulation of home remedies for CVD	Level of government/ public regulation of home remedies for CVD	don't know; none; very low impact; low impact; average; high impact; very high impact
	Government/public regulation	Type of government/ public regulation influenced utilisation of traditional nursing institutions	don't know Ministry of Health regulation; local regulation; BPJS; other
	Source of government/ public regulation of traditional nursing institutions for CVD	Government/public regulation source about traditional nursing institutions for CVD	don't know; advertising, brochure, flyer, billboard; electronic campaigns (TV, radio, internet); health education/ campaigns from health officer; other
	The best form of government/public regulation of traditional nursing institutions for CVD	Government/public regulation's best form of traditional nursing institutions for CVD	don't know; Ministry of Health regulation; local regulation; BPJS; other
	Impact of government/ public regulation of traditional nursing institutions for CVD	Level of government/ public regulation of traditional nursing institutions for CVD	don't know; none; very low impact; low impact; average; high impact; very high impact
	Government/public regulation of transitional nursing organisations	Government/public regulation influenced transitional nursing organisations	don't know; no; yes
	Government/public regulation of transitional nursing organisations	Type of government/ publicdon't regulation influenced utilisation of transitional nursing organisations	don't know; Ministry of Health regulation; local government regulation BPJS; other

Table 3.8 Block 7 (*continued*) Intervening Factors: Public and Private

Concept	Variable	Indicator	Categories
	Source of government/ public regulation of transitional nursing organisations for CVD	Government/ public source about transitional nursing institution for CVD	don't know; advertising, brochure, flyer; billboard; electronic campaigns; (TV, radio, internet); health education campaigns
	The best form of Government/public transitional nursing organisations for CVD	Government/public regulation of best form of transitional nursing organisations for CVD	don't know; Ministry of Health regulation local government regulation; BPJS; other
	Impact of government/ public regulation of transitional nursing organisations for CVD	Level of government public regulation of transitional nursing organisations for CVD	don'tknow;none very low impact; low impact; average; high impact; very high impact
	Government/public regulation of modern nursing organisations in the community	Government/public regulation's influenced of modern nursing organisations	don't know; no; yes; other
	Government/public regulation of modern nursing organisations	Type of government/public regulation influenced utilisation of modern nursing organisations	don't know; Ministry of Health regulation; local government regulation BPJS; other
	Source of government/ public regulation of modern nursing organisations for CVD	Government/public regulation source about modern nursing organisations for CVD	don't know; advertising, brochure, flyer, billboard; electronic campaigns (TV, radio, internet); health education/ campaigns from health officer; other
	Best form of government/ public regulation of modern nursing organisations for CVD	Government/public regulation best form of modern nursing organisations for CVD	don't know; Ministry of Health regulation; local government regulations; BPJS; other
	Impact of government/ public regulation of modern nursing organisations for CVD	Level of government/public regulation of modern nursing organisations for CVD	don't know; none; very low impact; low impact; average; high impact; very high impact
	Government/public promotion of home remedies in the community	Government/public promotion influenced of home remedies in the community	don't know; yes; no

Table 3.8 Block 7 (*continued*) Intervening Factors: Public and Private

Concept	Variable	Indicator	Categories
	Government/public of home remedies	Type of government/public promotion influenced utilisation of home remedies	don't know; yes;no Ministry of Health regulation; Local government regulation; BPJS; other
	Source of government/ public promotion of home remedies for CVD	Government/public promotion source about home remedies for CVD	don't know; paper advertising, brochure, flyer, billboard; electronic campaigns (TV, radio, internet); health education/ campaigns from health officer; other
	Best form of government/ public promotion of home remedies for CVD disease	Government/public promotion best form of home remedies for CVD	don't know; Ministry of Health regulation; local government regulation; BPJS; other
	Impact of government/ public promotion of home remedies for CVD	Level of government/public promotion of home remedies for CVD	don't know; none; very low impact; low impact; average high impact; very high impact
	Government/public promotion of traditional nursing institutions in the community	Government/public promotion influenced utilisation of traditional nursing institutions	don't know; no; yes
	Government/public promotion of traditional nursing institutions	Type of government/public promotion influenced utilisation of traditional nursing institutions	don't know; Ministry of Health regulation; local government regulation; BPJS; others
	Source of government/ public promotion of traditional nursing institutions for CVD	Government/public promotion's source about traditional nursing institution for CVD	don't know; advertising, brochure, flyer, billboard; electronic campaigns (TV, radio, internet); health education/ campaigns from health officer; other
	Best form of government/ public promotion of traditional nursing institutions for CVD	Government/public promotion best form of traditional nursing institutions	don't know; Ministry of Health government regulation; BPJS; other

Table 3.8 Block 7 (*continued*) Intervening Factors: Public and Private

Concept	Variable	Indicator	Categories
	Impact of government/ public promotion of traditional nursing institutions for CVD	Level of government/public promotion of traditional nursing institutions for CVD	don't know; none; very low impact; low impact; average high impact; very high impact
	Government/public promotion of traditional nursing institutions in the community	Government/public promotion influenced of traditional nursing institutions	don't know; no; yes
	Government/public promotion of traditional nursing institutions	Type of government/public promotion influenced utilisation of traditional nursing institutions	don't know Ministry of Health; regulation; local government regulation; BPJS
	Source of government/ public promotion of traditional nursing institutions for CVD	Government/public promotion source about traditional nursing institutions for CVD	don't know; advertising, brochure, flyer, billboard; electronic campaigns (TV, radio, internet); health education/ campaigns from health officer; other
	Best form of government/ public promotion of traditional nursing institutions for CVD	Government/public promotion best form of traditional nursing institutions for CVD	don't know; Ministry of Health regulation; local government regulation; BPJS; other
	Impact of government/ public promotion of traditional nursing institutions for CVD	Level of government/public promotion of traditional nursing institutions for CVD	don't know; none; low impact; low impact; average; high impact; very high impact
	Government/public promotion of transitional nursing institutions	Government/public promotion influenced of transitional nursing institutions	don't know; no; yes
	Government/public promotion of transitional nursing organisations nursing organisations	Type of government/public promotion influenced utilisation of transitional government	don't know; Ministry of Health regulation; local regulation; BPJS; other.
	Source of government/ public promotion of transitional nursing organisations for CVD	Government/public promotion source about transitional nursing organisations for CVD	don't know; advertising, brochure, flyer, billboard; electronic campaigns (TV, radio, internet); health education/ campaigns

Table 3.8 Block 7 (*continued*) Intervening Factors: Public and Private

Concept	Variable	Indicator	Categories
	Best form of government/public promotion of transitional nursing organisations for CVD	Government/public promotion best form of transitional nursing organisations for CVD	don't know; Ministry of Health regulation; local government regulation; BPJS; other
	Impact of government/ public promotion of transitional nursing organisations for CVD	Level of government/public promotion of transitional nursing organisations for CVD	don't know; none; low impact; average; high impact; very high impact
	Government/ public promotion of modern nursing organisations in the community	Government/public promotion influenced of modern nursing organisations	don't know; no; yes
	Government/public promotion of modern nursing organisations	Type of government/public promotion influenced utilisation of modern nursing organisations	don't know; Ministry of Health regulation; local government regulation; BPJS; other
	Source of government/ public promotion of modern nursing organisations for CVD	Government/public promotion source about modern nursing organisations for CVD	don't know; advertising, brochure, flyer, billboard; electronic campaigns (TV, radio, internet); health education/ campaigns
	Best form of government/ public promotion of modern nursing organisations for CVD	Government/public promotion best form of modern nursing organisations for CVD	don't know; Ministry of Health regulation; local government regulation; BPJS; other
	Impact of government/ public promotion of modern nursing organisations for CVD	Level of government/public promotion of modern nursing organisations for CVD	don't know; none; very low impact; impact; average; high impact; very high impact

Source: Household Survey (2017).

The Dependent Variables

Table 3.9 shows Block 8, Block 9, and Block 10, which represent the main nursing institutions' utilisation rate during the course of the latest year before the research was conducted. The variables represent the existing plural nursing system, which were preferred by the respondents, given their set of circumtstances within the last one-year period from the date when the interview was conducted.

Table 3.9 Block 8, Block 9 & Block 10 Utilisation of the Plural Nursing System

Concept	Variable	Indicator	Categories
Plural Nursing System	Utilisation of the traditional nursing institutions	Contacts of individuals with the traditional nursing institutions	Utilisation rates of traditional nursing institutions
	Utilisation of the transitional nursing organisations	Contacts of individuals with the transitional nursing organisations	Utilisation rates of the transitional nursing organisations
	Utilisation of the modern nursing organisations	Contacts of individuals with the modern nursing organisations	Utilisation rates of modern nursing organisations

Source: Household Survey (2017).

3.4 Stepwise Statistical Analysis

3.4.1 Bivariate and Mutual Relations Analyses

Based on the quantitative research of the household, the dataset from the four village samples was formed. The dataset is the basis for the statistical analysis presented in this study, based on the number of households involved in the survey, for which the number (*n*) equals 232. The household database is the basis for the quantitative analysis of the four village communities in the Sumedang Regency of West-Java, with regards to their experiences, knowledge, preferences and opinions related to the patterns of the utilisation of plural nursing systems: the use of Indigenous/Traditional Nursing Institutions, Transitional Nursing Organisations and Modern Nursing Organisations.

The dataset is used for descriptive cross-tab bivariate statistics, which are presented where appropriate to substantiate the qualitative findings in relation to the different topics presented in Chapters V to VIII. Descriptive and cross-tab bivariate or multivariate statistical techniques are used for the dataset derived from the household survey in the four village communities of Jayamekar, Cipasang, Situ and Jatimulya, in the district of Subang. The bivariate analysis is used to examine whether one variable relates to another and more specifically what the shape, direction and strength of the relationship is *(cf.* Weinberg & Abramowitz 2002). The focus of a bivariate analysis is the association between two variables, and although it does imply co-variation, it should not be mistaken for causation *(cf.* Rosnow & Rosenthal 2005; Field 2009).

The cross-tabulation technique is used in this study to establish whether the difference observed in the cross-tabulation of the sample represented a real difference in the population as a whole. Pearson's Chi-square ($\chi 2$) test of independence permits such a judgement; it allows for the determination of whether or not there is a statistically significant association between two variables *(cf.* Miller *et al.* 2002). The confidence level for this study is set at 95%, which could result in the mere dichotomy of 'significant' versus 'not significant'; hence, a differentiated assessment is used. In analysing the significance of statistical data, the researcher used the rules introduced by Agung (2005), Ambaretnani (2012) and Aiglsperger (2014), which are as follows:

Level of significance	Interpretation
$\chi^2 > 0.15$	not significant
$0.15 > \chi^2 > 0.10$	indication of significance
$0.10 > \chi^2 > 0.05$	weakly significant
$0.05 > \chi^2 > 0.01$	strongly significant
$0.01 > \chi^2 > 0.001$	very strongly significant
$\chi^2 < 0.001$	most strongly significant

Pearson's Chi-square can be suitably used for categorical data, which are by definition not continuous. Although Pearson's Chi-square does not rely on such assumptions as having continuous normally distributed data like most statistical tests, two important assumptions have always to be taken care of: firstly, each respondent can score only in one cell of the cross-tabulation; and secondly, no expected frequencies should be below 1 and no more than 20% of expected frequencies should be below 5. As the two types of data scales, both ordinal and nominal, have been used, Cramer's V is used to provide additional examination of the level of statistical significance *(cf.* Field 2009). Cramer's V can be applied to the data in order to measure the strength of all significant relationships regardless of the number of categories of each variable in the cross-tabulation. The values of Cramer's V range from 0 to 1, whereby 0 implies that no relationship exists between variables, and 1 indicates that variables are perfectly associated (*cf.* Leurs 2010, Field 2009). After the significant variables are identified, the mutual correlations analysis is applied in accordance with the above-mentioned conceptual analytical model (*cf.* Figure 8.2).

In 2016, Slikkerveer introduces his 'mutual relation analysis' on the basis of his quantitative research data from the Horn of Africa: '*by clustering all those variables which are showing a differential degree of significance, ranging from 'indication of significance' to 'most strongly significant', as represented as 'blocks' in the analytical model*.' In a recent article, Slikkerveer (2019c): adapted his ethno-methodological data analysis by replacing the 'mutual relations analysis' by the 'mutual correlations anaysis' in his analytical model of transcultural health care utilisation, which provides an overview of significant correlations representing selected variables on the basis of the calculated Pearson's Chi-Square ($\chi 2$) within the range of significance between $0.15 > \chi^2 > 0.10$ and $\chi^2 < 0.001$ (*cf.* Table 3.12).

By consequence, the mutual correlations analysis shows the results from the bivariate analysis of all significant variables represented by each 'block' in the analytical model. In this context, it shows what factors significantly influence people's utilisation behaviour in choosing a traditional nursing institution in comparison with the transitional and the modern organisations.

3.4.2. Multivariate Non-Linear Canonical Correlation Analysis

The conceptual model of the multivariate models of the utilisation behaviour in Plural Nursing Systems are based on some earlier empirical findings; there are various explanatory variables which influence people's behaviour in the utilisation of any available institutions. In this context, the relations between the explanatory variables, represented by the independent and intervening variables, with the dependent variables need to be addressed. There is a need to identify the relations between the blocks of variables in the institutions through a particular quantitative method *(cf.* Slikkerveer 1990; Agung 2005; Ibui 2007, Leurs 2010).

This study uses multivariate analysis to analyse the utilisation of the plural nursing system by the respondents in the four villages of the Sumedang Regency. The multivariate analysis of the household data renders it possible to analyse the level of correlations between the independent and intervening variables of the respondents in relation to the dependent variables of the reported utilsation patterns of the nursing institutions and organisations. When there are multiple independent and dependent variables in a research design, such as in this study of four categories of variables, the design is said to be multivariate *(cf.* Tabachnick & Fidell 2001).

The multivariate measurements of association are by nature more complex, because they have to take into account the relationships of the predictor variables (independent and intervening variables) with the dependent variables. By using the multivariate analysis techniques, it is possible to determine the level of significance among all the variables of the model. Classical multivariate analysis assumes that each variable has *a priori* quantification and can be treated as numerical data *(cf.* Van de Geer 1993; Aiglsperger 2014).

Although some variables could be considered to be (quasi-)interval data, treating all data numerically in this study would have presented an oversimplification of the complexity of this dataset.

The non-linear multivariate analysis, which does not have the same *a priori* assumption of the classical multivariate analysis is the appropriate analysis to use in this study. In his research, Agung (2005) documents the link between the conceptual model and the Non-Linear Generalized Canonical Correlations or OVERALS multivariate statistical analysis.

Following the examples of Agung (2005), Ibui (2007), Leurs (2010), Djen Amar (2010), Ambaretnani (2012), Chirangi (2013), Aiglsperger (2014), Erwina (2019), Saefullah (2019) De Bekker (2020) and Febriyanti (2021), the OVERALS analysis is also used in this study. The OVERALS analysis is a non-linear generalized canonical correlation analysis *(cf.* Van de Geer 1993) which allows the inclusion of variables with different measurement levels, including those with nominal and ordinal levels in the analysis, and allows different sets of variables to be concluded. In this study, the set of the independent and intervening variables form the first set, while the dependent variables form the second set.

3.4.3 Multiple Regression Analysis

The general purpose of Multiple Regression Analysis is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. Following the examples of Agung (2005), Ibui (2007), Leurs (2010), Djen Amar (2010), Ambaretnani (2012), Chirangi (2013), Aiglsperger (2014), Erwina (2019), Saefullah (2019); De Bekker (2020) and Febriyanti (2021), a Multiple Regression Analysis is used based on the individual OVERALS analyses between each block of variables with all other blocks of variables in the model. Specific Multiple Regression Analysis is used here to calculate the relative importance of the block of variables and the block of dependent variables. The most commonly used multivariate measures of association can be expressed as functions of the 'eigenvalues' of the product matrix. In this analysis, the multiple correlation coefficients (ρd) of the individual OVERALS analyses will be used to measure the association. The multiple correlation co-efficient (ρd) is related to the 'eigenvalues' (Ed). The formula used to calculate the ρd is ρd=2 x Ed-1 *(cf.* Van der Burg 1988).

The approach to the Multiple Regression Analysis relates to the pre-defined block of factors presented in the multivariate model. This model, firstly developed by Slikkerveer (1990; 1995) and thereafter implemented in different studies of applied ethnoscience by Agung (2005), Ibui (2007), Leurs (2010), Djen Amar (2010), Ambaretnani (2012), Chirangi (2013), Aiglsperger (2014), Erwina (2019), Saefullah (2019); De Bekker (2020) and Febriyanti (2021), widens the perspective on culture and also permits the assessment of the cognitive and behavioural components of particular groups or communities as 'institutions' in a rather holistic mode, hence generating an important value relation towards policy making. The Multiple Regression Analysis of the blocks of variables gives an indication of which aspects further policies should be based on and developed, and at which point such policies should be concentrated to increase the probability of positively affecting the intended changes in the behaviour of the community, as well as in the provision of nursing services.

CHAPTER IV RESEARCH SETTING: INDONESIA AND SUMEDANG

4.1 Indonesia: A Country of Great Cultural Diversity

4.1.1 Geographical and Historical Background

Indonesia is located in the Southeast Asian Region and is an archipelago cluster extending from west to east. The westernmost part is Weh Island on the northwestern tip of Sumatra Island which is located at the position of 95° East Longitude and the easternmost part is the border line of Irian Jaya and Papua New Guinea which is 141° East Longitude. The northernmost area is Miangas Island in the Sangihe Islands which is at 6° North Latitude and the southernmost is Roti Island located at 11° South Latitude. Latitude describes the wide distance from north to south around 1,888 kilometres, and longitude describes the length of the stretch from west to east, which reaches approximately 5,110 kilometres. This stretch length is more than 1/8 around the world and exceeds the length of the distance between the east coast and the west coast of the United States. Geographically, the territory of the Republic of Indonesia is located between the Continents of Asia and Australia, and between the Indonesian and Pacific Oceans. The Geospatial Information Agency stated that Indonesia is one of the largest archipelagic countries in the world with as many as 16,056 islands registered in the United Nations in 2017, a land area of 1,916,862.2 km2 and water area of 3,257,483 km2. The series of the Indonesian archipelago which continues from Sang to Merauke stretches beautifully, with natural plants which were always green, emitting shining rays in the sun, so that the expanse of the Archipelago is also called the emerald strand of the equator (*Zamrud Khatulistiwa).*

The Indonesian archipelago group is divided into four major groups, namely: the Great Sundanese Islands consisting of Java, Sumatra, Kalimantan and Sulawesi. The Lesser Sunda Islands include: the islands of Bali and Nusa Tenggara, the Maluku Islands and Irian Jaya, and the surrounding islands. The total number of islands reaches 17,508 and not all islands have names. For Indonesia, the land and sea are a unified and inseparable entity. Seawater is a unity between one island and another; because of that, the Unitary State of the Republic of Indonesia is called *Ibu Pertiwi*, the Motherland (*cf.* Soemargono 1992).

The total land area of the Republic of Indonesia is 1,948,758 square kilometres, while the area of the sea is more than 5,000,000 square kilometres which includes inland seas in the Sunda and Sahul continental shelves with a calculation of 12 miles from the coastline. The area of seawater is then increased by the stipulation of the marine waters of the Exclusive Economic Zone (EEZ) area as wide as 200 miles from the base of the territorial sea to the free sea. This determination was confirmed according to Law No.5/1983 in accordance with the International Law of the Sea. Administratively, the territory of the Republic of Indonesia is divided into 34 provinces, 416 regencies and 98 cities, 7,201 sub-districts, 8,479 villages and 74,957 hamlets.

Natural conditions on the Indonesian islands show a variety of reliefs ranging from lowlands, highlands, bumpy, hilly, mountainous, hollow, steep slopes and others. Indonesia has two rows of mountains which are circular like arcs. It is in the Pacific Circum mountain range that there are a number of volcanic peaks or mountains and 128 volcanoes, approximately 30% of all volcanoes in the world. The mainland region of Indonesia is drained by around 809 rivers spread throughout the provincial level. Most of the rivers flow throughout the year. Indonesia's large islands have long large rivers which can be navigated far upstream. Small islands are fed by swift small rivers. The longest river in Indonesia is the Kapuas River (998 km) on the island of Borneo, while the lakes, both natural and artificial, are spread on a number of islands.

Indonesia's climate is included in the category of tropical climate with fairly high temperatures throughout the year, between 26°C to 30°C in lowland areas. In the highlands the temperature drops between 0.5°-0.6°C. There is no extreme temperature difference. The country has a large number of plant species which thrive and develop throughout the year. Of the 400,000 plant species in the world, most are dominated by flowering plants (Angiosperms) and forest areas in Indonesia have approximately 40,000 species.

Various types of flora in Indonesia can be divided into two major parts, namely plants which grow and develop in forest areas, and plants which are cultivated by the community. The types of plants which have been cultivated by the community and spread throughout the area include food crops, such as: rice, corn, cassava, sweet potatoes, types of vegetables, various types of flowers, fruits, wood species, bamboo, rubber, coconut, oil palm, coffee, sugar cane, etc.

In addition, various types of wood plants are found in the western and eastern regions. Indonesian fauna has an Asian pattern in the western region and an Australian pattern in the East, while in the middle, it is transitional. Nevertheless, the distribution of fauna is not the same between one island and another.

4.1.2 Socio-Demography of Indonesia

While the estimation of the population of Indonesia in 2017 amounted to 261,890,882 inhabitants, consisting of 131,579,184 males and 130,311,688 females, the recent estimations by the *Worldometer* of the United Nations (2022) amount to 278.361.672. The life expectancy at birth of both sexes is 71.10 years, the infant mortality, based on infant deaths per 1,000 live births is 17.6, and the deaths under age of 5 is 21.3 per 1,000 live births. The 2023 population density in Indonesia is 153 people per km2 (397 people per mi^2), calculated on a total land area of 1,811,570 km2 (699,451 sq. miles). Currently, 59.1 % of the population of Indonesia is urban (163,963,233 people in 2023).

As in 2022, the percentage of the population of Indonesia aged 65 years or older was around 6.86%, the share of the elderly population across Indonesia has gradually increased over the past decade (*cf.* Smeru 2022). Based on National Socioeconomic Survey (Susenas 2019) there are more than 25.7 million people, or 9.6 % of the total population aged 60 years and over in the country. According to the report of the Smeru Research Institute (2022), the number of elderly people in Indonesia is expected to increase by around 20 percent by 2024.

Java is the most populated region in Indonesia. The least population is in the eastern part of Indonesia, namely Maluku and Papua. Population density shows the average population per km2. The greater population density indicates that more and more residents inhabit the area.

The population density of Indonesia in 2022 was 143.73 people per km2, a 0.64% increase from 2021. The population density of Indonesia in 2021 was 142.82 people per km2 being an increase of 0.7% since 2020. Population density is useful as a reference in order to realise the even distribution of the population. In the context of equal distribution of the population, the government carries out several methods, including: 1) transmigration or a programme to move the population from a crowded place to a sparsely populated place; 2) equal employment opportunities by developing industries, especially for provinces outside Java; and 3) controlling the population by reducing the number of births through family planning programmes or delaying the age of the first marriage.

Important indicators related to population distribution by age are often used to determine population productivity, namely the Dependency Ratio. The Dependency Ratio is a number which states the comparison between the number of people who are unproductive (not productive/under 15 years of age, and no longer productive/age 65 and over) with people who are a productive age (aged 15-64 years). This number can be used as an indicator to show the economic situation of a country. The higher the percentage of the dependency ratio, the higher the burden on the productive population to pay for the lives of people who are not productive or no longer productive, while a lower percentage of the dependency ratio shows that there is a lower burden borne by productive people to finance the population which is not/no longer productive.

Economic conditions are an aspect measured to determine the success of a country's development. In 2022, gross domestic product expanded by 5.31%,due to the removal of COVID-19 restrictions as well as record-high exports driven by stronger commodity prices. The statistics show the growth in real GDP in Indonesia from between 2018 to 2022, with projections up until 2028. In 2022, Indonesia's real gross domestic product grew by around 5.31 percent compared to the previous year. It is due to the ongoing crisis in the global economy, although the recovery continues in various major economies of the world but at a pace which is not in line with expectations and is also uneven, aggravated by various structural problems in the domestic economy which have taken place in recent years. These structural problems include exports which are still dominated by natural resources-based products and food, while energy security is still low, financial markets are still shallow and dependence on external financing is increasing.

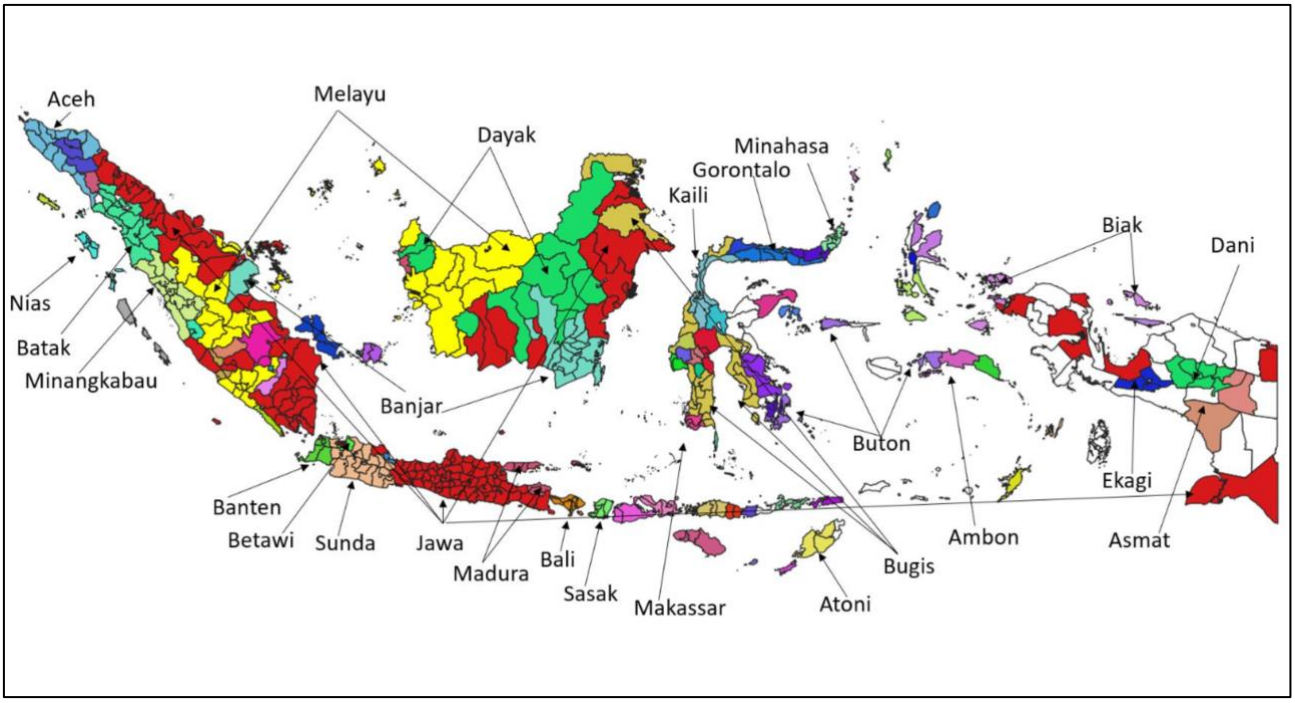
In 2022, Indonesia had an urban poverty line of approximately 552 thousand Indonesian rupiah per month, indicating a constant increase since 2013. The poverty line is the minimum amount of income needed for day to day necessities. The population as a determinant of development needs serious attention. Development programmes, including development in the health sector, have to be based on population dynamics. Development efforts in the health sector are reflected in health programmes through promotive, preventive, curative and rehabilitative efforts. Health care development is an effort to improve public health. Achieving optimal health status is not only the responsibility of the health sector, but other related sectors such as the education, economic, social and government sectors, which also play a significant role. Health is the right of all residents, so that health care development targets are set (*cf.* Pusdatin of the Indonesian Ministry of Health 2017). Population data for the target of health care development programmes is needed for programme managers, especially to develop planning and evaluation of the results of the achievement of the health efforts that have been implemented.

4.1.3 Cultural Diversity in Indonesia

Indonesia has more than 300 ethnic groups; more precisely, there are 1,340 ethnic groups in the country according to the 2020 BPS census. Any distribution of ethnic groups in Indonesia can be seen on Map 4.1. The Javanese are the largest group in Indonesia, reaching 41% of the total population, whereas in Kalimantan and Papua, there is a small population of only hundreds of people.

The division of ethnic groups in Indonesia is not absolute and unclear; this is the result of population movements, mixing of cultures, and mutual influence. The Sundanese people number 36,701,670 (15.5%), second only to the Javanese (40.22%) in 2020. The cultural diversity of various ethnic groups in Indonesia with each of their customs requires a special understanding of health workers so that there is no cultural disparity due to the provision of health services which do not meet the client's cultural needs. As Jovanovic (2012) states, cultural competence is very important for health service providers and has to be a core value for each institution or organisation.

Many young people born in the Sundanese region are very familiar with their culture. The entry of an unstoppable foreign culture has shifted one by one the Sundanese ancestral culture which is inherent in the Sundanese people’s self-image. This is one reason to restore the pride of the young generation to know and love and preserve Sundanese culture (*cf.* Sunarya 2012; Aryani 2015). ‘*Change is a necessity, there is no culture that does not change’* (*cf.* Soemardjo, 2011: 4).



Map 4.1 Map of the Location of Ethnic Groups in Indonesian
Source: Ethnography Room, National Museum of Indonesia, Jakarta (2018*)*.

There are two kinds of changes, namely changes in occidentalists and changes in orientalists. The occidental converter departs from the Sundanese people itself, which has existed since the ancestors of the Sundanese community in this region, and when dealing with foreign cultures, the modern West, they wanted to change towards it. The Sundanese will use western culture for Sundanese change. This means that Sunda judges the West in its own way because it is beneficial for its changes. Orientalist changes occur if the Sundanese use modern art to change Sundanese art. In general, rural communities are occidental. Modernity is an object of the Sundanese subject, rather than seeing Sunda as an object of modernity. However, Sundanese rural people continue to adhere to the cultural traditions of their ancestors.

4.2 The Province of West-Java: *Tanah Priangan*

4.2.1 Socio-geograhic Profile of West-Java Province

The West-Java Province is geographically located in the positions of 5°50'-7°50' South Latitude and 104°48'-108°48' East Longitude. It has an area of 3,710,061.32 hectares, where most of the area borders the sea so that West-Java has a long coastline, around 755.83 km. Like other regions in Indonesia, Jawa Barat Province has a tropical climate, with an average temperature between 17.4°-30.7°C, and air humidity between 73-84%. The lowest temperature of 9°C was recorded at the peak of Mount Pangrango and the highest temperature was 34°C in the north coast area. In October 2008, temperatures in West-Java reached 35°C for 3-4 weeks which were almost evenly experienced by all regions in West-Java. *BMKG* data states that throughout 2008, rain fell for 1-26 days each month with rainfall between 3.6-332.8 mm.

West-Java is drained by 40 watersheds with an area of 32,074.40 km2, 3,502 rivers and 6 river areas in 2 provincial authorities, namely Ciwulan-Cilaki and Cisadea-Cibareno. West-Java also has 706 reservoirs, with an area of about 18,355.43 ha and a water potential around 7,016,450,489.55 m3. The potential surface water in West-Java, both from rivers and reservoirs, is used by companies in West-Java. The population of West-Java Province in 2013 was estimated at 45,340,799 people, or a population increase of 792,368 people from the previous year (estimated results). The gender ratio is 102.99% (which means that of 100 females, there are 103 males). Of the 26 regencies/cities in West-

Java, there are five district/cities whose gender ratios are below 100, namely Tasikmalaya Regency (98.56), Ciamis Regency (98.12), *Majalengka* Regency (99.92), Sumedang Regency (99.59) and Banjar City (97.89). Based on the number of the population spread in West-Java in the district/city, it is very varied according to the characteristics of the area. Large populated regencies generally have large areas and are big towns supporting the city. The three regencies with large populations are *Bogor* (5,202,097), *Bandung* (3,405,475) and *Bekasi* (3,002,112), while the three regions with the smallest population are Banjar City (179,706), Cirebon City (301,728) and Sukabumi City (311,822). When viewed according to the density of its territory, the most densely populated area is Bandung, which houses 14,614 people per km2, then Cimahi City with a population density of 13,859 people per km2 and Bekasi City with 12,035 people per km2. Observing population data during 1971-2010, the population of West-Java Province continued to increase, originally being 21 million people in 1971 which doubled in 40 years to 43 million in 2010.

The data show that the Population Growth Rate (PGR) of West-Java Province is still relatively high. Despite the fact that the PGR of West-Java Province continued to decline, which was originally 2.66% per year in the period 1971-1980, it fell to 1.9% per year from 2000-2010. When compared to other provinces in Java, the West-Java PGR is still high; for example from 2000-2010, the Central Java PGR was 0.37% while in East Java it was 0.76%. Government efforts to improve public health continue to be carried out, for example by building health facilities and infrastructure. The number of health facilities in West-Java Province from year to year continues to increase; for example, hospitals in 2008 totaled 199 units, increasing in 2012 to 244 units; the number of health centers in 2008 amounted to 1,017 units, increasing to 1,045 units in 2011; and auxiliary health centers in 2011 amounted to 1,579 units, increasing by 63 units in 2008. The number of *posyandu* also continued to grow in 2011, amounting to 50,266 units, increasing significantly compared to 2008 which amounted to 46,231 units. With the increase in hospital health facilities, the ratio of hospital beds to the population dropped; in 2008 the ratio of hospital beds to the population was 1:1,980 compared to 1:1,652 in 2011. Besides health facilities which increased, the number of health workers continued to increase; general practitioners in 2008 were 1,570, which increased to 1,801 in 2011. Dentists who initially numbered 663 increased to 745 in 2011. Midwives who in 2008 amounted to 7,330 increased to 10,359 in 2011. Increased health facilities and medical personnel are expected to improve the health status of the people of West-Java.

Another encouraging indicator of health conditions in West-Java is the increasing percentage of deliveries assisted by medical personnel; in 2008, 74.34% of births were assisted by medical personnel, which increased to 87.20% in 2011. Cases of under-five malnourished children also continued to decrease; in the year 2008, there were still 1.02% of malnourished toddlers, which went down to 0.82% in 2011.

4.2.2 Historical Background of Tatar Sunda, Parahiyangan

The birth certificate of the Sundanese term of 458 saka (536 AD) is contained in the *Juru-Pangambat* inscription found in the Bogor area (*cf.* Darsa 2011). Sunarya (2012) explains that the term *Priangan* cannot be separated from the names of the Sundanese and West-Java. As stated by Ekadjati (2005:1): "*the Sundanese and West-Java status has now entered the life of the Indonesian people which points to the understanding of culture, ethnicity, geography, government administration, and society*". *Priangan* or *Parahiyangan* includes: Cianjur, Bandung, Sumedang, Limbangan (Garut), Sukapura (Tasikmalaya), and Galuh (Ciamis) (*cf.* Ekadjati 2004)

After the *Sunda* Kingdom collapsed (1579), it was divided into Sumedanglarang, Banten, Cirebon, and Galuh. Sumedanglarang and Galuh then became a region called *Priangan* (*cf.* Haan 1910, 1912 in Ekadjati 2004). The former territory of the Sunda Kingdom was called Tatar Sunda ('Sunda Land') or Pasundan (*cf.* Walbeehm 1857; Hageman 1867, 1869, 1870; Chijs 1886 in Ekajati 2005). In subsequent developments, *Priangan* was seen as the center of the Sunda Land (Pasoendan 1925). The boundaries of the provinces of West-Java and Central Java are the same as those set by Maratam and *Kompeni* (1706), with changes from Daendels. West-Java Province includes: Banten, Batavia

(Jakarta), Priangan (*Preanger-regentschappen*), and Cirebon (*cf.* Staatsblad no. 235 and 378 in 1925). At the beginning of the premiership of Governor-General Daendels, the Priangan Regency (*Cianjur, Bandung,* Sumedang, and *Parakanmuncang*) was combined with the Batavia region and was called *Jacatrasche en Preanger-Regentschappen*. Other Priangan areas, namely *Limbangan, Sukapura*, and *Galuh,* were entered into Cirebon.

The main basis for the division of the Priangan Regency was the preservation of the *Preangerstelsel* heritage of the Company, especially the mandatory planting of coffee, which was very beneficial for the colonials. Daendels separated the surplus coffee areas (*Cianjur, Bandung,* Sumedang and *Parakanmuncang*) with minus coffee areas (Limbangan, Sukapura, and Galuh). The last three areas are combined with Cirebon. During the reign of Lieutenant Raffles based on the provisions dated August 10, 1815 (1811-1816), the area was made into a residence called *Preangerlanden;* then the following year it became *Preanger-Regentschappen*. The number of districts in Priangan was reduced because Raffles with a decree dated February 16, 1813 abolished the Sukapura Regency. During the reign of the Commissioner General (1816-1830), in the Tatar Sunda Region there were changes in government. Priangan confirmed its status as a Residency. In this case, Limbangan and Sukapura returned their status as regencies. Thus, since that time the *Priangan* Residency consisted of four districts, namely: Cianjur, Bandung, Sumedang, and Limbangan. Since 1892 it has been determined that the private Resident is domiciled in Cianjur. In 1852 Resident Priangan Van Steinmetz stated that the Priangan area was open to foreigners. This policy was apparently intended to develop life in the Priangan Regency, which supported the interests of the colonial government, including the physical development and life of the regency cities.

One of the regency capitals which shows the development since the mid-19th century is the City of Bandung; Governor-General Charles Ferdinand Pahud submitted a proposal to the Government of the Kingdom of the Netherlands, so that the Capital City of Priangan was moved from Cianjur to Bandung (*cf.* Lubis *et al.* 2003 in Sunarya, 2012).

Based on sources from outside West-Java, in both Majapahit and Portuguese, the word Pajajaran was not found. These sources only mention Sundanese names. The authentic source of the Sundanese name or word comes from the Cibadak Inscription (Prasasti Cibadak) in 1030 in Sukabumi using letters, languages and ancient Javanese styles. The word Sunda is called three times in the form of *Prahajian Sunda,* and three times in the form of *Paduka Haji i Sunda*. In *Prasasti cibadak* there are four pieces with forty lines of sentences, but they never mentioned the Sundanese Kingdom. Thus, it is called the Sundanese Kingdom because the one who ruled it used the title of King, not because there is a 'King' word in the inscription. However, in that inscription the Sundanese King's name is very long, namely *Sri Jayabupati Jayamanahen Wisnumurti Samarawijaya Sakalabuana Mandaleswara-nindita Harogowardana Wikramotunggadewa* (*cf.* Danasasmita 2003).

According to Tome Pires in 1513, the East Sunda boundary was the *Cimanuk* River, which stretched westward into the territory of the Sundanese Kingdom. The city where the Sundanese Kingdom is located in a mountainous area is two days' walk from the *Sunda Kelapa* port in *Muara Ciliwung,* which means the area is *Pakuan Pajajaran*, located not far from the city of Bogor. The community has embraced Islam.

4.2.3 The Cultural Life of the Sundanese People

Indonesian society is divided into three communities, namely: *paddy* communities, *ladang* communities and coastal communities. West-Java is a farming community, while Central Java, East Java, and Bali are rice fields. Evidence for the Sundanese people being *huma* people is from the historical document of the colonial Dagregister period by De Haan in the four volumes of the book Priangan which states that in West-Java, the rice farming system was pioneered by Van Imhoff as an intensification of rice yields. In the Sumedang Regency, the first area to be converted into land was the Conggeang area, for which *pertanian* originated from Limbangan. Rice fields began to expand in West-Java in the middle, starting with Sultan Agung and Amangkurat I in *Karawang*. Then the *paddy* system was required by Governor General Baron Van Imhoff in the mid-eighteenth century.

The terms used by Sundanese farmers in plowing fields originate from that time, such as *ngawuluku*, and *ngagaru*. Generally, the Sundanese language is not used in rice fields but Javanese, such as: *kalen, mider, luput, arang, damping,* etc. This proves that paddy is mostly practiced in the area of Central Java and East Java. The second proof is the literature on *Carita Parahiangan* from the results of ancient literature of the Pajajaran era. In the story there is no term for farmers as *patani*, but farmers as *pahuma*. Other professions at that time were traders, tappers (sugar palm) and hunters (*panggerek, pamoro*). Third, there is a taboo on the *Baduy* people to rice fields or work on rice fields. Fourth, the term *huma* means literally a house, because in general they build houses in the fields, while the word *ladang* in Sundanese means results or rewards. *Ngahuma* (*berhuma)* is only for planting rice. In Sundanese it means modern oral documents in the Sundanese language, *huma* culture in Sundanese society. There is a saying: *Ulah sok pasea, bisi pajauh huma*: 'do not fight so that the fields are not far apart'.

The study of the history of the old Sundanese must not be separated from the problems of the order and building of the community. Researchers in the history of the Pajajaran and Sundanese generally do not pay much attention to this, so the size of Sundanese history is equated with ancient Javanese history, even though there are differences in the buildings of fields and rice fields. It can be seen from the various characteristics of the field community, which in general, have scattrered dwellings according to the fields they worked on, thus causing the character of the people who tended them to be individual, confident and independent. In addition, the people working in the field from morning to evening caused a lack of relations with neighbours, apart from the fact that the location of the houses was far apart, while ordinary paddy fields work until the time of *pecat sawed (*before midday). It has an effect on the development of Sundanese languages and literature, which tend to be densely filled, with no more decoration and additional words such as the Javanese caste. In addition, field people are not familiar with ancestral worship, so temples or tombs are rarely found, most only in the form of inscriptions. The tomb only uses the characteristics of the *hanjuang* tree instead of the tombstone. In addition, the farming community tends to move following the migration of the cultivated fields.

Planting rice in *ladang/huma* or rice fields (*sawah*) by the Sundanese is very closely related to the *Pohaci*, *Nyai Saripohaci* or *Dewi Sri* in West-Java as the queen guardian of rice plants. *Saripohaci* is a rice myth as a symbol of the goddess of fertility, a woman's beauty. For this reason, ritual offerings before carrying out rice farming activities are still valid today in West-Java. Rice is not only a staple food for Indonesians, but also for other important things, as a unifier of the user community. The birth of the perception of the rice myth teaches traditional values which refer to the means and place of the rice to grow, namely the soil itself. The values make land and rice a positive and relevant life guide for supporting the development and livelihood of the farmers themselves in matters of agricultural tradition, which contain the teachings of morality and manners. The teachings of morality are inherited by ancestors through the poem whose contents are sung with songs containing the values of prohibitions or taboos so that people in general find it easier to digest the message conveyed, even though this is often associated with a matter which leads to things occult or mystical things. An analysis of life views through *Pupuh Sri Dangdayang Tresna Pohaci's* speech according to his era concerns the view of human life as a person, the relationship between himself and his community, with his natural environment, with God, with outward progress and inner satisfaction.

The Sundanese tradition is spread in various Sundanese regions. Sundanese society uses the Sundanese language in daily conversation with *undak-usuk basa*; the level of language used is adjusted to the person spoken to. There are subtle languages: *basa lemes*, *loma*, and *basa kasar*. The tradition concerns the dynamics of culture which is adaptive to the social, natural and supernatural, and environment. This dynamic aspect shows that distribution and inheritance tend to be verbal, traditional in nature, because it repeats according to the provisions, and is anonymous but has a pattern, and is shared. This is the reason why in Sundanese society oral traditions are more widespread and more popular than written traditions, insofar as far as the sources of speech are still alive. The Sundanese community grew throughout its historical journey from the past until now in the framework of its *lemah cai* (homeland) which is now known as West-Java. In the course of their

history they experienced contact with the old culture, which also seemed to be used in Sundanese people's cultural life including in terms of treatment/maintaining health. As a cultural community group which is old and able to survive until now, presumably Sundanese people have their own views of life, with which they can live with independence in the midst of other communities and cultures. Of course, their view of life is not unchanged, but in addition to changing according to circumstances, there is also a fixed, unchanging nature. Thus, the views of the Sundanese people contain things which are both stable and dynamic. A clear picture of the life view of the Sundanese is important to digest, so that they can remain alive in its roots, but it is also important in the relationship of fostering and developing national culture which of course needs good values which have grown in the traditions of the people in Indonesia and later in the atmosphere of *Bhineka Tunggal Ika*; diversity becomes a part of the roots which strengthen national culture (*cf.* Budhisantoso *et al*. 1990).

Hajat or celebrations are a ritual or means to *Salameutan, tulak bala*, *nyalameutkeun,* to salvation. Celebrations are usually based on the phase of human life, ranging from pregnancy, four-months pregnancy, seven-months pregnancy, childbirth delivery, *ekah (aqiqah*), circumcision/*seupitan*, engagement, marriage, *ngunduh mantu*, etc. This activity is accompanied by getting together, to eat and pray together, led by elders, *kyai/ajengan*, *ustad* (religious scholar), traditional leaders, and community leaders. Traditional leaders (traditional practitioners) include: *kuncen (pakuncen)*, *paraji* (traditional birth attendant), and *wali puhun*. *Paraji* is sometimes called *indung beurang* or *dukun* (shaman). But *paraji* is usually associated with the settlement of a life crisis, while *dukun* is associated with the request to address the problems associated with the supernatural. *Paraji* and *dukun* are distinguished as: *Paraji papas* or *bidan* (midwives), *paraji sunat* (circumcision practitioner) who performs the circumcision, *dukun jampe* (the healer, shaman spell) and practitioners concerned with issues of romance and magical things, *dukun gaib* (magic shaman) which is concerned with the spirit and *dukun manis pahing*, the fortune forecaster.

According to Haji Moestapa, *paraji* is someone who knows the customs has an understanding of the magical (*aji, mantra, jampi*, spell). *Kuncen* are guards of the tomb. *Kuncen* is an expert in agriculture who also has the ability to communicate with spirits. *Wali puhun* is also called *punuh*. To become a traditional *adat* practitioner, you must have knowledge, which can be obtained by or derived from teachers, or learned. The higher the knowledge, the higher the status and the more you are respected. The knowledge consists of the power to make *jimat* or a talisman (amulet) which has a power derived from the owner of the knowledge itself. The traditional leader has a similar position as well as the position of the teacher with students. The teacher is called *Pak Haji, Bapak* (father) and *haji*, and the pilgrimage is a term for a person who has been conducting worship to Mecca. Someone who has a high knowledge is called a *jago* (master). To be able to get a *jimat* (amulet), someone has to perform ritual *tapa*, hermitage or meditation, secluded under the *beringin* tree (banyan tree) for three to seven days, or in a sacred place such as in the tomb. An amulet suddenly appears and will have great power *(cf.* Wessing 1978).

There are several festivals in the Islamic community users, including *Muludan* or *Mulud*, the third month in the Islamic calendar; Ramadan fasting, the ninth month of the Islamic year; and holiday or pilgrimage Dzulhijjah, the 12th month of the Islamic year. There is a celebration in honor of the birth of the Prophet Muhammad. The people in Sumedang in this month hold several rituals, including the ritual washing of heirloom tools, commonly referred to as *turun jimat* or a talisman ritual, *ngamuludkeun pakarang. Pakarang* is a weapon, such as *bedog* (machetes), swords, guns, especially Sundanese weapons called *kujang*, like a cleaver. *Kujang* is similar to a dagger (*keris*) in the Java community. The ceremony of *turun jimat*, the talisman ritual done by prayers before the amulets or the inheritance is washed prior to then being placed in a tray and covered with a white cloth, is seen in Illustation 4.1.

The tray is then placed in the middle of a circle of people who pray and make wishes. The prestige of prayer will be recorded as a fetish or a relic, so heirloom weapons will have more power than ever before. Similarly, the water in the bowl has the effect of prayer and can be used to treat people who are sick. Celebrations in the Sundanese life cycle have been documented by Wessing (1978) and Hastoapa (1996):

- *Pregnancy* (*reuneuh)*: *Tingkeuban* is the ceremony of the seven months of pregnancy. In this ritual people make wishes, to recite a prayer for salvation, because at the time of pregnancy a lot of taboos or restrictions could affect the condition of the fetus. The father of the baby is not allowed to hunt or kill animals, because people believe that it can cause imperfections or defects in the fetus or the baby will be born such as those hunted animals. In the event of seven months of pregnancy (*tujuh bulanan*) usually the family makes *nasi tumpeng,* meals in the form of a cone or yellow rice in a conical shape with a round 'seven' of food, including; seven kinds of salted fish, seven types of fruits, and seven types of vegetables. This ritual is usually led by *paraji* or *indung beurang* (traditional birth attendant). Then pregnant women bathe with water from seven wells and seven types of flowers. After the bath ritual, a pregnant woman is given a saroong to cover her body and an eel is dropped into the sarong, which are believed to be a symbol for a smooth delivery likened to the slipperiness of an eel. Then the oil is applied among the legs up to the shoulder, where the coconut symbolizes the baby's head. The ritual is performed seven times in a row using seven different saroong. Next is the *rujak* trading ritual, which is processed from seven kinds of fruits which were provided before.

Illustration 4.1 Ceremony of *Turun Jimat* ('Ritual of the Talisman')
Photography by R.D. Susanti (2018).

- *Childbirth*: Sundanese people believe that sometimes there are *kuntianak* (ghosts) which resemble *paraji* and enter the house of a mother who will give birth and they will cause disaster. To prevent this, rituals are used to prevent *kuntianak* by preparing sharp metal, such as knives, nail clippers, and safety pins for expectant mothers giving birth in the last month before giving birth. Likewise some plants, such as: *Panglay (Zingiber zerumbet Rosc*. or *Zingiber cassumunar* Roxb.), *Jaringao (Acorus calamus* L.), *Salam*, bay leaves (*Eugenia polyantha* Wight), and Paliyas grass (*Pogonatherum paniceum* Hack) are also prepared. All the leaves are stored near where the prospective mother will give birth. *Panglay, jaringao,* and *paliyas* are often used to fortify themselves from something evil or disease, whereas *salam* symbolises *salamet* or safe. After the baby is born, *adzan* is recited to the baby by the father. Giving baby names according to the Sundanese alphabetic has a certain meaning which must be considered.

- *Circumcision*: *Hajat sunat, seupitan,* or circumcision for boys and *gusaran,* exasperation for girls, is a ritual performed by circumcision practitioners. Furthermore, if their parents can afford it, they buy new clothes for their children, cut goats or chickens to defend, make cakes, and display various artistic attractions such as *pertunjukan wayang golek* (puppet shows) and *pencak silat.* Sumedang is famous for the art of *Kuda Renggong*, the dancing horse (*cf.* Illustration 4.2), while in Subang, it is

in the form of *Sisingaan* art (*cf*. Saefullah 2019). A few days before the celebration, usually the neighbours come to send rice or donations in the form of money. Then the rice container is refilled by food provided by the circumcised bride. Even in organising the celebration, *Gintingan* or *Gantang* activities are still valid as mutual cooperation efforts to help families who will hold the celebration (*cf.* Saefullah 2019). All food and rice prepared is kept in a *goah* ('special room') guarded by a woman, known as *candoli* or *canoli*. Usually this woman is also called a shaman or *sholehah*, a saint because she can interact with the supernatural from the cave room. Sometimes when boys from disadvantaged families cannot carry out circumcision, three boys are circumcised at one time by a family member. But the Sundanese have a fear of *Pamali Nungku* ('Taboo against Triangles'), which can cause bad luck to the three boys.

Illustration 4.2 Circumsiced Bride Celebration by Riding *Kuda Renggong*
Photography by R.D. Susanti (2018).

- *Marriage:* For Sundanese people, marriage is a sacred ceremony, so it has to be done at the right time (on a good day) so that the marriage lasts. Not everyone can look for a good day to carry out the marriage because it implies abstinence and other requirements, namely *tapa*, hermitage, not eating and drinking and not sleeping in a certain period of time, usually for 40 days, which is called *pati geni.* In addition to good days, there are also bad days or moon prohibitions where a person cannot travel on the prohibition of the month.

- *Death*: Death ceremonies are also important in the life of Sundanese people. Following the day of an individual's death, the third, seventh, fortieth, hundredth day and even the thousandth day after death will be commemorated with a ceremony.

The ceremony is carried out to eliminate the negative effects which could disrupt the overall life balance of the community. Sundanese people still believe in the existence of supernatural powers which can exert good or bad influence on humans. In carrying out the ceremony, it is usually led by a shaman or *kyai,* elders, community leaders who have magical powers.

4.3 Sumedang: The Center of West Javanese Cultural Heritage

4.3.1 Geographical and Historical Background of Sumedang

The Sumedang Regency is located about 45 km northeast of Bandung city with 6051'35 Ls coordinates, 107055'15 'Bt with a total area of 155,871, 98 ha consisting of 26 sub-districts, 270 villages (previously 276), and 7 sub-districts. Sumedang Regency administratively borders: Indramayu Regency on the north, Garut Regency on the south, Majalengka Regency on the east, and West-Bandung Regency and Subang Regency on the west. The surface shape of Sumedang Regency is very varied, ranging from flat surfaces to mountain slopes/altitude conditions, stretching from the west, north, south and east, which are increasingly sloping, *i.e.* some of *Tomo*, *Ujungjaya*, and *Buahdua* Districts (25-100.0 meters asl); most of the Districts of North Sumedang, Situraja, Darmaraja, Wado, Jatigede, Conggeang, Paseh, Tanjungkerta and Buahdua (101-500 m asl); most of the districts of Jatinangor, Cimanggung, Tanjungsari, Rancakalong, Sumedang Selatan, Cibugel, and Cimalaka (501 meters asl), and parts of Wado, Tanjungkerta, Sumedang Utara, Situraja and Darmaraja Districts.

Sumedang has a glorious history. Sumedang with the *Sumedanglarang* Kingdom was once the successor to the Sunda Kingdom of *Pajajaran* when it was led by Prabu Siliwangi, who was subsequently led by *Prabu Geusan Ulun* until it was passed on by Regents from the aristocratic class. As Ishak (2015) states, the *Sumedanglarang* Kingdom prevailed in *Tanah Parahiyangan* after the collapse of the Sunda Kingdom or the *Pajajaran* Kingdom in 1580. During the glory of the *Pajajaran* Kingdom or the Sunda Kingdom, the *Sumedanglarang* Kingdom was a regional kingdom or vassal kingdom under the greatness of the *Pajajaran* Kingdom.

Illustration 4.3 *Siger* and *Mahkota Binokasih* (‘Binokasih Crowns’)
Source: Prabu Geusan Ulun Museum (2017).

When the *Pajajaran* Kingdom collapsed and there was an attack from the Sultanate of Banten which was an Islamic sultanate, the *Sumedanglarang* Kingdom became the successor to the *Pajajaran* Kingdom. The symbolic transfer of power came with the surrender of *Mahkota Binokasih* (*Binokasih* Crown) from the *Pajajaran* Kingdom to the *Sumedanglarang* Kingdom through *Prabu Geusan Ulun*. The crown is still kept in the *Prabu Geusan Ulun* Museum, Sumedang Regency and the *Binokasih* crown is now enshrined in the form of a monument at the roundabout in the city center of Sumedang (*cf.* Illustrations 4.3 and 4.4).

The *Sumedanglarang* Kingdom, which was the successor to the *Pajajaran* Kingdom, was the target of the next *Banten* Sultanate attack. The territory of the *Sumedanglarang* Kingdom during the reign of *Prabu Geusan Ulun* covered the entire Tatar Sunda Region of the former *Pajajaran* Kingdom, namely all of West-Java, except *Banten, Cirebon* and *Jayakarta* (*Batavia*), which can be seen on Map 4.2. Then *Karawang, Indramayu, Ciasem* and *Pamanukan* escaped so that the territory of the *Sumedanglarang* Kingdom was reduced.

Illustration 4.4 Monument of *Mahkota Binokasih* in Sumedang
Photography by R.D. Susanti (2017).

According to Ekajati (2015), at the end of the 16th Century AD (1579), the Sundanese kingdom, which had a pattern of longing collapsed, resulting in the fading of the ideology of delays in its society (the values of delays have been formed since the 8th century). The entry of Islam came at the end of the 15th century through the coast of *Cirebon* and *Banten*, then the entry of Javanese culture (*Mataram*) through the eastern interior.

In the mid-17th century the Dutch controlled the Sunda Land. Sundanese people accepted Islam and Javanese culture openly, as well as the influx of foreign influences, so there is the term in Sundanese: *jati kasilih ku junti* ,which means the natives are pressured by migrants. Nevertheless, it turns out that ethics and Islamic teachings are in line with the belief system of Sundanese people who believe in *Batara Tunggal*, as well as *Allahu ahad* (Allah Almighty).

Oral and written traditions became the guidelines of Sundanese life during the Sunda Kingdom, partly as stipulated in two old Sundanese literary and literary texts entitled *Sanghiyang Siksakandang Karesian* and *Amanah Galunggung* (*cf.* Atja & Danasasmita 1981).

Map 4.2 Map of the *Sumedanglarang* Kingdom
Source: Yayasan Pangeran Sumedang (2015).

Islam was finally accepted overall and animated the Sundanese culture afterwards, except the *Kanekes* (*Baduy*) people in the interior of Banten who still maintain their belief system. Javanese culture entered through the prijajis in the Sunda Land, benefitting these groups in maintaining their position in the management of government.

So at the time of the entry of the Dutch Colonial, the influence of Javanese culture was allowed to continue to live in the Tatar Sunda Region ('Land of Sunda') as it was beneficial for the exploitation of this area. With the strong influence of foreign culture, this resulted in the marginalization of the use of Sundanese script and replaced with *Cacarakan (Carakan*) from Javanese script, Pegon script from Arabic script and Latin script from European culture. Likewise in language, the inclusion of a truly base-upload system (level of language) in the Javanese palace into the Sundanese district pavilion (basement steps) complete with *tatakrama* spread through Western system schools, thereby strengthening the feudal system in Sundanese society.

Likewise, the Sundanese tradition of working on agricultural land using a system of cultivation of dry land (*huma*, fields) turned into a system of rice fields through the migration of residents from the *Indramayu*, *Cirebon* and *Tegal* (Central Java) regions to the swampy Bandung plains in the 19th century. The Javanese who settled in the Land of Sunda were culturally integrated so that their social culture blended into Sundanese social culture in the 20th century.

4.3.2 The Socio-Demography of Sumedang

The population of the Sumedang Regency as of September 2012 was 1,239,736 people. With a population density of around 699 people per km2, the population distribution in the Sumedang Regency was almost evenly distributed in several sub-districts and the lowest was in Surian District. It is estimated that each year there is an increase in population of 4.38%. The livelihood of its population is concentrated in the agricultural sector as much as 43, 85%. The agricultural sector is still the mainstay sector with employment absorption of 27.79%. However, the percentage has decreased from the previous year, while the industrial sector and other sectors have increased from the previous year: the trade sector as much as 38,52%, the industrial sector as much as 17,10% and the financial sector as much as 0.53%. This condition shows a shift in the business field in the past year in Sumedang. The rate of population growth in the Sumedang Regency over the past two years

was 0.57% per year. The highest growth rate occurred in Sumedang Utara District at 1.26%, while the other three highest sub-districts are Pamulihan, Sukasari, and Tanjungsari Sub-districts with their respective population growth rates of 1.20%, 1.06% and 0.70%.

The average population density of the Sumedang Regency reaches 743 people per km2. The density level is quite varied in each sub-district. The district with the highest density is Jatinangor Subdistrict, which is 4,270.5 people per km2, while the lowest is Jatigede Sub-district, which is 214.2 people per km2 . Six sub-districts with the largest number of people in a row are Jatinangor which is 9.89%, followed by Sumedang 8.34%, *Cimanggung* 7.30%, *Tanjungsari* 7.01%, Sumedang Selatan 6.76% and Cimakala 5.18%. The gender ratio of the population of the Sumedang Regency is 99.48. In other words, for every 1,000 women, there are 995 men. The highest gender ratio is in Sukasari District, which is equal to 104.6 and the smallest in Sumedang Utara District, which is 91.67.

The availability of health facilities is a very important factor in efforts to improve public health. The hospitals available in the Sumedang Regency to date have two units, namely the Sumedang General Hospital and Pakuwon General Hospital. The number of health centers which have a place of care (in-patient care) are available for six units, while there are 26 health centers which do not have in-patient care. These facilities are already available in each sub-district which is very useful for the basic health services of the Sumedang community. In addition, to reach several community locations which have problems in terms of access to these health facilities, the Government has also built 74 Auxiliary Health Centers. Based on the health profile of Sumedang, in 2016 it showed that the number of outpatient cases in Pakuwon General Hospital was higher than the number of in-patient cases. This shows that the number of cases referred to Pakuwon General Hospital is still quite good and they can still be treated on an outpatient basis.

For the distribution of health and non-health personnel in 2016 in Sumedang, most were in the *puskesmas,* spread in 35 *puskesmas* and hospitals, where the personnel in this hospital came from the Sumedang Regency, Pakuwon Hospital and Harapan Keluarga Hospital (newly established at the end of 2016). While supporting staff, in this case health assistants and administrative support, are mostly in private health facilities, as many as 188 people are spread across clinics, pharmacies and independent practices of health workers. The highest number of health workers is 768 nurses where the distribution of nurses is greatest in hospitals, but health workers are still rare or even lacking in staff. The data for the above-mentuoned health workers is the result of the addition of civil servants and non-civil servants both working in *puskesmas*, Regional General Hospital, Pakuwon Hospital, Harapan Keluarga Hospital and private health facilities such as clinics and independent practices of health workers.The contribution of the health sector to the increase in the Community Development Index is strongly influenced by the life expectancy rate, which is very closely related to the Infant Mortality Rate (IMR) and maternal mortality rate (MMR).

The tendency of long-lived and healthy population expectations is measured by the Life Expectancy Rate at birth. Life expectancy at birth has a very close correlation with infant mortality or the infant mortality rate (IMR). Then the IMR is also influenced by the examination and care of pregnancy, childbirth assistance, neonatal care and infant nutritional status (0-11 months). Life expectancy in the Sumedang Regency has increased, indicating success to 68.54 years in 2015. Several health programmes have been implemented by the Sumedang Regency, including the reduction in the number of infant deaths, the number of maternal deaths, and the decrease in the prevalence of malnutrition in under-fives. Health problems are expressed in terms of morbidity and mortality. Health is an important element in the welfare of life, in individuals, groups and communities. Changes in health problems which occur in the community in general are illustrated by changes in the disease pattern and number of disease cases recorded and observed in health facilities in the form of numbers and data, so that it is good enough to be used as material for measuring the degree of public health itself. As a general description, the morbidity rate in Sumedang in 2016 can be obtained through data on the top ten diseases based on the total number of patient visits, coming to 35 *puskesmas* in the Sumedang Regency. From the data source of the *Puskesmas* Recording and Reporting System, it can be seen that the top ten diseases in the Sumedang Regency in 2016 were myalgia with the biggest percentage of 10.10% in the top 10 diseases. Myalgia is a pain which appears

on the muscles, a common condition, and can occur in everyone. Commonly caused by muscle tension, it is usually associated with the level of tension, too much activity or injury from sports and or work. Myalgia is a symptom of an illness; to overcome it a person should rest and take painkillers.

An overview of non-communicable diseases in *puskesmas* based on the system of recording and reporting of *puskesmas* in 2016 reported to the section on control and prevention of non-communicable diseases (P2PTM) to detect risk factors for hypertension, obesity, diabetes mellitus, detection of uterine cancer, sensory health and mental health. The P2PTM Section has 44 *Posbindu* PTM (Integrated Development Post Control of Non-Communicable Diseases) in villages with 165 cadres. The number of patients who were tested for blood pressure was 515.619, while 76.632 or 14.86% were diagnosed with hypertension. This coverage was also not optimal because there were still a number of health centers which did not report the results of hypertension coverage, but it is not guaranteed that hypertension cases do not exist *(cf.* Health Profile of Sumedang 2016).

4.3.3 The Center of West Javanese Cultural Heritage

Sumedang ordained itself as the center of cultural and artistic civilization called the Sumedang *Puseur Budaya Sunda* (Sundanese Cultural Heritage Center). This can be seen from three unique traditions which exist in the Sumedang Regency with various kinds of traditions, such as the traditions of the Darmaraja indigenous people, the traditions of the Rancakalong indigenous people, and the variety of customs and traditions of the Ujung Jaya people. Each tradition has its own characteristics according to its historical background. In traditional societies in the Tatar Sunda Region, religion has become the belief of the people, but that does not mean that people take their faith for granted. Their religion is often influenced by local beliefs.

Thus, sometimes religion is treated as culture, so that religion appears as a group belief, not as stated in the book of religion (*cf.* Ishak 2015).

Illustration 4.5 *Pencak Silat*, Martial Art Performance
Photography by R.D. Susanti (2017).

Illustration 4.6 *Kuda Renggong* ('Dancing Horse'), A Typical Sumedang Art Performance Photography by R.D. Susanti (2017)

The existence of indigenous people in Sumedang from royal tradition and wisdom documents a distinctive cultural aspect of the culture, norms, and ethical government in treating the natural environment, the earth, respect for nature, and society, but also influenced by politics at that time Some rituals are sacred traditions, the procession of flags, *ngabungbang,* the display charm *Muludan, mapag sri, ngaleuksa, jentreng, jangkar alam seni ajeng*, art tradition *ampih pare, seni olah kalimat Poyok Ungkal*. These rituals also influence the subsequent life cycle of Sundanese people, such as various traditional ceremonies at marriage, after marriage, rituals to enter the house to settle, during pregnancy, childbirth, the process of raising children from the ground down, cutting hair, circumcision, until they become adults and die until a thousand days after death. The Sumedang people carry out traditional arts in their customs by developing cultural values which contain such rich literary arts, song art, performing arts such as *pencak silat, kuda renggong*, and *sundanese* dance, *wayang* or puppet shows, *gamelan* music, and oral and written literature.

The Sundanese literary form in Sumedang is in the form of *pantun* or *wawacan* stories, which are usually intermittent and rhythmic poems which tell stories of Sundanese ancestors who are sung with the accompaniment of harp music instruments, for example *Wawacan Nurbuat, Wawacan Gandasari, Wawacan Anling Darma,* and *Wawacan Budak Hideung*. *Kitab Waruga Jagad* which contains cultural values is colored by Hindu and Islamic traditions. In addition, there are also literary works which talk about Sundanese figures in the *Babad Siliwangi, Nyi Pohaci Sanghyang Sri, Mundinglaya in Kusumah* (*cf.* Ishak 2015; Sumardjo 2013). Literature and history were written by Sumedang's men/*priyayi*, including the *Pancakaki* book by Raden Adipati Suryalaga, and *Babad* Sumedang by R.A.A Martanegara. It proves that the Sumedang Regency is one of the major centers of literature and history in the land of *Priangan* since the past and is still saved in the Museum of *Prabu Geusan Ulun,* Sumedang Regency.

In addition, there are also literary works in oral or spoken form commonly referred to as incantations, namely *mantra, jampe* or *jangjawokan*. *Jangjawokan* or *jampe* is a spell poem in Sundanese literature, also called *ajimantra,* which is taken from the ancient Sundanese script *Siksa Kandang Karesian* (*cf.* RS *et al.* 2012; Sumardjo 2013; Wibisana 2000). Rusyana (1970) mentions incantation poetry of many kinds, such as: *asihan,* kinasihan (compassion), *kemat, pelet, gendam, jangjawokan, ajian, singlar, rajah, jampe, pamake, teluh, pangabaran, piwurungan, wisaya*, which all include magical poetry. It is said to be "*magical because it contains elements related to the order of beliefs of people, which ultimately come to the belief that the power and authority of supernatural beings can be utilized by humans for the purposes they want in certain ways; i.e. reciting the spell*

and all its provisions "(*cf.* Wibisana *et al*. 2000: 272). *Jangjawokan* is a mystical spell poetry group, a sacred ritual in Sundanese society, which has different functions and roles according to other types of oral literature and its existence is parallel to the system of the beliefs held by the Sundanese people from time immemorial before the entry of Islam to the present, even though they are fading away. The entry of Islamic teachings into the Tatar Sunda Region does not necessarily undermine the beliefs of Sundanese people which have existed since time immemorial but instead Sundanese traditions and customs are in sync with Islamic teachings which have developed, so that the vocabulary in *jangjawokan* includes Arabic vocabulary or Islamic sentences. *Jangjawokan* plays a role in daily life, both for worldly affairs and eternal life. The ancient Sundanese people believed in supernatural forces that influenced human survival. Because of that, among other things, they deal with these magical powers by means of prescribed ways through the arrangement of words in the form of *jangjawokan;* in almost all orders of life, they have rituals or ceremonies which have to be carried out to seek safety and prosperity, including in terms of *atikan* (teaching), the cycle of human life (pregnancy, circumcision, marriage, death), agriculture, and astrology (*cf.* Has toapa 1996).

Illustration 4.7 *Upacara Kirab Panji Keraton* (‘Parade of Kingdom Flags Ritual’)
Photography by R.D. Susanti (2017).

The Sumedang indigenous people carry on a very diverse hereditary tradition in the form of traditional ceremonies which are also an artistic tradition. Historical sites become places which are visited by many people. The emergence of Islam in the Tatar Sunda Region is more easily accepted because it gives more convenience to prospective adherents with the similarity in practice, being closer to nature and prioritizing the contents of ritual worship which is centered on attitudes and behaviour.

In addition, the spread of Islam is carried out through traditional arts such as: puppets, performing arts and keeping on using existing terms (fasting, prayer, *netepan, surga, naraka*, koran, teacher, etc.), so that it is easily understood by the public. Only the contents and meaning are adjusted to the teachings of Islam. The Sundanese are obedient, carrying out religious obligations, but many people living in rural areas still go to the holy grave to make "*kaul*” (vows) or submit requests and blessings before they carry out the ritual, such as parties, trips or starting a business.

Beliefs in myths and religious teachings are often overwhelmed by magical powers, especially when carrying out traditions such as building houses, planting rice, and making vows, which are not elements of Islam. Sundanese farmers strongly believe in the myth of *Nyi Pohaci Sanghyang Sri* who played a role in rice planting activities.

Myths and daily activities or traditional ceremonies are believed to be something which is alive, which must maintained and believed to be able to provide a lot of good, so that people in carrying out their diverse lives are always influenced by traditions handed down from their ancestors as well as in terms of health and treatment of disease. The assumption is seen from modern life that belief in myths seems to have denied the logic of scientific knowledge.

CHAPTER V LIFE IN THE COMMUNITIES OF SUMEDANG

5.1 The Study Population and Sample Survey

5.1.1 The Study Population in Sumedang

Following the previous Chapter IV, providing a general description of Sumedang as a district/municipality in the West-Java Province, Indonesia, where the research was conducted, this Chapter presents the description of the sample surveys representing daily life in four research communities in the Sumedang Regency. It briefly presents an overview of the characteristics of the population and samples related to geographic, sociodemographic and socio-economic data. In addition, the results of general data collection related to the availability of the plural nursing systems will be presented, which are differentiated into traditional nursing institutions, and the transitional and modern nursing organisations by respondents in the four research areas, particulary of elderly who have CVD in Sumedang.

This Chapter also describes the results of both the qualitative and quantitative research in the four sample *desa/kampung/kelurahan* ('villages') in different *kecamatan* ('sub-districts') of the Sumedang Regency.

In the research the term regency preferred to *kabupaten* or district and municipality, underscoring its administrative-geographical location in West-Java. The section also describes how the sample survey villages were selected for the execution of complementary qualitative fieldwork as well as the household surveys.

5.1.2 The Sample Surveys of the Four Villages

The study was conducted in the four sample villages of the Sumedang Regency. Based on the preliminary study, the researcher decided to do the field work in the areas which were representing the division of the geographic location, in which the local government of Sumedang has made its development plans and policies. Table 5.1 contains a brief description of the village samples.

Table 5.1 Village Samples of the Surveys in the Sumedang Regency of West-Java

No.	Geographic area	Social Structure of the village	Village name	Zonation
1.	South	Rural	Jayamekar	Mountainous/Highland
2.	South	Rural	Cipasang	Mountainous/Highland
3.	Middle	Urban	Situ	Flat/Lowland
4.	Middle	Rural	Jatimulya	Mountainous/Highland

Source: Fieldwork (2017-2018).

5.2 Characteristics of the Four Selected Villages

5.2.1 Geographic, Socio-Demographic and Socio-Economic Characteristics

The two research areas of Jayamekar and Cipasang are located in the administrative area of Cibugel Sub-district, Sumedang Regency. A general description follows of Cibugel Sub-district which is one of the 26 sub-districts in the Sumedang Regency, located in the east of the Sumedang Regency with a distance of 60 kilometres from the Regency Capital with boundaries bordered on the east by Darmaraja Sub-district, on the south by the *Garut* Regency, on the west by South Sumedang Sub-district, and on the north by Wado Sub-district. Administratively, Cibugel Sub-district consists of 7 villages with an area of 49.05 square kilometres; the height of the region is in the range of 571 to 979 meters asl, with flat and hilly land surface conditions.

Agricultural activities in the Cibugel District Area are divided into two major parts, namely agriculture on paddy fields with an area of about 7.14 square kilometres and cultivation (dryland agriculture) covering an area of 20.02 square kilometres.

The location of *Cibugel* Sub-district is the outermost point of the Sumedang Regency because it is bordered by the Garut Regency. This condition affects the socio-economic and social life of the Cibugel Sub-district because it increases interaction between residents in one district, and it also interacts with residents of other regency areas with a different pattern of policies and programmes. Based on the profile of Cibugel Sub-district (2014), the total population of Cibugel Sub-district is 27,273 people consisting of 14,093 men and 13,180 women. The number of households in the Cibugel Area is 8,284 households, divided into 141 hamlets and 31 *RW*, with an average number of 3-4 family members per household. The population density of *Cibugel* Sub-district is 490.14/square kilometres with the highest ratio found in Buanamekar at 1,062/square kilometres and the lowest ratio in Jayamekar with 339.81/square kilometres. In general, the livelihoods of the population of Cibugel District are in the agricultural sector with a total of 7,915 people, 772 in industry, 486 in construction, 1,362 in trade, 892 in transportation and 1,437 in services.

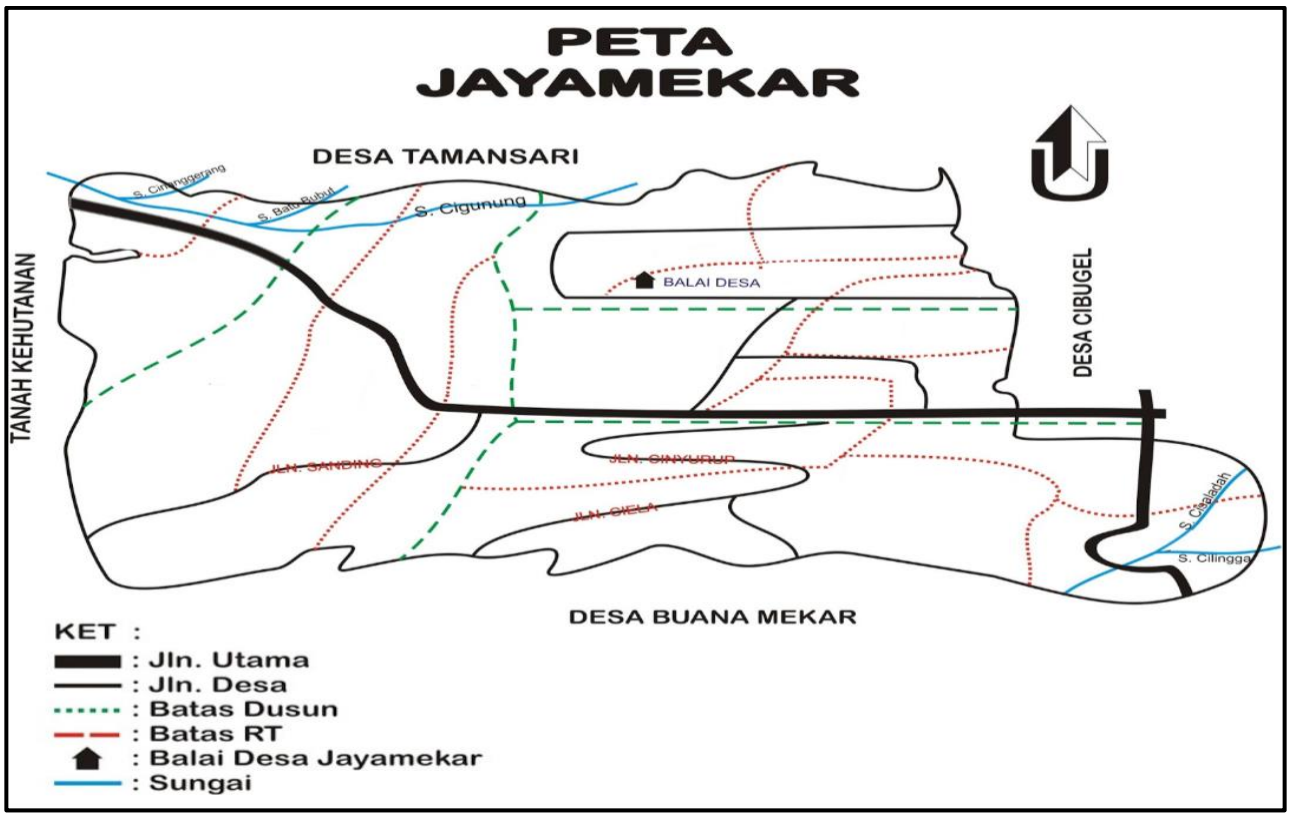
In the health sector, based on data from the *puskesmas* team review in the field and based on reports in which the percentage of healthy households is 85% (an increase from the previous year of 81.15%), the remaining 25% is still categorized as unhealthy, and this continues to be monitored and facilitated through programmes and coaching in an integrated manner by the relevant service/agency/institution. The programme launched in overcoming this problem is in the form of socialization and guidance on *Perilaku Hidup Bersih dan Sehat (PHBS),* Clean and Healthy Lifestyle, *Desa Siaga* development, Housing Sanitation Assistance and others. Development activities in the health sector in the *Cibugel* District are driven by the *puskesmas* assisted by two Sub-district Health Centers, Community Health Centers located in the Capital Districts, for Sub-district Health Centers located in Cipasang and Sukaraja. Handling of health problems is carried out by medical and paramedic staff, medical treatment is carried out in *puskesmas* and clinics, while community services at the village level are assisted by medical staff with a total of 13 people spread across seven villages in Cibugel District.

The community empowerment movement in the field of health is assisted by health cadres (*Posyandu* cadres and PKK cadres) which are summarized in the Integrated Service Post; these cadres are the stakeholders of the related working partners/agencies/institutions. The number of *Posyandu* units in the *Cibugel* District area is 25 *Posyandu* units and those who have entered the Purnama category are eight *Posyandu* units or 32%, with a total of 150 cadres. The number of poor family heads in the Cibugel District area is 1,543 people, with the largest number of poor people in Cipasang, as many as 270 people, and the smallest number in Jayamekar is 134 people. Poverty can be seen from indicators of meeting basic needs which have not been adequate/feasible. The basic needs include food, clothing, housing, health, education, and transportation. As regards community empowerment activities to enable the independence of the community, especially from poverty and backwardness/inequality/powerlessness through the initial strategy adopted, this is in the form of climate and atmosphere creation which supports the development of community potential and resources. The activities are carried out in the form of the preparation of input to the regulatory plan and adjustments to the rules in favor of the community. In this way, gradually, the potential which exists in society develops and becomes a strength to stand up and build itself. Empowering means protecting. In the process of empowerment, the weak have to be prevented from becoming weaker, because of the lack of empowerment in the face of the strong. Protection and partiality for the weak is very basic in the concept of community empowerment. Protecting does not mean isolating or covering up from interaction, because that would actually dwarf the small and overturn the weak. Protecting has to be seen as an effort to prevent unbalanced competition. The main strategies developed in community empowerment in *Cibugel* District are implemented through two main approaches, namely: facilitating the improvement of the quality of human resources, and facilitating the quality of the carrying capacity of facilities and infrastructure.

In an economic capacity, the agricultural sector is the core business of the specific District of *Cibugel* Sub-District. Other agricultural production in addition to rice is in the form of palawija and vegetables which are produced in the villages of the Cibugel District Area. The main agricultural commodities in *Cibugel* District are corn and cassava agricultural products. Annual corn maize production reaches 11,444 tons with an area of 2,267 hectares; the largest harvest of hybrid corn is in Cipasang with an area of 483 hectares with a total production of 2,537, while Cassava production per year is 22,752 tons with a harvest area of 1,373 hectares. The biggest harvest of cassava is in Cipasang with a harvest area of 407 hectares and a total production of 6,802 tons. The dominant commodity in paddy fields is paddy with the largest paddy center in Sukaraja while the smallest is Jayamandiri. The average rice production per hectare is 70.35 tons per hectare with the largest rice producer in Buanamekar with a production of 927 tons/year and the smallest is Jayamekar at 512 tons/year.

The following describes the characteristics of each study area, namely Jayamekar and Cipasang. There, agricultural products for large production are marketed to the Main Market outside the Sumedang Regency, while some are marketed at the local market. Production marketing transactions for large parties usually take place at farmland locations where farmers directly sell their produce to buyers, whereas for small parties or orders which are kept in a continuous way to the local market, farmers bring their products to be sold directly or deposited in vegetable stalls. The cooperative is a pillar of popular economic development, because the cooperative is regarded as involved in the welfare of its members with all policies and decisions returned to the Annual Member Meeting. The development of cooperatives in the Cibugel sub-district is quite low; in 2014 there were only 10 cooperatives which were recorded in it. The number of cooperatives in Jayamekar is two units, and there are four units of savings and loan groups. A number of Small and Medium Enterprises (SMEs) in the District of Cibugel are estimated at 351 units consisting of 296 foods and beverages, 35 wooden handicrafts, 20 brick and tile home industries and 125 others. Jayamekar Village is one of the villages in Cibugel Sub-district, Sumedang Regency.

Jayamekar



Map 5.1 Map of Jayamekar
Source: Pemerintah Desa Jayamekar (2017).

Jayamekar covers an area of 10.80 km2, it is hilly, and it is the village with the highest position, located at an altitude of 979 meters. Jayamekar has the highest population of 4,538 people, consisting of 1,368 households. The population density ratio in Jayamekar is the lowest compared to other villages in Cibugel Sub-district, which is 339,81 square kilometres. Based on an interview with the current *Kepala Desa* ('Head of the Village'), Mr. Aca Abdul Jafar, historically Jayamekar is the village as the result of the expansion of *Cibugel* Village in 1982, at the time when Cibugel Sub-District was still Kamantren.

Most of the residents of Jayamekar work as farmers in agriculture and plantation fields. Among them are tea gardeners, and vegetable farmers for tomatoes, cabbage, chili, eggplant, and onion. *Jayamekar* village has four units of *Posyandu* ('Integrated Service Post') with 21 cadres.
The number of poor households in *Jayamekar* is 230 households, the third highest in Cibugel Sub-district.

Illustration 5.1 Typical House in Jayamekar
Photography by R.D. Susanti (2017).

The community empowerment movement in the field is assisted by health cadres (*Posyandu* and *PKK* cadres) which are summarised in the Integrated Service Post; these cadres are the stakeholders of the related working partners/agencies/institutions.

Cipasang

Cipasang is located in the Cibugel District. The location is in the eastern end of the Cibugel District and is directly adjacent to Wado and Garut Districts. The area is separated by passing the *Cimanuk* River which flows on the border from south to north. The distance from the center of *Cibugel* District is about eight kilometres to the east. Historically, as the *Sesepuh* or *Kokolot* ('Community Leader') explained, Cipasang is one of two villages, which existed before the establishment of Cibugel Sub-District. Cipasang has become part of the Kapermat area (District Representative), Darmaraja in Cibugel. When *Cibugel* Sub-district was reformed, Cipasang became one of the areas in *Cibugel* Subdistrict along with six other villages.

Based on data from Cibugel Subdistrict in the 2014 profile, Cipasang has a village status with a classification as an independent village. Topographically, Cipasang area has a land surface in the form of a plateau. The height of the area where the village office is is around 571 meters asl. Geographically, Cipasang area is limited by the following areas: Sukapura, Wado District in the north, Cikareo North Village, South Cikareo and Cilengkrang (all located in Wado Sub-District in the east, Garut Regency in the south, and Jayamandiri and Sukaraja in the west.

Based on data from *Cibugel* Subdistrict in the 2014 profile, Cipasang has a village status with a classification as an independent village. Topographically, Cipasang area has a land surface in the form of a plateau. The height of the area where the village office is around 571 meters. Geographically, Cipasang area is limited by the following areas: Sukapura Village, Wado District in the north, Cikareo North Village, South Cikareo Village and Cilengkrang Village (all located in Wado Sub-District) in the east, Garut Regency in the south, and Jayamandiri *a*nd Sukaraja in the west. Administratively, the Cipasang area is divided into four hamlet areas, namely; *Cicadas* Hamlet, Sukajaya Hamlet, Cipasang Hamlet and Parakan Panjang Hamlet. The number of Pillars of Citizens and their Neighbourhood Unit is each in the range of nine RWs and 28 RTs (*cf.* Map 5.2).

Map 5.2 Map of Cipasang
Source: Satellite photos (2017).

For its own area, based on the same data source, Cipasang Village has a total area of 1,001 hectares. Judging by its area, it is quite large when compared to the area of other villages in the District of Cibugel, only slightly smaller than *Jayamekar* Village as the largest village in *Cibugel* Subdistrict. The area is used for various uses, especially agricultural land. The total area used as agricultural land is 664 hectares. The remaining 337 hectares are used for non-agricultural purposes such as residential land and yards, public facilities and forestry land.

The agricultural land is divided into two types, namely paddy fields and non-rice fields. The land of the farm itself has an area of 72 hectares and the agricultural land is in an area of 592 hectares. Cipasang Village area is dominated by verdant land and farmland. The land in the south and west is dominated by fields or rice fields. The paddy field is located in the lower part of the north and is connected to paddy fields in the Wado District. Most of the Cipasang area is at an altitude, so it is not surprising that most of the land is used as farmland and plantations. Only the northern end is in the lowlands.

Regarding the population, in 2013, as presented in *Cibugel* District data in 2017, Cipasang was inhabited by a population of 4,186 people and the number of family heads was 1,354 households (Table 5.2), while for the residents of Cipasang for each square *kilometre,* the area has an average population of 371.63 people.

Illustration 5.2 The Process of Making *Oyek* ('Traditional Food of the Village')
Photography by R.D. Susanti (2017).

For their livelihoods, the majority of Cipasang residents are engaged in the agricultural sector. In addition to agriculture, some work in the fields of trade, services, transportation, industry and construction. The main agricultural sector in Cipasang is dry land farming such as fields and plantations. The fields of the land produce the main products in the form of cassava and corn. The staple food of the village community besides rice is cassava. They process cassava into one of the traditional foods, typical of the village, namely *Oyek* (*cf.* Illustration 5.2).

Other products produced by plantation land in Cipasang, are various types of fruits such as *melinjo*, rambutan, banana, avocado, durian, and *siam* orange. For the rice field, the main product is rice, followed by the livestock sector, related to the maintenance of livestock from a type of beef cattle, goats, sheep, and various types of poultry such as domestic chicken, broiler, and duck. The industrial sector is still on a home industry scale, which is engaged in food processing, wood processing and the manufacture of tiles or bricks. Regarding cultural arts in Cipasang, there are still traditional Sundanese arts such as *Calung* and various types of dances.

Table 5.2 The Number of Inhabitants of Cipasang

Hamlet	Inhabitants	Households
Parakanpanjang	991	311
Cipasang	1.594	507
Sukajaya	689	214
Cicadas	912	302
Total	4.186	1.354

Source: Pemerintah Desa Cipasang (2017).

Situ

Situ is one of the urban villages or *kelurahan* in the North Sumedang Sub-district with a distance of 2.5 km from the city Sub-district, and a distance of 500 meters from the central district government of the Sumedang Regency. Based on topography, the situ area is in the form of a height of 600 meters and the average temperature of the day is around 22-33°C.

The population is heterogeneous, consisting of religious forms with the highest mobility which is a feature of the urban areas with additional land in the Situ sub-district which is an education center. The population density of Situ is 6,305 inhabitants per km2. Administratively Situ Village consists of 20 RWs and 76 RTs.

Illustration 5.3 Office of Situ
Source: Profile of Kelurahan Situ (2017).

Jatimulya

Jatimulya is one of the villages in North Sumedang Sub-District, the Sumedang Regency formed in 1983, one of three villages resulting from the expansion of *Sindangjatu* Village. The Jatimulya Government has been led by six village heads. The area of Jatimulya is 160.40 ha consisting of rice field area 60.25 ha, farming area 17.00 ha, residential area 89.15 ha, village land 9.00 ha, and public disposal area 3.00 ha.

In general, the Jatimulya area is a hilly/highland area, with an altitude of 400.00 meters asl**.** The location of Jatimulya is 4.00 km from the sub-district office, and 5.50 km from the Sumedang Government Office. Jatimulya Village consists of three hamlets, nine neighbourhoods (RW), and 43 neighbourhoods (RT). Hamlet I consists of RW 01, RW 06, and RW 07 including the Hamlets of Gunung Buleud, Cibiru, Rancamulya, Rancamukti, and Rancamulud. Hamlet II consists of RW 03, RW 04, and RW 08, including Bojong Inong Hamlet, Gunung Sari, Bojong Pasantren, Pasir Mulya, Pasir Malang, Sawah Lega, and Bojong Ciakar. Hamlet III consists of RW 02, RW 05 and RW 09 including Sindangwangi, Sindangtaman, Cipeundeuy, and Perum Sindang Taman Sari (Asabri) Hamlets.

Gender and age composition

Tables 5.3 highlights the distribution of gender among the household members of the sample over the four research communities. In September 2017, the population of the four villages was composed of 555 males and 178 females. Among the 733 respondents, males (75.7%, n=555) slightly outweigh females (24.3%, n=178), as highlighted in Table 5.3. Differences in roles are based on gender in Sundanese society such as men acting as heads of families who bear the family economy, while women are obliged to regulate family life and care for children. Even if they have to work, women usually only do light work (*cf.* Ekadjati 1984).

Table 5.3 Distribution of the Gender of the Household Member of the Sample over the Four Research Communities (N=733)

Gender	Jayamekar		Cipasang		Situ		*Jatimulya*		Total	
	N	%	N	%	N	%	N	%	N	%
Male	161	29.0	111	20.0	182	32.8	101	18.2	555	75.7
Female	47	26.4	36	20.2	53	29.8	42	23.6	178	24.3
Total	208	28.4	147	20.1	235	32.1	143	19.5	733	100.0

Source: Household Survey (2017).

Table 5.4 Distribution of the Age of the Household Members of the Sample over the Four Research Communities (N=733)

Age	Jayamekar		Cipasang		Situ		*Jatimulya*		Total	
	N	%	N	%	N	%	N	%	N	%
0-5	12	29.3	10	24.4	17	41.5	2	4.9	41	5.6
6-10	14	25.5	12	21.8	17	30.9	12	21.8	55	7.5
11-15	18	36.7	8	16.3	15	30.6	8	16.3	49	6.7
16-20	14	34.1	5	12.2	14	34.1	8	19.5	41	5.6
21-25	16	29.1	9	16.4	24	43.6	6	10.9	55	7.5
26-30	8	23.5	5	14.7	13	38.2	8	23.5	34	4.6
31-35	6	21.4	4	14.3	12	42.9	6	21.4	28	3.8
36-40	6	26.1	4	17.4	10	43.5	3	13.0	23	3.1
41-45	13	37.1	3	8.6	15	42.9	4	11.4	35	4.7
46-50	15	57.7	4	15.4	4	15.4	3	1.5	26	3.5
51-55	16	28.1	14	24.6	13	22.8	14	24.6	57	7.7
56-60	17	35.4	11	22.9	12	25.0	8	16.7	48	6.5
61-65	17	21.3	19	23.8	23	28.8	21	26.3	80	10.9
66-70	9	15.3	15	25.4	23	39.0	12	20.3	59	8.0
71-75	13	23.6	11	20.0	18	32.7	13	23.6	55	7.5
76-80	4	23.5	7	41.2	1	5.9	5	29.4	17	2.3
81-85	4	22.2	6	33.3	3	16.7	5	27.8	18	2.4
86+	6	50.0	0	0.0	1	8.3	5	41.7	12	1.6
Total	208	28.4	147	20.1	235	32.1	143	19.5	733	100.0

Source: Household Survey (2017).

On the basis of identifying the sample population of the four villages, Table 5.4 presents the age distribution of the household members of the sample over the four research communities. In the research area, the male inhabitants are commonly playing a leading role in the household as all 232 household heads of the sample are male. The highest percentage group is 61-65 years (10.9%, n=80) as this research focuses on the elderly who have CVD. In general, older inhabitants occupy a position of esteem within the community called '*sesepuh*" or "*kokolot*" and are treated with a sense of respect and politeness by the younger community members. The difference in social status is expressed by the common use of the terms '*Aki*', 'Grandfather', and '*Nini*', 'Grandmother', by community members when addressing male and female inhabitants, who have reached an elder or advanced age (*cf.* Kain Hart 1992 in Aiglsperger 2014). Adult and elderly groups fully participate in social life; meanwhile, the younger groups cannot fully participate because in Sundanese society, if young people surpass older people, it is considered impolite, even though young people have better abilities than older people.

Thus, for the sake of tolerance and courtesy towards older people, young people have to be able to suppress individual traits and consider the balance of life in society. In social life, the elderly are guiding younger groups (*cf.* Ekadjati 1984). Elderly community groups in the village are quite active in community participation, for example routine recitation meetings (*pengajian*), social gatherings *(arisan*), and other meetings at the village hall (*cf.* Illustration 5.4). The elderly group is the determining group in Sundanese society, although it is informal. This happens because in Sundanese society, parents are considered to have experience and have a lot of knowledge so as to be able to provide wise decisions for the community. A balanced life is the goal of Sundanese people.

The harmony and balance of people's lives guarantees a good life for everyone. Thus, the rights and obligations of each individual are not the same, according to their level. For example, younger siblings have to respect older siblings; young people have to respect older people. The relationship is family, so individual interests have to be set aside for the common good.

Illustration 5.4 Elderly Meeting at the Village Hall in Cipasang
Photography by R.D. Susanti (2017).

Such customs are in accordance with the concept of Sundanese people, *"silih asah, silih asih, silih asuh". Silih asah* means to give experience and knowledge to each other; one's shortcomings are added by others, one's mistakes are corrected by fellow community members. *Silih asih* means loving each other, and *silih asuh* means having to guide each other. Balance and harmony are the moral basis of Sundanese society (*cf.* Ekadjati 1984). A life of helping seems to be in the habit of *"nguyang*", which means giving something in the hope of getting a greater reward, for example neighbours giving crops to other neighbours during the harvest season.

The most common pattern of household composition found in the sample links up with the relationship between the household head and his or her partner (21.2%, n=156) and to the relationship between the household head and his or her son or daughter (12.0%, n=88 and 11.3%, n=83). The percentage of households, which are composed of sons and daughters is slightly high all over the four communities. In general, family ties among the Sundanese people are strong whereupon children live as nuclear or extended family, consisting of the couple, their parents (grandmother and grandfather), and children (grandchildren).

The children stay in the village with their parents before getting married. There is a view in Sundanese people of *"bengkung ngariung, bongkok ngaronyok*" which means a view and attitude in which you do not want to separate or be far from close family, and family has to be united and together forever. Gathering with relatives is more important than anything

Table 5.5 depicts the household head as the highest percentage of the household member relationship of the samples (36.8%, n=230); the most household heads are dominantly elderly. The number of household members of the sample are mostly three family members (19.2%, n=141); the highest number of household members was ten, 2.7% (n=20), as the extended family. The Sundanese consider family relations up to the seventh lineage.

Table 5.5 Distribution of the Relationship of the Household Members of the Sample over the Four Research Communities (N=733)

Relationship	Jayamekar		Cipasang		Situ		Jatimulya		Total	
	N	%	N	%	N	%	N	%	N	%
household head	58	25.2	56	24.3	62	27.0	54	23.5	230	36.8
spouse	46	29.5	31	19.9	46	29.5	33	21.2	156	21.2
son	30	34.1	9	10.2	24	27.3	25	28.4	88	12.0
daughter	29	34.9	10	12.0	33	39.8	11	13.3	83	11.3
father	1	100.0	0	0.0	0	0.0	0	0.0	1	0.1
mother	4	28.6	2	14.3	7	50.0	1	7.1	14	1.9
grandson	16	26.7	19	31.7	18	30.0	7	11.7	60	8.2
granddaughter	9	19.6	10	21.7	21	45.7	6	13.0	46	6.2
brother	1	100.0	0	0.0	0	0.0	0	0.0	1	0.1
sister	0	0.0	0	0.0	1	0.0	0	0.0	1	0.1
nephew	0	0.0	1	50.0	1	50.0	0	0.0	2	0.3
son in law	3	15.0	2	10.0	12	60.0	3	15.0	20	2.7
daughter in law	5	41.7	2	16.7	3	25.0	2	16.7	12	1.6
brother in law	1	100.0	0	0.0	0	0.0	0	0.0	1	0.1
sister in law	0	0.0	0	0.0	1	100.0	0	0.0	1	0.1
mother in law	2	33.3	2	33.3	1	16.7	1	16.7	6	0.8
other kin	3	27.3	3	27.3	5	45.5	0	0.0	11	1.5
Total	208	28.4	147	20.1	23	32.1	143	19.5	733	100.0

Source: Household Survey (2017).

All of one's experiences are always linked up to the seventh generation. *"Cadu kaalaman deui nepi ka tujuh turunan aing. Ieu pacaduan ulah dirempak nepi ka tujuh turunan."* Abstinence is experienced again by descendants until the seventh generation, so that all restrictions which exist should not be violated until the seventh descendant.

If there is a violation, then the consequences will also apply to the seventh generation (*cf*. Ekadjati 1984). Parents in Sundanese society always expect their children to have a good personality implicit in the proverbial *cageur*, *bageur*, *bener*, *pinter*.

It means children are always healthy, honest, correct, and good at carrying themselves in social life. However, the important thing is the main factor in health or *cageur*, prior to *bageur*, *bener*, and *pinter*. All these qualities are said to be pious (*shaleh*).

Table 5.6 Distribution of the Size of the Household of the Sample over the Four Research Communities (N=733)

No. of Household		Jayamekar		Cipasang		Situ		Jatimulya		Total Members	
		N	%	N	%	N	%	N	%	N	%
1 member		7	20.0	12	34.4	3	8.6	13	37.1	35	4.8
2 members		28	20.0	36	25.7	37	26.4	39	27.9	140	19.1
3 members		39	27.7	39	27.7	39	27.7	24	17.0	141	19.2
4 members		32	27.6	32	27.6	32	27.6	20	17.0	116	15.8
5 members		45	37.2	15	12.4	51	42.1	10	8.3	121	16.5
6 members		48	57.1	6	7.1	18	21.4	12	14.3	84	11.4
7 members		0	0.0	7	25.9	13	48.1	7	25.9	27	3.7
8 members		0	0.0	0	0.0	23	74.2	8	25.8	31	4.2
9 members		9	50.0	0	0.0	9	50.0	0	0.0	18	2.4
10 members		0	0.0	0	0.0	10	50.0	10	50.0	20	2.7
Total	208	28.4	147	20.1	235	32.1	143	19.5	733	100.0	

Source: Household Survey (2017).

5.2.2 Education, Profession and Religion Profile

As regards the sample population, Table 5.7 shows the distribution of the level of education completed by the household members of the sample over the two research communities. The majority of the respondents completed primary education (64.9%, n=476). The percentage who finished tertiary education is lowest among household members (1.8%, n=13). This happens because the most respondents were elderly and the availability of educational facilities in the village area has until recently been rather limited, whereupon inhabitants remained largely illiterate and most knowledge was handed down orally.

Table 5.7 Distribution of the Education of the Household Members of the Sample over the Four Research Communities (N=733)

Education	Jayamekar		Cipasang		Situ		Jatimulya		Total	
	N	%	N	%	N	%	N	%	N	%
No education	12	35.3	3	8.8	9	26.5	10	29.4	34	4.6
Primary education	136	28.6	97	20.4	151	31.7	92	19.3	476	64.9
Secondary education	9	25.0	7	19.4	13	36.1	7	19.4	36	4.9
Tertiary education	5	38.5	0	0.0	4	30.8	4	30.8	13	1.8
Other	46	26.4	40	23.0	58	33.3	30	17.2	174	23.7
Total	208	28.4	147	20.1	235	32.1	143	19.5	733	100.0

Source: Household Survey (2017).

While only a minor proportion of the older population of today have completed primary education, the majority did not receive any type of formal education. Accordingly, the percentage of respondents who did not enter formal education is higher among older and female inhabitants. Women generally get married at a young age and hereby abstain from entering formal education, whereas access to secondary education has been long restricted to men. Meanwhile Table 5.8 shows that all inhabitants (100.0%, n=733) have the Islamic religion and being a housewife plays the most important role among the female inhabitants (59.9%, n=439).

Table 5.8 Distribution of the Religion of the Household Members of the Sample over the Four Research Communities (N=733)

Religion	Jayamekar		Cipasang		Situ		Jatimulya		Total	
	N	%	N	%	N	%	N	%	N	%
Islam	208	28.4	147	20.1	235	32.1	143	19.5	733	100.0
Total	208	28.4	147	20.1	235	32.1	143	19.5	733	100.0

Source: Household Survey (2017).

Table 5.9 Distribution of the Profession of the Household Members of the Sample over the Four Research Communities (N=733)

Profession	Jayamekar		Cipasang		Situ		Jatimulya		Total	
	N	%	N	%	N	%	N	%	N	%
Unemployed	36	40.0	21	23.3	26	28.9	7	7.8	90	12.3
Housewife	113	25.7	100.0	22.8	129	29.4	97	22.1	439	59.9
Peasant	16	18.2	12	13.6	43	48.9	17	19.3	88	12.0
Farmer	5	15.2	4	12.1	20	60.6	4	12.1	33	4.5
Industr. Labourer	33	42.3	10	12.8	17	21.8	18	23.1	78	10.6
Entrepreneur	4	100.0	0	0.0	0	0.0	0	0.0	4	0.5
Other	1	100.0	0	0.0	0	0.0	0	0.0	1	0.1
Total 208	28.4	147	20.1	235	32.1	143	19.5	733	100.0	

Source: Household Survey (2017).

Illustration 5.5 Mosque in Jayamekar
Photography by R.D. Susanti (2017).

Islam is the religion of most Sundanese people. Most of them adhere to the teachings of Islam, such as performing five daily prayers, Friday prayers, fasting, paying *zakat*, and the desire to perform the pilgrimage to the holy land of Mecca. Muslims perform worship in mosques. Likewise, there is a small mosque which is used by residents who are Muslim to perform worship (*cf.* Illustration 5.5). The view of the Sundanese states which religion has to be an "*ageman"* or a way of life in social life and to live with it hereafter. So the teachings of Islam have to be practiced and implemented in daily life: *"agama kudu jeung darigama*." *(cf.* Ekadjati 1984).

5.3 The Plural Nursing System in Four Villages

5.3.1 The Traditional Nursing Institutions (TNI)

Traditional nursing institutions have increasingly received attention from various parties lately. Various advertisements which offer traditional herbs and practices with various advantages can be read in print media or electronic media, and billboards are often seen in public places. Attention to the practice of traditional medicine and traditional nursing institutions has been studied and published by anthropologists and ethnologists who pay attention to physical anthropology. In particular, the fields of Medical Anthropology, especially Ethnomedicine and Ethnonursing, study indigenous and explicit cultures not from the modern conceptual framework (*cf.* Hughes in Foster 1978). Traditional nursing institutions include preparing concoctions derived from flora and fauna which are mixed and used as medicine, both for maintaining health and as an antidote to disease. Knowledge of these ingredients is inherited from generation to generation based on the results of experience and not based on scientific explanations. The practice of traditional nursing institutions can be understood as a practice of prevention of care and healing, which is practiced by a group of citizens who have the expertise to use traditional ingredients, without going through formal education institutions. Traditional nursing institutions, whether mixed by the user or through the nursing practice of the *dukun/orang pintar* (shaman) in the initial observation, are the first choice before using the services of a medical professional, as well as the final choice after failing to use medical services. Not infrequently, the choice to use the services of a *dukun* invites doubts, if they are related to the

religion/beliefs held by the user. The community is still utilising traditional medicine in overcoming the illness, either by doing self-care at home or through the help of other healers, such as *ajengan (kyai*), *dukun*, or *orang pintar*. In this case, the medical system is a broad concept, not only about medicines and drugs, but including prevention, healing practices, and rehabilitation.

Illustration 5.6 Traditional Healer Giving Treatment to a Client in his House in Jayamekar. Photography by R.D. Susanti (2017).

The activities include treatments whether with herbs, skills, tools or the mind. So the word 'nursing' is more suitable and has been used interchangeably. In the *Cibugel* area including *Jayamekar* and Cipasang, there is an *sesepuh* ('elder') who also acts as a traditional healer. the person who can always be contacted if someone has a health problem.

Illustration 5.7 The *Jamu* ('Herbal Medicines') Kiosk Photography by R.D. Susanti (2017).

He treats the people through the skills he has combined with herbal ingredients in the form of plants around the environment in the region by giving massages or *pijat.* The community believes in the expertise of the person and always contacts him if someone has a health problem.

Illustration 5.8 A *Jamu Gendong* ('Herbal Medicines Peddler') Selling *Jamu* Door-To-Door Photography by R.D. Susanti (2017).

In Sumedang, the use of *jamu* ('herbal medicines') is widely used by the local population and is easily accessible. In addition, consumption of herbal medicine is a daily habit of the community to maintain stamina or overcome preceived complaints. The herbal medicine can be made alone at home or obtained from the *jamu* seller who usually comes every day in the neighbourhood, and consumed on site or at home.

Jamu can be acquired in *jamu* kiosks as well as from *jamu* vendors or *jamu* stalls (*cf.* Illustration 5.7). *Jamu* kiosks commonly sell herbal remedies in the form of beverages. Meanwhile, *jamu* stalls offer types of instant *jamu* or instantly prepared *jamu*, which are usually sold in packages, produced traditionally in large amounts. Besides selling different types of herbal medicine, the kiosks also offer customers the possibility of inquiring about the different brands and benefits of *jamu* (*cf.* Erwina 2019).

5.3.2 The Transitional Nursing Organisations (TNO)

Communities in Sumedang take advantage of transitional nursing organisations such as buying drugs from stalls (*Warung Obat*) or pharmacies to deal with perceived complaints (*cf.* Illustration 5.10). In general, academic research on patterns of utilisation of the plural nursing systems is characterised by differences between traditional nursing institutions and modern nursing organisations. Authors such as Buschkens & Slikkerveer (1982), Slikkerveer (1990; 1995), and Dijkstra (2005) consider that the activities of drug vendors, for example, are part of a rather informal medical system, which is officially linked between traditional and modern medical systems.

Slikkerveer (1982; 1990; 1995) introduces the concept of a transitional medical system, which defines these medical systems within the process of the transition from traditional medical systems to modern medical systems. Slikkerveer (1982: 1863) postulates that: "*Transitional medical systems can be determined as regulating large-scale commercial production and the sale of original*

pharmaceutical drugs and [modern] pharmaceuticals." Similarly, Buschkens & Slikkerveer (1982) describe a transitional medical system in conjunction with the activities of drug sellers in developing countries, who practice between city centers where contact with modern medical systems is in accordance with standard practice, and rural society, which continue to depend on traditional medical systems.

Following the sale of indigenous MAC plants for Traditional Medicine (TM), as well as for Complementary and Alternative Medicine (CAM) in more advanced societies today, a useful concept of medical systems can be used to convert commercially-oriented sales of all types of drugs or treatment in local companies, such as pharmacies or supermarkets, through the provision of services of transitional nursing, including pharmacists, pharmacy assistants and drug vendors.

The transitional organisations and the subsequent application of all kinds of drugs, which has supported the commercial use for sale, also includes industrially processed pharmaceutical drugs (*cf.* Slikkerveer 1982; 1990).

Transitional nursing organisations are often selling for profit Over-the-Counter (OTC) drugs, such as non-prescribed medicines, as well as the sale of prescription drugs issued by health providers. With regard to the prescription of drugs, the commercial interest in profit-making characterise these transitional medical systems, the medical payments and the doctor services. According to Kohn & White (1976), payment of insurance or doctor services to a certain extent is the same as buying OTC drugs, so medicines which are not prescribed can be used as interchangeable components of medical systems. Comparative requests for prescription and non-prescription drug shops have been applied by Slikkerveer & Lionis (2011).

Since the application of medicines sometimes also includes nursing practices of self-care, as well as the provision of modern nursing services, the plural nursing system also tends to divert the characteristics of traditional, transitional, and modern nursing institutions and organisations *(cf.* Mačukanović *et al*. 1976; Kennedy 1996, in Aiglsperger 2014).

Illustration 5.9 *Warung Obat* at the Village
Photography by R.D. Susanti (2017).

Illustration 5.10 Drug Store or Apotek at the Village
Photography by R.D. Susanti (2018).

5.3.3 The Modern Nursing Organisations (MNO)

There are several modern nursing organisations in Sumedang, such as the Public Hospital, Private Hospital, Public Health Center, *Puskesmas Pembantu* ('Auxiliary Public Health Center'), *Poskesdes* (*cf.* Illustration 5.11), medical center, and *Rumah Bersalin* ('Midwife Clinic'). Some people in the village visit the closest *Puskesmas Pembantu Sukaraja* ('Auxiliary Health Centers') in the area (*cf.* Illustration 5.12).

Illustration 5.11 *Pos Kesehatan Desa (Poskesdes)*, Village Health Post in Jayamekar
Photography by R.D. Susanti (2017).

Illustration 5.12 *Puskesmas Pembantu* ('Auxiliary Public Health Center') in Cibugel
Photography by R.D. Susanti (2017).

Based on data from the Health Profile of the Sumedang Regency (2016), the distribution of health workers is mostly located in public health centers spread across 35 health centers and hospitals, where the personnel spread into several hospitals such as a Local Public Hospital, *Pakuwon* Hospital and *Harapan Keluarga* Hospital, which was established at the end of 2016. Health and administrative support staff assistants are mostly in private health facilities; as many as 188 people are spread in clinics, pharmacies and independent practices of health workers. If the patient cannot be treated at the nearest health center, the *puskesmas* staff will refer to a larger health facility, which is a hospital in the district, approximately 60 kilometres away.

CHAPTER VI NURSING OF THE ELDERLY WITH CARDIO-VASCULAR DISEASE (CVD)

6.1 CVD Among the Elderly

6.1.1 Increasing Prevalence of CVD with Aging

This Chapter briefly describes the changes which occur among the elderly cardiovascular system, various types of CVD, how to control CVD in Indonesia and the relationship of CVD to the national nursing system, including nursing provision within the framework of the national nursing system, the position of the traditional nursing system in the national nursing system, and integrating *kearifan kesehatan lokal* into the national nursing system.

CVD increases in incidence and prevalence with age. CVD is the leading cause of death and major disability in adults >75 years of age. The prevalence of CVD increases progressively with age, and people >65 years of age constitute more than half of all inpatients and cardiovascular procedures in the United States, and 80% of all cardiovascular deaths (*cf.* Mozaffarian *et al*. 2016). Although indeed, cancer is a leading cause of death among adults in the Western world, such as in the United Sates, aged 18-74 years, CVD is the dominant cause of death among the elderly, especially over the age of 75 years (*cf.* Mozaffarian *et al.* 2016; Heron 2013).

The global burden of CVD is increasing, mainly because of the aging population, and men and women ≥80 years are responsible for the disproportionate number of cardiovascular deaths *(cf.* Moran *et al.* 2010). CVD is also a leading cause of chronic disability, loss of independence, and impaired quality of life among parents (*cf*. Murray & Lopez 2016; Yazdanyar & Newman 2009). In addition, due to age-related changes in cardiovascular structure and function (*cf.* Lakatta & Levy 2003a; Lakatta & Levy 2003b), this is also compounded by changes in other organ systems, including the kidneys, liver, skeletal muscles and brain, so that older patients are at increased risk for complications related to pharmacological and non-pharmacological interventions (*cf.* Gerstenblith 2005).

Old age is the most powerful predictor of cardiovascular morbidity, mortality, and disability. Age has traditionally been ignored as a risk factor for CVD because it is considered a risk which cannot be modified. However, further examination of age-related changes in the structure and function of blood vessels can help explain why aging is a strong predictor of side effects. Findings from recent clinical studies show that age-related changes in vascular structure and function, which were not previously defined as clinical or subclinical disease, are risk factors for CVD. These new risk factors, including intimal-medial thickness, expressed in Body Mass Index (BMI), vascular stiffness, and endothelial dysfunction, change the substrate on which CVDs are superimposed; they influence the development, manifestation, severity, and prognosis of these diseases (*cf*. Gerstenblith 2005).

Age-related changes are seen in the large arteries of humans. Cross-sectional studies show that central elastic arteries widen with age, which leads to an increase in lumen size (*cf.* Gerstenblith, Frederiksen, Yin (1997) which results in increased inertance. In addition, postmortem studies by Virmani *et al*. (1999) have indicated an age-related increase in thickening of the arterial wall, which is caused mainly by an increase in intimal thickening. In cross-sectional studies, carotid IMT increased almost threefold between the ages of 20-90 years (*cf.* Nagai *et al.* 1998). The range of values for BMI is much greater in older individuals than younger individuals. Vaitkevicius *et al.* (1993) state that an increase in thickening of the arterial wall is accompanied by an increase in hardening of the arteries and a reduction in vascular compliance, which is the result of several structural changes in the arterial wall (*cf.* Lakatta 1993). These changes include an increase in the content of collagen, the cross-linking of adjacent collagen molecules to form a sophisticated glycosylation end product (*cf.* Brownlee *et al*. 1988), elastin fraying, and a decreased amount of elastin. In addition to structural changes, functional changes include age-related reduction in vascular endoscopic vasoreactivity (*cf.* Celermajer *et al*. 1994; Gerhard *et al.* 1996). In blood pressure (BP), systolic pressure increases with increasing age in all adults, whereas diastolic blood pressure (DBP) increases until the fifth decade

and then decreases before decreasing after the age of 60 years *(cf.* Franklin *et al*.1997; Burt *et al.* (1995). These age-dependent changes in systolic, diastolic, and pulse pressure are consistent with the idea that in younger people, BP is determined largely by peripheral vascular resistance, whereas in older BP, it is determined primarily by stiffness of the central canal vessels (*cf.* Franklin *et al.* 1997). For further explanation, the link between age and changes in the cardiovascular system will be discussed in the next section.

CVDs including heart disease and stroke are the leading causes of death and disability in high per capita income countries (HIC); this especially holds true for the low and middle income countries (LMIC). The world is in the midst of a true global CVD epidemic (*cf.* Fuster *et al.* 2011**).** CVD caused about 30% of all deaths worldwide each year: 80% occur in LMIC, and half occur in women. The current global burden of CVD and its risk factors emphasize the evolution of the CVD epidemic in developing countries and its contributory factors. Ongoing efforts are made by the world community including WHO to combat and contain the current epidemic. The broad term of CVD includes: Coronary heart disease (CHD) which includes myocardial infarction (MI), angina, coronary insufficiency and coronary death, cerebrovascular disease (including stroke and transcient ischemic attacks), peripheral vascular disease, congestive heart failure (CHF), hypertension, and valvular and congenital heart disease. Fuster *et al.* (2011**)** document that there are world transitions with implication for CVD:

1) *Demographic transition*: This involves a progressive change from very high birth and infant mortality rates to low ones. This is accompanied by a shift from low population growth rates through an intermediate phase of high growth rates, with a consequent major increase in total population. This was followed by a reversal to low or zero growth rates. The demographic transition results in a conversion of the age distribution of the population from one with preponderance of young to one with nearly equal representation of all age groups. The demographic transition has been driven by the most dramatic improvements ever in the history of human health – sanitation, nutrition, and infectious disease control, and advances in perinatal care have resulted in lower infant and child mortality rates and an enhancement of overall life expectancy.

2) *Economic, social, and nutritional transition*: LMIC have been undergoing rapid industrialization, urbanization, economic development, and market globalization with increased standards of living, but inappropriate dietary patterns and physical inactivity. The nutritional status of the population has been adversely influenced by the aforementioned changes, a phenomenon referred to as nutritional transition**.** Globalization has resulted in the expansion of food economies from local to broad-based ones in which there is easy access to large amounts of unhealthy food products. The shift in dietary patterns includes all three major food constituents (namely fats, proteins, and carbohydrates). Traditional local diets rich in fiber and low in fat content are being replaced by cheap, energy-dense, saturated fat-laden, micronutrient-poor foods. Vegetarian food with high protein vegetable is replaced by animal protein. Complex carbohydrates in foods has been superseded by the high glycemic index carbohydrate; it increases calorie consumption but has low energy expenditure which ultimately leads to sedentary lifestyles with the advent of motorized transport and increased use of labor-saving home and office appliances. The changes in dietary and lifestyle patterns foreshadow in LMIC an increasing burden of diet-related diseases, including obesity, dyslipidemia, DM, hypertension, and eventually CVD. To some extent, CVD is a communicated disease spread by the forces of globalization.

3) *Epidemiologic transition*: The demographic, economic, and nutritional changes inexorably lead to major changes in the patterns of human diseases, a phenomenon referred to as epidemiologic transition. It is characterized by a progressive shift from a predominance of nutritional deficiencies and infectious diseases such as CVD, cancer, and diabetes.

Challenges in CVD epidemics in developing countries are different from that of developed countries. Temporal compression in CVD is occurring in LMIC over a compressed time frame, partly related to the rapidity of globalization. It requires a greater intensity of public health response. CVD in LMIC occurs in settings of poverty and international debt, which may restrict fiscal policy latitude with respect to public health. Easy access to low-cost cigarettes causes low tobacco control policy,in addition to the microeconomic forces, limited education, limited health education, limited financial resources, and limited access to health information and treatment to combat CVD epidemic in LMIC. Being a double epidemiological burden, communicable and non-communicable diseases make allocation decisions difficult under severe fiscal constraints. Data gaps in the global response to the ongoing epidemic are a challenge due to a lack of necessary infrastructure to define, characterize, and track the CVD epidemic in LMIC. The social knowledge gap happens as the societal response to the CVD epidemic lags because of the insidious, often invisible toll of CVD risk factors, a lack of awareness, and the prevalent belief that CVD is a disease in High Income Countries (HIC). Novel epidemiological profiles have documented several cases in Asia and Africa: increase in blood pressure and tobacco precede the impact of nutrition transition by decades, resulting in different CVD profiles with higher levels of stroke, but relatively low levels of CVD. These variant CVD patterns underscore the opportunity to implement strong CVD preventive programmes focusing on nutrition and physical activity and aggressive control of blood pressure and tobacco use (*cf.* Sinclair, Morley & Vellas 2012).

6.1.2 Age-Related Condition in Vascular Structure and Function

Kevorkian & Morley (2012, in Sinclair, Morley & Vellas 2012) reveal that ageing is related with complex and diversified changes in cardiovascular structure and function. Changes occur at the structural/functional levels and also at the molecular/cellular level. The heart becomes slightly hypertrophic and hyper-responsive to sympathetic (but not parasympathetic) stimuli, so that the exercise-induced increases in heart rate and myocardial contractility are blunted in older hearts. The aorta and major elastic arteries become elongated and stiffer, with increased pulse wave velocity, evidence of endothelial dysfunction and biochemical patterns resembling atherosclerosis. These changes are thought to be caused by increased angiotensin II activity in the arterial wall, which leads to endothelial dysfunction, vascular smooth muscle proliferation and an increase in glycation and collagenization. Molecularly, these changes are secondary to an increase in transforming growth factor beta 1 (TGF-β1), matrix metalloproteinase type II, calpain 1 and milk fat globule EGF-8. There is also an increase in reactive oxygen species reactivity, which leads to a decrease in endothelial nitric oxide bioavailability. The arterial baroreflex is altered in ageing, with the baroreceptor of the heart showing greater impairment than the baroreceptor control of peripheral vascular resistance. There is no conclusive evidence for which alterations occur in different, central neural, efferent and effector organ portions of the reflex arch which are altered with ageing. Reflexes arising from cardiopulmonary vagal afferents are blunted in aged individuals. It is important to clarify that all changes in cardiovascular function do not imply failure of the system and in the absence of overt CVD, do not result in symptoms. This statement is supported by Kitzman & Taffet (2009) in Halter *et al.* (2009) which states that aging does not result in disease.

Coronary atherosclerosis is highly prevalent in western societies and can be occult and significantly affect cardiac function. Systemic arterial hypertension is even more common. There are reasonable screenings for these two common disorders, so it is prudent to separate aging from disease. The changes which are seen in an older population reflect the combination of all these factors, periods, cohorts, lifestyles, and disease-related changes, as well as the biological effect of age itself. It is often challenging to precisely separate and discern, both qualitatively and quantitatively, the latter from the former.

However, awareness of the important nuances of normal aging can help avoid most errors. Normal age-related changes in the anatomy of the heart are increased heart weight, Left Ventricular (LV) mass, and LV wall thickness; mild hypertrophy; fibrosis, collagen accumulation in the myocardium;

LV cavity size decreases; shortening of Long Axis (LAX);, rightward shift and dilatation of the aorta; dilation of left atrium and senile septum; calcific and fatty degeneration of valve leaflets and annuli; coronary artery dilation and calcification; conduction system; fibrosis and loss of specialized cells and fibres; loss of 75% of pacemaker cells in the sinoatrial node; and fibrosis of A-V node and left anterior fascicle. Normal age-related changes in cardiovascular physiology are peak cardiac output declines; peak heart rate declines; peak ejection fraction declines; LV stiffness increases and diastolic relaxation decreases; valvular regurgitation develops; prolongation of PR, QRS, and QT; left axis deviation, stiff arteries and increased aortic impedance; and systolic blood pressure increases. Below are listed the effects of normal ageing on the cardiovascular system;

Structural/Functional Level

Systolic function

No change in maximum capacity of the coronary flow bed
Moderate left ventricular hypertrophy
Maintenance of ability to generate wall tension
Decreased velocity of myocardial shortening
Increased myocardial stiffness
Prolonged duration of systolic contraction
Increased left ventricular cavity diameter
No change in stroke volumes, heart rate, cardiac output or ejection fraction at rest
Greater use of the Frank-Starling mechanism
Decline in maximum heart rate and maximum oxygen uptake with exercise
Increased ventricular stiffness
Decreased ventricular relaxation

Diastolic function

Delayed relaxation
Diastolic peak filling rate decreases with age
Decreased peak velocity of early filling while atrial fraction increases with age
Ratio of early peak to atrial peak (E/A ratio) flow velocity decreases with age

Arterial function

Increased arterial stiffness
Decreased endothelial function
Increased systolic blood pressure
Increased pulse pressure

Molecular/cellular level

Increased catecholamine levels
Decrease in β-adrenoceptor-mediated responses
Preservation of β-adrenoceptor number/density but decreased sensitivity
Maintenance of peak amplitude of force generation
Increased duration of myoplasmic calcium transient during excitation - contraction coupling
Prolongation of the ventricular transmembrane action potential
Cell dropout and compensatory cellular hypertrophy

Age-Related Changes in Vasculature

Increased intimal thickness → Promotes atherosclerosis
Increased collagen, reduced elastin, increased vascular stiffness → Systolic hypertension
Endothelial cell dysfunction → Increased risk of vascular disease
Effects of Aging on the Cardiovascular System
The structure and function of the human heart and vasculature change as a function of the normal aging process

The age-associated increase in stiffness of central elastic arteries promotes systolic hypertension in older adults
Diastolic dysfunction in the aging heart arises from impaired left ventricular filling, increased afterload, and prolonged availability of intracellular calcium
Decreased responsiveness to β-adrenergic receptor stimulation limits the increase in heart rate and contractility in response to exercise in older adults
Despite limits on the ability of the aging cardiovascular system to respond to exercise, regular exercise attenuates the adverse effects of aging on the heart and vasculature and again protects the development of CVD in older adults.

Age-Associated Changes in the Heart:
Increased collagen, changes in elastin and increased left ventricular wall thickness impairs passive left ventricle filling
Prolonged availability of intracellular calcium diastolic dysfunction
Increased left atrial hypertrophy
Susceptibility to atrial arrhythmias
Decreased number of pacemaker cells in sinoatrial node → decreased ability to elevate heart rate in response to exercise
Decreased sensitivity to β-adrenergic receptor stimulation → impaired ability to increase heart rate and contractility in exercise

There are prominent changes in the structure and function of the vasculature and myocardium in older adults when compared to younger adults. These changes are apparent even in the absence of overt CVD. However, these age-related alterations in the vasculature and the heart may cause CVD (*cf.* Gerstenblith 2005; Howlett 2010; Kevorkian & Morley 2012 in Sinclair, Morley, and Vellas 2012).

6.1.3 Types of Cardiovascular Disease among the Elderly

The heart is an organ which consists of strong muscles and pumps blood which carries oxygen and carries food to all parts of the body. The heart has two main coronary arteries and has many branches (*cf.* Ministry of Health Research and Development [Litbang Depkes] 2001). The heart is also one of the vital organs of the body. The heart beats 60-80 times per minute, and pulsations accelerate during rescue or movement, so that the body's needs will be met. Suppose the heart beats 70 times per minute, then in an hour the heart beats 4200 times or 100.0,800 times a day overnight. Each time the throbbing is pumped around 70cc, so within 24 hours the heart pumps around 7000 liters (*cf.* Ulfah 2000). To meet the energy needs of the heart muscle, available blood vessels or coronary arteries drain the blood laden with nutrients. These vessels come out of the base of the main blood vessels/aorta, of which there are two, namely the left coronary artery (LCA) and the right coronary artery (RCA). Each of these coronary arteries branches smoothly throughout the heart muscle, to supply chemical energy (*cf.* Ulfah, 2000).

According to the Indonesian Department of Health handbook (2007), CVDs (heart diseases) are abnormalities which occur in the heart organ with functional, anatomic and hemodynamic problems. The American Heart Association (2017) states that what is meant by CVD or commonly referred to as heart disease generally refers to conditions which involve narrowing or blocking of blood vessels which can cause heart attacks, chest pain (angina) or stroke. Other heart conditions which affect the heart muscle, valves or rhythm are also considered forms of heart disease. Sources which cause heart disease are caused by diseases that occur due to abnormalities in the heart's blood vessels. The risk of heart disease can be weakened by controlling diseases caused by changes in heart conditions or heart attacks (*cf.* State Government of Victoria 2004).

In the broadest sense, there are various kinds of heart disease. The most frequent heart disease events are coronary heart disease, heart attacks and other heart diseases (*cf.* The State Government of Victoria 2004). Symptoms can be in the form of pain or an unwell feeling in the chest such as burning,

pressure, squeezing, or strangulation. The feeling often radiates to the arms, chin, neck, back or stomach which becomes bloated, causing nausea or vomiting. The error lasts quite a long time (more than a few minutes) and does not diminish/disappear with rest, causing bloating, cold sweats, palpitations, and feelings of anxiety or fear of death.

There are several types of heart disease, *i.e.* arterial vascular disease, based on the reports of the Indonesian Ministry of Health (2007) and WHO (2016) including the following:

- *Coronary heart disease*, such as ischemic heart disease, heart attack, myocardial infarction, angina pectoris. Coronary heart disease is an abnormality in the blood vessels which supply the heart muscle. Conditions which make the heart unable to pump blood properly are very frightening things for humans in general. Undergoing routine examination is the main action to be able to avoid being affected by this coronary heart disease;
- *Cerebrovascular Disease* (stroke, transient ischemic attack: TIA). Cerebrovascular disease is an abnormality in the blood vessels which supply the brain in the form of blockages, especially the brain arteries. This disease is caused by a disruption in the blood vessels of the brain, in the form of blockage or rupture of blood vessels of the brain, and is not caused by other diseases such as brain tumors, brain infections or peripheral nerve disorders*;*
- *Peripheral Arterial Disease*. Peripheral artery disease is a condition of narrowing of the arteries which causes blood flow to the feet to become blocked. This narrowing is caused by fat deposits in artery walls which originate from cholesterol or other waste substances (artheromas). In this condition, the foot does not receive adequate blood flow so that the foot hurts, especially when walking (claudication). Even so, even the mildest peripheral artery disease indicates problems with arteries in other parts of the body, especially the heart;
- *Hypertensive heart disease*. Almost all the main consensus/guidelines both from inside and outside the country state that a person is hypertensive if he/ or she has systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg, on repeated examinations (*cf.* Weber *et al*. 2013);
- *Rheumatic Heart Disease*. Rheumatic heart disease is damage in the heart muscle and heart valves from rheumatic fever, which is caused by streptococcal bacteria. The affected part of the heart can include the heart valve or heart muscle. Symptoms of this disease generally occur between one to six months after streptococcal bacteria invade;
- *Congenital Heart Disease*. Congenital heart disease is a disorder of the heart structure experienced since a baby is born. This disorder occurs when the foetus develops in the womb. The most common congenital heart disease is an abnormality in the ventricular septum, known as the Ventricular Septal Defect (VSD) and abnormalities in the cardiac septal septum, or better known as the Atrial Septal Defect (ASD);
- *Heart failure*. Heart failure is basically a condition when the heart muscle becomes so weak that it cannot pump enough blood throughout the body at the right pressure;
- *Cardiomyopathy*. Cardiomyopathy generally refers to a heart muscle disorder of unknown origin and a cause of heart failure (*cf.* Backers & Gersh 1992 in Anityo *et al.* 1994). Based on pathophysiological abnormalities, cardiomyopathy is categorized as congestive/dilated cardiomyopathy, hypertrophic cardio-myopathy, and restrictive cardiomyopathy; and
- *Heart valve disease*. It occurs if one or more valves in the heart cannot function properly. The heart has four valves which ensure which blood flows in the right direction. However, sometimes heart valves have an abnormality which is when the valve does not open or close properly. This can cause disruption of blood flow from the heart to other parts of the body.

6.1.4 Cardiovascular Disease Control in Indonesia

In dealing with the health problem of CVD in Indonesia, the Ministry of Health has made various breakthrough efforts. In 2007 the *Harapan Kita* Cardiovascular Hospital in Jakarta was established as a National Cardiovascular Center directed towards world-class hospitals, building a tiered cardiovascular service system throughout Indonesia with the enactment of the Minister of Health

Decree Number 1102/MENKES/SK/IX/2007. It aims to bring the CVD referral service closer. Integrated Cardiovascular Service Centers have been developed which currently exist in several provinces in Indonesia. Furthermore, the Minister of Health Decree Numbers 997/MENKES/SK/X/2007 and 984/MENKES/SK/VII/2007 are establishing the basis for providing medical devices for non-surgical intervention services (balloon and stent medical devices) to the entire community, especially the poor, through CVD health services in several hospitals throughout Indonesia. However, those efforts made by the government are still limited to modern nursing service facilities, not paying attention to the service systems of traditional and transitional care organisations.

In the Ministry of Health's Strategic Plan for 2005-2009, policies on the prevention and eradication of diseases have been established through the promotion of clean and healthy living behaviours, as well as controlling risk factors. The Government of Indonesia has also given appreciation and serious attention, especially in controlling risk factors, in preventing non-communicable diseases, especially CVDs, with the enactment of the Minister of Health Regulation No. 1575/2005 concerning Organization and Work Procedures as amended by the Regulation of the Minister of Health Number 4295/2007 marked by the formation of the Directorate of Non-communicable Disease Control in implementing CVD control. This Directorate also has the main tasks and functions of carrying out the control of diabetes mellitus and metabolic diseases, cancer, chronic and other degenerative diseases, as well as disorders due to accidents and injuries (*cf.* Ministry of Health 2007).

It proves how CVD substantially contributes to the problem of national development, so that CVD control has to be in line with the Ministry of Health's vision of an independent community for healthy living. For this reason, there are guidelines for controlling (preventing and managing) risk factors for CVD as a reference for all parties concerned in reducing the numbers of morbidity, disability and death from CVD in Indonesia in the form of the Decree of the Minister of Health of the Republic of Indonesia No. 854/MENKES/SK/IX/2009 concerning Guidelines for Controlling CVDs. The guidelines explain the risk factors for CVD and how to reduce risk and support the healing process of degenerative diseases, including CVD. The risk factor is a condition which is potentially dangerous and can trigger CVD in a person or certain group. Risk factors for CVD include risk factors which cannot be modified, such as family history, age, and gender, while modifiable risk factors include hypertension, smoking, diabetes mellitus, dyslipidemia (abnormal fat metabolism), general obesity and central obesity, lack of physical activity, poor diet, consumption of alcoholic beverages, and stress. Risk factors for a disease are factors which are believed to increase the risk of the disease in question. But this is not absolute. This means that if someone has just one factor or a combination of several types of risk factors, it does not mean that he or she will automatically experience the disease in question. But they will be more likely to be affected by the disease compared to those without risk factors (*cf.* Ministry of Health 2007).

The following efforts can be made to reduce risk and support the healing process of CVD which can be done independently by the community, including primary prevention in the form of early detection of early CVD in individuals who have risk factors for CVD or have not experienced cardiovascular events, while secondary prevention is carried out on individuals who have experienced cardiovascular events (*cf.* Webb *et al.* 2005). Early detection and early intervention are proven to be able to reduce the incidence of deadly diseases. Primary prevention efforts need to be recognized with more than just the knowledge of the symptoms of a heart attack. The first time someone realises that he has a certain disease is when he knows the results of the diagnosis of the disease. Early detection or screening aims to detect the onset of disease before the disease enters the clinical phase or pathogenesis which makes the pre-clinical period longer.

In the field of public health, screening is used as a simple check on people who look physically healthy. It can be said that early detection is the identification of asymptomatic disease by diagnosing risk factors (*cf.* Fletcher *et al.* 2005). Early detection is done by checking heart function. Examination of heart function can be used to determine a person's health status, namely to determine a person's level of fitness, detect or make a diagnosis of abnormalities of the cardiovascular system. Examination of heart function can be non-invasive or invasive examination.

Non-invasive tests include inspection, palpation, percussion, and auscultation. In addition, additional examinations can also be done in the form of chest X-ray, electrocardiography (ECG), heart training (stress test), phonocardiography, echocardiography, and so on.

Invasive cardiac examinations are cardiac catheterization and electrophysiology (*cf.* Santoso 2008). Other efforts to prevent CVD are dietary adjustments carried out by following the General Guidelines for Balanced Nutrition such as consumption of foods low in sodium and high in potassium, reducing stress through exercise, muscle relaxation, recreation, expressing feelings, limiting the time of sadness, deepening worship and religion, and avoiding negative escape.

6.2 The Plural Nursing System in Indonesia

6.2.1 Traditional Nursing Institutions (TNI)

The cultural aspects of traditional nursing institutions are significant, as they have proven for generations to be beneficial and successful as applied by non-commercial nurses and healers in the communities. The understanding of the socio-cultural environment, the cultural influence and the widespread availability of the traditional nursing sub-system in Indonesia are playing a major role in the choice of nursing by the patients (*cf.* Moningka 1999). Efforts to recognise, utilise and develop traditional nursing institutions in Indonesia have been known for a long time, often using MAC plants (*cf.* Hampp 1999).

Traditional medicine and traditional nursing institutions are lately receiving increased attention from various formal parties. Numerous advertisements offering *jamu* and traditional practices with various advantages can be read in print or in the electronic media, and many billboards are now often seen in public places. Traditional knowledge, medicine and practices provided on a non-commercial basis of traditional nursing institutions are beginning to be popularised and receive growing attention from various parties, specifically from the elderly, for several reasons, summarised as follows:

- The success of herbal medicine practitioners in processing traditional ingredients used in traditional nursing in the traditional nursing institutions in the communities;
- the difficulty of drug entrepreneurs in obtaining imported raw materials which has led to a shortage of medicines in the market, encouraging competent medical practitioners to look for traditional ingredients and recipes used as effective ingredients for traditional medicines;
- the failure of modern medicine, and the success of traditional medicine;
- the increasing openness of several medical functionaries (doctors, pharmacists, and nurses) to the use of traditional herbal medicines; and
- the international strategies by WHO (1978; 2002; 2017 to recognise and implement traditional medical knowledge and practice in a comprehensive health care system.

Some of these health workers are even combining modern medical treatment and traditional therapy for many cases. Traditional nursing institutions, generally implementing the treatment by the *dukun* (‘traditional healer’) at the first symptoms, are often the first choice of patients before using the services of transitional or modern medical personnel, or, conversely, the final choice after the failure of the treatment by modern medical services. Not infrequently, the choice to use the services of a *dukun* invites scepticism if it is related to the religious belief held by the patient. However, the practice of traditional nursing institutions and the repertoire of traditional medicines in this area of research has not been widely explored, underscoring that ethnomedical studies need to be carried out in an interdisciplinary manner (*cf.* Ulain 1999). As mentioned in the previous Chapter, a total of 89,753 of the 294,962 (30.4%) households in Indonesia have utilised the traditional nursing institutions in the past year. The traditional nursing institutions utilised by the majority of households are mostly using skills without tools (77.8%) and potions (49.0%) (*cf.* Riskesdas 2013). The data also show a general tendency of the philosophy of ‘back to nature’, intensely felt by the people of Indonesia who are promoting the traditional ways of disease prevention and treatment for improved health and well-

being. The use of *jamu* is increasingly popular, especially in rural areas, largely because of its cultural embeddedness, affordability, and easy accessibility. Furthermore, the growing disappointment with the failure of modern medicine to provide adequate and affordable treatment for certain diseases has also aroused renewed interest in herbal medicine, not only in developing countries but also in countries which mainly rely on modern medical care (*cf.* Aiglsperger 2014). Herbal medicines, which are widely considered a form of safe medical care, have been identified as integral and rapidly growing elements of CAM, which have recently gained a tremendous dimension in the world market (*cf.* Eisenberg 1993; WHO 1993; Zhang 1998; WHO 2002a; Slikkerveer 2006; Lynch & Berry 2007; WHO 2012). Indonesia's health profile in 2012 prepared by the Ministry of Health documents that the number of districts/cities implementing alternative, complementary and traditional treatments in Indonesia has increased to 103 districts/cities, *i.e.* around 20.7% of 497 districts/cities. The profile underscores that Indonesia is primarily a multicultural country with a plural nursing system serving the communities, including traditional nursing institutions, and transitional and modern nursing organisations.

6.2.2 Transitional Nursing Organisations (TNO)

In Law Number 36 of 2009 concerning Health, it is stipulated that health is a state of well-being of the body, soul and society, which enables everyone to live productively, socially and economically. This healthy paradigm is a health care development strategy for all to maintaining healthy painless productive conditions known as promotive and preventive efforts rather than curative efforts which only emphasize efforts to deal with sick people. In health efforts, the programme which is needed is a more effective health-oriented one, practiced on a commercial basis following traditional health care development which is expected to be able to answer challenges while complying with the *Sistem Kesehatan Nasional* (SKN) ('National Health Care Delivery System'). In order to achieve these health care development goals, various comprehensive and integrated health efforts are organised in health facilities both at the *puskesmas* and hospitals. The *puskesmas* are responsible for organizing health efforts for the first level, while hospitals are a reference for advanced health services with the main function of organizing health efforts which are healing for patients (*cf.* Ministry of Health 2009). At present, health service facilities can be organised through the Integrated Traditional Nursing Service which is a form of health service which combines conventional health services with Complementary Traditional Nursing Services, both as a complement or substitute.

The purpose of traditional nursing services is according to the Decree of the Minister of Health Number 1076/MENKES/SK/VII/2003 (2003) regarding the Implementation of Traditional Medicine, which is then regulated in Government Regulation no. 103 of 2014 concerning Traditional Nursing Services. This traditional medicine is interpreted as an effort to provide treatment with other methods outside of medical science and/or nursing, which are widely used by the community in overcoming health problems. The application of traditional medicine in health services is expected to explore the potential of traditional health services based on *kearifan kesehatan lokal* in each region, so that traditional health services can be practiced in a safe and useful way. As elaborated in Paragraph 1.2.1, the transitional nursing sub-system as part of the transitional medical system in Indonesia is represented by transitional nursing organisations introduced from outside the communities, schematically presented in Figure 1.2. In the research area, the transitional nursing organisations provide three types of transitional nursing care, as follows:

Empirical Transitional Nursing Services. The empirical transitional nursing services include the application of transitional nursing practices, introduced from outside the communities, and empirically show their safety and benefits for the local patients. The empirical transitional nursing services often use one treatment method or a combination of traditional and modern treatment methods, including traditional and modern practices and medicines in compliance with the rules of good medical practice.

Complementary Transitional Nursing Services. Complementary transitional nursing services refer to the application of traditional and modern medicine by medical professionals, who utilise both science and ethnocience in theory and practice in compliance with rules of good medical practice. These services are provided in the communities on a commercial basis in complementary traditional health service facilities which meet the criteria, such as to follow scientific rules, not endangering the patient's or client's health, and paying attention to the best interests for them. In addition, these services should also have the potential to provide promotive, preventive, curative and rehabilitative care, and improve the quality of life of patients or clients, not only physically, but also mentally and socially. The skills used in transitional health services are practiced by using manual techniques, energy therapy, and therapy of the mind.

Integrated Traditional Nursing Services. The recent strategy of integrated traditional nursing services is a new form of nursing which combines the principles of conventional health care with traditional medicine in nursing, both as complementary or substitute services. Integrated traditional nursing services are carried out jointly by modern and traditional health workers for the treatment of patients or clients. These integrated traditional nursing services represent the transitional organisations and should be implemented as part of the general nursing facilities. This type of traditional integrated nursing service was introduced by the Minister of Health after obtaining a recommendation from the team of the Ministry of Health, based on the concept of complementarity. The team includes professional organisations, practitioners and traditional health experts. The implementation of integrated traditional nursing services in the existing nursing facilities is determined by the leader of the nursing service facilities concerned. If the service is performed in a hospital, it has to be approved by the leadership of the hospital, and based on the recommendation of the medical committee. If these nursing services are implemented at a nursing service facility, then the leadership's approval is given after getting a recommendation from a team formed by the head of the district health office. The type of non-hospital nursing facility has to be determined by the Minister of Health.

The integrated traditional nursing services consist of three categories, as follows:

- first, the integrated traditional nursing services using skills;
- second, the integrated traditional health services using herbs; and
- third, the integrated traditional health services using a combination of skills and concoctions in a unified traditional nursing system.

In the integrated traditional nursing services, manual skills and techniques are applied in the form of manipulation and movement of one or several parts of the body, or through energy therapies which involve treatment techniques using energy fields both from outside and from within the body itself. Sports therapy techniques are also practiced, utilising the ability of the mind to improve bodily functions. The traditional integrated health services also use *jamu*, including natural materials in the form of plants, animal ingredients, mineral preparations, or mixtures of these ingredients. The integration of traditional health services is also expected to include harmony and compatibility. However, the concept of integration of traditional medicine is still subject to some debate, specifically in terms of the different meanings between Traditional Medicine (TM) and Complementary and Alternative Medicine (CAM).

In this context, the concept of Integrated Traditional Nursing Services should not be confused with the Western concept of Integrative Nursing, in which integrative nurses view each person as a whole system, i.e. body, mind, and spirit, and where the environment has a strong influence of that person's health and well-being *(cf.* Bowler *et al.* 2010; Kreitzer & Koithan 2014). Meanwhile, WHO (2002a) mentions that Traditional Medicine and Traditional Nursing Services have the same meaning as Complementary Alternative Medicine (CAM). In fact, WHO (2002a) refers to a broad set of nursing practices which are not necessarily part of the country's own medical tradition, or are not integrated into its dominant nursing system. In the same way, Slikkerveer (2003) notes that CAM combines

foreign philosophies about health and healing, therapies and professionals, which provide alternatives to modern medical doctrines. Ernst & Dixon (2004: 308) also defines complementary medicine as: 'diagnosis, treatment and/or prevention that complements general treatment by contributing to the same whole, by meeting demands that are not met by orthodoxy or by diversifying the conceptual framework of drugs'. WHO (2002a) also claims that CAM is largely based on a holistic approach to medicine, which emphasises a person's health in general, rather than the disease alone.

Although the official WHO strategy (2002a) reports a general tendency to combine the concept of CAM with the concept of traditional medicine, some scientists disagree because it generally refers to medical practices which are outside the scope of modern medical knowledge systems (cf. Aiglsperger 2014). The difference is that there are several countries which claim that health services outside conventional services are forms of traditional medicine, and that the pattern of development of its services is often using unconventional methods. Some countries argue that CAM is using non-conventional services, practiced in various treatment methods, ranging from the use of natural products, holistic treatment of mind and body, and treatment with manipulation of body parts. Notwithstanding, CAM refers mostly to practices together with conventional services (cf. Tradkom Newsletter 2012 in Aswani 2016). During the WHO Congress on Traditional Medicine (2008) in Beijing, a resolution was adopted to develop traditional health services according to the conditions of the country. The Basic Health Research Results (2013) document the practice of Traditional Nursing Services which are often used by people in Indonesia, and include the four following types:

- traditional nursing services using *jamu*, aromatherapy, *gurah* ('herbal mixture for colds'), homeopathy and spa;
- traditional nursing services using skills with tools, including acupuncture, chiropractice, *bekam* ('cupping'), apathy, *ceragem* ('thermal massage'), and acupressure;
- traditional nursing services using skills without tools, including *pijat-urut* ('massage'), special massage for mothers and babies, treatment of fractures, and reflection therapy; and
- traditional nursing services using skills treating the mind, including hypnotherapy, treatment with meditation, *prana* ('yoga') and inner power.

In 2013, a total of 89,753 out of 294,962 (30.4%) households in Indonesia utilised traditional health services in the past year. The types of traditional health services which are utilised by most households include skills without tools (77.8%) and ingredients (49.0%) (*cf.* Riskesdas 2013). The data mentioned above show that there is a tendency of going back to nature which is felt by the Indonesian people and has a high interest in traditional ways of maintaining health. As indicated above, Indonesia's health profile released by the Ministry of Health (2012), showed the number of districts/cities implementing Complementary and Alternative Medicine (CAM), and Traditional Medicine (TM) in Indonesia, amounting to 103 districts/cities or around 20.7% of 497 districts/cities. This is an interesting result since Indonesia is essentially a multicultural society which has a variety of *kearifan kesehatan lokal* which has a great potential for the development of transcultural nursing, particularly for the elderly. Other facts also state that out of 2,083 hospitals in Indonesia, only 55 hospitals are providing traditional or complementary and alternative medical care (*cf.* Ministry of Health 2013).

Initially, the organisation structure of the Ministry of Health included the traditional nursing services executed by the 'Directorate of Traditional, Alternative and Complementary Health Services', established at the 'Directorate General of Nutrition and Maternal and Child Health' of the Ministry of Health, divided into 4 Sub-Directorates. With the re-organisation of the Ministry of Health, the 'Directorate of Traditional, Alternative and Complementary Health Services' changed its name into the 'Directorate of Traditional Nursing Services', which is currently under the auspices of the 'Directorate General of Health Services' of the Ministry of Health, because it promotes the development of traditional health services in hospitals and *puskesmas*, aimed at the provision of traditional integrated health services. The Directorate of Traditional Nursing Services is divided into three Sub-Directorates, namely the 'Empirical Traditional Nursing Services Sub-Directorate', the

'Complementary Traditional Nursing Services Sub-Directorate' and the 'Integrated Traditional Nursing Services Sub-Directorate'. For traditional integrated nursing services, the programme to be implemented has to be adjusted to the policies of Indonesia.

In the Declaration of Primary Health Care of Alma Ata of 1978, WHO presented policy perspectives on efforts to integrate traditional health services into national health services, which are policy models attuned to the conditions of each country. Through the implementation of the Norms, Standards, Procedures, Criteria and Regulations (NSPK) carried out to improve the quality of traditional health services in health facilities, the government, the private sector and the community also support the control of traditional health service advertisements, which are not appropriate or misleading to the public. The programme of the Directorate of Traditional Health Services, in its implementation, still provides supplies to health workers in order to increase its capacity in the form of training in traditional health services for medical treatment with acupuncture, herbal medicine and acupressure focussed on the implementation of the integrated traditional nursing services in hospitals and health centers. The Medical Acupuncture Service is a type of manual service using acupuncture needle tools. Acupuncture comes from the word *acus*, which means needle and *punktura*, which means 'inserting'. It is also a method of therapy with needles administered at certain points on the surface of the body to treat complaints, illnesses and diseases. Acupuncture stimulation is practiced by various techniques through the insertion of thin iron needles through the skin manually or by electrical stimulation (*cf.* National Center for Complementary and Alternative Medicine 2012 in Aswani 2016).

The Herbal Medical Services are included in traditional herbal health services which are implemented in health facilities. *Obat traditional* ('Traditional Medicines') include ingredients or concoctions in the form of plant materials, animal ingredients, mineral materials, galenicals preparations, or mixtures of these materials which have been used for many generations for treatment, and can be applied in public in accordance with appropriate norms. Built on the growing level of evidence-based efficacy, accepted requirements for raw materials and their successful utilisation, the Indonesian natural medicines are divided into three groups, *i.e.* herbal materials, *obat herbal terstandar* (OHT) ('standardised herbal medicines') and phytofarmaca, referring to materials based on natural ingredients which are clinically tested and of which the products are standardised (*cf.* Aswani 2016; Ministry of Health 2022). Accordingly, the government is paying special attention to traditional health services as a form of indigenous medical knowledge, which is expected to become a major asset for the promotion of sustainable nursing in the community in the near future.

6.2.3 Modern Nursing Organisations (MNO)

As the continuation of the previous government programme in achieving health care development in Indonesia, the Ministry of Health has launched a Strategic Plan 2015-2019 in which it has no vision and mission, but following the vision and mission of the President of the Republic of Indonesia based on mutual cooperation (*gotong royong*). Efforts are made to realise this vision through seven development missions and *Nawa Cita's* priority agenda. The Ministry of Health has a role and contribution in the achievement of all of *Nawa Cita*, especially in improving the quality of life of Indonesian people, which aims to improve the status of public health and improve responsiveness and public protection against social and financial risks in the health sector. Improved public health status is carried out on all continuum life cycles, from infants, toddlers and school-age children, to adolescents, working age groups, maternal, and elderly groups.

Thus, the direction of the national health care development policy and strategy for 2015-2019 is part of the 2005-2025 Long-Term Development Plan in the Health Sector (RPJPK), which aims to increase awareness, willingness, and the ability to live a healthy life for everyone so as to increase the level of public health as high as can be realised, to the people, nation and state of Indonesia which is characterized by its population living with their behaviours and in a healthy environment, having the ability to reach quality health services, fairly and equitably, with the highest degree of health in all regions of the Republic of Indonesia. The target of health care development to be achieved in 2025

is an increase in the degree of public health, which is indicated by an increase in life expectancy, declining infant mortality rates, declining maternal mortality rates, and decreasing prevalence of malnourished children under five. In order to achieve these goals and objectives of health care development, the 2005-2025 health care development strategies include the following:

- national health-oriented development;
- community and regional empowerment;
- development of efforts and health financing;
- development and empowerment of health human resources; and
- management of health emergencies.

The policy directions and strategies of the Ministry of Health are based on national policy and strategy directions as stated in the National Medium-Term Development Plan 2015-2019 (RPJMN). In order to guarantee and support the implementation of various effective and efficient health efforts, for those considered priority with a great leverage in achieving the results of health care development, an integrated effort is made in the focus of health care development. The policy direction of the Ministry of Health refers to three important issues: 1) strengthening primary nursing; 2) application of the continuum of care approach, and 3) health risk-based interventions (*cf*. Ministry of Health 2015).

Moeloek (2020 raises five strategic issues which are priorities in the health care development period of 2020-2024. These five issues have been identified in the National Working Meeting 2019, such as the Maternal Mortality Rate (MMR) and the Neonatal Mortality Rate (IMR) which is still high, tuberculosis (TB), non-communicable diseases (PTM) and complete basic immunisation coverage. Moreover, CVD is also one of the priorities in health care development in Indonesia. Riskesdas (2018) documents an increase in Non-Communicable Diseases (PTM) which requires special handling and control strategies. Based on the results of the *Burden of Disease* (BoD), this indicates the years of life lost due to early death and disability (DALY Lost), in the period 1990-2017. It shows a significant shift from PM (Infectious Disease) to PTM. Even in 2017, the burden of PTM nationally reaches the proportion of 70%. According to the Ministry of Health (2019), health research and development is one of the important components to be carried out in the national development programme, as mandated in Presidential Regulation No. 72 of 2012 on the SKN.

The SKN is a health management system organised by all components of the Indonesian Nation in an integrated and mutually supportive manner in order to ensure the achievement of the highest degree of public health. Health management is the process or means of achieving health care development goals through the management of health efforts, health research and development, health financing, health human resources, pharmaceutical preparations, medical devices, food management, health information and regulation of community empowerment.

SKN needs to be carried out in the context of overall health care development taking into account social determinants, including daily living conditions, education level, family income, distribution of authority, security, resources, public awareness, and the ability of health workers to address these problems. The SKN is prepared by taking into account the approach to revitalising primary nursing, which includes coverage of fair and equitable health services, providing quality health services which favour the interests and expectations of the people, public health policies to improve and protect public health, leadership, and professionalism in health care development.

The SKN is also prepared by paying attention to innovations or breakthroughs in the implementation of broad health care development, including strengthening the referral system. The global approach to basic nursing has been recognized as the right approach in achieving health for all by considering gender responsive health policies. The SKN is intended to make adjustments with various external and internal changes and challenges, so that it can be used as a guideline in health management by the National Government, the Regional Government, and/or the community including legal entities, business entities, and private institutions. The SKN reinforces the meaning of health care development in the context of fulfilling human rights, clarifying the implementation of health care development in accordance with the vision and mission of the 2005-2025 Long Term Health Care Development Plan (RPJP-K), strengthening partnerships and transformative leadership,

implementing equitable health efforts to be affordable and high-quality, thereby increasing health investment for the success of national development. Thus, the SKN is a health management policy document to be used as a reference for implementing health services development.

Nursing services as a health service sub-system are an integral part of the overall nursing system. Below, the concept of nursing services in the provision of nursing care is shown in Figure 6.1. Nursing services are part of health services which include basic and referral services so as to improve the peoples' health status. Nurses have roles in *Upaya Kesehatan Perorangan* (UKP) ('Individual Health Efforts') and *Upaya Kesehatan Masyarakat* (UKM) ('Public Health Efforts') in all nursing settings at each referral level. The form of services provided includes comprehensive biological, psychological, social, and spiritual aspects for clients: individuals, families, groups, and communities, whether in a healthy or sick condition covering all life processes.

As shown in Figure 6.1, the proportion of nursing staff (nurses and midwives) is the largest proportion of the work force (48%) and can affect the performance of hospitals and health centers or other health facilities. The role of nurses is in individual health efforts and public health efforts in all health service settings at each level of reference. The forms of services provided include bio-psycho-socio-spiritual help, comprehensive for individuals, families, groups, and communities in a healthy range of illnesses covering all life processes.

The contribution of nurses in care services in all settings can also be a leverage for quality health services. The quality of nursing services is determined by two factors: 1) quality of care, improvement and development of human resources or health personnel, and 2) quality of services, the provision of facilities and infrastructure which support the implementation of tasks (*cf.* Ministry of Health 2015; Budiono 2016). At the level of basic services performed in the scope of health centers with a family and community nursing approach towards family tasks in health, these include early recognition of health problems, taking decisions, overcoming emergencies, providing basic services to sick family members and modifying the environment.

Figure 6.1 The Framework of Nursing Services in Indonesia
Source: Ministry of Health, Republic of Indonesia (2015).

Conceptually, health is said to be good, if it meets the following requirements: available, sustainable, acceptable, appropriate, accessible, affordable, qualified, serving with a conscience (soft system), continuous improvement, and empowering customers. Meanwhile, the health referral system in Indonesia includes referral services in the form of: a) basic health services, in general, carried out in *puskesmas*, auxiliary *puskesmas*, mobile *puskesmas*, and other services in the *puskesmas* working areas other than hospitals, and b) referral health services, generally carried out in hospitals. Nursing care is needed, both in basic health services and in referral health services. Nursing services are often used as a benchmark for the image of a hospital in the eyes of the community; thus, it requires the professionalism of the nurse and the nurse manager in providing and managing nursing care to patients.

An optimal contribution in realising quality health services will be achieved if the nursing system supports professional nursing practices and is guided by standards which have been set and managed by managers with adequate abilities and skills. Nursing is provided in three levels, namely: primary care, secondary or acute care and tertiary care. Each level has a structure to regulate and provide health services. As Budiono (2016) argues, the nurse has an important responsibility to provide care for clients at all levels and to determine preventative actions. The level of health services and the level of prevention is determined as follows:

Primary Nursing. Primary nursing involves the client directly and is usually the initial contact with the primary care giver, for example a doctor or nurse. Primary nursing services focus on early detection and routine care. Primary nursing services have to be easily accessible to clients. Primary nursing service places comprise a doctor's practice, clinics managed by nurses, and occupational health service places.

Secondary Nursing. Secondary nursing includes the provision of special medical services by specialist doctors or by hospitals referred by primary nurses. The client experiences signs and symptoms which are recognized as diagnostic or which require further diagnostic action.
Tertiary Nursing. Tertiary nursing is a level of care which requires high specialization and techniques to determine the diagnosis and treat complex health problems or unusual health problems.

In addition to the level of nursing services, Leavell & Clark (2005) report that there are also levels of prevention which help to explain the client's healthy behaviour at several different levels of prevention as follows:

- *Primary nursing prevention*. Primary nursing prevention is an action intended to improve health and protect against disease. Primary prevention is carried out before the disease gives rise to signs and symptoms.
- *Secondary nursing prevention.* Prevention of secondary nursing is an action which aims to maintain the health of clients who experience health problems, complications or disabilities. Secondary prevention is carried out during the pathogenesis period after the disease shows signs and symptoms.
- *Tertiary Prevention*. Tertiary prevention is a precautionary measure related to rehabilitation and to return the client to the maximum functional status within the limitations caused by illness and disability. This level of prevention occurs after an illness causes extensive damage, such as stroke.

Providing nursing care is a way to provide health services to clients who are undergoing changes in response to various important issues in nursing. The issue which is currently developing is that the movement of attention across health services has changed, which was initially oriented towards inpatient services and is now seen more as an outpatient installation. Hospitals are now looking for new ways to provide services aimed at achieving efficiency and shorter times for care. More attention is given to the need for preventive services, where organisations provide services which help individuals and families to maintain health or detect disease at an early stage. Service delivery is

directed to the participation of the community. Health education is directed to the awareness of the community that the emergence of disease is closely related to community behaviour, especially unhealthy behaviours which can cause disease problems in the community, for example: littering, or waste management, forming a threat of disease outbreaks in the community.

6.2.4 The Integration of *Kearifan Kesehatan Lokal* into Transcultural Nursing

Presidential Regulation No. 72 of 2012 on the implementation of SKN in the regions must pay attention to *kearifan lokal* (índigenous knowledge) which is regarded as the potential for the region which can provide a contribution to improved health care development outcomes and effectiveness that can be measured quantitatively from increased community participation and qualitatively from the improved quality of physical and spiritual health. The regional development policy in the health sector has to be in line with the SKN, although in practice, it can be adjusted to the potential and conditions of the community in the area, especially in the provision of basic health services for the people.

SKN also provides an opportunity to integrate the *kearifan kesehatan lokal* of each region into the planning of government policies, especially health policies in order to achieve an optimal health status of the local population. The year 2014 became a milestone in the implementation of traditional nursing services with the adoption of Government Regulation Number 103 of 2014 concerning Traditional Nursing Services, which regulates their delivery. Riskesdas (2013) proved that the proportion of households which used traditional nursing services was 30.4%, based on the type of service most widely used, encompassing skills without tools at 77.8%, skills with potions at 49%, skills with tools at 7.1%, and skills with psychological therapies at 2.6%. These data illustrate that traditional health services have considerable potential and need serious attention as part of a comprehensive national health care development. The Ministry of Health's Strategic Plan (Renstra) for 2015-2019 has set several indicators for achieving the targets for the delivery of traditional health services, including the number of *puskesmas* providing traditional nursing services, and government hospitals providing traditional health services. The target set for 2017 for the indicators of the *puskesmas* providing traditional health services was 3336 out of the total number 9767 *puskesmas*, while the target indicators for government hospitals providing traditional health services were 183 out of a total of 984 government hospitals.

It is generally recognised that health care development has to be carried out with a comprehensive approach, with reference to the President's vision and mission based on mutual cooperation. Efforts to realise this vision are carried out through *tujuh* (‘seven’) development missions, in which the 4th mission refers to the realisation of high quality, advanced and prosperous Indonesian human life. In 2015-2019, national development independence is also established in, respectively, the economic field, sovereignty in politics and personality in the culture, known as *Trisakti.* In order to realise this mission, nine *Nawa Cita* (‘priority agendas’) are outlined, in which the 5th agenda is intended to improve the quality of Indonesian people's lives, which would be achieved through several programmes, *i.e.* the Smart Indonesia Programme, the Healthy Indonesia Programme, and the Indonesia Work and Prosperous Indonesia Programme.

The Healthy Indonesia Programme has 3 components, namely: 1) Healthy Paradigm; 2) Strengthening Health Services; and 3) National Health Insurance (JKN). The National Long-Term Development Plan (RPJPN) for 2005-2025 gives priority to promotive and preventive efforts. In the Ministry of Health's Strategic Plan for 2015-2019, there is the Healthy Indonesia Programme, encompassing the Healthy Paradigm, the Strengthening Health Services, and the National Health Insurance as an effort for the Indonesian people to behave in a healthy environment, able to reach quality health services to achieve a health status as high as possible. The Healthy Indonesia Programme refers to a promotive and preventive effort through the Healthy Indonesia Programme with the Family Approach (PIS-PK) and the *Gerakan Masyarakat Sehat* (Germas) (‘Community Movement for Healthy Living’).

The Directorate of Traditional Health Services is one of the working units under the Directorate General of Health Services, where the majority of activities lead to the achievement of the Directorate General of Health Services. These activities include objectives, policies, strategies, performance indicators and problems which will arise within a period of 1 year. The performance indicators of the Directorate of Traditional Nursing Services show that these indicators have generally exceeded the established targets.

The *puskesmas* implementing traditional health services with a Rencana Strategis ('Renstra target') have reached 3410 *puskesmas* (102.2%) from the Renstra target, which is 34.91% of the total number of *puskesmas* (9767). The success of the achievement of indicators is inseparable from the efforts of dissemination, advocacy, monitoring, evaluation, and technical guidance on a regular and ongoing basis, both at the center and in the region, as well as with related cross-sectors. The Directorate of Traditional Nursing Services added the Strategic Plan Indicator in 2017 by including the indicator of the number of Government Hospitals conducting Traditional Health with a target of 183 hospitals. The achievement of the target in 2017 has exceeded the target of 184 in the total number of 984 government hospitals. This condition is supported by the existence of other activities which support the achievement of targets carried out by the community, such as in education and social services (*cf.* Performance Accountability Report of Government Agencies 2017).

CHAPTER VII THE TRADITIONAL NURSING INSTITUTIONS

7.1 The Sundanese Indigenous Knowledge System

7.1.1 Cosmology and Beliefs of the Sundanese People

Embarking on the relationship between the Sundanese belief system and the peoples' view on life affecting their health behaviour, this Chapter presents a description of the belief system of the Sundanese people through the documentation of the cosmology of Sundanese people and their way of life. Furthermore, the Sundanese culture of health and healing is described followed by the documentation of the Sundanese people's view on health and illness in line with the traditional nursing of the Sundanese people regarding CVD prevention and health promotion, including the use of *ubar kampung* by the Sundanese people in the Sumedang Regency.

Slikkerveer (1999b: 171) underscores the significance of the concept of cosmovision by arguing that: '*Cosmovision refers specifically to the way in which members of certain cultures view their world, cosmos or universe.*' In this way, the cosmovision guides the relationships which the local people maintain with the three worlds, *i.e.* the human, the natural and the spiritual worlds. According to Haverkort (1995: 456): '*the concept of cosmovision thus refers to the way a certain population perceives the world cosmos; it includes the assumed interrelationship between spirituality, nature and mankind; it describes the roles of supernatural powers and the way natural processes take place, as well as the relation of man and nature, and it makes explicit the philosophical and scientific premises on the basis of which prevention in nature (as is the case in agriculture and nursing) take place'.* According to Carl Sagan (in Sumardjo 2013), the cosmos is all that is, and all that is always there.

Cosmology is all human knowledge about the existence of the universe. The concept underscores that every religious individual believes that what exists is not only what is seen or captured by the senses, but also everything which is not visible – spiritual – so it is a concept about the human existence. The Sundanese cosmovision requires special attention for the world order with special reference to mystical, spiritual and theological characteristics (*cf.* Sumardjo 2013; Erwina 2019). As Saefullah (2019) indicates, cosmology is concerned with the study of the human understanding of the universe and its components, enabling humans to achieve their happiness through their words and actions, based on their views of themselves, their society, environment, ancestors and spiritual beings.

From time to time, the Sundanese cosmovision has undergone cultural development and change. The development took place under the subsequent influence of other cosmovisions, such as during the era of the Hindu influence until 1500, the era of Islamic influence from 1500 to 1800, the era of Dutch colonial rule (from 1800 to 1942), the era of the Japanese colonial rule from 1942 to 1945, and the era of independence from 1945 until now. A similar process is reflected in the historical developments in the Sundanese region, which has been influenced by various historical eras.

The Sundanese way of life can also be observed among the community members, whether they are from the aristocratic group or from the group of ordinary people, as they all are members of the same community of worship. Similarly, the Sundanese way of life can also be assessed on the basis of data resources, either in the form of literature or written materials or through interviews with informants, often supplemented by observations at the location of the data resources (*cf.* Warnaen *et al.* 1987; Ekadjati 2005; Sumardjo 2013; Salahudin 2017).

The Sundanese cosmology is divided into three parts: *sangkala* ('the natural world'), *niskala* ('the unseen world'), and *jatiniskala* ('the supernatural world'). The understanding of the Sundanese people becomes possible along the lines of the Sundanese concepts of *Ti Tangtu* and *Tilu Inditan*, which supports their daily life. This is also represented in the Sundanese philosophy: if you want to live safely, then you have to follow the principles of *tri tangtu, hirup nu hurip dina kahirupan* (living in prosperity), so you have to *miang* ('go'), *bajuang* ('fight') and *mulang* ('go back') with all the *tekad* ('desire'), *ucap* ('words'), and *lampah* ('behaviour') which has to be beneficial to the lives of

others, the social environment, the nation and the state. All human behaviour in life has to be an example for the next generation; *hirup kudu nyontoan jeung picontoeun* means that someone has to have a vision and be responsible for oneself, others, and the environment, *hirup kudu neundeun jeung ninggalkeun*, with the hope that if humans eventually have to return to *Purbatiti Purbajati, mulih ka jati mulang ka asal, congo nyurup dina puhu, sirnaning pati-rawayan jati*, they return to the origin of facing God in a state of *khusnul khotimah i.e*. fulfilment. The concept of *tri tangtu* as an indicator to measure the individual balance, namely on maturity of age, intellect and emotion, aims to train humans to be more grateful, so that optimal quality of life can be achieved (*cf.* Suryalaga 2010; Sumardjo 2013; Erwina 2019; Saefullah 2019). The Sundanese also believe that when the three indicators are out of balance, there will be no harmony in life.

In carrying out daily life in various fields, the concept of *tri tangtu* is used in the government system by applying *rama, resi, prabu*, for example in determining government policies and economic strategies. The government has the role of *rama*, which is responsible for observing and evaluating food security and the government system which is operating; *resi* plays the role of the law maker and regulation, for example the Minister of Health, and *prabu* is the executor of the government system, namely government officials and stakeholders. Likewise, the governance structure and layout of government buildings in the Pasundan Regency still represent the *tri tangtu* concept. The architectural layout of government buildings and Sundanese traditional houses illustrate the concept of tri tangtu from the top to the bottom level of the building. There is *ambu luhur* or the upperside of the house (‘rooftop’); *ambu tengah*/*pangkeng* or the middle side of the house where the rooms are built; and *ambu handap* under, or the lower/groundside of the house. In the same way, Sundanese cosmovision can be described from various perspectives of daily life, including agricultural traditions, the use of heirlooms (weapons), and oral and written literary works, such as traditional poetry (*mantra, ajian, jampe, jangjawokan, guguritan*) which are full of symbols and myths believed by the Sundanese people. The old Sundanese people respected the power of God, both vertically and horizontally, and have led to a new belief system accompanied by traditional and social values (*cf.* Erwina 2019; Saefullah 2019).

Even though most Sundanese people adhere to the religion of Islam, in daily life there still appear elements of non-Islamic forms of belief. Religious life is often also influenced by belief in spirits and magical powers. Various rituals are performed in each phase of the life cycle, from marriage, pregnancy, and childbirth, to puberty, adulthood and death. In addition, it is related to building a house, occupying a new house, planting rice etc, containing non-Islamic elements. Thus, it is difficult to separate religion from local belief systems, because both are still practiced by some Sundanese people (*cf.* Garna 2008). This is especially the case in rural communities, where the boundary between elements of religion and non-religion are rather diffuse. The elements of Islam and the elements of the traditional beliefs and local customs are generally integrated into one belief system. The Sundanese people assume that all human life cannot be separated from the cosmos, which is a greater in unity (macrocosm) and interconnected. Such beliefs are called *cosmic classificators* (*cf.* Ekadjati 1984; Sumardjo 2013). There are many words like *pamali, sumpah, cadu*, and so on, in which the prohibitions are passed down from generation to generation. If violated, it will bring consequences or disasters to the violators, even to the entire community where they lives. In addition to the prohibition, there are also suggestions which would be felt illogical when viewed in the series of cosmic unity as mentioned earlier: for example, to make someone have courage, he or she has to eat the heart of a tiger, so as not to be disturbed by evil spirits. Among these spirits, there are also those who like to occupy certain places and disturb humans, commonly known as *dedemites, jurig, ririwa, kuntianak, kelong, budak hideung*, and so on (*cf.* Abdulah 2006). Trust in the spirits of the ancestors is still evident with the holding of offerings aimed at the spirits of *karuhun* (‘ancestors’), to ask for blessings before carrying out important work.

With the ceremony, offerings, *'nadran/nyekar'* and reciting prayers and *kaul* are believed to provide safety and avoid interference from these evil spirits. These ceremonies are called *'tulak bala'*. Some *tulak bala* ceremonies are done alone at their own homes, while some are carried out jointly led by *Ajenga*n or *kuncen* or *dukun* (‘shaman); for example, the *'seren taun'* ceremony and the *turun*

jimat ceremony at *Bulan Mulud* in Sumedang (*cf.* Ekadjati 2003). Plants are also considered to contain magical power that can be used to increase the magical power of humans, for example: coconut leaves, *jaringao, jawer kotok, hanjuang*, banana trees, ivory coconut, sugar cane, areca nut, etc.

Likewise in daily life, a *shaman* is considered to have magical powers compared to people in general and can use that power to heal the sick or make people sick. The Sundanese people still believe in the existence of sorcerers, traders who can cause people to become sick or die. There are also shamans who can make people fall in love or hate someone, commonly referred to as a *pellet* or *asihan* ('shaman'). Similarly, if someone wants to look youthful and beautiful, the shaman will provide implants made of gold pieces which are inserted under the skin. Implants can also be used to make someone immune. Water, fire, and soil are also considered to have great magical powers, so that shamans often treat sick people using only water which is given a spell. The water is then drunk and used for bathing by the sick person (*cf.* Ekadjati 1984).

7.1.2 The Sundanese Peoples' Notion of Indigenous Knowledge

In the traditional Sundanese culture, people hold a comprehensive concept of local knowledge, known as *elmu*, which includes moral teachings, ethics, service, mysticism, religion and belief in the existence of *uga* ('destiny or nature'), *kila-kila* ('signs in natural events in life'), and *wawales* ('reciprocity'). The interpretation method is called *elmu kirata* or *ki-rata, kirata basasa*, being an acronym of *kira-kira nyata*, which is the ability to interpret certain words with the correct meaning *(cf.* Ekadjati 1984; Warnaen *et al.* 1987; Garna 2010). According to Iskandar in Abdulah (2006), the Sundanese people's knowledge system is divided into five classes, namely:

- knowledge about nature;
  knowledge about flora;
- knowledge about fauna;
- knowledge about human behaviour; and
- knowledge about the human body.

All the classes of the indigenous knowledge system on the universe are always related to each other, and everything has its place. Human's place in relation to the universe determines his position in the social, economic, and religious world. By consequence, certain people in society possess special magical powers, because they believe that the five classes in the knowledge system are related to the four directions of the wind and one of its center, called *madhab papat kalima pancer* (*cf.* Figure 7.1).

Each direction has a certain colour and a particular characteristic *(cf.* Ekadjati 1987). In the Sundanese rural communities there exists also special knowledge about the emergence of *bintang wuluku*, a group of stars which are forming a *wuluku* line. In addition, through their knowledge of space and time, the Sundanese people are looking for safety, fortune, and livelihood, which is called *kolenjer* or *tunduk* or *palintangan*, and includes the calculation of the value of days, markets, months, and years. It is used to predict good days or bad days in relation to all daily events, for example building a house, harvesting rice, traveling to look for food, determining the right *repok jodoh* ('match partner'), determining the wedding day, giving a name to the child, etc. If someone is going to travel, then the position of *kala* has to be taken into account, so that it does not happen during *mapag kala* which can cause misfortune or disaster. According to Ekadjati (1984) and Abdulah (2006), in the local Sundanese belief, *kala* follows every day a certain direction of the wind. In the Sundanese calendar, there are calculations according to *kala* which determine the numerical value of every day and month. While the method of calculation is different in each region, the Sundanese people are still practicing the calculation of the knowledge systems in daily life, including in Sumedang. Thus, the belief system and the knowledge system have such a close relationship that they cannot be separated from each other. The entire life of the Sundanese people is influenced by their outlook on life and way of thinking, which is based on their belief that basically all life is aimed at maintaining the balance of the three worlds in the universe. The harmonious balance among the three worlds has to

be maintained by the performance of various kinds of ceremonies and magical practices. The balance with the human world is largely maintained by the principle of reciprocity. There is the expression *silih asah, silih asih, silih asuh: silih asah* refers to sharing experience and knowledge among each other, and one's mistakes are corrected by the fellow community members; *silih asih* means loving each other; and *silih asuh* means having to guide each other. With such a view of the Sundanese people, all actions and behaviours which can disrupt the harmonious balance will be considered as 'bad', while actions and behaviours which can restore the balance will be considered as 'good'.

7.1.3 The Way of Life of the Sundanese People

Every member of a community who wants to stand firm and knows clearly the direction of the goal they want to achieve requires a view of life. The view of life is a concept which a person or group in a society holds to respond to and explain all the problems of life in the natural world *(cf.* Warnaen *et al*. 1987). As Garna (2008: 187) mentions, a way of life refers to: '*a series of beliefs in the form of thoughts and characteristics about the world. The beliefs held about something that has to and should be believed are related to normative, moral matters that have a certain usefulness. View of life is a philosophy of life or concepts about life* [...].' This view of life will determine the direction and behaviour about how to solve the problems of life.

Throughout the course of their history from the past until today, the Sundanese people have lived and survived in the Tatar Sunda Region, being their *lemah cai* ('homeland'). The Sundanese society has been able to survive because of its members' own view of life, enabling them to live independently amidst other cultures. Although in the course of history, their view of life has maintained its basic structure, it has undergone certain changes. As stated by Sumardjo (2011: 4), '*Change is a necessity, there is no culture that does not change'*. In this context, there are, as Ekadjati (1984) argues, two kinds of changes, namely occidental changes and orientalist changes. While occidental changes depart from the delay itself, which has existed since the ancestors of the Sundanese people in this region, their dealing with foreign cultures was determined by their desire to change in their own direction. The Sundanese people value the Western culture in their own way because it can be beneficial for development. Changes occur when the Sundanese people utilise modern art as a means to change Sundanese art. Although these changes are determined as occidental, the rural Sundanese people still continue to maintain the cultural roots of their ancestors. While they generally resist extreme changes, their outlook on life is characterised by both stable and dynamic experiences, rendering their position as indigenous people in the Sundanese region in West-Java. In this process, the Sundanese peoples' view of life is able to select such changes to participate in the national culture of the Indonesian society, while at the same time maintaining their own cultural values, norms and customs rooted in their local institutions: *Bhineka Tunggal Ika* ('Unity in Diversity'). According to Ekadjati (1984), Warnaen *et al.* (1987), Garna (2008), and Suryalaga (2010), the Sundanese view of life seeks to achieve glory, happiness, peace, and enjoyment of life, free from heavy burdens, living in harmony, submissive and prosperous, and is based on the following types of the philosophies of life:

- *life philosophy of humans as a person;*
- *life philosophy of humans with society;*
- *philosophy of human life with nature;*
- *philosophy of human life with God;*
- *philosophy of human life in pursuing outward and inner satisfaction.*

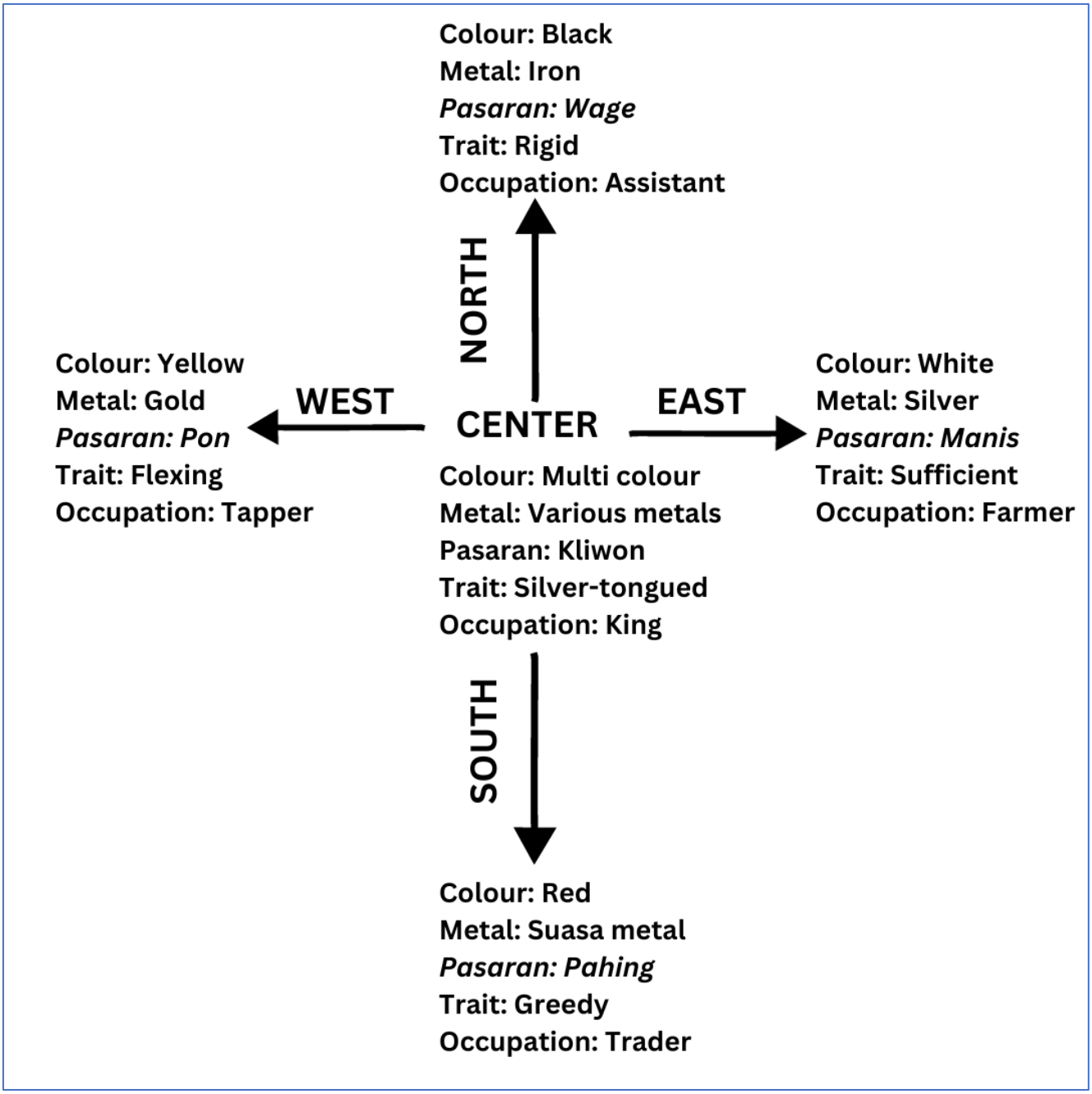


Figure 7.1 *Madhab papat kalima pancer (Kolenjer or Palintangan)* are the four cardinal points (east, west, north, south), and their centers each have their own properties, colours, market days and metals, the meaning of which affect human life and self. *Source*: Adapted from Ekadjati (1987).

The Sundanese people realise that they are the guardians of an important role in the process of their individual and social life, while maintaining a harmonious balance. In essence, the Sundanese people are not individualistic people, because they always pay attention to other people. With a positive mindset, the Sundanese people realise that humans are full of mistakes and that God is the *Lautan hampura* ('the sea of forgiveness'). The Sundanese people belong to an ethno-cultural group which easily forgives the mistakes of others, known as *jembar manah*, with the words *hampura* and *paralun* as an expression of *karuhun* ('gratitude') to God. The Sundanese oral expressions are used as social control in such situations in order to achieve the balance of life. The Sumedang community continues to adhere to the above-mentioned philosophies of life.

7.2 The Sundanese Concept of Health and Disease

7.2.1 The Sundanese People's View of Health and Illness

The concept of health in Sundanese refers to both physical and spiritual health, and is reflected in oral traditions and ancient literary texts, *sanghyang suksa kandang karesian* and *carita pantun lutung kasarung*. It appears that the Sundanese people are holding the view that these two principles are equally important and closely interrelated. Physical phenomena are always expressed in connection with spiritual phenomena, and *vice versa*, as mentioned in the phrase '*ngeunah angen, ngeunah angeun'*, which refers to the connection between physical and spiritual satisfaction. Health problems are not only related to health and illness, but also to the human approach in their interaction with various environments, including the social, the cultural, and the natural system. Lubis (2000) states that thoughts about health behaviour in certain areas, including in the Tatar Sunda Region, are largely governed by customs, beliefs, religious teachings, norms and legal systems.

Thus, health problems are embedded in the cultural values and life orientations, even though in reality the cultural values and worldviews are constantly changing. According to Van Peursen in Lubis (2000), the development and nature of human thought progress through the following stages: mythic, ontological, and functional. 'Mythic' refers to the attitude of humans who feel that they are surrounded by supernatural forces. 'Ontological' refers to the attitude of humans who do not live in a cohesion of supernatural powers, but who freely want to know about their environment. 'Functional' refers to the nature of mind which appears in modern humans who no longer believe in the mythic mind. In line with Comte (1798-1857) in Lubis (2000), the level of human intellectual development is divided into three stages, *i.e.* theological, metaphysical, and positivistic.

The theological stage is characterised by belief in the forces of nature, supernatural powers, and the gods. At the metaphysical stage, symptoms are explained in a speculative or philosophical abstract framework. At the positivistic stage, symptoms are explained in an empirical framework of observations, experiments, and comparisons with a view to achieve a scientific explanation. In order to understand the cultural context, the Sundanese view of health and illness was initially assessed by research not only on the oral resources, such as proverbs, expressions, and fairy tales, but also on traditional historiographic literary works, such as the *carita*, *pantun (rajah*), *babad*, and *wawacan*. The nature of these resources has often been influenced by the authors in comparison with reality, known as *mentifact* data ('mental facts'). By consequence, the researchers prioritise what is implied, not what really is written.

These data resources can also be used to understand how the culture interpreted health in the community in the past (*cf.* Lubis 2000). At the mythic stage there is the concept of myth, which is a symbolic form in interpreting the world of experience and reality, characterised by the close dependence of humans on supernatural forces which can be observed from animals, planets, trees, and mountains. This mythic view assumes that the supernatural powers can cause, prosperity, fertility, health; *vice versa* it can lead to destruction, bad luck, disaster, disease, or infertility. It depends on whether humans can harmonise the lives of microcosms and macrocosms in the universe. If there is a disturbance between the two forms of cosmos, myth has to be used to restore the harmony. Thus, the myth serves to maintain harmony in life from all possible disturbances or threats from outside forces and show the existence of supernatural powers, so myth has to be known, and passed on to future generations (*cf.* Kartodirjo 1984).

The concepts of health and illness in the traditional culture of the Sundanese society involve three main areas, namely:

- illness problems, disease prevention and health maintenance;
- functionaries who apply a cure for a disease, called a *dukun* ('traditional healer') or shaman;
- material matter of medicines.

For some modern people these three areas are often considered to be related to problems beyond the reach of human reason. Health problems are important for the Sundanese people. The significance is expressed in the following phrase: *saur sepuh, anu utama badan walagri sarta cageur, leuwih tibatan kakayaan* meaning that a healthy body is healthier and better than wealth. The ideal of every Sundanese individual is encapsulated in the words: *'cageur, bageur, bener, pinter*, in which *'cageur'* refers to the importance of physical and mental health. The Sundanese people consider health as an important inseparable part of the human life cycle, from birth to death.

As Erwina (2019) documents, the Sundanese people apply health behaviour patterns in the form of health promotion, disease prevention, healing and recovery in all respects, especially in determining not only the location of building houses and maintaining water sources, but also in choosing functional and symbolic plants and trees, especially in agriculture and animal husbandry. Thus, these aspects receive considerable attention, especially with regard to the body, the family, property, the position, and the environment. The body has to be maintained because a healthy body is one of the conditions to achieve the hope of *heubel hirup* ('longevity') to live a long healthy life. A healthy body will show the beauty of the body which is associated with inner beauty depicted as *sorot* or *semu* (*cf.* Warnaen *et al*. 1987). Similarly, the body needs *kadaharan* ('food') to create energy and health. Much effort is made to satisfy the needs of food, as implied in the expression: *mun teu ngopek moal nyapek, mun teu ngakal moal ngakeul, mun teu ngarah moal ngarih*, meaning that people have to find their sustenance in any possible way. Efforts to acquire food in agriculture, animal husbandry, and hunting are undertaken in order to meet the needs of food and nutrition.

The Sundanese people obtain their food from resources in the surrounding nature, where *kejo* ('rice') and *bongborosan* or *beubeutian* include not only different varieties of tubers such as cassava, potatoes, sweet potatoes, and *pupucukan* ('leaf buds') or *lalaban* ('raw vegetables') and *bungbuahan* ('fruits'), but also *lalaukan* ('freshwater fish'). They do not consume too much meat, since that is limited to certain occasions, and then even only chicken. The food is usually processed in various ways by *diseupan* ('steamed'), such as *seupan cau* ('steamed banana'), *seupan taleus* ('steamed taro'), *seupan hui* ('steamed sweet potato'), *seupan sampeu* ('steamed cassava'), and so on; and *dibeuleum* or *dibubuy* ('baked/roasted') for example *beuleum hui* ('roasted sweet potato), *beuleum jagong* ('roasted corn'), and so on (*cf.* Erwina 2019).

The advancement of technology nowadays causes changes in the way of life of the Sundanese people in their eating behaviour or food processing, thereby changing eating behaviour; for example, the Sundanese people used to cook rice in the traditional way by steaming it using *aseupan* and then the rice was stored in *boboko*, a bamboo woven container, then *diakeul* ('cooled') in a certain way using a *hihid* fan. At present, the community prefers a practical means to cook rice using an electric cooker, so that the rice is always warm. But research shows that rice cooked in the traditional way and in a cold state shows a lower glycemic index so as to minimise the increase in blood sugar levels and the risk of obesity (pers. comm. Setiawan 2018).

According to the Sundanese nature of thought, illnesses arise often at the location of the house, along the direction of the wind, and on the day of birth of the hostess, grouped as follows:

- *cahya geni* ('fever, due to incompatibility with the element of fire');
- *cahya* ('body ache, associated with the light of the earth');
- *cahya banyu* ('coldness, associated with incompatibility with the element of water');
- *cahya angin* ('shortness of breath, associated with the element of wind).

For example, if the lady of the house is born on a Sunday, then the house she is building has to face southward, and the door of the house has to be located to the West, while the bedroom has to be located to the East. If this rule is ignored, the household head will become sick. Such a belief is similar to the Chinese belief of Feng Shui. In order to deal with the sick occupant of the house, the sick person has to undergo a bath ceremony by a traditional healer. Likewise, if humans carelessly cut down large trees, or destroy large rocks and close springs, these actions will cause disaster. In such cases, the individual concerned has to apologise to the victims (*cf.* Lubis 2000). In the traditional

Sundanese belief, there were five *byapara* ('veils'), referring to the elements of earth, water, light, wind, and sky in the universe which have to be utilised as efficiently as possible for the purposes of life. All these elements are paired with the human body, so the soil is paired with the skin, water with blood or saliva, light with the eye, angina with bone, and the sky with the head. These paired conceptions prove the view of Sundanese people that everything in the universe has its equivalent in the human body. In order to maintain a healthy body, one has to be able to harmonise all daily activities with life in the universe (*cf.* Warnaen *et al*. 1987). In addition, there is a prohibition for the Sundanese people to plant trees carelessly, for example not to plant thorny trees because thorns are identical with problems. People who plant such thorny trees are expected to suffer from heart disease.

In line with Foster's (1983) medical-anthropological ethno-classification of traditional illnesses into *naturalistic* and *personalistic* illnesses, the Sundanese people distinguish between three types of supernatural, *i.e*. personalistic diseases:

- *pamali matak kabadi ulah lalaku dina waktu kumapalang*, which is to not be allowed to do something at a time which is not permitted by the rules so as not to cause disease or disaster;
- *lalampahan teu hade matak paeh*, which is a disease due to bad behaviour which can cause dangerous magic, sickness, and even death. The intended death can exist in the form of death of mind, death of heart, and feeling of death which causes the offender to live a useless life;
- *cadu matak tumpur*, which is to do something which is taboo, and must not be violated; if violated, it causes the life of the offender to be destroyed; and
- *katarumpangan*, which is a disease caused by temptation or stupid behaviour of supernatural beings (*cf.* Abdulah 2006; Erwina 2019).

7.2.2 Influence of Animism and Hinduism on Illness Perception

Animism and Hinduism have been very influential on the Sundanese society before the arrival of Islam. Magical events combined with daily life brought good fortune or bad luck to individuals who became associated with invisible forces, such as in *kabuyutan* ('sacred tombs'), mountains, springs, rivers, front- and backyards of houses, *hawu* ('fireplaces'), and in barns or rice storage areas. Such beliefs were implied by the mantras which are passed down from generation to generation of the Sundanese people, especially in rural areas. The people can feel if there will be an epidemic on the basis of certain natural phenomena, such as the sounds of the mountains, the birds, or *sirit uncuing* ('sound of the rice fields').

The community used to believe that the sounds of birds are a sign of death or disaster, causing parents to chant special spells at home to chase the spirits away: *Baid, baid, deukeut-deukeut ka dieu, ka peuntas, karang Palembang*. Also, to ward off the plague, people hang pineapples on the outside wall of the room.

The conception of a healthy culture in Sundanese society is also expressed in a collection of texts on traditional medicine, documented in the nineteenth century from the Paririmbon Script by orientalists such as Holle, Brandes and Snouck Hurgronje, containing *i.a*. *mantra, mantra pamunah rajah*; *Doa-do'a dan Sihir Pengobatan; Mistik dan Obat-obatan; Obat-obatan dan Mantra; Palakiah; Ubar-ubar jeung Lalampahan Urang Kampung sarta Kaanehan Sato-sato; Ubara-ubaran Urang Kampung; Catatan tentang Mantra, Sihir; Jampe, Kitaab Jajampean; dan Paririmbon djeung Jangjawokan* (*cf*. Ekadjati 1988). According to Darsa (2011) in Erwina (2019) there are 15 manuscripts which discuss disease and treatment, as follows: *Kapalsastra* ('Science and Medicine'); Literature *Sarwa Wyadi* ('Science of Various Diseases'); *Yaksami Literature* ('Lung Medicine'); *Sarwosadawédya* ('The Science of Various Medicines'); *Usadilata Literature* ('Science of Medicinal Plants'); Usadawédya ('Medical Science'); Literature Sarpa Wisosada ('Poisoning Medicine'); Sarwa Wydayanang Janapada ('Various Society Diseases'); Animal Fibers Sarwa Wydaya ('Notes on Various Animal Diseases'); Kajamasosada Literature ('Hair Care Science'); Literature Sarwa Pārnosada ('Science of Various Drugs of Severe Disease'); Wydadikang Nirosada Library ('Book of Disease without Healing'); Gamyosadi Literature (Science Panacea Science'); Ayurveda Literature

('Medical Science'); and Sarwa Kusalasala Literature ('Various Medical Sciences'). Many Sundanese people, however, do not know of the existence of these manuscripts, because those who can read the texts are usually *priyayi* ('learned people*')*, community leaders, and *kokolot* ('traditional leaders'). They are people who are highly respected, and their knowledge is usually handed down orally. On the other hand, the principle of *makin berisi, makin merunduk* is well-known among Sundanese people as it means that if someone is more knowledgeable, that person will be more humble and will not show off his knowledge. As a result, it is not uncommon that much knowledge is unknown among the next generation after the death of the previous elders, due to the limited written information (*cf.* pers comm Setiawan 2017).

Meanwhile, the influence of animism and Hinduism in medicine slowly diminished with the influence of Islam. The process can be observed from the contents of the recitations of the mantra which replaces the title *Hyang* for the Deity with the title of a Prophet, the guardian or Allah, as written in the *Wawacan Sheikh Abdul Qadir Jaelani*, which is recited when a baby is expected, to receive the baby with a healthy soul and the good qualities of the Saints. Likewise, the circumcision on boys is practiced if they have followed the *Khatam Al Qur'an*. Such a practice is an example of the influence of Islam on health awareness in the community (*cf.* Moestapa 1913 in Lubis 2000).

As regards hygienic behaviour, the traditional Sundanese people realise that cleanliness is part of maintaining purity, including the fact that the surface of the land has to be taken care of to keep it clean. Likewise, water has to be purified so that the people will remain free from disease. It is prohibited to defecate carelessly on the side of the road, or next to the house, as it has to take place at least seven steps from the side of the road in a landfill, underscoring the awareness of a healthy body and the practice of hygienic behaviour that have existed over many generations in the Sundanese society (*cf.* Warnaen *et al.* 1987).

7.2.3 *Ubar Kampung*: Sundanese Indigenous Herbal Medicines for CVD

According to the Sundanese people, the heart is the center of life. If someone suffers from *kasawat jajantung* or *panyawat jajantung* ('heart disease' or 'CVD'), it is regarded as if that person is resting with one foot in the grave. Such a belief shows how severe the disease is perceived by the Sundanese people (pers. comm. Ibu Eni 2017).

Illustration 7.1 The Local Traditional Healer Bapak Ajat and his Wife Collecting *Antanan Bodas Ageung* (*Centella Asiatica* L. Urban.) for *Ubar Kampung* ('Sundanese Indigenous Herbal Medicines')
Photography by R.D. Susanti (2018).

In the teachings of Islam, which have been adopted by most Sundanese people, it is written that humans are subject to *sunatullah* (‘law of nature’), but humans are created differently from all other living creatures, and humans are endowed with reason to think and create works. Likewise, the local people regard the heart as a miracle, which God has given to humans. The Messenger of Allah has said: *'actually in the body of the child of Adam there is a lump of flesh, if he is good, all the body is good, he is the heart'*.

Here, the heart refers to *alqolbu,* which represents: a) the flesh which is in the left breast and in the sockets containing ‘black blood’, being the source of the spirit and its place of residence. The flesh in this form is also found in animals and in the dead; and b) *alqolbu* (‘the heart) which is the whisperer of *rabbaniah ruhaniah*

It is this whisperer who knows God and understands what the essence of human health actually is. If the heart is considered as the centre, surely it has to be cared for to maintain a healthy condition, because if the heart is disturbed, it will affect all other body systems *(cf.* Abdullah 2006).

A traditional way of specific nursing for CVD has been developed in the Sundanese region. Several qualitative interviews with selected informants in the Sumedang research area have provided in-depth information on this subject during the execution of the fieldwork (2017). Bapak Ajat (80 years old), being a *kokolot* (‘traditional healer’) and also a *shaman* in the research area of *Jayamekar* Sumedang, has outlined several ways of traditional nursing, including traditional nursing care for the elderly with CVD. Traditional nursing includes massage techniques by pressing with the thumb or fingers, known as acupressure, accompanied by mantras and prayers, and the administration of *ubar kampung* which can be collected in the surrounding forest (*cf.* Febriyanti 2021). Specifically, this massage technique is practiced by massaging the middle of the cranium, between the two nipples, five fingers above the inner wrist, two fingers on the side of the fourth spine, two fingers on the side of the spinal cord of the kidney, four fingers above the navel, three fingers below the navel, slightly to the side, and four fingers above the inner ankle

Illustration 7.2 Bapak Ajat, a Traditional Healer Consumes *Ubar Kampung* (‘Sundanese Indigenous Herbal Medicines’) to Maintain His Health.
Photography by R.D. Susanti (2018).

The massage technique should be executed routinely, since repeated treatment will be more beneficial, as shown in the research team as an illustration, while reciting prayers of healing.

Meanwhile, Ibu Titin (67 years old), a *paraji* ('traditional birth attendant') and *dukun papaes* ('bridal make-up specialist') from *Jatimulya* informed the interpreter that the treatment of heart problems included *dileules* ('body massage') of special techniques from the toe, the whole body, to the head, using traditional spice oil. In addition, Ibu Titin also uses *ubar kampung* found in the surrounding forest.

As regards Ibu Eni (63 years old), one of the community leaders and health cadres in Situ, she explained that in order to overcome heart disease, she usually advises clients to consume *ubar kampung* which can easily be collected around the village (*cf*. Illustration 7.1).

Illustration 7.3 A Village Woman Collecting *Annona Muricata Linn* to Prepare *Ubar Kampung* ('Sundanese Indigenous Herbal Medicines')
Photography by R.D. Susanti (2017).

Meanwhile, Ibu Eni explained that the herbal medicine dosage required for each person is different depending on the patients' birthday. In order to calculate the dose of the *ubar kampung* the day of birth and the value of the figure can be seen from the Sundanese calendar. For instance, if the patient was born on Saturday, then the number of leaves of medicinal plants is nine, and so on, adjusted to the calculation of the Sundanese calendar which has been described previously.

The *ubar kampung* are consumed in several ways, namely: boiled with water until the water volume is half (decocted), and then drunk, or eaten raw such as *lalaban* ('salad'), cleaned with hot water ('macerated'), grated and squeezed, or flattened. The way to use *ubar kampung* consisting of both internal use (drunk or eaten) and external use on the outside of the body such as ointment. *Ubar kampung* can be given on-site during visits to the traditional healer or mixed and consumed at home.

Ibu Eni also explained that the dosage required of *ubar kampung* for each patient is different depending on the patients' birthday. The calculation of the dose of the *ubar kampung* can be made from the Sundanese calendar, the day of birth and the value of the number. If, for instance, the patient was born on Saturday, then the number of leaves of medicinal plants is nine, and so. The *ubar kampung* are consumed in several ways, namely: boiled with water until the water volume is half (decocted), then drunk, eaten raw such as *lalaban* ('salad'), doused with hot water (macerated), grated and squeezed, or flattened.

According to Erwina (2019), the term *ubar kampung* is used by the Sundanese people to describe the traditional system of indigenous medicine based on parts of MAC Plants. The term *ubar kampung* consists of two words, *ubar* and *kampung*. In Sundanese, *ubar* means medicine and *kampung* means

traditional village. The subtle language of *ubar* is *landong*, so some Sundanese people use the word *landong* instead of the word *ubar*. Based on this definition, *ubar kampung* can also be interpreted as a drug used by Sundanese people in their traditional residential areas. Components of *ubar kampung* usually refer to spiritual and vegetable medicine, easily available and inexpensive. Usually the services provided by traditional healers are holistic and do not request a service charge.

The Sundanese people tend to use traditional nursing care because they feel comfortable within their communities and satisfied. In this case, the traditional nursing instituitions in the Sumedang Regency not only apply *ubar kampung*, but also practice massage performed by the traditional healers. The traditional health care institutions are usually providing the following services:

1. Primary prevention of disease, which is meant for people who have not been exposed to disease by early detection, and they practice health promotion. The definition of early detection here is different from the diagnosis of modern medicine, since traditional healers will usually only mention disorders of the body in simple language, which are easy to understand by their clients. If there is interference on the body, the traditional healer will provide treatment through the application of massage techniques together with recited prayers and *jampe* ('mantras'), and a mixture of *ubar kampung.* At this stage, traditional nursing is aimed at protecting the body from disease and improving the client's health status;

2. Secondary prevention of diseases, which applies to patients who have been diagnosed with a disease. Here the action of treatment is intended to achieve healing of the patient. The techniques used are similar, using massage techniques, with recited prayers and *jampe* ('mantras'), and a mixture of *ubar kampung*;

3. Tertiary prevention of disease, which refers to traditional treatment of the patients with a view to improving the healing process and prevent disability. The actions are similar using massage techniques, with recited prayers and *jampe* ('mantras'), and a mixture of *ubar kampung*.

7.2.4 Sundanese MAC Plants Used for Treatment of CVD

In general, the traditional nursing institutions are using the same methods, while there is only a difference in the species of the plants and the dosage for the mixtures of *ubar* ('indigenous herbal medicines'). Traditional treatment rarely practices invasive measures, especially for traditional treatment of CVD. In the case of patients in severe conditions with a need for invasive action or surgery, a traditional healer will refer the patient to the hospital. Based on qualitative interviews with informants and the sample surveys in the Sumedang research area, it has become evident that the majority of clients with CVD prefer to use traditional treatment of *ubar kampong* ('indigenous herbal medicines').

The inventory of reported use of MAC plants (Table 7.2) in the research area shows that there are 46 species of MAC plants which are used as *ubar kampung* for CVD. In general, the MAC plants are growing in the wild around the house, enabling the local population to collect and use them at any time (*cf.* Illustration 7.2)

Table 7.1 List of MAC Plants used as *ubar kampung* for Treatment of CVD in Sumedang

No.	Indonesian Name	Local Name	Scientific Name	Part used	Preparation	Administration way
1.	*Sambiloto*	*Sonteng/Samiloto(*)(**)(***)*	*Andrographis Paniculata* (Burm.F.)	Whole	Decocted and drunk	Internal
2.	*Sadagori*	*Sandagori (*) (**)(***)*	*Sida Rhombifolia* L. (Malvaceae)	Whole	Decocted and drunk	Internal
3.	*Jawer kotok*	*Jawer kotok (*)(**)(***)*	*Plectranthus Scutellaroides* (L.) R.Br.	Leaf	Decocted and drunk	Internal
4.	*Jarongan*	*Jarong (*)(**)(***)*	*Achyranthes Aspera* L..(Amaranthaceae)	Leaf	Decocted and drunk	Internal
5.	*Kesemek*	*Kesemek (*)(**)(***)*	*Diospyros Kaki (Thunb.)*	Leaf	Decocted and drunk	Internal
6.	*Daun sendok*	*Ki urat (*)(**)(***)*	*Plantago Major* L.	Whole	Decocted and drunk	Internal
7.	*Sintrong*	*Sintrong (*)(**)(***)*	*Crassocephalum Crepidioides* (Benth.) S. Moore	Leaf	Fresh vegetables	Internal
8.	*Alpukat*	*Alpuket (*) (**)(***)*	*Persea Americana* (Lauraceae)	Leaf	Decocted and drunk	Internal
9.	*Salam*	*Salam (*) (**)(***)*	*Syzygium Polyanthum* (Wight) Walpers	Leaf	Decocted and drunk	Internal
10.	*Saga*	*Saga (*) (**)(***)*	*Abrus Precatorius* L.	Leaf	Decocted and drunk	Internal
11.	*Tapak dara*	*Tapak dara (*) (**)(***)*	*Catharanthus Roseus* (L.) G.Don	Leaf	Decocted and drunk	Internal
12.	*Mentimun*	*Bonteng (*)(**)(***)*	*Cucumis Sativus* L.	Fruit	Fresh vegetables	Internal
13.	*Kencur*	*Cikur (*)(**)(***)*	*Kaempferia Galanga* L.	Root	Decocted and drunk	Internal
14.	*Pegagan kecil*	*Antanan alit (*)(**)(***)*	*Hydrocotyle Sibthorpioides* (Lam.)	Whole	Fresh vegetable,	Internal
15.	*Pegagan Merah Besar*	*Antanan Bereum ageung (*)(**)(***)*	*Centella Coriacea* Nannfd.	Whole	Fresh vegetable	Internal
16.	*Pegagan Putih Besar*	*Antanan Bodas ageung (*)(**)(***)*	*Centella Asiatica* (L.) Urban	Whole	Fresh vegetable	Internal
17.	*Jati*	*Jati (*) (**)(***)*	*Tectona Grandis* (L.f.)	Leaf	Decocted and drunk	Internal
18.	*Alang-alang*	*Akar eurih (*) (**)(***)*	*Imperata Cylindrica* (L). Beauv	Whole	Fresh vegetable	Internal
19.	*Ciplukan*	*Cecendet (*) (**)(***)*	*Physalis Angulata* L.	Fruit	Fresh vegetables	Internal
20.	*Tempuyung*	*Tempuyung (*) (**)(***)*	*Sonchus Arvensis* L	Leaf	Decocted and drunk	Internal
21.	*Sirsak*	*Nangka walanda (*) (**)(***)*	*Annona Muricata* L.	Leaf	Decocted and drunk	Internal
22.	*Kersen/Talok*	*Kersen (*) (**)(***)*	*Muntingia Calabura* L.	Fruit	Decocted and drunk	Internal
23.	*Kecombrang*	*Honje (*) (**)(***)*	*Etlingera Elatior* (Jack) R.M.Smith.	Flower	Decocted and drunk	Internal
24.	*Ketumbar*	*Katuncar (*) (**)(***)*	*Coriandrum Sativum* L.	Seed	Decocted and drunk	Internal
25.	*Sereh*	*Sereh (*) (**)(***)*	*Cymbopogon citratus (Stapf)*	Whole	Decocted and drunk	Internal
26.	*Jantung Pisang*	*Jantung Cau (*) (**)(***)*	*Musa X Paradisiaca* L.	Bloom	Decocted and drunk	Internal
27.	*Sukun*	*Sukun (*) (**)(***)*	*Artocarpus Altilis (Fosberg)*	Fruit	Decocted and drunk	Internal
28.	*Mengkudu, Pace*	*Cangkudu (*) (**)(***)*	*Morinda Citrifolia* L.	Fruit	Decocted and drunk	Internal
29.	*Rambut jagung*	*Buuk jagong (*) (**)(***)*	*Zea mays ssp. Mays* L.	Hair	Dried, decocted and drunk	Internal
30.	*Bawang putih*	*Bawang bodas (*) (**)(***)*	*Allium Sativum* L.	Clove	Fresh vegetable	Internal
31.	*Pepaya muda*	*Gedang ngora (*) (**)(***)*	*Carica Papaya* L.	Young fruit	Decocted and drunk	Internal

32. Table 7.2 (*Continued*) List of MAC plants used as *ubar kampung* for Treatment of CVD in Sumedang

No.	Indonesian Name	Local Name	Scientific Name	Part used	Preparation	Administration
32.	*Labu siam*	*Waluh siem (*) (**)(***)*	*Sechium Edule* (Jacq.) Swartz.	Fruit	Boiled	Internal
33.	*Teh*	*Enteh (*) (**)(***)*	*Camellia Sinensis* (L.) Kuntze	Leaf	Dried, decocted and drunk	Internal
34.	*Daun Sembung*	*Daun sembung (*) (**)(***)*	*Blumea Balsamifera* (L.) DC.	Leaf	Decocted and drunk	Internal
35.	*Daun pandan*	*Daun pandan (*) (**)(***)*	*Pandanus Amaryllifolius* Roxb.	Leaf	Decocted and drunk	Internal
36.	*Daun dewa/ Sambung Nyawa*	*Daun dewa (*) (**)(***)*	*Gynura Divaricata (DC)*	Leaf	Decocted and drunk	Internal
37.	*Seledri*	*Saledri (*) (**)(***)*	*Apium Graveolens* L.	Leaf	Decocted and drunk	Internal
38.	*Tekokak/Terung Pipit*	*Takokak (*) (**)(***)*	*Solanum Torvum* Sw.	Fruit	Fresh vegetables	Internal
39.	*Kunyit*	*Koneng ageung (*) (**)(***)*	*Curcuma Longa* L.	Root	Macerated	Internal
40.	*Senduduk/Senggani*	*Harendong (*) (**)(***)*	*Melastoma Candidum (Blume)*	Leaf	Decocted and drunk	Internal
41.	*Jahe*	*Jahe (*) (**)(***)*	*Zingiber Officinale* Roscoe	Root	Decocted and drunk	Internal
42.	*Kayu manis*	*Kiamis (*) (**)(***)*	*Cinnamomum Verum* J. Presl.	Skin	Decocted and drunk	Internal
43.	*Jeruk nipis*	*Jeruk mipis (*) (**)(***)*	*Citrus Aurantiifolia* (Christm.) Swingle	Flower	Decocted and drunk	Internal
44.	*Sambung Nyawa*	*Sambung nyawa(*) (**) (***)*	*Gynura Procumbens Lour. Merr*	Leaf	Decocted and drunk	Interna
45.	*Lempuyang*	*Lampuyang (*) (**) (***)*	*Zingiber Zerumbet* (L.) Roscoe ex Sm.	Root	Decocted and drunk	Internal
46.	*Belimbing*	*Balingbing(*) (**) (***)*	*Averrhoa carambola* L.	Fruit	Fresh fruit	Internal

Source:(*) Bapak Ajat, (**) Ibu Eni, (***) Ibu Titin

Sonteng – *Andrographis paniculata (Burm.F.) Nees*
(*)(**)(***)

Sandagori – *Sida rhombifolia L (Malvaceae)*
(*)(**)(***)

Jawer kotok – *Plectranthus scutellaroides* (L.) R.Br
(*)(**)(***)

Jarong - *Achyranthes Aspera* Linn. (Amaranthaceae)
(*)(**)(***)

Kesemek - *Diospyros Kaki (Thunb.)*
(*)(**)(***)

Ki Urat - *Plantago Major* L
(*)(**)(***)

Sintrong – *Crassocephalum Crepidioides* (Benth.) S. Moore
(*)(**)(***)

Alpuket- *Persea Americana* (Lauraceae)
(*)(**)(***)

Salam- *Syzygium Polyanthum (*Wight) Walpers
(*)(**)(***)

Saga - *Abrus Precatorius L*
(*)(**)(***)

Tapak Dara - *Catharanthus roseus* (L.) G.Don
(*)(**)(***)

Bonteng - *Cucumis Sativus* L
(*)(**)(***)

Cikur – *Kaempferia Galanga* L
(*)(**)(***)

Antanan alit- *Hydrocotyle* (L.) *Sibthorpioides (Lam.)*
(*)(**)(***)

Antanan Bereum Ageung *Centella Coriacea* Nannfd
(*)(**)(***)

Antanan Bodas Ageung – *Centell Asiatica (L.)* Urban *a*
(*)(**)(***)

Jati - *Tectona Grandis* (L.f.)
(*)(**)(***)

Akar Eurih - *Imperata Cylindrica* (L). Beauv
(*)(**)(***)

Cecendet - *Physalis Angulata L* .(*)(**)(***)

Tempuyung- *Sonchus Arvensis L.* *(*)(**)(***)*

Nangka Walanda - *Annona Muricata* L. *(*)(**)(***)*

Kersen - *Muntingia Calabura L.* *(*)(**)(***)*

Honje - *Etlingera Elatior* (Jack) R.M.Smith *(*)(**)(***)*

Katuncar - *Coriandrum Sativum* L. *(*)(**)(***)*

Sereh – *Cymbopogon Citratus (Stapf)* *(*)(**)(***)*

Jantung Cau - *Musa X Paradisiaca* L. *(*)(**)(***)*

Sukun - *Artocarpus Altilis* (Fosberg) *(*)(**)(***)*

Cangkudu - *Morinda Citrifolia L.*
(*)(**)(***)

Buuk jagong - *Zea Mays ssp.Mays L.*
(*)(**)(***)

Bawang Bodas - *Allium Sativum L.*
(*)(**)(***)

Gedang Ngora - *Carica Papaya L.*
(*)(**)(***)

Waluh siem - *Sechium Edule* (Jacq.) Swartz.
(*)(**)(***)

Enteh - *Camellia Sinensis* (L.) Kuntze
(*)(**)(***)

Daun Sembung – *Blumea Balsamifera* (L.) DC.
(*)(**)(***)

Daun Pandan – *Pandanus Amaryllifolius* Roxb.
(*)(**)(***)

Daun Dewa - *Gynura Divaricata (DC)*
(*)(**)(***)

t

Saledri - *Apium Graveoens* L.
(*)(**)(***)

Takokak - *Solanum Torvum* Sw.
(*)(**)(***)

Koneng Ageung - *Curcuma Longa* L.
(*)(**)(***)

Harendong – *Melastoma Candidum (Blume)*
(*)(**)(***)

Jahe - *Zingiber Officinale* Roscoe.
(*)(**)(***)

Kiamis - *Cinnamomum Verum* J. Presl
(*)(**)(***)

Jeruk Mipis - *Citrus Aurantiifolia* (Christm.) Swingle
(*)(**)(***)

Daun Sambung Nyawa. *Procumbens Lour. Merr.*
(*)(**)(***)

Lempuyang – *Zingiber zerumbet* (L.) Roscoe ex Sm
(*)(**)(***)

Illustration 7.4 MAC Plants Used as *Landong* or *Ubar Kampong* ('Sundanese Indigenous Herbal Medicines') for the treatment of CVD in Sumedang Photography by R.D. Susanti (2017).

CHAPTER VIII UTILISATION PATTERNS OF THE PLURAL NURSING SYSTEM

8.1 Bivariate Analysis of the Utilisation of the Plural Nursing System

8.1.1 Preparation of Data Analysis: Data Set and Variables

This Chapter presents the quantitative analysis of collected data during the household surveys conducted in the research area of four villages in the Sumedang Regency. The household surveys have been carried out as an extension of the qualitative research findings with a view to *measure and analyse* the spread of findings over the entire research area. A description is presented of the way in which the respondents with CVD of the sample surveys have reported their utilisation behaviour of the Plural Nursing System, sub-divided by the traditional, transitional and modern institutions and organisations. In order to understand the quantitative outcome of the data, different categories of variables are analysed which can potentially be identified as significant determinants of reported utilisation patterns of the respondents in Sumedang. In this way, the conceptual model with predisposing, enabling, and intervening variables is analysed as possible significant variables, *i.e.* determinants of dependent variables of utilisation of the Plural Nursing System.

The quantitative analysis uses data which has been completed by 232 households through information provided by the household head selected in Sumedang for the sample surveys. The Chapter continues to provide information on the data, which is subsequently entered into the electronic database, for the final analysis in SPSS. It is shown that the data are subject to variable analysis, in which the independent and intervening variables are distributed over the dependent variables through the method of cross-tabulation.

As regards the three categories of reported utilisation, respectively the Traditional Nursing Institution, and the Transitional Nursing and Modern Nursing organisations, with a view to adequately representing the reported utilisation behaviour of the Plural Nursing System, the significant variables which have been identified as influencing the traditional, transitional and modern nursing institutions and organisations are described as being distributed in the model of Mutual Correlations Analysis. In this way, the significant correlations are presented among all independent and intervening variables in relation to the utilisation variables. Subsequently, the results of the multivariate analysis using OVERALS are shown to identify the relative influence of the variables, *i.e.* the specific determinants of the reported utilisation behaviour of the plural nursing system by the respondents of the household surveys.

Finally, the multiple regression analysis is presented with a view to assessing the correlations and related weights among and between different categories of variables which are presented as blocks of variables in the model. This Chapter concludes with an interpretation and discussion of the results of the quantitative analysis in the structure of the final analytical model.

The samples collected in this study accommodate the geographical distribution of the Sumedang Regency, which is divided into four areas: Central Sumedang, and Southern Sumedang as shown in Table 8.1. As mentioned by the Head of the Village of Sumedang, an analysis of three geographical areas of Sumedang is necessary to be examined (pers. comm. 2017). The questionnaires were distributed between September-November 2017 in the four villages of the Sumedang Regency.

Table 8.1 Distribution of the Questionnaires over the Four Villages of Sumedang, also indicating the Time of the Interviews

Village	Number of Questionnaires	Interviewer	Time of Interview
Jayamekar	60	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Cipasang	56	Raini, Listia, Oselia Rizky, Fajar	7 September - 30 November 2017
Situ	60	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Jatimulya	56	Raini, Listia, Oselia, Rizky, Fajar	7 September - 30 November 2017
Total	232		

Source: Household Survey (2017).

A total of 232 questionnaires were distributed over the respondents. The collected data from the samples were tabulated in the spreadsheet file with MS Excel. The tabulated data are examined through the processes of data cleaning and re-categorisation of some variables, according to the analytical model. The distribution of the data samples which are analysed in this study are shown in Table 8.2.

Table 8.2 Distribution of the Household Samples based on the Villages over the Geographic Area of the Samples and the Number of Distributed Samples

Name of the Village	Type of Area	Geographic Area of Sumedang	Total Number of Households Interviewed	
			N	%
Jayamekar	Highland/Rural	Southern Area	60	25.9
Cipasang	Highland/Rural	Southern Area	56	24.1
Situ	Lowland/Urban	Central Area	60	25.9
Jatimulya	Higland/Rural	CentralArea	56	24.1
Total number of samples			232	100.0

Source: Fieldwork (2017).

8.1.2 Selected Variables of the Utilisation of the Plural Nursing System

The research uses a multivariate analytical model, adapted from the pioneering research by Slikkerveer (1990, 1995, 1999). Adapted models have been used for various studies in applied ethnoscience, which have been carried out by Agung (2005), Leurs (2010), Djen Amar (2010), Ambaretnani (2012), Chirangi (2013), Aiglsperger (2014), Erwina (2019), Saefullah (2019), De Bekker (2020) and Febriyanti (2021).

The multivariate model is the basis for the appropriate statistical analyses of the quantitative data collected about the utilisation behaviour of the plural nursing system by the community members in the four village samples in the Sumedang Regency in West-Java. The significant variables are included in the quantitative analyses of the bivariate analysis, mutual correlations analyses, and the multivariate and multiple regression analyses.

Table 8.3 Distribution of the Sample Villages over the Dependent Variable of the Utilisation of the Plura Nursing System (N=586)

Sample Village Variable	Utilisation of the Plural Nursing System							
Village Name	Traditional		Transitional		Modern		Total	
	N	%	N	%	N	%	N	%
Jayamekar	103	70.1	34	23.1	10	6.8	147	100.0
Cipasang	76	59.8	42	33.1	9	7.1	127	100.0
Situ	91	53.5	198	39.4	12	7.1	170	100.0
Jatimulya	81	57.0	198	38.7	37	4.2	142	100.0
Total 351	59.9		198	33.8	37	6.3	586	100.0

(Pearson $\chi 2$=.047 & Cramer's V =.047)
Source: Computation of the Data Set from the Field Work (2017).

Adapted from the multivariate analytical model of Slikkerveer (1990, 1999), there are several variables which are determining peoples' behaviour in the utilisation of the plural nursing systems in the four villages of Sumedang in West-Java. The model emphasises the interactions between dependent variables of utilisation behaviour and the determinants of the independent and intervening variables, which are as follows: 1) Independent Variables: Predisposing Variables including Socio-Demographic and Psycho-Social Variables, Perceived Morbidity Variables, Enabling Variables, Institutional Variables, and Environmental Variables; 2) Intervening Variables; and 3) Dependendent Variables.

The results of the univariate explorative analyses of each of the variables (N=232) demonstrates that some of the variables are statistically insignificant to be included in any of the bivariate or multivariate statistical analyses. From the original answer categories of all the 80 questions in the quantitative questionnaire which have been analysed, 25 variables, *i.e.* 22 independent and 3 dependent variables, are significant and the rest are not significant. The level of significance of the variables is described in detail below. The particular label assigned to each variable within the statistical programme for data analysis (using SPSS) is presented in apostrof after the name of the variable. Since virtually all the 733 survey respondents adhere to Islam, the variable 'religion' has been deleted from the data set.

Table 8.4 Range of Significant Values and their Interpretation

Significancy and Asymp Signicancy value (χ^2)	Interpretation of value
$\chi^2 > 0.15$	not significant
$0.15 > \chi^2 > 0.10$	indication of significance
$0.10 > \chi^2 > 0.05$	weakly significant
$0.05 > \chi^2 > 0.01$	strongly significant
$0.01 > \chi^2 > 0.001$	very strongly significant
$\chi^2 < 0.001$	most strongly significant

Source: Slikkerveer (1995) ; Agung (2005); Leurs (2010); Djen Amar (2010); Ambaretnani (2012); Chirangi (2013) ; Aiglsperger (2014); Erwina (2019); Saefullah (2019); De Bekker (2020); and Febriyanti (2021).

Table 8.5 shows the 25 selected variables, categorised in independent, intervening and dependent variables, sub-divided in ctehries or blocks, *i.e.* socio-demographic, psycho-social, enabling, perceived morbidity, institutional, intervening and dependent variables.

Table 8.5 List of Categories or Blocks of the Variables and Variable Labels Selected on the Basis of the Results of the Qualitative Research for the Stepwise Analysis of Quantitative Data

Category or Blocks	Variable Name	Label
INDEPENDENT VARIABLES		
Socio-Demographic Variables:		
Block 1	Household relationships	*hhrel*
	Age	*age*
	Gender	*gender*
	Marital status	*marital*
	Profession	*prof*
	Vaccination history	*vac*
	Length of CVD	*lencvd*
Psycho-Social Variables :		
Block **2**	Knowledge of CVD	*knowcvd*
	Knowledge of traditional nursing institutions	*knowtrad*
	Knowledge of transitional nursing organisations	*knowtrans*
	Knowledge of transitional nursing organisations for CVD	*ranscvd*
	Belief in transitional nursing organisations for CVD prevention	*beltrad*
Perceived Morbidity Variables:		
Block 3	Perceived general health status	*perhe*
Enabling Variables:		
Block 4	Household head's income	*headinc*
	Cost of transitional nursing organisations	*costrans*
	Transportation cost to modern nursing organisations	*transmod*
	Health insurance ownership	*helins*
Institutional Variables:		
Block 5:	Geographical distance of modern nursing organisations	*modedist*
Environmental Variables:		
Block 6	Community nursing institutions: environmental-friendly	*envloc*
	Zonation locations of the community nursing institutions	*zonaloc*
INTERVENING VARIABLES		
Block 7	**8.16a** Infuence of government/public regulations on the utilisation of modern nursing organisations	*gremod2*
	8.16b Influence of government/public promotion on the Utilisation of home nursing for CVD	*gprohom3*
	8.16c Influence of government/public promotion on the utilisation of modern nursing organisations	*gpromod*
	8.16d Influence of government/public promotion on the utilisation of modern nursing organisations for CVD prevention	*gpromod3*
	8.16e Influence of government/public promotion on the utilisation of modern nursing organisations for CVD treatment	*gpromod4*
Block 8	Utilisation of Traditional Nursing Institutions	*Trad*
Block 9:	Utilisation of Transitional Nursing Organisations	*Trans*
Block 10	Utilisation of Modern Nursing Organisations	*Mod*

Source: Computation of the Data Set from the the Field Work (2017).

8.1.3 The Behavioural Patterns of the Plural Nursing System

Based on the data analysis towards the quantitative surveys of 232 households from the four village samples, Table 8.5 indicates the preferences of the community members in four villages in their utilisation behaviour towards the plural nursing systems. As Slikkerveer (1990: 226) observes: '*Such multiple utilisation or healer shopping may be simultaneous or successive and may involve different nursing institutions or be within the same system*'. Following the limited patterns of repeated contacts with one nursing institution, the present study, however, focuses on the patterns of multiple utilisation of different nursing institutions and excludes a quantitative description of patterns of multiple utilisation within the systems. In addition to the 267 'patients' of the sample, who took a first step within the search for treatment, 117 (36.1%) contacted the plural nursing system as a second step, while 11 (3.4%) patients took three steps, thereby using each of the available nursing institutions and organisations in order to receive treatment.

Figure 8.1 illustrates the decisions made by the patients of the sample towards seeking treatment and contacting the different nursing institutions and organisations operating in the research area. In view of the different steps the respondents took in order to seek treatment, the patterns of utilisation of the plural nursing system maintained by all 263 'action patients' of the sample amount to a total of 586 utilisation rates. In particular, the respondents of Sumedang who had experienced an episode of illness during the recall period and decided to seek action in a way to receive treatment contacted the plural nursing institution available in the research area a total of 586 times: namely, a first time in 263 cases, a second time in 209 cases and a third time in 114 cases. As Slikkerveer (1990: 231) explains: '*It is clear that the shift in utilisation rates is caused by multiple utilisation and referral of patients between the systems for the treatment of the same illness episode*'. Table 8.9 sheds light on the rates of utilisation of the plural nursing institutions. While 'non-action patients' did not seek treatment for their illness at any available institution of organisation, patients who successively use different nursing institutions and organisations have been identified as 'Flow-Through Cases' (*cf.* Slikkerveer 1990).

While Table 8.6 shows the distribution of the two categories of 267 patients into 4 'non-action patients' and 263 'action patients', *i.e.* patients actively seeking treatment at the plural nursing system during the preceding 12 months, Table 8.7 shows the first step utilisation of the three nursing institutions and organisations in Sumedang by the 'action patients' during the Preceding 12 months. From these 263 'action patients', 209 'action-patient' reported a secons step, and 114 'action-patients' reported a third step for treatment.

As shown in Table 8.9, from the 263 'action-patients' of the sample, , nearly one-fifth (19.7%, n=54) took one step to contact the plural nursing institution one time, while more than three-fourth (79.5%, n=209) took a second step to seek treatment. Thereafter, almost half (43.3%, n=114) of the patients took the third step. In view of the availability of three different nursing institutions and organisations in the research area, none of the eleven respondents, who contacted the plural nursing system three times, identified as 'flow-though cases', took an additional to receive further treatment

Following the calculation of the rate of utilisation of the plural nursing system operating in the research area, Table 8.8 shows the number of reported steps taken by 263 'action-patients' during the preceding 12 months.

Table 8.9 explains the process of illness behaviour of the 263 'action-patients' of the sample and the calculation on the basis of their illness steps and 'flow-through cases' of the frequency of their 586 utilisation rates of the different nursing institutions and organisations in Sumedang.

Table 8.6 Categories of Patients from the Survey Distributed according to the Reported Type of Action or Non-Action Taken to Obtain Treatment during the Preceding 12 Months

Category of Patients	N	%
Non-action patients	4	1.49
Action patients	263	98.51
Total	267	100.00

Source: Computation of the Data Set from the Field Work (2017).

Table 8.7 First step Utilisation of the Three Nursing Institutions and Organisations in Sumedang by the Action Patients during the Preceding 12 months

Number of Action Patients		Type of Nursing Institution					
		Traditional		Transitional		Modern	
N	%	N	%	N	%	N	%
263	100.0	18	6.8	32	12.2	213	81.0

Source: Computation of the Data Set from the Field Work (2017).

Table 8.8 Number of Reported Steps Taken by 263 'Action-Patients' during the Preceding 12 Months

Number of Reported Illness Steps	Number of Patients	
	N	%
1 illness step	54	20.5
2 illness steps	95	36.1
3 illness steps	114	43.4
Total	263	100.0

Source: Computation of the Data Set from the Field Work (2017).

Table 8.9 Flow-Through Cases of Patients: Illness Behaviour of the 267 Patients of the Sample and the Resulting Total Number of 586 Utilisation Rates, Distributed over the Plural Nursing System in Sumedang

Total No. of patients	Non-action patients	Action patients						Plural Nursing System	Total Number of utilisation rates	
			One step	Flow-through cases	Two steps	Flow-through cases	Three steps			
N	N	N	N	N	N	N	N		N	%
267	4									
			18	11	81	68	58	TNI	157	26.8
		263	32	18	33	36	34	TNO	99	16.9
			213	180	95	114	22	MNO	330	56.3
267	4	263	263		209		114		586	100.0

Source: Computation of the Data Set from the Field Work (2017).

The number of patients reveals the quantity of respondents, who reportedly took only one step within the process of nursing utilisation. In the same fashion, all respondents who took two steps have subsequently been asked to report whether they had taken a third step in order to seek treatment. Likewise, respondents had to select an answer from the categories 'traditional nursing institutions', 'transitional nursing organisations', 'modern nursing organisations' or 'no further step taken'. The number of patients, who chose to take no further step highlights the quantity of respondents who took two steps within the process of seeking treatment, while all remaining patients have been categorised as respondents who took three steps as a way to receive treatment. Since respondents could take a maximum of three steps, notably conforming to the number of nursing institutions and organisations available in the research area, no further questions have been asked.

In order to elaborate the dependent variables, the different steps during which the patients contacted the plural nursing institutions have been translated into an overall rate of utilisation (*cf.* Table 8.9). Thereafter, the dependent variables have been calculated on the basis of the utilisation rates reported by all patients of the sample. Since the requirements of the subsequent statistical bivariate and multivariate analyses differ to a considerable extent, the final dependent variables have been constructed in two different ways.

The dependent variables, which are used in the bivariate analysis of patterns of nursing utilisation behaviour, have been incorporated in the overall variable 'Utilisation of the Plural Nursing System'. The variable is measured at the nominal level and eventually came to comprise the following answer categories: 'utilisation of the traditional nursing institutions'; 'utilisation of the transitional nursing

organisations'; and 'utilisation of the modern nursing organisations'. However, in order to meet the requirements of the multivariate analysis of the data, the dependent variables are arranged into three separate variables, namely 'Utilisation of the Traditional Nursing Institutions', 'Utilisation of the Transitional Nursing Organisations' and 'Utilisation of the Modern Nursing Organisations'.

Table 8.10 Frequency of the Utilisation of the Plural Nursing System by the 263 Action Patients in . Sumedang (N=586)

Number of Action patients	Number of steps	Number of visits to the Plural Nursing System						Total number of visits	
		traditional nursing institutions		transitional nursing organisations		modern nursing organisations			
		N	%	N	%	N	%	N	%
54	1	33	61.1	18	33.3	3	5.5	54	100.0
95	2	118	62.1	60	31.6	12	6.3	190	100.0
114	3	200	58.7	120	35.0	22	6.1	342	100.0
263		351	59.9	198	33.8	37	6.3	586	100.0

Source: Computation of the Data Set from the Field Work (2017).

In general, 9.22% (n=54) of the utilisation rates refer to a single contact with the plural nursing system, 32.42% (n=190) of the utilisation rates imply a double contact with the plural nursing system and 58.36% (n=342) of the utilisation rates relate to the number of patients who took three steps in order to seek treatment. Furthermore, the majority of the utilisation rates reported by the patients (59.9%, n=351) refers to contacts with the traditional nursing institutions as the most commonly used nursing institutions in the research area. Meanwhile, the transitional nursing organisations' utilisation rates in this respect show a slightly smaller percentage of utilisation rates (33.8%, n=198). Accordingly, only 6.3% (n=37) of contacts between patients and the plural nursing system relate to patterns of utilisation of the modern nursing organisations, which hereby forms the least frequently contacted nursing institution and organisation in the research area.

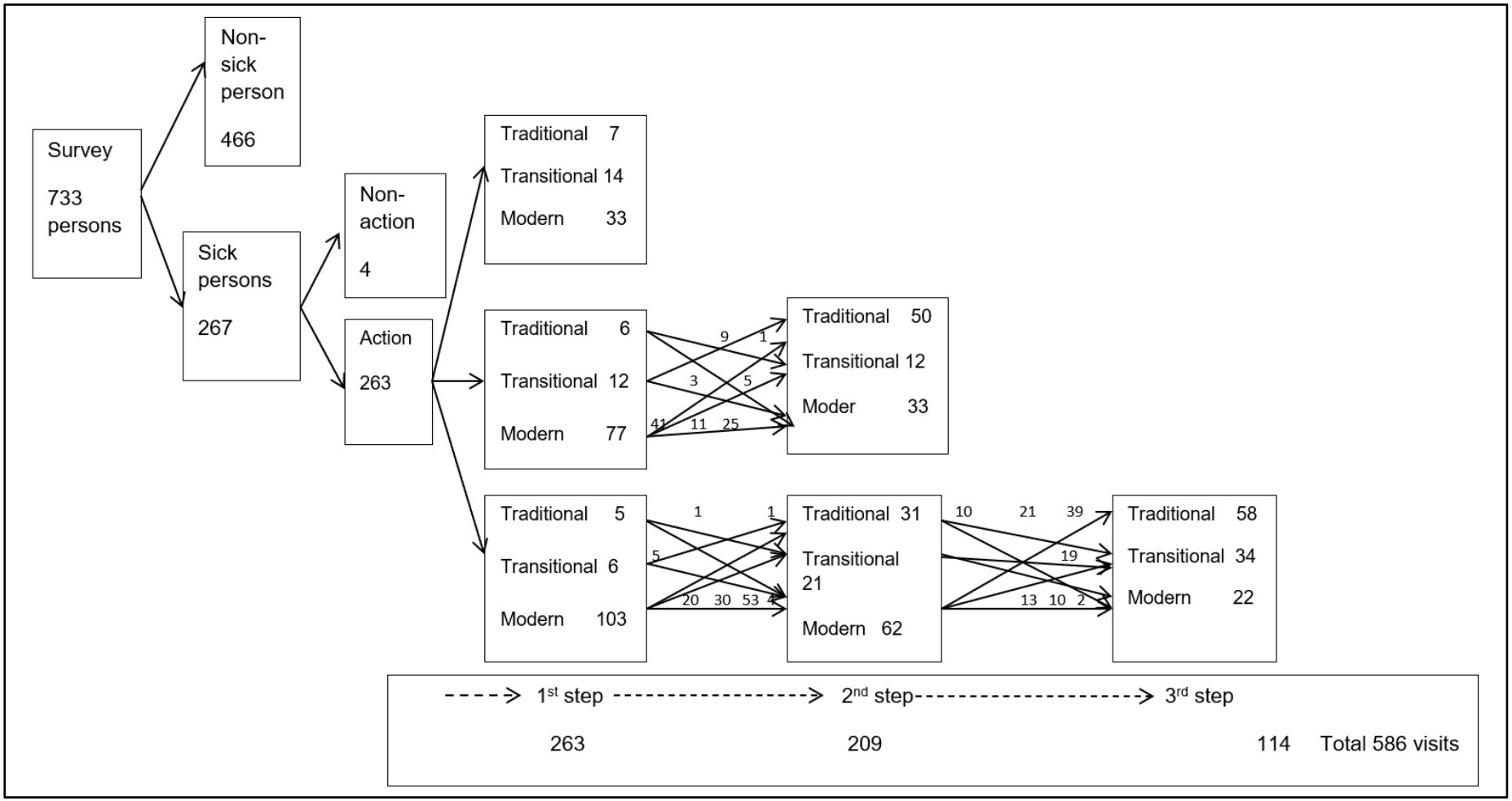


Figure 8.1 Decision Tree Showing the Movement of Patients in the Survey Through the Plural Nursing System in Sumedang
Source: Computation of the Data Set from the Field Work (2017).

8.1.4 Results of the Bivariate Analysis

Independent Variables

Socio-Demographic Variables

The household heads formed the majority of the respondents (79.9%) who use the traditional nursing institution compared to other family members. Meanwhile spouses tend to choose the transitional nursing institution (78.6%) compared to traditional nursing institutions (14.9%) or modern nursing institutions (6.5%). Within the block of socio-demographic factors, the distribution of the variable 'Household relationship' (χ^2 =.000) over the dependent variables demonstrates a most strongly significant relationship, rendering the attention in the bivariate analysis primarily on the reported utilisation of the traditional nursing institution in the research area.

Table 8.11a Distribution of the Socio-Demographic Variable of 'Household Relationship' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Household Relationship	N	%	N	%	N	%	N	%
Household head	301	79.2	56	14.7	23	6.1	380	100.0
Spouse	25	14.9	132	78.6	1	6.5	168	100.0
Son	0	0.0	1	100.0	0	0.0	1	100.0
Daughter	4	44.4	4	44.4	1	11.1	9	100.0
Father	2	66.7	1	33.3	0	0.0	3	100.0
Mother	13	68.4	4	21.1	2	10.5	19	100.0
Mother in law	3	100.0	0	0.0	0	0.0	3	100.0
Other kin	3	100.0	0	0.0	0	0.0	3	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.000/Cramer's V = .443

As regards the bivariate analysis of the socio-demographic variable *household relationship*, Table 8.11a shows the most strongly significant correlation between the variable *household relationship* and the differential utilisation of the plural nursing system (χ2 =.000), supported by a strong association of the Cramer's V=.423. Table 8.11a also shows that more than three-fourth (79.2%, n=301) of respondents include the household heads reporting the highest utilisation of traditional nursing institutions, followed by more than two-third (68.4%, n=13) of mothers for whom their highest utilisation of the traditional nursing institutions is reported. In comparison, for more than two-third (78.6%, n=132) of spouses the highest utilisation of the transitional nursing organisations is reported, while for more than one-tenth-third (10.5%, n=2) of spouses the highest utilisation of the modern nursing organisations is reported.

Table 8.11b Distribution of the Socio-Demographic Variable of 'Gender' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nirsing Organisations		Total	
Gender	N	%	N	%	N	%	N	%
Male	161	74.5	46	21.3	9	4.2	261	100.0
Female	190	51.4	152	41.1	28	7.6	370	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.000/Cramer's V=.228

Source: Computation of the Data Set from the Field Work (2017).

Table 8.11b also shows that three-fourth of males (74.5%, n=161) and more than half (51.4%, n=190) are reported to use the traditional nursing institution, while the reported proportion of females using the transitional nursing organisations is twice of that of males ((41.1% and 21.3).

Table 8.11c Distribution of the Socio-Demographic Variable of 'Age' of te Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nirsing Organisations		Total	
Age	N	%	N	%	N	%	N	%
30-35	3	42.9	4	57.1	0	0.0	7	100.0
36-40	1	100.0	0	0.0	0	0.0	1	100.0
41-45	4	50.0	4	50.0	0	0.0	8	100.0
46-50	8	57.1	5	35.7	1	7.1	14	100.0
51-55	22	29.3	4	65.3	4	5.3	75	100.0
56-60	41	70.7	13	22.4	4	6.9	58	100.0
61-65	63	49.6	54	42.5	10	7.9	127	100.0
66-70	66	71.7	22	23.9	4	4.3	92	100.0
71-75	82	70.7	29	25.0	5	4.3	116	100.0
76-80	34	75.6	6	13.3	5	11.1	45	100.0
81-85	17	68.0	6	24.0	2	8.0	25	100.0
86+	10	55.6	6	33.3	2	11.1	18	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.000/Cramer's V=.242
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the socio-demographic variable *age*, Table 8.11c shows the most strongly significant correlation reported for the age category of the respondents and their differential of the plural nursing system) ($\chi 2$ =.000, and a moderate association of the Cramer's V=.242.

Table 8.11c also shows that almost three-quarter (75.6%, n=34) of the respondents in the 76-80 age category, followed by almost three-quarter (71.7%, n=66) of respondents in the 66-70 age category is reporting the second highest utilisation of traditional nursing institutions. In comparison, almost two-third (65.3%, n=4) of the respondents in the 51-55 age category is reporting the highest utilisation of the transitional nursing organisations, while more than one-tenth (11.1%, n=45) of the respondents in the 76-80 age category is reporting the highest utilisation of the modern nursing organisations. In general, Table 8.11c shows, that in all age categories, traditional nursing institutions are the first choice reported by more than half (59.9%, n=351) of the respondents, compared to one-third (33.8%, n=198) of respondents reporting the choice of the transitional nursing organisations.

Table 8.11d Distribution of the Socio-Demographic Variable of 'Marital Status' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nirsing Organisations		Total	
Marital Status	N	%	N	%	N	%	N	%
Single	3	75.9	1	25.0	0	0.0	4	100.0
Married	176	51.9	143	42.2	20	5.9	339	100.0
Monogamy								
Married	12	54.5	10	45.5	0	0.0	22	100.0
Polygamy								
Divorced	4	100.0	0	0.0	0	0.0	4	100.0
Widow	148	73.3	38	18.8	16	7.9	202	100.0
Widower	8	53.3	6	40.0	1	6.7	15	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.000/Cramer's V=.177

As regards the bivariate analysis of the socio-demographic variable *marital status*, Table 8.11d shows a most strongly significant correlation between the marital status of the respondents and their differential utilisation of the plural nursing system ($\chi 2$ =.000), and shows a weak association of the Cramer's V=.177. Table 8.11d also shows that three-fourth (75.9%, n=3) of the respondents with a single marital status is reporting the highest utilisation of traditional nursing institutions, followed by nearly three-fourth (73.3%, n=148) of the respondents with a widow marital status similarly reporting the second highest utilisation of the traditional nursing institutions. In contrast, nearly one-half (45.5%, n=10) of the respondents with a married marital status, as well as nearly one-tenth (7.9%, n=16) of the respondents with a widow marital status is reporting the highest utilisation of the modern nursing organisations. In general, more than a half of the married monogamy respondents (51.9%, n=176) report utilising the traditional nursing institutions.

Table 8.11e Distribution of the Socio-Demographic Variable of 'Profession' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Profession	N	%	N	%	N	%	N	%
Unemployed	107	73.8	30	20.7	8	5.5	145	100.0
Housewife	64	39.5	83	51.2	15	9.3	162	100.0
Peasant	27	61.4	13	29.5	4	9.1	44	100.0
Farmer	57	65.5	27	31.0	3	3.4	87	100.0
Industrial labourar	6	85.7	1	4.3	0	0.0	7	100.0
Entrepreneur	40	70.2	17	29.8	0	0.0	57	100.0
Private empl.	2	66.7	0	0.0	1	33.3	3	100.0
Driver	3	50.0	3	50.0	0	0.0	6	100.0
Retired	14	77.8	3	16.7	1	5.6	18	100.0
Other	31	54.4	21	36.8	5	8.8	57	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.000/Cramer's V=.224
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the variable *profession*, Table 8.11e shows the most strongly significant correlation between of the respondents profession and their differential utilisation of the plural nursing system ($\chi 2$ =.000), and a moderate association of the Cramer's V=.224. Table 8.11e also shows that more than four-fifth (85.7%, n=6) of the respondents with the profession of industrial labourer is reporting the highest utilisation of traditional nursing institutions, while more than three-fourth (77.8%, n=14) of respondents with a retired profession is similarly reporting the highest utilisation of traditional nursing institutions. In addition, more than half (51.2%, n=83) of the respondents with the profession of housewife is reporting the highest utilisation of transitional nursing organisations, compared to nearly one-tenth (9.3%, n=15) of them from the same category reporting the highest utilisation of the modern nursing organisations. Three-fourth (73.8, n=107) of them who are unemployed report the highest utilisation of the traditional nursing institutions.

Table 8.11f Distribution of the Socio-Demographic Variable of 'Vaccination History' of Respondents of the . Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Vaccination History	N	%	N	%	N	N	%	
No vaccine	42	82.4	7	13.7	2	3.9	51	100.0
Not completed Vaccine	309	57.8	191	35.7	35	6.5	535	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.003/Cramer's V=.142
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the socio-demographic variable *vaccination history*, Table 8.11f shows a very strongly significant correlation between the vaccination history of the respondents and their utilisation of the plural nursing system ($\chi 2$ =.003), and a weak association of the Cramer's V=.305. Table 8.11f also shows that more than four-fifth (82.4%, n=42) of the respondents with no vaccine is reporting the highest utilisation of traditional nursing institutions, while just more than one-third (35.7%, n=191) of respondents with no completed vaccine is reporting the highest utilisation of transitional nursing institutions. In addition, more than half (6.5%, n=35) of the respondents with no completed vaccine is reporting the highest utilisation of modern nursing organisations.

Table 8.11g Distribution of the Socio-Demographic Variable of 'Length of CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nirsing Organisations		Total	
Length of CVD	N	%	N	%	N	%	N	%
less than 1 week	230	64.8	106	29.9	29	5.4	355	100.0
1-2 weeks	6	60.0	1	10.0	3	30.0	10	100.0
3-4 weeks	5	71.4	2	28.6	0	0.0	7	100.0
5-6 weeks	110	51.4	89	41.6	15	7	214	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.000 / Cramer's V =.185
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the socio-demographic variable *length of CVD*, Table 8.11g shows the most strongly significant correlation between the place of birth of the respondents and their differential utilisation of the plural nursing system ($\chi 2$ =.000), and a weak association of the Cramer's V=.185. Table 7.2d also shows that more than two-third (71.4%, n=71) of the respondents with a length of CVD of 3-4 weeks is reporting the highest utilisation of traditional nursing institutions. In comparison, one-fifth (41.6%, n=89) of the respondents with a length of CVD of 5-6 weeks is reporting the highest utilisation of the transitional nursing organisations, while less than one-third (30.0%, n=3) of the respondents with a length of CVD of 1-2 weeks is reporting the highest utilisation of the modern nirsing organisations.

Psycho-Social Variables

As regards the bivariate analysis of the psycho-social variable *knowledge of CVD*, Table 8.12a shows the most strongly significant correlation between knowledge of CV'of the respondents and their differential utilisation of the plural nursing system ($\chi 2$ =.000), and a weak association with the Cramer's V=.161.

Table 8.12a Distribution of the Psycho-Social Variable of 'Knowledge of CVD' of Respondents of the Sample over the . Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Knowledge of CVD	N	%	N	%	N	%	N	%
Very little	9	75.0.	46	21.3	9	4.2	261	100.0
Little	75	66.4	33	29.2	5	4.4	113	100.0
Average	195	59.8	102	31.3	29	8.9	326	100.0
Much	59	48.4	60	49.2	3	2.5	122	100.0
Very much	13	100.0	0	0.0	0	0.0	13	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.000/Cramer's V=.161
Source: Computation of the Data Set from the Field Work (2017).

Table 8.12a also shows that all (100.0%, n=13) of the respondents with very much knowledge of CVD is reporting the highest utilisation of traditional nursing institutions, while hree-fourth (75.0%, n=9) of the respondents with very little knowledge of CVD is reporting the highest utilisation of traditional nursing institutions. In comparison, nearly one-half (49.2%, n=60) of the respondents with much knowledge of CVD is reporting the highest utilisation of transitional nursing institutions, while less than one-tenth (8.9%, n=29) of the respondents with average knowledge of CVD is reporting the highest utilisation of the modern nursing organisations.

Table 8.12b Distribution of the Psycho-Social Variable of 'Knowledge of Traditional Nursing Institution' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Knowledge of Traditional Nursing Institution	N	%	N	%	N	%	N	%
None	15	93.8	1	6.3	0	0.0	16	100.0
Very little	40	63.5	17	27.0	6	9.5	63	100.0
Little	143	57.9	92	37.2	12	4.2	63	100.0
Average	94	53.4	68	38.6	14	8.0	176	100.0
Much	47	66.2	20	28.2	4	5.6	71	100.0
Very much	12	92.3	0	0.0	1	7.7	13	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.012/Cramer's V=.139
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the psycho-social variable *knowledge of traditional nursing institutions*, Table 8.12b shows the significant correlation (χ^2 =.012) and a weak association of Cramer's V=.139. Table 8.12b also shows that nearly all (93.8%, n=15) of the respondents with no knowledge of the traditional nursing institutions is reporting their highest utilisation of nursing institutions, while nearly three-fourth (38.6%, n=68) of the respondents with average knowledge of the traditional nursing institutions is reporting the highest utilisation of transitional nursing institutions.

In addition, nearly one-tenth (9.5%, n=6) of the respondents with very little knowledge of traditional nursing institutions is reporting the highest utilisation of the modern nursing organisations.

Table 8.12c Distribution of the Psycho-Social Variable of 'Knowledge of Traditional Nursing Institutions for CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing. System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Knowledge of Traditional Nursing Institutions for CVD	N	%	N	%	N	%	N	%
None	12	85.7	2	14.3	0	0.0	14	100.0
Very little	57	66.3	22	25.6	7	8.1	86	100.0
Little	141	56.9	93	37.	14	4.2	248	100.0
Average	83	53.2	62	39.7	11	7.1	156	100.0
Much	46	66.7	19	27.5	4	5.8	69	100.0
very much	12	92.3	0	0.0	1	7.7	13	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.036/Cramer's V =.128
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the psycho-social variable *knowledge of traditional nursing institutions for CVD*, Table 8.12c shows a strongly significant correlation (χ^2 =.036) and a weak

association with the Cramer's V=.128. Table 8.12c also shows that nearly all (92.3%, n=12) of the respondents with very much knowledge of traditional nursing institutions for CVD are reporting their highest utilisation of traditional nursing institutions, followed by more than two-fifth (39.7%, n=62) of the respondents with average knowledge of traditional nursing institutions for CVD is reporting the highest utilisation of transitional nursing organisations. In contrast, Table 8.12c also shows that nearly one-tenth (8.1%, n=7) of the respondents with very little knowledge of of traditional nursing institutions for CVD is reporting the highest utilisation of modern nursing organisations.

Table 8.12d Distribution of the Psycho-Social Variable of 'Knowledge of Transitional Nursing Organisations' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Knowledge of Transitional Nursing Institutions	N	%	N	%	N	%	N	%
None	14	73.7	4	21.1	1	5.3	19	100.0
Very little	33	58.9	15	26.8	8	14.3	56	100.0
Little	131	64.9	59	29.2	12	5.9	202	100.0
Average	116	57.1	77	37.9	10	4.9	203	100.0
Much	47	49.0	43	44.8	6	6.3	96	100.0
Very much	10	100.0	0	0.0	0	0.0	10	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.007/Cramer's V=.143
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the psycho-social variable *knowledge of transitional nursing organisations,* Table 8.12d shows a strongly significant correlation (χ^2 =.007) and a weak association with the Cramer's V=.143. Table 8.12d also shows that all (100.0%, n=1o) of the respondents with very much knowledge of transitional nursing organisatins are reporting their highest utilisation of traditional nursing institutions. In addition, nearly half (44.8%, n=43) of the respondents with much knowledge of transitional nursing organisations is reporting the highest utilisation of transitional nursing organisations. In contrast, Table 8.12c also shows that more than one-tenth (14.3%, n=8) of the respondents with very little knowledge of of transitional nursing organitions is reporting the highest utilisation of modern nursing organisations.

Table 8.12e Distribution of the Psycho-Social Variable of 'Knowledge of Transitional Nursing Organisations for CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Knowledge of Transitional Nursing Organisations for CVD	N	%	N	%	N	%	N	%
None	14	73.7	4	21.1	1	5.3	19	100.0
Very little	34	58.6	17	29.3	7	12.1	58	100.0
Little	135	63.7	62	9.2	15	7.1	212	100.0
Average	112	58.3	71	37.0	9	4.7	192	100.0
Much	46	48.4	44	46.3	5	5.3	95	100.0
Very much	10	100.0	0	0.0	0	0.0	10	100.0
Total	351	9.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.016/Cramer's V =.136
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the psycho-social variable *knowledge of transitional nursing institutions for CVD*, Table 8.12e shows a significant correlation (χ^2 =.016) and an average association

of the Cramer's V=.136. Table 8.12e also shows that all (100.0.%, n=10) of the respondents with very much knowledge of transitional nursing organisations for CVD is reporting the highest utilisation of traditional nursing institutions, while nearly half (46.3%, n=44) of the respondents with much knowledge of transitional nursing organisations for CVD reports the highest utilisation of transitional nursing organisations. In contrast, more than one-tenth (12.1%, n=7) of the respondents with very little knowledge of transitional nursing organisations for CVD reports the highest utilisation of modern nursing organisations.

Table 8.12f Distribution of the Psycho-Social Variable of 'Belief in Traditional Nursing Institution as a Prevention of CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Belief in Traditional Nursing Institution as a Prevention of CVD	N	%	N	%	N	%	N	%
None	9	81.8	1	9.1	1	9.1	11	100.0
Very little belief	72	59.5	41	33.9	8	6.6	121	100.0
A little belief	91	59.1	54	35.1	9	5.8	154	100.0
Average	89	53.3	71	42.5	7	4.2	167	100.0
Much belief	85	66.4	32	4.2	12	9.4	128	100.0
Very much belief	5	100.0	0	0.0	0	0.0	5	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.041/Cramer's V=.127
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the psycho-social variable *belief in traditional nursing institution as a prevention of CVD*, Table 8.12f shows a strongly significant correlation (χ^2 =.041) and a weak association of Cramer's V=.127. Table 8.12f also shows that all (100.0%, n=15) of the respondents with very much belief in traditional nursing institution as a prevention of CVD, and that two-third (66.4%, n=85) of the respondents with much belief in traditional nursing institution as a prevention of CVD are reporting the highest utilisation of the traditional nursing institutions. In contrast, less than one-tenth (9.4%, n=9) of the respondents with much belief in traditional nursing institution as a prevention of CVD reports the highest utilisation of modern nursing organisations.

Table 8.12g Distribution of the Psycho-Social Variable of 'Belief in Traditional Nursing Institution as a Treatment of CVD' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Belief in Traditional Nursing Institution as a Treatment of CVD	N	%	N	%	N	%	N	%
None	11	84.6	1	7.7	1	7.7	13	100.0
Very little belief	24	54.5	17	38.6	3	6.8	44	100.0
A little belief	138	60.0	76	33.0	16	7.0	230	100.0
Average	79	52.7	65	43.3	6	4.0	150	100.0
Much belief	90	64.7	38	27.3	11	7.9	139	100.0
Very much belief	9	90.0	1	10.0	0	0.0	10	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.055/Cramer's V=.124
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the psycho-social variable *belief in traditional nursing institution as a treatment of CVD*, Table 8.12g shows a stronly significant correlation (χ^2 =.055) and a weak association of the Cramer's V=.124. Table 8.12g also shows that nearly all (90.0.%, n=9) of the respondents with very much belief in traditional nursing institution as a treatment of CVD are reporting their highest utilisation of traditional nursing institutions, while more than two-fifth (43.3%, n=65) of the respondents with average belief in traditional nursing institution as a treatment of CVD is reporting the highest utilisation of transitional nursing organisations. In contrast, less than one-tenth (7.9%, n=11) of the respondents with much belief in traditional nursing institution as a treatment of CVD is reporting the highest utilisation of modern nursing organisations.

Perceived Morbidity

Table 8.13 Distribution of the Perceived MorbidityVariable of 'Perceived General Health Status' of Respondents of the Sample over the Dependent Variables of the Utilisation of the Plural Nursing System (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Perceived General Health Status	N	%	N	%	N	%	N	%
Very bad	2	66.7	0	0.0	1	33.3	3	100.0
Bad	90	72.6	27	21.8	7	5.6	124	100.0
Average	107	52.7	71	38.9	17	8.4	203	100.0
Good	137	58.1	89	37.7	10	4.2	236	100.0
Excellent	11	78.6	2	14.3	1	7.1	14	100.0
Total	347	59.8	197	34.0	36	6.2	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.003 / Cramer's V =.141
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the variable of *perceived morbidity*, Table 8.13 shows a very strongly significant correlation between the perceived morbidity of the respondents and their differential utlisation of the plural nursing system (χ2 =.030), and a weak association of the Cramer's V=.141. Table 8.13 also shows that more than three-fourth (78.6%, n=11) of the respondents with an excellent perceived general health status is reporting their highest utilisation of traditional nursing institutions, while more than two-fifth (43.3%, n=65) of the respondents with an average perceived general health status is reporting the highest utilisation of transitional nursing organisations, compared to nearly one-tenth (8.4%, n=17) of the respondents with a similr average perceived general health status is reporting the highest utilisation of modern nursing organisations.

Enabling Variables

Table 8.14a Distribution of the Enabling Variable of 'Monthly Income of Household Head' of .Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Monthly Income of Household Head	N	%	N	%	N	%	N	%
None	14	63.6	7	31.8	1	4.5	22	100.0
1 – 1.000.000 Rp	202	62.9	95	26.9	24	7.5	321	100.0
1.000.001 –2.000.000 Rp	56	54.4	41	39.8	6	5.8	103	100.0
2.000.001 –3.000.000 Rp	32	45.1	37	52.1	2	2.8	71	100.0
3.000.001 –4.000.000 Rp	31	63.3	15	30.6	3	6.1	49	100.0
More than 4.000.000 Rp	16	80.0	3	15.0	1	5.0	20	100.0
Total	170	59.4	97	33.9	19	6.6	286	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.035/Cramer's V=.129
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the variable *monthly income of household head*, Table 8.14a shows a strong significant correlation between the perceived morbidity of the respondents and their differential utlisation of the plural nursing system ($\chi 2$ =.035), and a weak association of the Cramer's V=.129. Table 8.14a also shows that four-fifth (80.0%, n=16) of the respondents with a monthly income of more than 4.000.000 Rp is reporting their highest utilisation of the traditional nursing institutions. In comparison, more than half (52.1%, n=37) of the respondents with a monthly income of 2.000.001 –3.000.000 Rp is reporting the highest utilisation of the transitional nursing organisations. In contrast, less than one-tenth (7.5%, n=24) of the respondents with a monthly income of 1.000.001 –2.000.000 Rp is reporting the highest utilisation of the modern nursing organisations.

Table 8.14b Distribution of the Enabling Variable of 'Cost of the Transitional Nursing Organisations' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Cost of of Transitional Nursing Institutions	N	%	N	%	N	%	N	%
Free of charge	32	47.8	30	44.8	5	7.5	67	100.0
Very cheap	85	63.9	41	30.8	7	5.3	133	100.0
Cheap	132	54.3	93	38.3	18	7.4	243	100.0
Medium	78	67.8	32	27.8	5	4.3	115	100.0
Expensive	22	88.0	2	8.0	1	4.0	25	100.0
Very expensive	2	66.7	0	0.0	13	3.3	3	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.007 / Cramer's V =.144
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the enbling variable *cost of the transitional nursing organisations*, Table 8.14b shows a strongly significant correlation (χ^2 =.007) and a weak association with Cramer's V=.144. Table 8.14b also shows that more than four-fifth-third (88.0%, n=22) of the respondents with expensive costs of the transitional nursing organisations is reporting the highest utilisation of the traditional nursing institutions.

In contrast, nearly half (44.8%, n=30) of respondents with no costs of the transitional nursing organisations are reporting the highest utilisation of the transitional nursing organisations, compared to less than one-tenth (7.5%, n=5) of the respondents with similarly no costs of the transitional nursing organisations, reporting the highest utilisation of the modern nursing organisations.

Table 8.14c Distribution of the Enabling Variable of 'Transport Cost of the Modern Nursing Institution' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Transport Cost of the Modern Nursing Institution	N	%	N	%	N	%	N	%
Free of charge	72	55.8	48	37.2	9	7.0	129	100.0
Very cheap	15	44.1	16	40.1	3	8.8	34	100.0
Cheap	29	43.3	32	47.8	6	9.0	67	100.0
Medium	129	65.8	61	31.1	6	3.1	196	100.0
Expensive	97	65.1	40	26.8	12	8.1	149	100.0
Very expensive	9	81.8	1	9.1	1	9.1	11	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.009/Cramer's V=.142
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the enbling variable *transport cost of the modern nursing institution,* Table 8.14c shows a strongly significant correlation (χ^2 =.009) and a weak association with Cramer's V=.142. Table 8.14c also shows that more than four-fifth-third (88.8%, n=9) of the respondents indicating expensive costs of the transitional nursing organisations is reporting the highest utilisation of the traditional nursing institutions.

In contrast, nearly half (47.8%, n=32) of respondents indicating cheap transport cost of the modern nursing institution is reporting the highest utilisation of the transitional nursing organisations, compared to less than one-tenth (78.8%, n=3) of the respondents indicating very cheap transport cost of the modern nursing institution, reporting the highest utilisation of the modern nursing organisations.

Table 8.14d . Distribution of the Enabling Variable of 'Health Insurance Ownership' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Health Insurance Ownership	N	%	N	%	N	%	N	%
No	107	69.9	38	25.2	8	5.3	153	100.0
Yes	244	56.4	160	37.0	29	6.7	433	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.049 / Cramer's V =.09
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the enabling variable *health insurance ownership,* Table 8.14d shows a strongly significant correlation between the vaccination history of the respondents and their differential utilisation of the plural nursing system (χ2 =.049), and a weak association of the Cramer's V=.09. Table 8.14d also shows that more than four-fifth (69.9%, n=107) of the respondents with no health insurance ownership is reporting the highest utilisation of traditional nursing institutions.In contrast, just more than one-third (37.0%, n=160) of respondents with health insurance ownership is reporting the highest utilisation of transitional nursing institutions.
In comparison, less than one-tenth (6.7%, n=9) of the respondents with health insurance ownership reporting the highest utilisation of modern nursing organisations.

Institutional Variables

Table 8.15a Distribution of the Institutional Variable of 'Availability of the Transitional Nursing Orgnisations' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Availability of the Transitional Nursing Orgnisations	N	%	N	%	N	%	N	%
None	4	44.4	5	55.6	0	0.0	9	100.0
Chemist	122	57.8	81	38.4	8	3.8	211	100.0
Warung obat ('Stall')	133	72.3	38	20.7	13	7.1	184	100.0
Drug store	1	100.0	0	0.0	0	0.0	1	100.0.
Total	260	62.4	124	30.6	21	5.2	405	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.005 / Cramer's V =.152
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the institutional variable *availability of the transitional nursing organisations,* Table 8.15a shows a significant correlation (χ^2 = .005) and moderate association with Cramer's V= .152. Table 8.15a also shows that nearly three-fourth (72.3%, n=133) of the respondents with the availability of *Warung obat* ('Stall') of the transitional nursing orgnisations are reporting the highest utilisation of the traditional nursing institutions. In addition, more than half (55.6%, n=5) of the respondents with no availability of the transitional nursing organisations reporting their highest

utilisation of the transitional nursing organisations. In contrast, less than one-tenth (7.1%, n=13) of the respondents with the availability of *Warung obat* ('Stall') of the transitional nursing orgnisations is reporting their highest utilisation of the modern nursing organisations.

Table 8.15b Distribution of the Institutional Variable of 'Geographical Distance to Modern Nursing Organisation' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Geographical Distance to Modern Nursing Organisation	N	%	N	%	N	%	N	%
0.1 – 2 km	126	50.8	108	43.5	14	5.6	248	100.0
2.1 – 4 km	126	60.6	70	33.7	12	5.8	208	100.0
4.1 – 6 km	61	77.2	15	19.0	3	3.8	79	100.0
6.1 – 8 km	23	76.7	2	6.7	5	16.7	30	100.0
> 8.1 km	15	71.4	3	14.3	3	14.3	21	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.000 / Cramer's V =.160
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the institutional variable *geographical distance to modern nursing organisation*, Table 8.15b shows a most strongly significant correlation (χ^2 = .000) and a weak association of Cramer's V= .160. Table 8.15b also shows that more than three-fourth (76.7%, n=233) of the respondents with a geographical distance between 6.1 – 8 km to a modern nursing organisation is reporting the highest utilisation of the traditional nursing institutions, followed by more than half (43.5%, n=108) of the respondents respondents with a geographical distance between 0.1 – 2 km to a modern nursing organisation is reporting the highest utilisation of the transitional nursing organisations.
In contrast, less than one-fifth (16.7%, n=5) of the respondents with with a geographical distance between 6.1 – 8 km to a modern nursing organisation is reporting the highest utilisation of the modern nursing organisations is reporting their highest utilisation of the modern nursing organisations.

Table 8.15c Distribution of the Institutional Variable of 'Zonation Location of the Community' of Respondents of the . Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Zonation Location of the Community	N	%	N	%	N	%	N	%
Mountainous	161	74.5	39	18.1	16	7.4	216	100.0
Plains	190	51.4	159	43.0	21	5.7	370	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.000 / Cramer's V =.254
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the institutional variable *zonation location of the community*, Table 8.15c shows a most strongly significant correlation (χ^2 = .000) and a strong association of Cramer's V= .254.

Table 8.15c also shows that nearly three-fourth (74.5%, n=614) of the respondents from a mountainous zonation location of the community is reporting the highest utilisation of the traditional nursing institutions, while nearly half (43.0%, n=159) of the respondents from a plain zonation location of the community is reporting the highest utilisation of the transitional nursing organisations. In comparison, less than one-tenth (7.4%, n=5) of the respondents from a mountainous zonation location of the community is reporting the highest utilisation of the modern nursing organisations.

Table 8.16a Distribution of the Intervening Variable of 'Government/Public Regulations Influencing Utilisation of Modern Nursing Organisations' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Government/Public Regulations Influencing Utilisation of Modern Nursing Organisations	N	%	N	%	N	%	N	%
Electronic campaigns (TV, radio, internet)	4	66.7	0	0.0	2	33.3	6	100.0
Health education/ campaigns from health officers	256	58.6	153	35.0	28	6.4	437	100.0
Other	91	63.6	45	31.5	7	4.9	143	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.035/Cramer's V=.094
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the intervening variable *government/public regulations influencing utilisation of modern nursing organisations,* Table 8.16a shows a strong significant correlation (x^2 = .035) and a strong association of Cramer's V= .094.

Table 8.16a also shows that two-third (66.7%, n=4) of the respondents with experience of electronic campaigns (TV, radio, internet) influencing the utilisation of modern nursing organisations is reporting the highest utilisation of the traditional nursing institutions. In contrast, more than one-third (35.0%, n=153) of the respondents with experience of health education/ campaigns from health officers influencing the utilisation of modern nursing organisations is reporting the highest utilisation of the transitional nursing organisations. Also, one-third (33.3%, n=2) of the respondents with experience of electronic campaigns influencing the utilisation of modern nursing organisations is reporting the highest utilisation of the modern nursing organisations.

Table 8.16b Distribution of the Intervening Variable of 'Promotion of Home Nursing by the Government' of Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Promotion of Home Nursing by the Government	N	%	N	%	N	%		
Ministry of Health regulations	6	54.5	5	45.5	0	0.0	11	100.0
BPJS	1	25.0	1	25.0	2	50.0	4	100.0
Other	344	60.2	192	33.6	35	6.1	571	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.007/Cramer's V=.110
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the intervening variable *promotion of home nursing by the government,* Table 8.16b shows a strongly significant correlation (χ^2 =.007) and a weak association of Cramer's V=.110.Table 8.16b also shows that nearly three-fifth (60.2%, n=344) of the respondents with experience of promotion by the government of other forms of home nursing is reporting the highest utilisation of the traditional nursing institutions, while nearly half (45.5%, n=5) of the respondents with experience of Ministry of Health regulations is reporting the highest utilisation of the transitional nursing organisations. In comparison, less than one-tenth (6.1%, n=35) of the respondents with experience of promotion by the government of other home nursing promotion is reporting the highest utilisation of the modern nursing organisations.

Table 8.16c Distribution of the Intervening Variable of 'Modern Nursing Promotion by the Government' of . Respondents of the Sample over the Dependent Variables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Modern Nursing Promotion by the Government	N	%	N	%	N	%	N	%
No	82	70.7	29	25.	5	4.3	116	100.0
Yes	269	57.2	169	36.0	32	6.8	470	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.020/Cramer's V =.100
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the intervening variable *modern nursing promotion by the government*, Table 8.16c shows a very strong significant correlation ($\chi 2$ =.020) and a weak association of Cramer's V =.100

Table 8.16c also shows that nearly two-third (70.7%, n=82) of the respondents with no experience of modern nursing promotion by the government is reporting the highest utilisation of the traditional nursing institutions, while more than one-third (36.0%, n=169) of the respondents with experience of modern nursing promotion by the government is reporting the highest utilisation of the transitional nursing organisations.

In comparison, less than one-tenth (6.8%, n=32) of the respondents with experience of modern nursing promotion by the government is reporting the highest utilisation of the modern nursing organisations.

Table 8.16d Distribution of the Intervening Variable of 'Government/Public Promotion Influencing Utilisation of Modern Nursing Organisations for CVD Prevention' of Respondents of the Sample over the DependentVariables (N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Government/Public Regulations Influencing Utilisation of Modern Nursing Organisations for CVD Prevention	N	%	N	%	N	%	N	%
Ministry of Health regulations	69	68.3	26	25.7	6	5.9	11	100.0
Local government regulations	20	52.6	16	42.1	2	5.3	38	100.0
BPJS	178	54.4	127	38.8	22	6.7	327	100.0
Other	84	70.0	29	24.2	7	5.8	120	100.0
Total	351	59.9	198	33.8	37	6.3	586	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.036/Cramer's V=.119
Source: Computation of the Data Set from the Field Work (2017).

Regarding the bivariate analysis of the intervening variable *government/public promotion influencing utilisation of modern nursing organisations for CVD prevention*, Table 8.16d shows a strongly significant correlation ($\chi 2$ =.036) and a weak association of Cramer's V =.119.

Table 8.16d also shows that more than two-third (70.0%, n=84) of the respondents with experience of other *promotions influencing the utilisation of modern nursing organisations for CVD prevention* is reporting the highest utilisation of the traditional nursing institutions, while more than two-fifth (42.1%, n=16) of the respondents with experience of local government/public regulations influencing utilisation of modern nursing organisations for CVD prevention is reporting the highest utilisation of the transitional nursing organisations.

In comparison, less than one-tenth (6.7%, n=22) of the respondents with experience of BPJS influencing utilisation of modern nursing organisations for CVD prevention is reporting the highest utilisation of the modern nursing organisations.

Table 8.16e Distribution of the Intervening Variable of 'Impact of Government/Public Promotion Influencing Utilisation of Modern Nursing Organisations for CVD Treatment' of Respondents of the Sample over the Dependent Variables .(N=586)

Variable	Utilisation of the Plural Nursing System							
	Traditional Nursing Institutions		Transitional Nursing Organisations		Modern Nursing Organisations		Total	
Impact of Government/Public Promotion Influencing Utilisation of Modern Nursing Organisations for CVD Treatment	N	%	N	%	N	%	N	%
None	85	69.7	31	25.4	6	4.9	122	100.0
Very low impact	10	35.7	17	60.7	1	3.6	30	100.0
Low impact	16	66.7	5	20.8	3	12.5	24	100.0
Average	73	61.3	41	34.5	5	4.2	119	100.0
High impact	114	59.7	63	33.0	14	7.3	191	100.0
Very high impact	53	52.0	41	40.2	8	7.8	102	100.0
Total	350	59.8	198	33.8	37	6.3	585	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) =.023/Cramer's V=.133
Source: Computation of the Data Set from the Field Work (2017).

As regards the bivariate analysis of the intervening *variable impact of government/public promotion influencing utilisation of modern nursing organisations for CVD treatment*, Table 8.16e shows a strongly significant correlation ($\chi 2$ =.023) and a weak association of Cramer's V =.133.

Table 8.16e also shows that more than two-third (69.7%, n=85) of the respondents with no impact of government/public promotion influencing utilisation of modern nursing organisations for CVD treatment is reporting the highest utilisation of the traditional nursing institutions, while nearly two-third (60.7%, n=17) of the respondents with very low impact of government/public promotion influencing utilisation of modern nursing organisations for CVD treatment is reporting the highest utilisation of the transitional nursing organisations.

In comparison, more than one-tenth (12.5%, n=3) of the respondents with very low impact of government/public promotion influencing utilisation of modern nursing organisations for CVD treatment is reporting the highest utilisation of the modern nursing organisations.

In Sum, the general explanation of the results of the bivariate analysis in terms of the strong significant correlations between respondents with the selected independent socio-demographic, psycho-social, perceived morbidity, enabling, institutional, and intervening variables and the dependent variables of utilisation of the plural nursing system in the research area underscore that the majority of respondents continue to follow their *kearifan kesehatan local* ('indigenous medical knowledge') as applied in the *perawatan tradisional* ('indigenous system of nursing knowledge, beliefs and practices'), and as such expressed in their reported substantial utilisation of the traditional nursing institutions in the Sumedang Regency of West Java.

The bivariate analysis of these variables shows not only an evidence-based preference of local people for the utilisation of indigenous nursing institutions, particularly for nursing of patients with CVD, but also a clear lack of due attention from the national health system for the user-oriented needs of appropriate nursing of people with CVD. The fact that the selected variables, complemented with categorised data of the respondents from the sample are showing even more stronger significant correlations with their utilisation of the traditional nursing institution, implies that these variables are very important for the proposed development of integrated nursing in the Sumedang Regency of East Java. The remarkable findings of the bivariate analysis of selected variables categorised in the different blocks of variables within the multivariate model of transcultural nursing utilisation are

presented in Figure 8.2 in whih the statistically significant mutual correlations between variables of the mode are indicted. The independent variables, for which a statistically significant correlation with the dependent variables is calculated, are represented in the respective block of factors under reference of the chi-value. The significant mutual correlations displayed in Figure 8.2 anticipate the complexity of a multivariate analysis of data, in which all variables identified in the model are included, notably irrespective of their significance value revealed within the bivariate analysis.

In the step-wise analysis of the research data, the bivariate analysis provides a basic overview of the significance of the correlations of the independent variables in relation with the dependent variables. In order to further understand the sinifiance of the significant correlations, additional analysis are required in order to assess the overall extension of determinants of people's patterns of the plural nursing system utilisation behaviour.

8.2 The Mutual Correlations Analysis

8.2.1 Overview of Significant Variables

Based on the bivariate cross-tab analysis among the independent, intervening and dependent variables, the study could indicate the mutual correlations analysis, which shows the significant variables which influence the behavioural patterns of the people in the utilisation of the plural community nursing institutional system in the four sample villages.

Figure 8.2 shows the mutual correlations analysis constructed on the basis of the resulting significant correlations of variables, calculated in the preceding bivariate analysis. The abbreviation of each variable includes the statistical significance measures written in *italics*. Pertaining to the following conclusions:

1. In terms of the socio-demographic variables, there are seven significant variables which have mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to transitional and modern nursing organisations. The significant variables are 'household relationship' (*hhrel/.000*), 'gender of the respondents' (*gender/.000*); 'age of respondent' (*age/.000*); 'marital status of respondent' (*marstat/.000*); 'profession of the respondents' (*profession/.000*); 'vaccination history' (*vacc/.000*); and the duration of the illness, expressed in 'length of cvd' (*lencvd/.000*);

2. In terms of the psycho-social variables, there are five significant variables which have mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations. The variables are 'knowledge of traditional nursing institutions' (*knowtrad/.000)*; 'knowledge of traditional nursing for prevention of CVD' (*knowcvd/.012*), 'knowledge of transitional nursing institution*'* (*knowtrans/.036*), 'knowledge of transitional nursing institution for CVD*'* (*transcvd/.016*), and 'beliefs in traditional nursing institution as a prevention of CVD' (*beltrad/.041*));

3. In terms of the perceived variables, there is onlyone significant variable which has mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations. The variable is 'perceived general health status' (*perhe/.003);*

4. In terms of the enabling variables, there are four variables that have mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations: 'monthly income of head of household' (*headinc/.035*); 'use of the support of the transitional nursing institution' *(costrans/.007);* 'transport cost to reach modern nursing organisation source' *(transmod/.009),* and 'health insurance ownership' *(helins/.049).*

5. In terms of institutional variables, only one variable has a mutual correlations with the intervening variables on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations. The only significant variable is ‘geographical distance to modern nursing institution’ (*modedist/.000*); and finally;

6. In terms of the environmental variables, two variables have mutual correlations with the intervening variables - mentioned below - on their influence in the utilisation of traditional nursing institutions in contrast to the transitional and modern nursing organisations. The variables are ‘environmental location of the nursing institutions’ (*envloc/.000*), and ‘zonation location of the nursing institutions’ (*zonaloc/.000*).

7. The intervening variables in this model indicate the mutual correlations to the independent variables as well as their influence in the utilisation of the traditional nursing institutions, in contrast to the transitional and modern ones. The significant variables are ‘source of government/public regulations influencing the utilisation of modern nursing organisations for CVD’ (*gremod2/.035*), ‘home nursing promotion by the government’ *(gprohom3/.007),* ‘modern nursing institution utilisation promotion by the government*’ (gpromod/.020),* ‘government/public promotion influencing utilisation of modern nursing institution for CVD’ *(gpromod3/.036*), and ‘impact of government/public promotion influencing utilisation of modern nursing institution for CVD’ *(gpromod4/.023).*

In the next Paragraph, the multivariate and multiple regression analyses will be elaborated. The behavioural patterns of the local people of Sumedang in the utilisation of the Plural Nursing System will be explained through a stepwise analysis with a multivariate analysis and multiple regression analysis to explain the influence of independent and intervening variables towards the dependent variables of the utilisation behaviour.

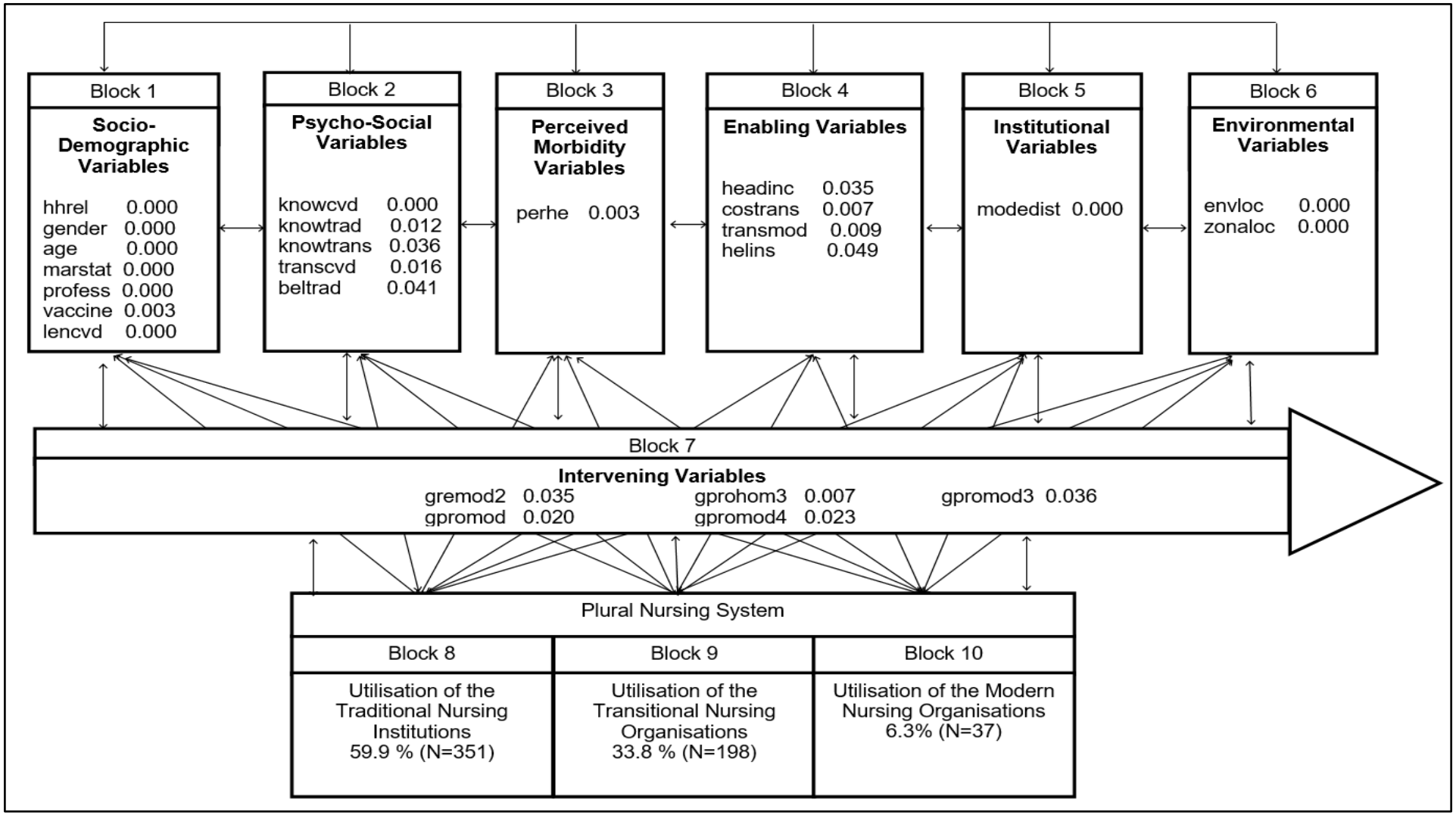


Figure 8.2 Model of the Mutual Correlations Analysis of the Blocks of Variables
Note: Variables which are statistically significant are presented in the block with the significant value
Source: Adapted from Slikkerveer 2012 for Computations based on the Field Work Survey (2017).

8.3 The Multivariate Analysis: OVERALS

8.3.1 The Non-Linear Canonical Correlation Analysis (OVERALS)

In addition to the bivariate analysis in the previous section, this study is also conducting a multivariate analysis. The multivariate analyses are examined by implementing optimal scaling: the Non-Linear Generalized Canonical Correlation Analysis, which is known as OVERALS. It has been developed by the Data Theory Scaling System Group (DTSS) of Leiden University in the Netherlands. Similar studies which have used OVERALS have been executed by Slikkerveer (1990, 1995), Agung (2005), Leurs (2010), Djen Amar (2010), Ambaretnani (2012), Aiglsperger (2014); Erwina (2019), De Bekker (2020), Saefullah (2019) and Febriyanti (2021) in the multivariate analysis in various studies in subjects of Ethnoscience and Development.

As regards the quantitative analysis of the data in this study, the analysis implements Categorical Components Analysis with optimal scaling for data reduction when the variable is categorical (nominal and ordinal with only small numbers of values, each of which corresponds to a specific category value/label). The categorical data cannot be normally distributed as they are not continuous data (*cf.* Field 2009; 2013). Categorical Component Analysis is concerned with identifying the underlying variables from the set of variables while maximizing the amount of variance accounted for in those items by the principal components. The analysis fits in as it does not assume linear correlations among the numeric data nor does it require assuming multivariate normal data. In optimal scaling, it is an advantage as the researcher specifies the chosen level of measurement, according to earlier research.

The reduction technique, run in IBM PASW 22.0, mainly in two dimensions with the exception of one variable, requires multiple runs in a block of variables as shown in the analytical model. In this multivariate analysis, the study applies multiple regression and canonical correlation analysis, while at the same time OVERALS is also applied to indicate the relationship of sets of variables of each other. Seven blocks of independent variables, including one block of intervening variables, are used to analyse its influence on three dependent variables in the utilisation behaviour of the Plural Nursing Systems. The seven blocks of independent and intervening variables are the Socio-demographic, Psycho-social, Perceived Morbidity, and Enabling Variables, Institutional Variables, Environmental Variables and Government/Private Influence through policies and promotion. Altogether, the number of significant variables total 25.

Table 8.17 Component Loadings of the Two Sets of Variables with a Total of 25 Variables on Two Dimensions (N=856)

Set		Dimension	
		1	2
1	hhrel[a,b]	-0,836 (1)	-0,002
	gender[a,b]	-0,274 (4)	0,112
	age[b,c]	0,133	0,132
	marstat[a,b]	0,014	0,007
	profession[a,b]	-0,194	0,211 (2)
	vaccin[a,b]	-0,187	0,042
	length[b,c]	0,284 (3)	-0,072
	knowcvd[b,c]	-0,082	0,081
	knowtrad[b,c]	0,002	0,077
	knowtrans[b,c]	-0,038	-0,188 (3)
	transcvd[b,c]	-0,009	-0,162 (4)
	beltrad[b,c]	-0,093	-0,042
	perhe[b,c]	-0,015	-0,152 (5)
	headinc[b,c]	0,114	0,007
	costrans[b,c]	0,186	-0,068
	transmod[b,c]	0,223	-0,110

Table 8.17 (*Continued*) Component Loadings of the Two Sets of Variables with a Total of 25 Variables on Two . Dimensions (N=856)

Set		Dimension	
		1	2
	helins[a,b]	0,024	-0,002
	modedist[b,c]	0,265 (5)	0,126
	envloc[a,b]	0,257	0,139
	zonaloc[a,b]	-0,335 (2)	-0,058
	gremod2[a,b]	-0,042	-0,239 (1)
	gprohom3[b,c]	-0,082	0,102
	gpromod[a,b]	-0,149	0,049
	gpromod3[a,b]	-0,188	0,019
	gpromod4[b,c]	-0,120	0,047
2	Traditional nursing institution[b,d]	0,882	-0,225
	Transitional nursing institution[b,d]	-0,901	-0,187
	Modern nursing institution[b,d]	-0,035	0,840

a. Optimal Scaling Level: Single Nominal
b. Projections of the Single Quantified Variables in the Object Space
c. Optimal Scaling Level: Ordinal
d. Optimal Scaling Level: Numerical

Based on Table 8.17, there are five leading independent variables in Dimensions 1 and 2, which explain the strongest correlation to people's behaviour in the utilisation of the plural nursing systems, among traditional institutions, transitional and modern nursing organisations.

As regards the analysis, the 'household relationship' ('*hhrel*') variable of the environmental variables in Dimension 1 is the strongest correlation to 'People's behaviour in the utilisation of the Plural Nursing System' (correlation score of -.836).

Table 8.18 Distribution of the Strongest Correlated Variables to People's Behaviour in the Utilisation of the Plural Nursing System in Sumedang (N= 586)

Dimension 1	Dimension 2
hhrel	*gremod2*
zonaloc	*profession*
lencvd	*knowtrans*
gender	*transcvd*
modedist	*headinc*

Source: Computations based on the Field Work Survey (2017).

8.3.2 Projection of Variables and Objects in Canonical Space

The component loadings of all variables are presented graphically in the centroid plot of Figure 8.3. The distance from the origin to each variable point approximates the importance of each variable. Both the relationship and direction scores among variables can be explored as they appear in the plot.

When there are no missing data, the component loadings are equivalent to Pearson's correlation between the quantified variables and the object scores. The three dependent variables are plotted with three straight lines from the center of the graph to distinguish them from the independent and the intervening variables. The line also explains the closest influences of each of the independent and intervening variables to the related dependent variables.

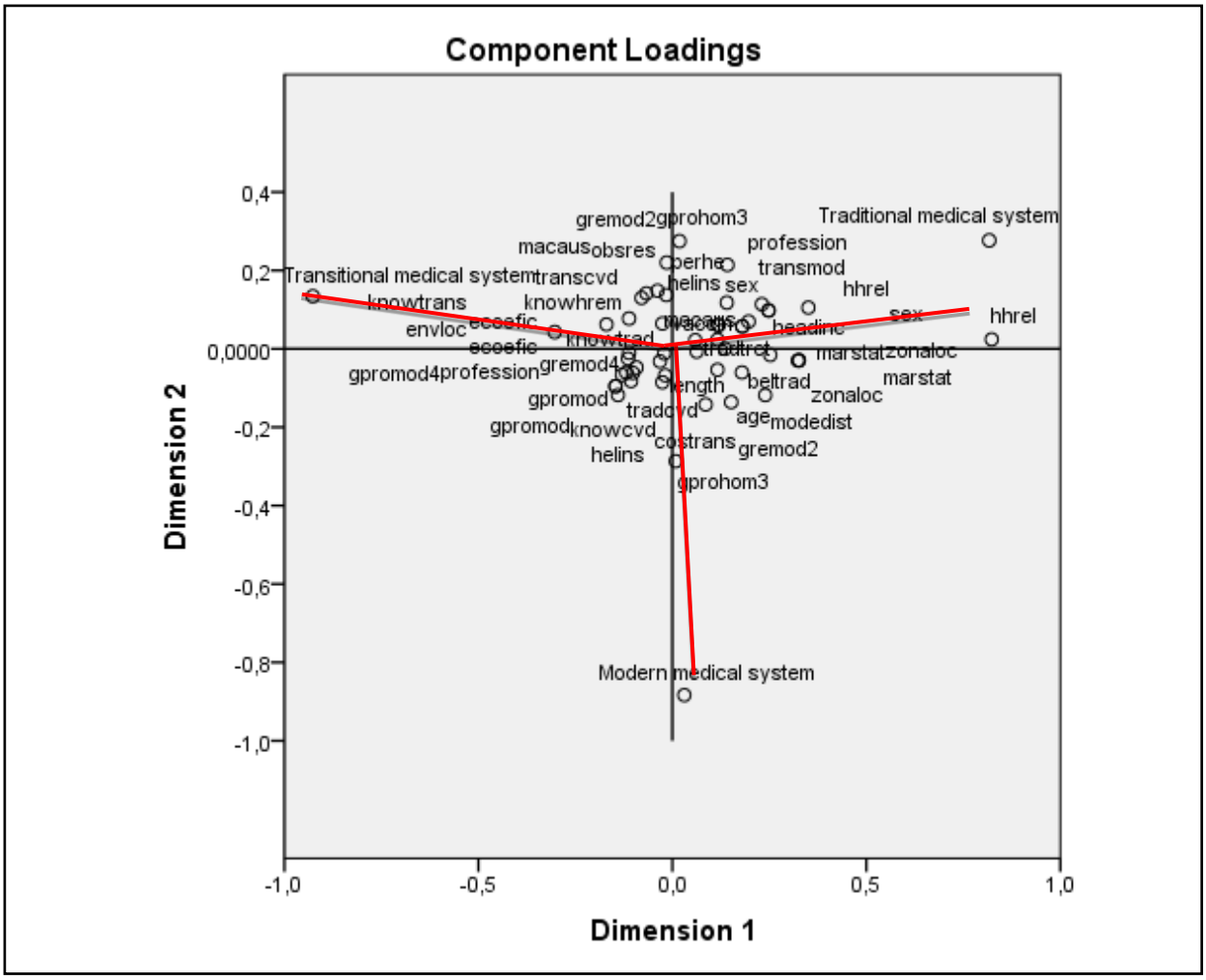


Figure 8.3 Plot of the Component Loading Analysis (OVERALS) for the Utilisation of the Plural Nursing System in Sumedang.
Source: Computations based on Field Work Survey (2017).

8.4 Multiple Regression Analysis of Variables

8.4.1 Analysis of the Model and Interpretation of the Findings

The next step after examining the correlations between one variable and another in the bivariate analyses and the interaction among variables in the mutual relation analysis in the next section is the stepwise analysis which is further undertaken to compare the various blocks of variables in the model with each other in order to determine the relative strength of interaction, known as the multiple regression analysis. The multivariate analysis can be extended to develop an explanatory, analytical model of utilisation behaviour of the plural nursing systems. It measures the correlation between the different blocks of variables identified in the model. While bivariate and multivariate analyses have so far illustrated the correlations between different variables in the model, this section seeks to calculate the maximum correlation between the blocks of the variables (*cf.* Agung 2005; Ibui 2007; Leurs 2010, Djen Amar 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014; Erwina 2019; Saefullah 2019; De Bekker 2020; and Febriyanti 2021). The correlation between the blocks of variables is measured by means of multiple regression analysis estimating the significance of the overall model by comparing the observed values to the predicted ones for each dimension, represented by a multiple correlation coefficient (r). The following ten blocks of variables were specified for multiple regression analysis:

Blocks of Independent and Intervening Variables

1. In the blocks of socio-demographic variables, the variables are 'Household Relationship'(*hhrel),* 'Gender of the Respondents' (*gender)*, 'Age of respondent' (*age*), 'Profession of the Respondents' (*profession),* 'Vaccination history' (*vacc/.000*), and 'Length of CVD' (*lencvd*);
2. In the blocks of psycho-social variables, the variables are 'knowledge of traditional nursing institutions' (*knowtrad),* 'knowledge of traditional nursing institutions for prevention of CVD' (*knowcvd*), 'knowledge of transitional nursing institutions*'* (*knowtrans*), 'knowledge of transitional nursing institutions for CVD*'* (*transcvd*), and 'beliefs in traditional nursing institution as a prevention of CVD' (*beltrad*);
3. In the blocks of perceived morbidity variables, the only variable is 'perceived general health status' (*perhe);*
4. In the blocks of enabling variables, the variables are 'monthly income of head of household' (*headinc*), 'cost to use the support of the transitional nursing institution' *(costrans),* 'transport cost to reach modern nursing organisations' *(transmod),* and *'*health insurance ownership' *(helins);*
5. In the blocks of institutional variables, the only significant variable is 'the geographical distance to modern medical institution' (*modedist*);
6. In the blocks of environmental variables, the two variables are 'environmental locations of the nursing institutions' (*envloc*), and 'zonation locations of the nursing institutions' (*zonaloc*);
7. In the blocks of the intervening variables, the variables are 'source of government/public regulations influencing the utilisation of modern nursing organisations for CVD' (gremod2), 'home nursing promotion by the government' *(gprohom3),* 'modern nursing institution utilisation promotion by the government*'* *(gpromod),* 'government/public promotion influencing utilisation of modern nursing institutions for CVD' *(gpromod3*), and 'impact of government/public promotion influencing utilisation of modern nursing institutions for CVD' *(gpromod4).*

Blocks of the Dependent Variables

8. The block of utilisation of the Traditional Nursing Institutions (*Trad*);
9. The block of utilisation of the Transitional Nursing Organisations *(Trans*);
10. The block of utilisation of the Modern Nursing Organisations (*Mod*).

In order to calculate all the possible correlations between the blocks of variables and to distinguish the associations, multiple regression analysis is applied. It uses the eigenvalue (Ed) of each correlation, which is derived from the individual OVERALS analyses of all possible combinations of the blocks of variables. OVERALS provides an eigenvalue for each dimension (Ed) of the calculation, and forms the basis for the subsequent calculations of the multiple correlation coefficients (r) for each dimension. The formula is applied to the calculation of the multiple correlation coefficients using the 'eigenvalue' with the following formula of 'r = 2 x Ed-1' (*cf.* Van der Burg 1988; Agung 2005; Ibui 2007; Leurs 2010; Djen Amar 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014, Erwina 2019, Saefullah 2019*;* De Bekker 2020 and Febriyanti 2021).

Table 8.19 depicts a list of all multiple correlation coefficients, which have been calculated separately for all the possible combinations of blocks of variables for each dimension. A stepwise regression analysis by the use of the 'eigenvalue' as the multivariate measure of interactions among all the variables concerned is conducted with the assistance of the statistical software of IBM PASW version 22 as the result of the Dimension-Reduction Optimal Scaling statistical technique. The optimal scaling of each of the two blocks of variables is scaled in different levels and an optimally quantified component loading number with dimensions. The first column of Table 8.17 to the left highlights the numbers of the respective blocks of variables, to which an OVERALS analysis is applied. Hereafter, the second column indicates the dimension of the solution, for which the multiple correlation coefficient is calculated. The formula which is used to calculate the multiple correlation coefficient is presented in the third column from the left and is reconstructed for each correlation

using the corresponding eigenvalues. As suggested by Cohen (1988; 1992), the values of ρ are presented for each dimension in the last column to the right, whereby the value of r = .10 reveals a weak correlation effect, the value of r = .30 reveals a moderate correlation effect and the value of r = .50 reveals a strong correlation effect. Any correlation coefficients between those values will be interpreted in between the categories. For instance, if the correlation coefficient is .40, the correlation effect can be interpreted as moderate to strong, while the correlation coefficient of .0.25 can be interpreted as a weak to moderate correlation effect. In more detail, Calkins (2005) categorised the coefficient correlations as very highly correlated for r between 0.9 to 1.0, highly correlated for r between 0.7 to 0.9, moderately correlated for r between 0.5 to 0.7, weakly correlated for r between 0.3 to 0.5 and little or hardly correlated for r less then 0.3 to 0 (*cf.* Calkins 2005; Field 2013, Aiglsperger 2014, Erwina 2019, and Saefullah 2019; De Bekker 2020; and Febriyanti 2021*).*

In general, the eigenvalue reveals that for each dimension, the extent of the correlation between two blocks of variables can be explained by the model as opposed to having occurred by chance. In this respect, the sum of the eigenvalues on both dimensions of each correlation refers to the total 'fit' of the model to the respective variables, whereby a perfect 'fit' equals the number of dimensions chosen (*cf.* Van der Burg 1988; Field 2013; Aiglsperger 2014). Table 8.17 reveals where there are different correlation effects between the independent, intervening and the dependent variables.

Table 8.19 List of Multiple Correlation Coefficients (ρ) calculated by means of a Multiple Regression Analysis of Ten Blocks of Factors on Two Dimensions (N=856)

Block	⟷	Block	Dimension	Calculation (ρd = 2 x Ed- 1)	Multiple Correlation Coefficients (ρ)
1	⟷	2	1	2 x 0.813 – 1 =	0.626
			2	2 x 0.770 – 1 =	0.540
1	⟷	3	1	2 x 0.686 – 1 =	0.372
		2		2 x 0.682 – 1 =	0.364
1	⟷	4	1	2 x 0.738 – 1 =	0.476
		2		2 x 0.673 – 1 =	0.346
1	⟷	5	1	2 x 0.734 – 1 =	0.468
1	⟷	6	1	2 x 0.764 – 1 =	0.528
		2		2 x 0.695 – 1 =	0.390
1	⟷	7	1	2 x 1.000 – 1 =	1.000
			2	2 x 1.000 – 1 =	1.000
1	⟷	8	1	2 x 0.806 – 1 =	0.612
1	⟷	9	1	2 x 0.812 – 1 =	0.624
1	⟷	10	1	2 x 0.606 – 1 =	0.212
2	⟷	3	1	2 x 0.762 – 1 =	0.524
			2	2 x 0.725 – 1 =	0.450
2	⟷	4	1	2 x 1.000 – 1 =	1.000
			2	2 x 0.836 – 1 =	0.672
2	⟷	5	1	2 x 0.750 – 1 =	0.500
2	⟷	6	1	2 x 0.925 – 1 =	0.850
			2	2 x 0.758 – 1 =	0.516
2	⟷	7	1	2 x 0.907 – 1 =	0.814
			2	2 x 0.822 – 1 =	0.644
2	⟷	8	1	2 x 0.626 – 1 =	0.252
2	⟷	9	1	2 x 0.627 – 1 =	0.254
2	⟷	10	1	2 x 0.612 – 1 =	0.224
3	⟷	4	1	2 x 0.726 – 1 =	0.452
			2	2 x 0.647 – 1 =	0.294
3	⟷	5	1	2 x 0.606 – 1 =	0.212
3	⟷	6	1	2 x 0.696 – 1 =	0.392
			2	2 x 0.622 – 1 =	0.244
3	⟷	7	1	2 x 0.689 – 1 =	0.378
			2	2 x 0.687 – 1 =	0.374

Table 8.19 *(Continued)* List of Multiple Correlation Coefficients (ρ) calculated by means of a Multiple Regression Analysis of Ten Blocks of Factors on Two Dimensions (N=856)

Block ⟷	Block	Dimension	Calculation (ρd = 2 x Ed- 1)	Multiple Correlation Coefficients (ρ)
3 ⟷	8	1	2 x 0.598 – 1 =	0.196
3 ⟷	9	1	2 x 0.598 – 1 =	0.196
3 ⟷	10	1	2 x 0.576 – 1 =	0.152
4 ⟷	5	1	2 x 0.783 – 1 =	0.566
4 ⟷	6	1	2 x 0.790 – 1 =	0.580
		2	2 x 0.724 – 1 =	0.448
4 ⟷	7	1	2 x 0.886 – 1 =	0.722
		2	2 x 0.822 – 1 =	0.644
4 ⟷	8	1	2 x 0.640 – 1 =	0.280
4 ⟷	9	1	2 x 0.635 – 1 =	0.270
4 ⟷	10	1	2 x 0.580 – 1 =	0.160
5 ⟷	6	1	2 x 0.823 – 1 =	0.646
5 ⟷	7	1	2 x 0.713 – 1 =	0.426
5 ⟷	8	1	2 x 0.610 – 1 =	0.220
5 ⟷	9	1	2 x 0.619 – 1 =	0.238
5 ⟷	10	1	2 x 0.498 – 1 =	0.004
6 ⟷	7	1	2 x 0.782 – 1 =	0.564
		2	2 x 0.667 – 1 =	0.334
6 ⟷	8	1	2 x 0.632 – 1 =	0.264
6 ⟷	9	1	2 x 0.646 – 1 =	0.292
6 ⟷	10	1	2 x 0.541 – 1 =	0.082
7 ⟷	8	1	2 x 0.611 – 1 =	0.222
7 ⟷	9	1	2 x 0.608 – 1 =	0.216
7 ⟷	10	1	2 x 0.607 – 1 =	0.214

Source: Computations based on Field Work Survey (2017).

On the whole, the results of the multiple regression analysis show that the block of the perceived morbidity factors and the block of the predisposing socio-demographic factors correlate strongly with all blocks of independent factors and moderately with all blocks of dependent factors. Furthermore, the block of the intervening factors correlates rather strongly with all blocks of independent factors. Likewise, the block of the predisposing psycho-social factors correlates strongly with the blocks of independent factors. On the basis of the results gained from a multiple regression analysis, Figure 8.4 presents the final analytical model of plural nursing system utilisation behaviour.

The groups of variables, which have been identified as determinants of patterns of behaviour, are shown in the respective block of factors, and the correlations (r) between the different blocks of factors, which have been identified during the multiple regression analysis, are illustrated accordingly. In this way, the correlations displayed in the model highlight the validity of the multivariate model, which is applied to the present data, and hereby produces the final, explanatory model of plural nursing system utilisation behaviour for the sample population of Sumedang

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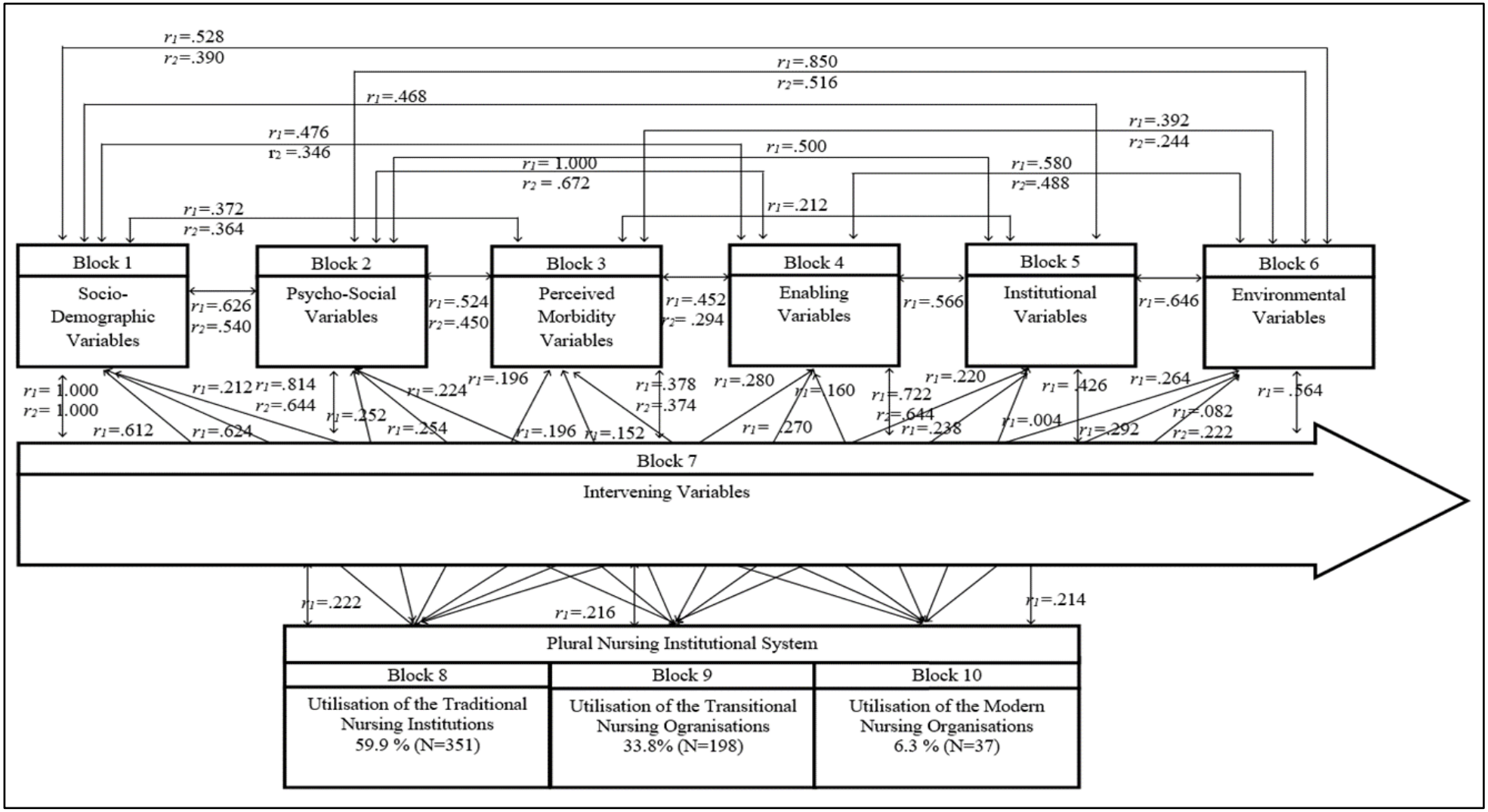

Figure 8.4 The Final Model of the Utilisation Behaviour of Plural Nursing Systems indicating the Strength of the Correlations between the Blocks of Variables, based on the Multiple Regression Analysis.

Note: The indicated figures represent 'r' = the correlation values between the variables.

Source: Computations based on Field Work Survey (2017).

CHAPTER IX CONCLUSION AND RECOMMENDATIONS

9.1 Conclusions

This last Chapter presents the conclusions and implications of the study of *Kearifan Kesehatan Lokal*, Indigenous Medical Knowledge Systems in nursing of the elderly with CVD, especially on behavioural patterns of utilisation of Plural Nnursing Systems in the four villages in Sumedang, West-Java Indonesia. This Chapter includes a description and explanation of the determinants of community behaviour, shown through significant factors which influence respondents in utilising various nursing services in the community, *i.e.* traditional nursing institutions, transitional nursing organisations and modern nursing organisations, which form the configuration of the plural nursing system in the Sumedang research area, specifically in the management of CVD. In addition, the implications of the results of this study include theoretical and practical implications as well as to provide support for the development of an empirical model of an integrated plural nursing system towards the development of transcultural nursing in Indonesia. To arrive at the conclusion of the realization of the general objectives of this study, a summary of the conclusions is presented as a number of specific objectives which have been achieved, and can be listed as follows:

First, the introduction in Chapter I, regarding community nursing development in Indonesia includes an explanation of the development of public and community nursing, and community empowerment, as well as trends in the development of nursing in Indonesia, including an increase among the elderly population, changes in disease patterns; changes from infectious diseases to degenerative diseases, including the increased incidence and prevalence of CVD among the elderly; industrial development and rapid changes in social conditions accompanied by various changes in attitudes, values, lifestyles, environmental conditions, new community groups, individual problems, family or between individuals; increasing public knowledge as recipients of nursing and health services, and increasing public expectations of the quality of nursing and health services, as well as changes in the concept of health, where a person's condition is not only free from disease, but has the ability to live healthy and have high productivity power; increasing scientific, biomedical, and medical technology which bring improved methods to deal with diseases; the development of the health team and the increasing specialisation of new health personnel; the new pattern of health services, which continues to change along with the change of leaders and policy makers; lack of medical personnel leading to delegation of responsibilities or authority to nurses or other health workers so that malpractice cases often occur; the community as an active partner in public health services; the use of local resources and local knowledge of the community in independent health efforts, which is the focus of this study, namely the use of a diverse system of nursing services in the community: traditional nursing institutions, and transtitional and modern nursing organisations; and finally, the rapid pace of social media technology as a source of health information which sometimes provides inaccurate information.

Those are some of the trends faced in public health nursing in Indonesia which inevitably have to be considered in providing and improving better nursing services, in order to achieve an increase in the quality of sustainable public health care development. Research on *kearifan kesehatn lokal* needs to be explored in order to re-reveal the values, which have been buried in order to be tested and utilized for improving nursing efforts by paying attention to *kearifan kesehatan lokal* itself. For this reason, it is important to conduct research on *kearifan kesehatan lokal* in various ethnicities in Indonesia as an alternative to uncovering various facts of social life related to health, because it needs to be realised that cultural diversity in Indonesia requires careful understanding and deepening in each region with ethnicity in the region. By exploring local health knowledge, it will eventually be used as an intervention strategy in health efforts. Each ethnic group has a way of perceiving a healthy condition of the illness. This is very influenced by the culture of the community. When an individual experiences a health disorder, as a member of the community, he

or she will perceive the symptoms of their illness based on what they feel and will determine their attitude in an effort to overcome the health disorder or the disease until they can recover as usual. Efforts to seek treatment by individuals in overcoming health problems in the community or ethnic groups can be through self-medication or through others. The search for treatment through other people can be done through traditional healers or health workers in health service facilities such as health centers, clinics, and hospitals. The effort is a reference behaviour that is characteristic of people's lives and has become a hereditary tradition which affects health, both positive and negative.

Knowledge factors, beliefs, perceptions and cultural concepts related to illness or health will affect the actions of a person or group of people in health efforts. That can be a health problem in certain community groups or ethnic life in an area in Indonesia. This research also studies the traditional health behaviour patterns in the Sundanese ethnic elderly community in the Sumedang Regency, West-Java, Indonesia. Furthermore, the discussion on challenges in nursing in cultural diversity is related to the diversity of ethnic groups in Indonesia, so it is necessary to explore the importance of transcultural nursing. In addition, an explanation is provided of the existence of an epidemiological transition in Indonesia and the conceptualisation of the plural nursing system, and the concept of utilisation of the plural nursing system, the concept of *kearifan kesehatan lokal*, as an expression of sustainable community health promotion, described in Chapter I.

Next, in Chapter II, the concepts covered include medical pluralism, ethnoscience and Indigenous Knowledge Systems, the importance of Indigenous Knowledge Systems in Nursing, also concepts and theories regarding Transcultural Nursing, cultural competence in nursing, and transcultural perspectives in the nursing of the elderly from various literatures. After that, the complex process of utilising existing traditional, transitional, and modern nursing organisations are presented as a subject from a specific ethnographic perspective on indigenous medical knowledge systems.

Second, the research methodology uses the *'Leiden Ethnosystems Approach'* to gain a better understanding and explanation of the perceptions, practices, beliefs, values and philosophies of indigenous peoples related to cardiovascular nursing among elderly respondents in the four villages in the study area in Sumedang as presented in Chapter III. *The 'Leiden Ethnosystems Approach'* consistsing of three methodological principles from this approach, developed by Slikkerveer (1989; 1990), namely 'Participant's View' (PV), which is related to the anthropological concept of an emic culture's inner view which contrasts with an ethical view from the outside; the Field of Ethnology Study (FES), which has its roots in the Leiden Tradition of Structural Anthropology which refers to the concept of 'culture areas' introduced in Indonesia, regardless of their sub-cultural diversity as a culture area; and the Historical Perspective (HP), which is used to facilitate (pre-)historical analysis of complex contemporary patterns, including in religion, agriculture, resource conservation as well as in medicine and nursing in the Sumedang research area, specifically in the four villages of the research area. Appropriate conceptual models are built based on the Transcultural Nursing Utilisation Model, developed by Slikkerveer (1990; 1995, 2012) which allows the assessment of the cognitive and behavioural components of certain groups or communities as 'systems' in a somewhat process-oriented fashion. This study uses a multidimensional approach to ethno-nursing and ethno-medicine about health and CVD based on significant evidence on which individual behaviour is influenced, by a number of factors, namely socio-demographic, economic, psycho-social, perceived morbidity, environment, institutional and intervening variables.

The *'Leiden Ethnosystems Approach'* and conceptual model have also been successfully applied by researchers in various disciplines with special reference in this study. Furthermore, to complete the qualitative data, in-depth interviews with key informants and participatory and non-participatory observations and literature studies obtained a general picture of the behaviour of the elderly who have CVD in the use of diverse nursing services, including the traditional nursing institutions, and the transitional and modern nursing organisations in the four research villages. The collected data are then analysed through the stepwise Bivariate, Mutual Relations,

Multivariate and Multiple Regression Analyses and presented in such a way that the utilisation behaviour of the respondents from the four village samples can be comprehensively explained in the overall picture, which can contribute to the work of scholars and professionals, as well as the policymakers involved in appropriate nursing for the elderly with CVD, and as such in the promotion of sustainable health.

Third, a brief description of Indonesia as the country of great cultural diversity is presented; Indonesia has more than 300 ethnic groups, including Sundanese as the second most dominant group in the country. In addition, the description of West-Java as the Land of Priangan and the Tatar Sunda and Sundanese cultural life is also explained, with a discussion about Sumedang as one of the regencies in the Tatar Sunda Region and the center of West-Java cultural heritage. This is discussed based on geographical, historical and sociodemographic backgrounds presented in Chapter IV. The Sundanese community grew throughout its historical journey from the past until now in the framework of its *lemah cai* (homeland) which is now known as West-Java. In the course of their history, it experienced contact with the old culture, which also seemed to be used in Sundanese people's cultural life including in terms of treatment and maintaining nursing.

Fourth, Chapter V presents the description of daily life in four research communities in Sumedang. It briefly presents an overview of the characteristics of population and samples related to geographic, sociodemographic and socio-economic data. In addition, the results of the general data collection related to the availability of the plural community nursing institutional systems will be presented, differentiated into the three components of the plural nursing system: the traditional nursing institutions, and the transitional and modern nursing organisations, by respondents in the four research villages, particulary by the elderly who have CVD in Sumedang. This chapter describes the results of both qualitative and quantitative research in the four sample villages, namely Jayamekar, Cipasang, Situ, and Jatimulya. A brief description of the profiles of the four villages and the plural public nursing system available in the region results in the conclusion that local communities have great potential to maintain their own local culture because they have lived in a rich cultural and natural heritage with promising human resources. This can provide an excellent opportunity to achieve sustainable community development by recognising and revitalising traditional institutions by integrating local people's knowledge, beliefs, practices, and institutions. An emic perspective is provided in the lives of participants in four villages in the Sumedang Regency of West-Java, located in both rural and urban areas in the study area. Complementary qualitative and quantitative surveys in the study area provide relevant information about the study population and sample surveys from the four selected villages, representing the highlands and lowlands.

Fifth, a description of CVD and nursing systems in Indonesia is presented in Chapter VI, with a focus on CVD among the elderly, associated with changes in the structure and function of blood vessels with age and various types of CVD among the elderly, with a brief description of the concomitant control of CVD in the nursing system in Indonesia. Furthermore, a discussion ensues about the Plural Nursing System, including the regulation of nursing services and traditional treatment policies in the National Health System System and integrating *kearifan kesehatan lokal* into the transcultural nursing in Indonesia.

Sixth, the description of the traditional nursing system in the Sundanese community includes the relationship between the Sundanese belief system and its outlook on life affecting health behaviour, with a description of the belief system of the Sundanese people through a description of the cosmology of the Sundanese people and their way of life. Next, the Sundanese culture of health and healing was discussed, followed by the Sundanese people's view of health and illness along with the traditional nursing institution of the Sundanese people in CVD prevention and health promotion, including through the use of *ubar kampung* by Sundanese people in the

Sumedang Regency. Chapter VII describes the concept of the health of the Sundanese people, referring to physical and spiritual health. Physical things are always expressed in connection with the spiritual, and vice versa. Health problems are not only related to health and illness, but are more oriented to the human approach in their interactions with various environments which include social systems, cultural systems, and ecology. Thinking about health behaviour in certain areas, including in the Tatar Sunda Region, is governed by customs, beliefs, religious teachings, norms and legal systems, so that health problems are imbued with the orientation of cultural values and Sundanese life outlooks, including the philosophy of human life as a person: Life Philosophy of Humans with Society, The Philosophy of Human Life with Nature, The Philosophy of Human Life with God, and The Philosophy of Human Life in Pursuing Outward and Inner Satisfaction. Healthy and sick culture in traditional Sundanese society involves three main things, namely: 1) disease problems, prevention, and health maintenance; 2) a person who works as a cure for a disease, called a 'shaman'; and 3) medicinal matter. The Sundanese people consider health as an inseparable part of the human life cycle, from the womb to death.

According to the Sundanese people, the heart is the center of life. If someone suffers from *'Kasawat Jajantung'* or *'Panyawat Jajantung'* (heart disease or CVD), then it is equated with one foot resting on a grave. This shows how severe the disease is perceived by Sundanese people. There are the traditional ways of nursing for CVD in Sundanese based on interviews with several informants in the Sumedang research area, such as massage techniques by pressing using the thumb or fingers (acupressure) or '*dileules*' (massage technique with spice oil) accompanied by mantras, jampes, and prayers, and *ubar kampung*. Inventorying finds 45 species of MAC plants which are used in village plots for CVD. As regards the components of *ubar kampong* ('indigenous herbal medicines') this usually refers to spiritual and herbal medicine, easily available and inexpensive. The services often provided by traditional healers are holistic and don't have a service charge. People tend to use traditional nursing institution services because they feel comfortable and satisfied with them. In this case, the traditional nursing institutions in the Sumedang Regency, *ubar kampung* is also accompanied by massage skills from traditional healers. Traditional nursing institution services are provided as the primary form of prevention of disease, for people who have not been exposed to the disease, through early detection and health promotion. The definition of early detection here is different from the diagnosis of modern medicine; usually traditional healers will only mention disorders of the body with simple language, which is easy to understand. At this stage traditional nursing is aimed at protecting the body from disease and thus increasing health status; secondary prevention of diseases applies to people who have been diagnosed with the disease. Here the action is taken as a treatment intended for healing. Tertiary prevention of disease is a traditional treatment action which applies to sufferers to improve healing and prevent disability. As regards the actions, they are still the same, given through massage techniques, recited prayers, spells and *jampes,* and the mixture of *ubar kampung*.

Seventh, Chapter VII presents quantitative analysis of data collected during the household surveys conducted in the research area of four villages in Sumedang. These household surveys have been carried out as an extension to the research findings with a view to measuring and analysing the spread of findings over the entire community. A description is presented of the way the sample is presented and the utilisation of the behaviour of the plural nursing system, sub-divided by the traditional, transitional and modern nursing organisations, for the improvement of their health related to CVD. In order to understand the quantitative outcome of the data, different categories of variables are analysed which can potentially be identified as significant determinants of reported utilisation patterns of the respondents in Sumedang. In this way, the conceptual model which has predisposing, enabling, and intervening variables is analysed for possible significant variables, *i.e.* determinants of dependent variables in the utilisation of the plural nursing system. The quantitative analysis uses data which has been collected in 232 households through information provided by the household head selected in Sumedang for the sample surveys, which is subsequently entered into the electronic database for the final analysis in SPSS.

It is shown that the data are subject to variable analysis, in which the independent and intervening variables are distributed over the dependent variables through the method of cross-tabulation. As the results show, the percentage of distribution of the three categories of utilities include: the traditional nursing institution (59.9%), the transitional nursing institution (33.8%) and the modern nursing institution (6.3%), with a view to adequately representing the reported utilisation of the plural nursing system. The significant variables which have been identified as influencing the traditional, transitional and modern nursing organisations are described as being distributed in various models of influence in the model of Mutual Relations Analysis, and subsequently, as the influence of all independent and intervening variables on the interaction between all variables. In this way, the results are presented of the multivariate analysis using OVERALS to identify the relative influence of the variables, *i.e.* the specific determinants of the utilisation behaviour of the respondents of the Plural Nursing System. The results also show the level of significance of the correlation between the independent variables and interventions to the dependent variable.

A summary of these results is provided as follows:

Independent Variables
Block 1: Socio-Demographic Variables:
Household relationships: 'most strongly significant'
Gender: 'most strongly significant'
Age: 'most strongly significant'
Marital status: 'most strongly significant'
Profession: 'most strongly significant'
Vaccination history: 'very strongly significant'
Length of CVD : 'most strongly significant'

Block 2: Psycho-Social Variables
Knowledge of CVD : 'most strongly significant'
Knowledge of traditional nursing institution: 'strongly significant'
Knowledge of transitional nursing organisations: 'strongly significant'
Knowledge of transitional nursing organisations for CVD: 'strongly significant'
Belief in transitional nursing organisations for CVD prevention: 'most strongly significant'

Block 3: Perceived Morbidity Variables
Perceived general health status: 'very strongly significant'

Block 4: Enabling Variables
Household head's income: 'strongly significant'
Cost of transitional nursing organisations: 'very strongly significant'
Transportation cost to modern nursing organisations: 'very strongly significant'
Health insurance ownership: 'strongly significant'

Block 5: Institutional Variables
Geographical distance of modern nursing organisations: 'most strongly significant'

Block 6: Environmental Variables
Traditional nursing institution: environmentally-friendly: 'most strongly significant'
Zonation location of the traditional nursing institution: 'most strongly significant'

Intervening Variables
Block 6: Intervening Variables
Infuence of government/public regulation on the utilisation of modern nursing organisations: ‘strongly significant’
Influence of government/public promotion on the utilisation of home remedies for CVD: ‘very strongly significant’
Influence of government/public promotion on the utilisation of modern nursing organisations: ‘strongly significant’
Influence of government/public promotion on the utilisation of modern nursing organisations for CVD prevention: ‘strongly significant’
Influence of government/public promotion on the utilisation of modern nursing organisations for CVD treatment: ‘strongly significant’

Based on the results of mutual relations analysis, it seems clear that the influence of the dominant variable block on the dependent variable can be sorted as follows: socio-demographic variables (7), followed by two variables with the same number per block, namely psycho-social variables (5) and intervening variables (5), then enabling factors (4), followed by environmental variables (2), and followed by the institutional variable (1) and the perceived morbidity variable (1). The results of the Canonical Non-Linear Correlation Analysis (OVERALS) revealed that socio-demographic variables contributed the most to the dependent variables because it was clear that the sample of this study included the elderly group suffering from CVD and the length of time suffering from CVD very significantly influence the utilisation of the plural nursing system. In addition, there is a very strong correlation between the gender of the respondent and the behaviour of the community in the use of traditional nursing institutions.

However, it was also concluded that the 'profession/occupation of the respondents' greatly influenced the behaviour of the utilisation of nursing and organisations. Likewise, psycho-social variables contribute greatly to the dependent variables 'Knowledge of CVD’ and ‘Belief in transitional nursing organisations for CVD prevention’ which greatly contribute in determining behavioural patterns of utilisation of the plural nursing system to respondents in the study area of Sumedang. Furthermore, institutional variables, especially the aspect of distance to the modern nursing organisations, particularly hospitals, correlate with the most strongly significant ‘effect on utilisation, where the distance from Jayameka and Cipasang, approximately 60 kilometres away requires a travel time of approximately 2 hours. While the distance from Situ and Jatimulya is very easy to reach, it is more or less 1-2 km. This is also in line with environmental variables where zonation locations of the plural nursing system and environmentally-friendly nursing institutions have a 'most strongly significant' correlation. This is evident from the location of traditional nursing institutions in the mountains and the plains or in the city. The friendliness of nursing workers also determines the behaviour of the utilisation of the plural nursing system in the communities of the four research villages in the Sumedang areas.

Moreover, multiple regression analysis which applies the OVERALS technique is used to assess not only the correlation between variables, but also the correlation between different blocks of variables identified in the model, namely the interaction between blocks of independent variables, interventions and dependent variables. This calculated correlation shows the relative value of the interaction between the blocks and thus highlights the validity of the multivariate model. In this context, it is appropriate to measure the coherence between all categories or the ten blocks of variables, which leads to the conclusions for this study. The initial conceptual model of this research has been successfully developed into a behavioural model of multivariate utilisation behaviour of nursing institutions and organisations in Sumedang.

In addition, the multiple regression analysis mentioned above allows for the determination of the relative importance of each of the six blocks of independent variables and one block of intervention variables, in relation to the dependent block of the behaviour of utilisation of the plural nursing system through the calculation of the related multiple regression coefficients.

Eighth, and finally, the theoretical and practical conclusions and implications of this study are presented in Chapter IX, and completed with the development of a strategic model of the Plural Nursing System as a planning tool based on the emic view approach in order to contribute to the improvement of transcultural nursing services based on the integration of *kearifan kesehatan lokal* which is also expected to provide a strong means of promoting sustainable health for the Sumedang Regency in particular, and for Indonesia in general.

9.2 Implications of the Research

9.2.1 Theoretical Implications

After drawing conclusions from the research conducted in the four villages in Sumedang, the main theoretical, methodological and practical implications are presented below. However this research contributes to the body of knowledge in the plural nursing system, particularly in terms of the traditional nursing institutons and the timely development of an advanced approach of transcutural nursing from the emic perspective of ethno-medicine and ethno-nursing from the local participants in the four sample villages of Sumedang.

The results of research conducted in the four villages have theoretical implications which support previous theories suggested by Slikkerveer & Dechering (1995), Slikkerveer (1999) and Slikkerveer, Baourakis & Saefullah (2019), in the context of sustainable development, through a combination of the emic view and incorporate culture into development, in this case health promotion. In addition, the results of this study also support other scholars, namely the Transcultural Nursing Utilisation Model originally developed by Slikkerveer (1995; 1999) and various studies in applied ethnoscience such as Agung (2005); Ibui (2007); Leurs (2010); Djen Amar (2010); Ambaretnani (2012); Chirangi (2013); Aiglsperger (2014); Erwina (2019); Saefullah (2019); De Bekker (2020) and Febriyanti (2021).

In this model, Slikkerveer (1995; 1999) identifies the determinants which influence health behaviour in the form of predisposing factors, namely the factors contained in a person such as sociodemographic and psychosocial enabling factors in the form of socioeconomic perceived needs or perceived morbidity, institutional factors and environmental factors. In addition there are also external factors in the form of intervention factors which help determine a person's behaviour. Likewise with the theory of 'ethnoscience' as explained by Slikkerveer (2006) in Saefullah (2019) which developed from the discipline of cognitive anthropology in the 1950s as a complement to science, it was introduced on the basis of ideas, perceptions, practices, experiences, and the wisdom of indigenous peoples themselves; the continuation of the emic view, the use of the language of the local people, the original classification of plants, animals, religion and life, as well as their native cosmology and philosophy about nature and the environment are the subjects of ethnoscience research.

Likewise this study supports that the theory of Indigenous Knowledge Systems (IKS) in the context of overall nursing is rooted in ethnobotany and indigenous medical knowledge systems, both of which are specific examples of IKS. In general, IKS manifests itself in the form of traditional nursing *ubar kampung*. Traditional health and healing practices which have been recorded as part of the initial ethnographic record on IKS underwent a revitalization during the second half of the 20th century in the new field of ethnomedicine, in the ethnics sub-field (Foster & Anderson 1978:5; Hughes 1968; Slikkerveer 1990, Balick 1994; Alcorn 1995; Balick & Cox 1996; Cotton 1996; Skoula 2003; Slikkerveer 2006).

Similarly, the results of this study support the theory of transcultural nursing, cultural care theories, concepts of care, the diversity and universality of the model of cultural care and the Sunrise model by Leininger (1980; 1984; 1988; 1988; 1989; 1991) which aims to understand and help various cultural groups and group members meet their nursing needs, particularly the Sundanese ethnic group in this study. This research contributes to supporting the theories of transcultural nursing mentioned above; by knowing indigenous knowledge systems and behavioural patterns of utilisation of Plural Nursing Systems, a holistic assessment of aspects of culture, beliefs, and lifestyle or client behaviour is needed to reduce the possibility of stress and conflict due to cultural misunderstandings in nursing provision. In addition, this study also supports several scholars which developed theories related to other aspects in the context of culturally sensitive nursing, including: Purnell (1995) who developed the Model for Cultural Competence, Andrews/Boyle (1999) who created the Transcultural Nursing Assessment Guide for Individuals and Families, Giger and Davidhizar (2002) who developed the Transcultural Assessment Model, Campinha-Bacote (2003) who introduced the Process of Cultural Competence in the Delivery of Nursing Services and Biblically Based Models of Cultural Competence, and Spector (2004) who developed the Health Traditions Model.

9.2.2 Methodological Implications

Based on methodological implications, this research was carried out using the '*Leiden Ethnosystems* Approach' introduced by Slikkerveer (1990; 1999), providing strong empirical evidence about the importance of using a combined methodological approach in conducting applied ethoscience research within the context of development. This study has shown that combined research methods, both qualitative and quantitative, involving the 'Participant's View' (PV), 'Field of Ethnology Study' (FES) and 'Historical Dimension' (HD)', have provided support to explain the utilisation of the plural nursing system in Sumedang among the elderly with CVD. In addition, this study links up with the results of previous studies from Agung (2005), Leurs (2010), Djen Amar (2010), Ambaretnani (2012), Chirangi (2013), Aiglsperger (2014), Erwina (2019), Saefullah (2019); De Bekker (2020) and Febriaynti (2021), who have successfully implemented the *'Leiden Ethnosystems Approach'* in their applied ethnoscience research. This approach also combines qualitative and quantitative research through household surveys.

In addition, this study also partially supports the ethnonursing methodology by Leininger (2006): when collecting data, the strategies of the foreign-friend enabler and the observation-participation-reflection enabler are used. When researchers move from strangers (ethics) to friends during the ethnonursing process, it is more likely that accurate and meaningful data will be collected, so that by fostering mutual trust with informants first, it will get a complete emic view. Thus, the results of this study show the importance of using a mixed methodology in research, combining subjective conclusions through in-depth study in the field, with objective generalizations through household surveys in the study area (*cf.* Saefullah 2019).

9.2.3 Practical Implications

The results of the study revealed the percentage of utilisation of traditional nursing institutions (59.9%), transitional nursing organisations (33.8%), and modern nursing organisations (6.3%). Thus the practical implications of the results of this study indicate that Sundanese people, especially in Sumedang, prefer to utilize traditional nursing institutions both by themselves and through traditional healers. This is evident from the knowledge, beliefs and nursing practices to overcome CVDs through massage techniques and the use of *ubar kampung*, which have identified as many as 45 species of MAC plants which can be obtained from the environment around the house with special preparation and administration, in addition to the belief in reciting *mantras*, *jampe* or prayers which are offered to ask for healing. This can be practically disseminated, demonstrated, and applied to other people in need, in the same way through counseling strategies at *Posyandu, Posbindu* or community gatherings, for example in regular social gatherings, recitals, or other social events. Thus, it is expected to help

in the promotion of sustainable health, especially for sufferers of CVD in the Tatar Sunda Region, and generally in Indonesia. Likewise the practical implications of the use of transitional nursing organisations which are usually the use of over-the-counter medicine demands increased information about the principles of drug use so that they do not cause side effects or other impacts, for example the incidence of polypharmacy, intoxication, drug allergies, and others which threaten consumer safety. This needs collaboration between health practitioners, be it nurses, pharmacists, medical doctors, or traditional healers themselves. Dissemination of information through various online and offline media is also very possible to do.

The use of modern nursing organisations is generally focused on invasive or surgical actions, which cannot be done through traditional nursing institutions or transitional nursing organisations. However, modern nursing organisations certainly do provide early detection services, medical treatment, and surgery to rehabilitation. In this case, it has practical implications for collaboration between nursing institutions and organisations in conducting a referral process in which the care of the elderly can be executed more effectively and efficiently in order to contribute to patient-oriented nursing of the elderly in the communities.

9.3 Recommendations

9.3.1 A Model of an Integrated Nursing System

As the end of this Chapter, based on the conclusions and various research implications, there are some evidence-based recommendations of this study which this research has shown; despite the rapid advances in technology and the global information flow, in fact, *kearifan kesehatan lokal* still dominates the local peoples' medical knowledge, belief and practices in the Sundanese society. This is also evident from the behavioural patterns of the use of Plural Nursing Systems influenced by *kearifan kesehatan lokal*, as well as the visible and invisible determinant variables. Socio-demographic variables, especially one's position in the family or household relationship, age, gender (gender), profession and marital status, greatly influence the utilisation of the Plural Nursing System. Likewise, psycho-social variables prove that the knowledge and beliefs possessed by Sundanese indigenous people greatly influence the behaviour of the use of the Plural Nursing System.

The concept of health in Sundanese refers to physical and spiritual health. Physical things are always stated in connection with the spirit. Sundanese people realise thagt they are actors with an important role in the process of their physical and social lives, which they live with a full balance between microcosm and macrocosm. The Sundanese philosophy of life that supports health needs to be maintained and improved, and traditional nursing practices need to be disseminated, passed down from generation to generation both orally and in writing through community-based activities. This is also important as an effort to preserve culture and biodiversity in the Tatar Sunda Region.

For this reason, nurses must have special competencies which are culturally sensitive;, in this case nurses must be able to master the *kearifan kesehatan local* in Sundanese society so that nurses can act as care providers, as mediators between existing nursing institutions and organisations for collaborative action, as health educators, as well as advocating for clients who need it in terms of primary, secondary and tertiary nursing care services, in all settings. This combination is used in the model which is proposed as an Integrated Nursing System Model (*cf.* Figure 9.1).

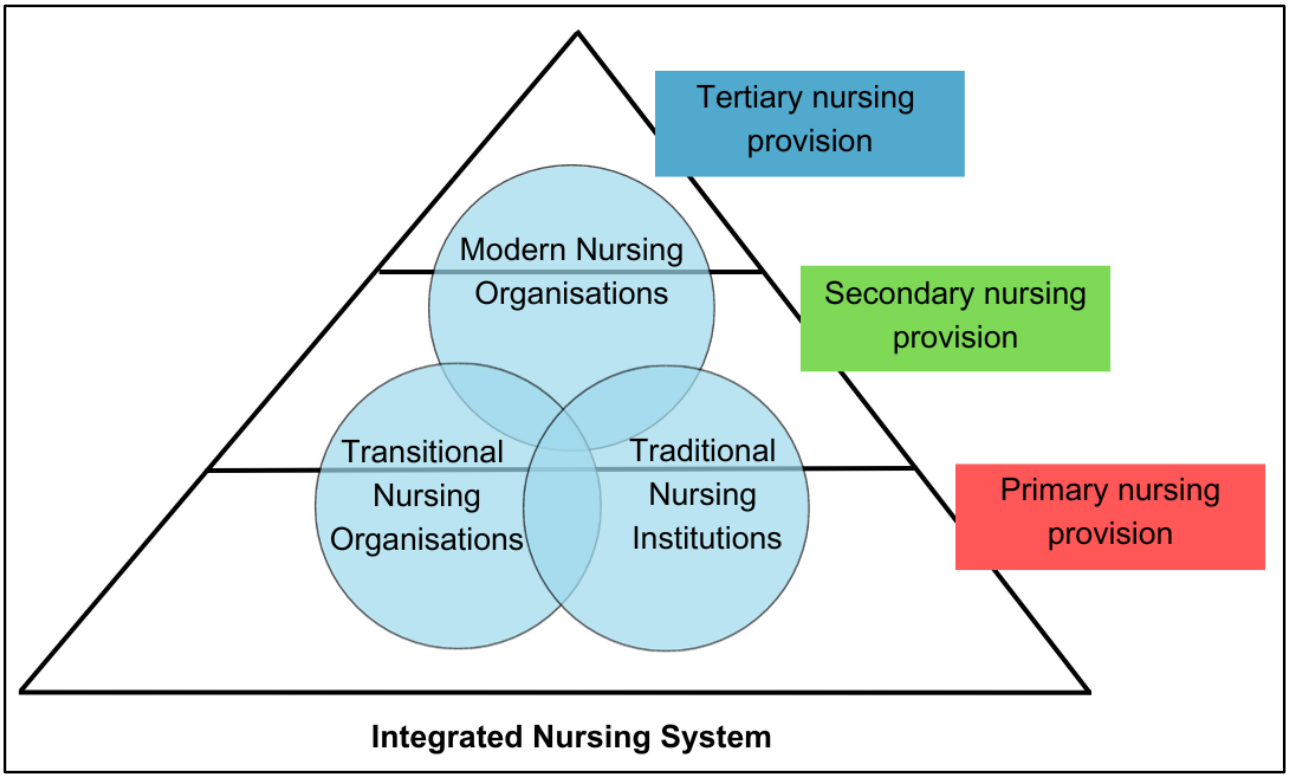

Figure 9.1 A Schematic representation of the proposed Model of the Integrated Nursing System
Source: Designed & Adapted from: -Transcultural Nursing Model by Leininger (1981);
-Transcultural Nursing Utilisation by Slikkerveer (1995);
- Framework of Nursing Services by the Ministry of Health R.I. (2015).

Thus, client satisfaction can be achieved, improving healing and optimizing client's health functions by minimizing misunderstandings due to cultural clashes between clients and health workers and between health practitioners. For this reason, cultural competence has to exist in the nurse education curriculum so that nursing students are able to demonstrate and apply a variety of traditional nursing institution practices in accordance with the client's cultural background. This is also recommended as a prerequisite for passing the Indonesian nurses' competency exam.

9.3.2 Towards the Development of Transcultural Nursing in Indonesia

This study shows the important role of *kearifan kesehatan lokal* among the Sundanese people, especially in their pattern of utilisation behaviour of the plural nursing system by the elderly with CVD in Sumedang. These results support the development of transcultural nursing in Indonesia, a concept initiated by Leininger (1985), and followed by scholars (*cf.* Andrews & Boyle 2002; Leininger & McFarland 2002; Douglas *et al.* 2011; Carr & Knutson 2015) who state how important it is to understand culture, values and client confidence so that the nursing services provided can be in accordance with the client's needs. In this case, nursing as a profession has to meet the needs of clients to achieve holistic care in accordance with the peoples' Sundanese cultural background. Thus, the results of this study can support the achievement of the cultural competence of nurses so that they are able to understand the views and worlds of patients and avoid stereotypes and misuse of scientific knowledge. This study of the Sundanese traditional medical knowledge, beliefs and practices in Indonesia can be the basis for nurses in providing care to clients based on their culture and beliefs so that nursing goals are achieved accompanied by an optimal level of client satisfaction.
The competency of nurses is needed to provide care services in accordance with the cultural background of the client. Nurses have to acquire culturally sensitive nursing competencies as a strategy to address health inequalities and to improve nursing outcomes for clients (*cf.* Sharon 2008).

As Prosen (2015) reveals, nurses must be able to recognize the culture that comes from the patient so that the treatment given is culturally appropriate to their needs. Nurses' skills in assessing culture that are integrated with critical thinking will increase nurses' knowledge and abilities as a basis for providing transcultural nursing services, in this case the Sundanese culture as the second largest ethnic group in Indonesia (*cf.* Andrews & Boyle 2002; Leininger & McFarland, 2002). According to Jeffreys (2006), patients are entitled to culturally competent nursing services as the concept was first introduced by Leininger in 1954 up to 1993, as the initiator of the Transcultural Nursing Theory. Leininger stated that nurses must be able to provide culturally sensitive nursing services to patients in order to achieve patient satisfaction (*cf.* Reynolds & Leininger 1993).

Any attempt to improve cultural competence among nursing practitioners working with clients who are fully diverse from 714 ethnic cultures in Indonesia is a challenging endeavor. The results of this study can at least contribute to understanding Sundanese culture as the dominant cultural group, the second largest in Indonesia after the Javanese (*cf.* Ambaretnani 2012). This research has gained an understanding of the social behavior and health of the Sundanese people on how to use tradition and culture as local health wisdom, in dealing with disease. As such, this research underlies the development of a comprehensive understanding of how the health practices of the Sundanese people fit into their culture. This is in line with recent studies revealing that the use of the Indigenous Knowledge System can be the basis for the cross-cultural nursing utilisation model introduced by Slikkerveer in his study in Horn, Africa (1990), further developed and adapted, among others by Agung (2005) in Bali; Leurs (2010) in Bali; Djen Amar (2010) and Ambaretnani (2012) in Sunda; Chiranggi (2013) in Tanzania; and Aiglsperger (2014) in Crete. This model significantly places it as a system for developing sustainable cultural awareness among local communities (cf. Slikkerveer & Dechering 1995). This idea is in line with Presidential Regulation Number 72 of 2012 which regulates the National Health Administration System in Indonesia stating that the National Health Administration System in an area has to prioritize local/potential resources to obtain positive results that can be measured quantitatively and increase community participation in maintaining physical and mental health. Thus, each regional policy has to comply with this decision, although it is arguably more flexible to be adapted to local needs and resources.

9.3.3 Policy Recommendations for Integrated Nursing Systems

CVD as a non-communicable disease is one of the priorities in health care development in Indonesia. Riskesdas (2018) revealed an increase in non-communicable diseases which required special handling and control strategies. Based on the results of the Burden of Disease (BoD), which is indicated by years of life lost due to early death and disability due to illness (DALY Lost), in the period 1990-2017, it has shifted significantly from communicable diseases to non-communicable diseases. Even in 2017, the national burden of non-communicable diseases reached the proportion of 70%.

According to the Ministry of Health (2019), health research and development is one of the important components which has to be carried out in the national development programme, as mandated in Presidential Regulation No. 72 of 2012 concerning the National Health Care System. In traditional nursing services, according to the Decree of the Minister of Health Number 1076/MENKES/SK/VII/2003 regarding the Implementation of Traditional Medicine, which is then regulated in Government Regulation no. 103 of 2014 concerning Traditional Nursing Services, traditional medicine is interpreted as an effort towards treatment, with other methods outside of medical science and/or nursing, which are widely used by the community in overcoming health problems.

The application of traditional medicine in health services is expected to explore the potential of traditional health services which include local health wisdom and indigenous knowledge systems in each region, so that traditional health services can be realised which are safe, useful, and scientific. Traditional Health Services include three types of traditional nursing services, namely: Empirical Traditional Nursing Services, Complementary Traditional Nursing Services, and Integrated

Traditional Nursing Services. The Minister of Health Decree Numbers 997/MENKES/SK/ 2007 and 984/MENKES/SK/VII/2007 established the basis for providing medical instruments for non-surgical intervention services (balloon and stent medical devices) to the entire community, especially the poor, through CVD health services in several hospitals throughout Indonesia.

However, those efforts made by the government are still limited to modern nursing service facilities, not paying attention to the service systems of traditional and transitional care institutions and organisations. So, it is obvious that the culturally appropriate way in which the traditional nursing institutions in the Sundanese region are handling the elderly with CVD has to be taken into consideration for effective inclusion in future policies of non-surgical CVD control and as one of the crucial guidelines for preventing and managing risk factors for CVDs as a reference for all parties concerned in reducing suffering, morbidity, and disability of the elderly with CVD in Indonesia. Such a policy of transcultural nursing is in line with the Decree of the Minister No.854/MENKES /SK/IX/2009 concerning the Guidelines for Controlling CVD, as an effort to be made in order to reduce risk and support the healing process of cardiovascular disease; thus, it can contribute rather independently to the community, including in primary prevention in the form of early detection of CVD in individuals who have risk factors for CVD or have not experienced cardiovascular events, while secondary prevention is carried out on individuals who have experienced cardiovascular events.

It is hoped that the integration of *kearifan kesehatan lokal* into a Community-based National Transcultural Nursing System will be realised in joint efforts together with the local communities, in order to promote sustainable nursing of the elderly with CVD in Sumedang and throughout Indonesia in the future.

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Summary

Indonesia is a unique country with 1.340 ethnic-cultural groups spread over more than 17.000 islands. The cultural diversity is expressed in a large variety of local knowledge systems and lifestyles of the population groups. The different kinds of cultural perspectives on health and disease of the participants are related to their knowledge, beliefs, values and practices manifested in various forms of lifestyle in Indonesia. The cultural diversity of the population is also related to differences in health behaviour (*cf.* Loredan & Prosen 2013).

Nursing as a profession has to be able to encourage clients and patients, particularly with Cardiovascular Diseases (CVD) to obtain holistic nursing in an effort to meet all client needs, regardless of their ethno-cultural background and their diverse beliefs and values about health and healing (*cf.* Prosen 2003; Sharon 2008). Thus, the competence of nurses is needed to provide nursing in accordance with to the cultural background of clients and patients. Nurses must have culturally sensitive competencies as a strategy to deal with health inequalities and to improve nursing outcomes for clients and patients. (*cf.* Sharon 2008). As Prosen (2015) reveals, nurses have to be able to recognise the cultural origins of patients so that the treatment provided is culturally appropriate to their needs. Nurses' skills in assessing an integrated culture with critical thinking will increase nurses' knowledge and abilities as a basis for providing transcultural nursing services (*cf.* Andrews & Boyle 2002; Leininger & McFarland, 2002).

Every effort to improve cultural competency among nursing practitioners who fully work with diverse patients from the numerous ethno-cultural groups in Indonesia is a challenge. One important step which can be taken is to learn and understand the Sundanesepeople as the dominant cultural group in West Java. The Sundanese population of more than 35.5 million has recently increased significantly, making it the second-largest ethno-cultural group in Indonesia after the Javanese (*cf.* Ambaretnani 2012). The situation certainly requires a deepening of understanding of social behaviour and public health in terms of how to use traditional institutions such as *kearifan kesehatan lokal*, as well as indigenous knowledge of *jamu* and *ubar kampung* in dealing with health care of the elderly with CVD. This research develops a comprehensive understanding of how Sundanese public health practices fit into their culture.

Recent studies have elaborated the theory that the integration of IKS forms the basis for a transcultural model of utilisation of various local and global systems in different culture areas. This theory of applied ethnosciene has been introduced by Slikkerveer in his research in the Horn of Africa (1990; 1995) and has further been elaborated and adapted by several researchers, including Agung (2005) and Leurs (2010) in Bali; Djen Amar (2010), Ambaretnani (2012) and Febriyanti (2021)in Sunda; Aiglsperger (2014) in Crete; Chirangi (2013) and De Bekker (2020) in Tanzania. The transcultural utilisation model places indigenous knowledge systems central in the realisation of the process van sustainable socio-economische development, in particular in developing countries (*cf.* Slikkerveer 1990; Slikkerveer & Dechering 1995).

One of the important related issues currently in the world, including in Indonesia, is aging. The population of the elderly in Indonesia has reached 7.56% in 2012. Presently, it is estimated that in 2050, the elderly population in Indonesia will reach 28.68% (*cf.* Pusdatin 2013). According to Adioetomo & Mujahid (2014), the population is said to be an 'old population' if the proportion of the elderly population (age 60+ years) has reached 10% or more. Indonesia is one of the countries which is projected to enter the status of such ‘old population’ within a few generations’ period of time. According to Bappenas (BPS) and UNFPA (2013), such projection will continue to increase in the 2020s along with Indonesia's Life Expectancy (UHH), which is projected to continue to increase from 69.8 in 2010 to 72.4 in 2035. This condition results in a demographic transition and epidemiological transition in Indonesia. Epidemiological transitions are complex changes in health patterns and patterns of disease-causing death. It happens along with changing lifestyles, socio-economics and increasing life expectancy, which means a higher incidence of degenerative diseases such as heart disease, diabetes mellitus, hypertension, etc.

Epidemiological transition means that there are changes in diseases which are causing death, for example from infectious diseases to non-communicable chronic diseases. The Indonesian Hospital Association (2009) mentions that about 74% of the elderly in Indonesia suffer from chronic diseases, so they need medical treatment and medicines during their lifetime. The Hospital Information System (SIRS) (2010) reports that the ten highest ranks of outpatient diseases from all outpatient diseases in the age groups of 45-64 years 65+ yea- were essentially diagnosed as hypertension (*cf.* Pusdatin 2013).

The results of the study indicate that the problem associated with the high prevalence of chronic diseases among the elderly is the increasing uncontrolled condition of chronic elderly diseases, in line with the results of Guessous *et al.* (2012) who show that around 50% of hypertensive patients do not take action and are not controlled. Likewise, the results of Basic Health Research (Riskesdas) (2013) show that most (63.2%) cases of hypertension in the community are undiagnosed, 42.1% of stroke cases in the community are undiagnosed, and even 88.1% of cases of rheumatism in the community are not diagnosed (*cf.* Ministry of Health 2013). Hypertension is the 'silent killer', which is one of the causes of CVD. The disease refers to the condition, which recently contributed to around 17.3 million deaths per year in the world. The highest proportion of causes of death among the elderly group is stroke and ischaemic heart disease, as a result of uncontrolled hypertension (*cf.* Pusdatin 2013; Riskesdas 2013,2018). In developing countries, from 1990-2020, the number of deaths caused by coronary heart disease is increased by 13.7% in men and 12% in women.

Based on the results of the Basic Health Research by the Ministry of Health (2013), age has shown to increase the prevalence of CVD. The highest prevalence is observed at 65-74 years (0.5%) and ≥75 years (1.1%). Prevalence is higher in women (0.2%) than in men (0.1%). Similarly, the results of *Riskesdas* ('Basic Health Research') (2018) show that the prevalence of hypertension as diagnosed by medical doctors' increases with age, where the percentage of women is higher than of men, and more cases of hypertension are found in urban areas than in rural areas. Simultaneously with the prevalence of CVD showing an increase with age, the prevalence of CVD is also increasing. In the 55-64 year-old age group it is 3.9%, the 65-74 age group is 4.6% and the 75+ year group is 4.7% , with a greater percentage of women, and with 1.6% in urban areas and 1.3%. in rural areas.

In cases of CVD among the elderly, the relationship between aspects of culture is very strong and becomes evident in the nursing practice, which aims to provide optimal care to help patients dealing to overcome the disease. In general, however, current nursing practice as part of the national health care delivery system in Indonesia has not given sufficient attention to the role of these culturally sensitive nursing practices in the provision of overall nursing for elderly in Indonesia, causing difficulties in achieving patient satisfaction with the services provided (*cf.* Hariyati & Sahar 2012). Nursing practices for the elderly with CVD in Indonesia remain mostly focused on the modern health system, where modern medicine does not consider the cultural background of patients.

There is a cultural gap between providers and users of medical care in disease treatment, clearly manifest in nursing of the elderly with CVD. A research-based approach in integrated nursing is needed in order to reduce these limitations and lead to promoting health, improving welfare, and effective and efficient treatment. This study is focussing on the role of *kearifan kesehatan local* in the plural nursing system in Sumedang, in which traditional nursing institutions and transitional and modern nursing organisations are providing nursing to the elderly with CVD.

While the modern organisations are often identified as 'scientific'' as opposed to the traditional and transitional institutions, this research follows a line of reasoning, in which the practice of all human activities, including belief and magic, established in both indigenous and modern knowledge systems are basically considered 'scientific' (*cf.* Bronowski 1967).

IKS is largely rooted in experience, which people have gained over many centuries from interactions with their natural, social and spiritual environment, and which is transferred verbally from generation to generation. In general, IKS involves mainly intangible socio-cultural charcteristics, which are related to the worldview or cosmovision of different population groups. IKS is the basis for local -evel decision-making in various sectors of society, including in the health sector) and has been defined as a dynamic, sustainable and adaptive system of knowledge, beliefs and

practice. In addition, IKS advocates patterns of behaviour which can be culturally adaptable to local settings and changes, and involve ways of continuous human interaction with the natural, social and spiritual environment (*cf.* Slikkerveer 1997; 1998; 1999; 2003; Warren, Slikkerveer & Brokensha 1995). The study and incorporation of indigenous knowledge into science is called '*applied ethnoscience*', because basically indigenous knowledge is rational, rooted in the process of empirical research and scientific testing in largely practical settings.. Ethnoscience uses an emic perspective relating to the behaviour of indigenous populations, which has been implemented from generation to generation and has benefited the community in several sectors, including health and healing.

The research has been conducted in the Sumedang area, West-Java, Indonesia, in four villages: Jayamekar and Cipasang representing the rural northern highland areas, and Situ representing the urban southern lowland area and Jatimulya the urban southern highland area of the Sumedang Regency, selected as representative of the characteristics of the Sundanese communities in West Java.. The sample of this study includes families with elderly members with CVD in the research area. In order to achieve the specific objective of this study, the research approach used the *'Leiden Ethnosystems Approach'* to document, study and analyse the role of indigenous nursing knowledge and institutions in the provision of cultural-specific nursing practices for elderly with CVD, intended to contribute to the development of a transcultural nursing system in Indonesia.

In practice, the *'Leiden Ethnosystems Approach'* follows three methodological principles: (1) the 'Historical Dimension' (HD); (2) the 'Participant's View' (PV); and (3) the 'Field of Ethnological Study' (FES).

As regards the research methodology in the field, the research uses a questionnaire introduced by Slikkerveer (1990) and has thereafter been successfully implemented by other researchers, including Agung 2005; Ibui 2007; Djen Amar 2010; Leurs 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014; Erwina 2019; Saefullah 2019; De Bekker (2020); Febriyanti (2210) in the field of ethnoscience and indigenous knowledge.

The researcher conducted several discussions with key informants, the community leaders and participants to adapt the content of the questionnaire in accordance with the focus of the research and the situation in the field until it was ready to be distributed in this sample surveys from September to November 2017. The research instruments applied in this study have been designed with a view to collect information on the utilisation of the plural nursing system by the respondents and include data from both qualitative questions and quantitative questionnaires. The complementary approach of combined qualitative and quantitative surveys aims at confirming the findings of both surveys in terms of measuring the depth and spread of related factors and assessing the interactive processes involved in the reported differential behaviour of the community members regarding the utilisation of the plural nursing system in Sumedang. In addition, supporting background data about the Sumedang Regency have been obtained from available public information, text notes, digital sources, images, sounds or combinations, and a profile of the Sumedang Regency.

The dataset is the basis for the stepwise statistical analysis presented in this study, based on the number of households involved in the survey, in which the number (N) equals 232. The household database is the basis for the quantitative analysis of the four village communities in the research area, with regard to the respondents' experiences, knowledge, preferences and opinions related to the patterns of the utilisation of the plural nursing system: the use of indigenous nursing institutions, transitional nursing organisations and modern nursing organisations.

The analysis of collected quantitative data is based on the above-mentioned transcultural utilisation model, encompassing a bivariate analysis, a mutual correlation analysis, a multivariate analysis and a multiple regression analysis, pertaining to the patterns of utilisation behaviour of the plural nursing system by the patients with CVD of the sample surveys. The significant correlations among selected variables represent the determinants of the utilisation behaviour of the plural nursing system by the patients with CVD in Sumedang. The analytical model emphasises the interactions between the independent and intervening variables in relation with the dependent variables of utilisation, sub-divided as follows:

Independent Variables:
- socio-demographic
- psycho-social variables
- perceived morbidity variables
- enabling variables
- institutional variables
- environmental variables

Intervening Variables:
- government/public regulation variables
- government/public promotion variables

Dependendent Variables:
- utilisation variables of the traditional nursing institutions
- utilisation variables of the transitional nursing organisations
- utilisation variables of the modern nursing organisations

The analysis of the quantitative surveys of the 232 households from the sample measures the degree of significance of the correlations between the independent and the intervening variables in relation to the dependent variables of reported utilisation of the plural nursing system by the selected 267 patients in the four villages. Of the 263 'action patients' in the sample, 54 took one step in their search for treatment, 209 took a second step and 114 took a third step.

The various steps taken by the 263 patients to obtain treatment resulted in a total of 586 contacts with the plural nursing system, referred to as ‘utilisation scores’. The distribution of the calculated 586 utilisation scores across the plural nursing system includes more than one-fourth (26.8%, n= 157) in the traditional nursing institutions, almost one-fifth (16.9%, n= 99) in the transitional nursing organizations, and more than half (56.3%, n=330) in the modern nursing organizations.

The bivariate analysis, followed by the mutual relationship analysis, the multivariate analysis and the multiple regression analysis reflect the degree of the significant correlations between the selected variables in relation to the variables of the utilisation of the traditional nursing institutions, the transitional and the modern nursing organisations.

In this way, the results of the multivariate analysis 'OVERALS' are used to identify and explain the specific determinants of the utilisation behaviour of the respondents of the plural nursing system. The results of the significance level of the correlations between the independent, the intervening and the dependent variables are calculated in the analysis. The overview below summarises these results in terms of the degree of significance of the correlations between the independent and intervening variables in relation to the dependent variables from the model.

The level of significance is calculated using the Pearson's Chi-square (X^2) and the Cramers's Value (V.) The outcome of the calculation of the distribution of the utilisation pattern of the 586 scores of 351 patients of the plural nursing system includes respectively nearly two-thirds (59.9%, n=351) in the traditional nursing institutions, more than one-third (33.8%, n=198) in the transitional nursing organisations and less than one-tenth (6.3%, n=37) in the modern nursing organisations.

The level of significance of the correlations between the independent and intervening variables in relation to the dependent variables from the analytical model scores the highest in the socio-demographic variables of the reported utilisation behaviour of older patients with CVD, followed by specific psycho-social, institutional, environmental variables, as well as intervening variables, as summarised in the overview below.

Independent variables	Plural Nursing System Level of Significance
Block 1: Socio-demographic variables	
- Household relationships	most strongly significant correlation
-Gender	most strongly significant correlation
-Age	most strongly significant correlation
-Marital status	most strongly significant correlation
- Profession	most strongly significant correlation
- Vaccination history	most strongly significant correlation
- Duration of CVD	most strongly significant correlation
Block 2: Psycho-social variables	
- Knowledge of CVD	most strongly significant correlation
- Knowledge of traditional nursing institutions	significant correlation
- Knowledge of traditional nursing institutions for CVDs	strongly significant correlation
- Knowledge of transitional nursing organizations	strongly significant correlation
- Knowledge of transitional nursing organizations for CVD	significant correlation
- Belief in traditional nursing organizations for prevention of CVD	strongly significant correlation
- Belief in traditional nursing organizations for treatment of CVD	strongly significant correlation
Block 3: Perceived morbidity variables	
- Perceived general state of health	very strongly significant correlation
Block 4: Socio-economic variable management	
- Monthly income of the head of household	strongly significant correlation
- Cost of Treatment in Transitional Nursing Organizations	strongly significant correlation
- Transportation Costs for Modern Nursing Organizations	strongly significant correlation
- Possession of health insurance	strongly significant correlation
Block 5: Institutional variables	
- Availability of transitional nursing organizations	significant correlation
- Geographical distance from modern nursing organizations	most strongly significant correlation
Block 6: Environment variables	
- Location of the zone of the community	most strongly significant correlation
Intervening variables	
Block 7: Intervening variables	
- Influence of Public/Public Regulation on the Use of Modern Nursing Organizations	strongly significant correlation
- Influence of public/public promotion on the use of home care	strongly significant correlation
- Influence of public/public promotion on the use of modern nursing organisations	very strongly significant correlation
- Influence of public/public promotion on the use of modern nursing organizations for prevention of CVD	strongly significant correlation
- Influence of public/public promotion on the use of modern nursing organizations for the treatment of CVD	strongly significant correlation

The influence of the significant correlations of the variables indicated above in the nursing of the elderly with CVD in the local communities of Sumedang is specifically expressed in the use of *kearifan kesehatan lokal*, *jamu* and *ubar kampung*, as well as in traditional massage techniques to treat CVD. *Ubar kampung* in the Sundanese region also includes extensive indigenous knowledge of more than 45 species of Medicinal, Aromatic and Cosmetic (MAC) plants, which are collected in the vicinity of the house. The selection and preparation of medicines from the local MAC plants takes place through special preparations and practices in connection with the faith through the recitation of

mantras or prayers which are said to obtain healing. This is also important as an activity to preserve the bio-cultural diversity of the Sundanese region. In order to improve the care of elderly people with CVD, nurses must also have special competencies that are in line with the local culture and traditions of health and disease.

Based on the results of this user-oriented ethnomedical research in Sumedang, it is important that the nurses are familiar with traditional knowledge and practices of using *kearifan kesehatan lokal*, *jamu* and *ubar kampung* for prevention and treatment of CVD, and thus integrate their care for the elderly into a new system of nursing for elderly people with CVD in the Sundanese society, so that they can act not only as health educators, but also as mediators between existing nursing institutions and older people with CVD, advocates for clients and patients who need primary, secondary and tertiary nursing facilities that match their socio-cultural lifestyles and expectations for integrated care for the elderly. Such integrated strategy is then used as a model which is presented as an Integrated Nursing Institution Model. In this way, it is expected that misunderstandings due to cultural misunderstandings between patients and health professionals and between health care providers themselves will be minimised, and that the satisfaction of elder people with CVD will be increased, thereby improving their health. Hence, cultural competence is advocated in the nursing school curriculum with special attention to traditional medicine institutions so that students can apply their nursing practices in an integrated national system of transitional nursing for elder patients with CVD. In addition, the recognition and integration of traditional medical knowledge, beliefs and practices of *kearifan kesehatan lokal* in the proposed transitional nursing care for the elderly with CVD will also contribute significantly to the promotion of sustainable nursing as part of a national health care system for the entire population of Indonesia in the future.

Samenvatting

Indonesië is een uniek land met 1.340 erkende etnisch-culturele groepen verspreid over ruim 17.000 eilanden. De culturele diversiteit komt tot uiting in een grote verscheidenheid aan lokale kennissystemen en levensstijlen van de bevolkingsgroepen. De verschillende culturele zienswijzen op gezondheid en ziekte houden verband met kennis, overtuigingen, waarden en praktijken, die tot uiting komen in verschillende vormen van levensstijl in Indonesië. De culturele diversiteit van de bevolking hangt samen met verschillen in gezondheidsgedrag (*cf.* Loredan & Prosen 2013).

Het verpleegkundige beroep zou er voor cliënten naar moeten streven om holistische zorg te krijgen en daarmee aan alle behoeften van cliënten te voldoen, ongeacht hun etnisch-culturele achtergrond en hun uiteenlopende overtuigingen en waarden over gezondheid en genezing (*cf.* Prosen 2003; Sharon 2008). Verpleegkundige vaardigheid om zorgdiensten te verlenen in overeenstemming met de culturele achtergrond van de cliënt is dus nodig. Verpleegkundigen moeten als strategie over competenties beschikken ten einde om te kunnen gaan met cultureel gevoelige onderwerpen zoals ongelijkheden op gezondheidsgebied om daarmee verpleegkundige resultaten voor cliënten te verbeteren (*cf.* Sharon 2008). Zoals Prosen (2015) aantoont, moeten verpleegkundigen de cultuur van patiënten kunnen herkennen, zodat de geboden behandeling ook cultureel gezien passend is bij hun behoeften. De kennis en vaardigheden van verpleegkundigen bij het beoordelen van een geïntegreerde cultuur, door kritisch denken, zullen worden vergroot en de basis vormen voor het verlenen van transculturele verpleegkundige zorg (*cf.* Andrews & Boyle 2002; Leininger & McFarland 2002).

Elke poging om deze culturele competentie bij verpleegkundigen, die voltijds werken met cliënten uit de vele etnisch-culturele bevolkingsgroepen in Indonesië te verbeteren, is een uitdaging. Eén stap die gedaan kan worden is het leren en begrijpen van de Sudanezen als de dominante etnisch-culturele groep in West Java. De Soendanese bevolking van ruim 35,5 miljoen is zelfs aanzienlijk toegenomen, waardoor zij, ná de etnisch-culturele Javanen de op één na grootste etnisch-culturele groep in Indonesië is (*cf.* Ambaretnani 2012).

Dit vereist zeker een verdieping van het begrip van sociaal gedrag en de volksgezondheid, over hoe traditie en cultuur, zoals IKS ('Inheemse Kennissystemen'), *kearifan kesehatan lokal* ('traditionele medische kennis', *jamu* ('traditionele planten geneesmiddelen'), en *ubar kampung* ('Soendanese imheemse planten geneesmddelen') gebruikt kunnen worden bij de behandeling van ziekten. Dit onderzoek ontwikkelt dus een alomvattend begrip van hoe de Soendanese volksgezondheidzorg in hun cultuur passen. Voorgaande studies hebben aangetoond dat het gebruik van inheemse kennissystemen de basis kan vormen voor een intercultureel model van verpleegkundig gebruik, geïntroduceerd door Slikkerveer in zijn onderzoek in de Hoorn van Afrika (1990), en verder ontwikkeld en aangepast door onder meer Agung. (2005) en Leurs (2010) op Bali; Djen Amar (2010) en Ambaretnani (2012) in Sunda; Chirangi (2013); Aiglsperger (2014) op Kreta; en De Bekker (2020) in Tanzania. Dit model plaatst het in belangrijke mate als een systeem voor het ontwikkelen van duurzaam cultureel bewustzijn bij lokale gemeenschappen (vgl. Slikkerveer & Dechering 1995).

Één van de belangrijkste problemen in de wereld, die ook in Indonesië spelend, is de vergrijzing. Het aantal ouderen in Indonesië bedraagt ruim 7%, terwijl dit in 2012 7,56% bedroeg. Er wordt geschat dat het aantal ouderen in Indonesië in 2050 28,68% zal bedragen (vgl. Pusdatin 2013). Volgens Adioetomo & Mujahid (2014) wordt de bevolking 'een oude bevolking' genoemd als het aandeel van de oudere bevolking (leeftijd 60+ jaar) 10% of meer heeft bereikt. Indonesië is een van de landen die zullen gaan behoren tot landen met een oude bevolkingsstructuur, omdat het percentage ouderen nu al 7,6% van de totale bevolking heeft bereikt Volgens de Population Census (BPS 2010) en UNFPA (2013) wordt verwacht dat deze in 2020-2035 zal blijven stijgen, samen met de levensverwachting van Indonesië (UHH), die naar verwachting zal blijven stijgen van 69,8 in 2010 naar 72,4 in 2035. Dit leidt tot een demografische en epidemiologische transitie in Indonesië. Epidemiologische transities zijn complexe verschuivingen in patronen van oorzaken van gezondheid en sterfte. Het treedt op bij veranderende levensstijlen, sociaal-economische omstandigheden en een stijgende levensverwachting, die met een hogere incidentie van degeneratieve ziekten, zoals

hartziekten, diabetes mellitus, hoge bloeddruk, enz. gepaard gaan. Epidemiologische transitie betekent ook, dat er verschuivingen plaatsvinden in oorzaken van sterfte, bijvoorbeeld van infectieziekten naar niet-overdraagbare chronische ziekten.

De Indonesian Hospital Association (2009) meldt dat ongeveer 74% van de ouderen in Indonesië aan een chronische ziekte lijdt, waarvoor zij levenslang medicatie moeten gebruiken. Uit rapporten van ziekenhuizen in Indonesië via het Hospital Information System (SIRS) in 2010 bleek, dat de meest voorkomende van alle poliklinisch gestelde diagnosen in de leeftijdsgroep van 45-64 jaar en de 65+-jarigen essentiële hypertensie was (*cf.* Pusdatin 2013).

De resultaten van het onderzoek geven aan, dat de hoge prevalentie van chronische ziekten onder ouderen het probleem van een verminderde controle van chronische ouderenziekten weergeeft. Dit is in lijn met de resultaten van Guessous *et al.* (2012), waaruit blijkt, dat ongeveer 50% van de hypertensiepatiënten geen actie onderneemt en niet onder controle is. Op vergelijkbare wijze lieten de resultaten van Basic Health Research (Riskesdas) (2013) zien, dat de meeste (63,2%) gevallen van hypertensie in de gemeenschap niet gediagnosticeerd waren, dat 42,1% van de gevallen van beroerte in de gemeenschap niet gediagnosticeerd waren en dat zelfs 88,1% van de gevallen van reuma in de gemeenschap niet gediagnosticeerd was. De gemeenschap werd niet gediagnosticeerd (*cf.* Ministry of Health 2013). Hypertensie is de stille moordenaar en één van de oorzaken van hart- en vaatziekten, in deze studie aangeduid als Cardiovascular Diseases (CVD). Deze ziekte draagt volgens een publicatie uit 2013 bij aan ongeveer 17,3 miljoen sterfgevallen per jaar wereldwijd. Het hoogste percentage doodsoorzaken onder de ouderengroep zijn beroertes en ischemische hartziekten als gevolg van ongecontroleerde hypertensie (*cf.* Pusdatin 2013; Riskesdas 2013, 2018). In de ontwikkelingslanden zal het aantal sterfgevallen als gevolg van coronaire hartziekten tussen 1990 en 2020 naar verwachting met 13,7% bij mannen en met 12% bij vrouwen toenemen.

De resultaten van het gezondheidsonderzoek van het Ministry of Health (2013) tonen aan, dat met de leeftijd de prevalentie van hart- en vaatziekten stijgt. De hoogste prevalentie wordt bij 65-74 jaar (0,5%) en ≥75 jaar (1,1%) waargenomen. De prevalentie is hoger bij vrouwen (0,2%) dan bij mannen (0,1%). Evenzo tonen de resultaten van het Health Research (Riskesdas) van 2018 aan, dat de prevalentie van hypertensie op basis van de klinische diagnose stijgt met de leeftijd, waarbij het percentage bij vrouwen wederom hoger is dan dat bij mannen, terwijl de prevalentie van hypertensie in stedelijke gebieden hoger is dan op het platteland. Tegelijkertijd met de toename van prevalentie van hart- en vaatziekten met de leeftijd, neemt de prevalentie van hart- en vaatziekten zelf ook toe. In de leeftijdsgroep van 55-64 jaar is dit 3,9%, de leeftijdsgroep van 65-74 jaar 4,6% en de groep van 75+ jaar 4,7%, met een groter percentage vrouwen, en met 1,6% in stedelijke gebieden en 1,3% in landelijke gebieden.

In geval van hart- en vaatziekten bij ouderen is de relatie met culturele achtergronden zeer sterk en dit wordt vooral duidelijk in de verpleegkundige praktijk, die erop gericht is om optimale zorg te bieden en om patiënten te helpen om met de ziekte om te gaan en deze te overwinnen. Over het algemeen heeft de huidige verpleegkundige praktijk, als onderdeel van het nationale systeem van gezondheidszorg in Indonesië, echter niet voldoende aandacht besteed aan de invloed van deze cultureel gevoelige verpleegkundige praktijken bij het bieden van de algemene verpleegkundige zorg aan ouderen in Indonesië, dat de patiënttevredenheid nadelig beïnvloed bij de geleverde diensten (*cf.* Hariyati & Sahar 2012). De verpleegkundige praktijken voor ouderen met hart- en vaatziekten in Indonesië blijven vooral gericht op het universele systeem van gezondheidszorg, namelijk de moderne geneeskunde, die vrijwel geen rekening houdt met de culturele achtergronden van patiënten.

Er bestaat dus een culturele kloof tussen aanbieders en gebruikers van medische zorg bij de behandeling van ziekten. Een op onderzoek gebaseerde aanpak in geïntegreerde verpleegkundige praktijken is dus nodig om deze beperkingen te doen afnemen om daarmee een verbetering van de gezondheid, het welzijn en een effectieve en efficiënte behandeling te bereiken. Deze studie concentreert zich op Inheemse Kennissystemen (IKS) en maakt onderscheid tussen enerzijds inheemse of traditionele kennissystemen en anderzijds moderne kennissystemen, waarbij deze laatste vaak worden geïdentificeerd als ‘wetenschappelijk’ in tegenstelling tot inheemse kennissystemen. Dit onderzoek gaat echter uit van de benadering, waarin kennis, geloof en praktijk van de

participanten gekoppeld worden aan hun gedrag, die de universele kenmerken vormen van alle menselijke samenlevingen, waarbij zowel traditionele als moderne kennissystemen als wetenschappelijk kennissystemen kunnen worden beschouwd.

IKS zijn overwegend gebaseerd op ervaringen, die de bevolking opdoet in hun interacties met de natuurlijke, sociale en spirituele omgeving van hun samenleving, die mondeling van generatie op generatie worden overgedragen. IKS impliceren ontastbare sociaal-culturele aspecten, die verband houden met het wereldbeeld of de kosmovisie van bepaalde bevolkingsgroepen. Dit vormt de basis voor de besluitvorming op lokaal niveau in verschillende sectoren van de samenleving, waaronder de gezondheidszorg. IKS kunnen worden gedefinieerd als dynamische, duurzame en adaptieve kennis-, praktijk- en geloofssystemen. Daarnaast streven IKS de gedragspatronen na, die cultureel adaptief kunnen zijn aan veranderingen in lokale omstandigheden en die daarbij vormen van voortdurende menselijke interactie met de natuurlijke, sociale en spirituele omgeving omvatten (*cf.* Slikkerveer 1995; 1998; 1999; 2003). De integratie van inheemse kennis in de wetenschap wordt 'etnowetenschap' genoemd, omdat inheemse kennis in wezen rationeel is en geworteld in het proces van empirisch onderzoek en 'wetenschappelijk' testen van generatie op generatie. Etnowetenschap maakt gebruik van een emisch perspectief - de visie van de participanten - dat bepalend is voor het gedrag van de lokale bevolking, die dat van generatie op generatie heeft toegepast en de gemeenschap ten goede is gekomen.

Het onderzoek is uitgevoerd in vier geselecteerde dorpen in de regio van Sumedang, West-Java, Indonesië, die representatief zijn voor de kenmerken van de lokale gemeenschap: *Jayamekar* en Cipasang vertegenwoordigen hierbij de noordelijke hoogland gebieden, terwijl *Situ* het stedelijke zuidelijke laagland gebied vertegenwoordigt en *Jatimulya* het stedelijke zuidelijke hoogland gebied van Sumedang, De steekproef van deze studie is genomen uit gezinnen uit de vier dorpen van de geselecteerde onderzoeksgebieden van Sumedang, waaronder de ouderen, die hart- en vaatziekten hebben. Om de specifieke doelstelling van deze studie te realiseren, is in de benadering van het onderzoek gebruik gemaakt van de '*Leiden Ethnosystems Approach*' om de rol van inheemse verpleegkundige kennis en de institutionele systemen, die in de zorg voor oudere CVD-patiënten in Sumedang worden gehanteerd, te documenteren, te bestuderen en te analyseren om daarmee bij te dragen aan de ontwikkeling van transculturele verpleegkundige zorg in Sumedang en elders in Indonesië.

In de praktijk volgt de '*Leiden Ethnosystems Approach'* drie methodologische principes: (1) 'de 'Historical Dimension' (HD); (2) de 'Participants' View' (PV); en (3) het 'Field of Ethnological Study' (FES). In dit onderzoek wordt daarbij gebruik gemaakt van een vragenlijst, geïntroduceerd door Slikkerveer (1990) en daarna gebruikt door andere onderzoekers (waaronder Agung 2005; Ibui 2007; Djen Amar 2010; Leurs 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014; Erwina 2019; Saefullah 2019; De Bekker 2020; en Febriyanti 2021). op het gebied van etnowetenschap en inheemse kennis. De onderzoeker heeft verschillende gesprekken met de participanten uit de steekproef gevoerd en de inhoud van de vragenlijst aangepast aan de focus van het onderzoek totdat deze klaar was om van september tot november 2017 in de geselecteerde vier dorpen te worden verspreid.

De in dit onderzoek toegepaste onderzoeksinstrumenten zijn specifiek ontworpen om informatie te verzamelen over het gebruik van het meervoudig verpleegkundige systeem door de respondenten, en zowel kwalitatieve als kwantitatieve vragen in de vragenlijsten op te nemen. De complementaire aanpak van gecombineerde kwalitatieve en kwantitatieve onderzoeken heeft tot doel, de bevindingen van beide onderzoeksmethoden vast te leggen in termen van het meten van de diepte en de spreiding van relevante factoren en het beoordelen van de interactieve processen die betrokken zijn bij het gerapporteerde differentiële gedrag van het gebruik van het plurale verpleegkundige systeem door de participanten in Sumedang.

Daarnaast zijn andere ondersteunende gegevens over Sumedang verkregen uit beschikbare openbare informatie, tekstnotities, digitale bronnen, afbeeldingen, geluiden of combinaties, een profiel van Sumedang en voorbereidende onderzoeken met gemeenschapsleiders.

De dataset vormt de basis voor de opeenvolgende statistische analyses, die in dit onderzoek worden uitgevoerd, gebaseerd op het aantal huishoudens in de steekproef, waarbij het aantal (N) gelijk is aan 232. De database van deze 'huishoudens' vormt de basis voor de kwantitatieve analyse van de vier dorpsgemeenschappen omtrent o.m. hun kennis, geloof, achtergrond, ervaringen, en omstandigheden m.b.t. het gerapporteerde gebruik van het plurale verpleegkundige systeem over de voorafgaande 12 maanden., *i.c.* het gebruik van traditionele verpleegkundige instituties, en transitionele en moderne verpleegkundige organisaties. Dit onderzoek maakt gebruik van een stapsgewijze 'bivariate', 'mutual relations', 'multivariate' en het 'multiple regressie' analytisch model op basis van de kwantitatieve gegevens, die in de vier dorpen in de steekproef zijn verzameld, waarbij de significante correlaties tussen de verschillende variabelen worden gemeten en onderzocht. Het model identificeert daarbij de significantie correlaties in de interacties tussen onafhankelijke, interveniërende en afhankelijke variabelen utilisatiegedrag, zoal hieronder nader aangegeven:

Onafhankelijke variabelen:

- predisponerende variabelen: sociaal-demografische en psychosociale variabelen,
- waargenomen morbiditeitsvariabelen,
- faciliterende variabelen,
- institutionele variabelen en
- omgevingsvariabelen;

Interveniërende variabelen

- governementele/openbare regulerende variabelen
- governementele/openbare promotie variables

- *Afhankelijke variabelen*
- utilisate variabelen van traditionele verpleegkundige instituties
- utilisatie variabelen van transitionele verpleegkundige organisaties
- utilisatie variabelen van moderne verpleegkundige organisaties

Gebaseerd op de data-analyse van de kwantitatieve onderzoeken van de 232 huishoudens uit de steekproef wordt de mate van significantie van de correlaties tussen de onafhankelijke en de interveniërende variabelen in relatie tot de afhankelijke variabelen van gerapporteerd gebruik van het plurale verpleegkundige systeem door de geselecteerde 267 patiënten in de vier dorpen gemeten. Uit de 263 'actie-patiënten' uit de steekproef hebben 54 één stap in hun zoektocht naar behandeling hebben gezet, en 209 een tweede stap en 114 nog een derde stap gezet.

De verschillende stappen die de 263 patiënten hebben genomen om behandeling te verkrijgen, hebben geresulteerd in een totaal van 586 contacten met het plurale verpleegkundige systeem, benoemd als utilisatie scores. De verdeling van de gecalculeerde 586 utilisatiescores over het plurale verpleegkundige systeem omvat ruim één-vierde (26.8%, n= 157) bij de traditionele verpleegkundige instituties, bijna één-vijfde (16.9%, n= 99) bij de transitionele verpleegkundige organisaties, en ruim de helft (56.3%, n=330) bij de moderne verpleegkundige organisaties.

De bivariate analyse, gevolgd door de wederzijdse relatie analyse, de multivariate analyse en de wederzijdse regressie analyse geven de mate van significante correlaties tussen de geselecteerde variabelen weer in relatie tot de variabelen van de utilisatie van de traditionele verpleegkundige instituties, en transitionele en moderne verpleegkundige organisaties.

Op deze manier worden de resultaten van de multivariate analyse 'OVERALS' gebruikt om de specifieke determinanten van het utilisatiegedrag van de respondenten van het plurale verpleegkundige systeem te identificeren en te verklaren. Daarbij worden de resultaten aangegeven van het significantieniveau van de correlaties tussen de onafhankelijke, de interveniërende en de afhankelijke variabelen. In het onderstaande overzicht wordt een samenvatting van deze resultaten gegeven in termen van de mate van significantie van de correlaties tussen de onafhankelijke en interveniërende variabelen in relatie tot de afhankelijke variabelen uit het model.

Het niveau van significantie is berekend met behulp van de Pearson's Chi-square (X^2) en de Cramers's Value (V.) De uitkomst van de berekening van de verdeling van het utilisatiepatroon van de 586 scores van 351 patiënten van het plurale verpleegkundige systeem omvat respectievelijk bijna twee-derde deel (59.9%, n=351) in de traditionele verpleegkundige instituties, ruim een-derde deel (33.8%, n=198) in de transitionele verpleegkundige organisaties en minder dan een-tiende deel (6.3%, n=37) in de moderne verpleegkundige organisaties.

Het niveau van significantie van de correlaties tussen de onafhankelijke en interveniërende variabelen in relatie tot de afhankelijke variabelen uit het analytisch model scoort het hoogst in de socio-demografische variabelen van het gerapporteerde utilisatiegedrag van oudere patiënten met CVD, gevolgd door enkele psycho-sociale, institutionele, omgevingsvariabelen, alsmede enkele interveniërende variabelen, zoals in onderstaand overzicht samengevat.

Onafhankelijke variabelen	Plurale Verpleegkundige Systeem Niveau van Significantie
Blok 1: Socio-demografische variabelen	
- Huishoud relaties	meest sterke significante correlatie
- Geslacht	meest sterke significante correlatie
- Leeftijd	meest sterke significante correlatie
- Burgerlijke staat	meest sterke significante correlatie
- Beroep	meest sterke significante correlatie
- Vaccinatie geschiedenis	zeer sterke significante correlatie
- Duur van CVD	meest sterke significante correlatie
Blok 2: Psycho-sociale variabelen	
- Kennis van CVD	meest sterke significante correlatie
- Kennis van traditionele verpleegkundige instituties	significante correlatie
- Kennis van traditionele verpleegkundige instituties voor CVDs	sterke significante correlatie
- Kennis van transitionele verpleegkundige organisaties	sterke significante correlatie
- Kennis van transitionele verpleegkundige organisaties voor CVD	significante correlatie
- Geloof in traditionele verpleegkundige organisaties voor preventie van CVD	sterke significante correlatie
- Geloof in traditionele verpleegkundige organisaties voor behandeling van CVD	sterke significante correlatie
Blok 3: Gepercipieerde morbiditeitsvariabelen	
- Gepercipieerde algemene gezondheidstoestand	zeer sterke significante correlatie
Blok 4: Socio-economische variabelenzorg	
- Maandinkomen van het hoofd van het huishouden	sterke significante correlatie
- Kosten van behandeling in transitionele verpleegkundige organisaties	sterke significante correlatie
- Transportkosten voor moderne verpleegkundige organisaties	sterke significante correlatie
- Bezit van een zorgverzekering	sterke significante correlatie
Blok 5: Institutionele variabelen	
- Beschikbaarheid van transitionele verpleegkundige organisaties	significante correlatie
- Geografische afstand van moderne verpleegkundige organisaties	meest sterke significante correlatie
Blok 6: Omgevingsvariabelen	
- Locatie van de zone van de gemeenschap	meest sterke significante correlatie
Interveniërende variabelen	
Blok 7: Interveniërende variabelen	

- Invloed van openbare/publieke regelgeving op het gebruik van moderne verpleegkundige organisaties	sterke significante correlatie
- Invloed van openbare/publieke promotie op het gebruik van thuiszorg	sterke significante correlatie
- Invloed van openbare/publieke promotie op het gebruik van moderne verpleegkundige organisaties	zeer sterke significante correlatie
- Invloed van openbare/publieke promotie op het gebruik van moderne verpleegkundige organisaties voor preventie van CVD	sterke significante correlatie
- Invloed van openbare/publieke promotie op het gebruik van moderne verpleegkundige organisaties voor de behandeling van CVD	sterke significante correlatie

De invloed van IKS bij de verpleegkundige preventie en behandeling van CVD bij ouderen in de lokale gemeenschappen komt specifiek tot uitdrukking in het gebruik van *kearifan kesehatan lokal*, *jamu* en *ubar kampung*, alsmede in traditionele massagetechnieken om CVD te behandelen.

Ubar kampung in de Soenda regio omvat tevens uitgebreide lokale kennis van meer dan 45 soorten Medicinale, Aromatische en Cosmetische (MAC) planten, die in de omgeving van het huis worden verzameld. Het selecteren en bereiden van medicijnen uit de lokale MAC planten vindt plaats d.m.v. speciale voorbereiding en praktijken in samenhang met het geloof door het reciteren van mantra's of gebeden die worden uitgesproken om genezing te verkrijgen. Dit is ook belangrijk als een activiteit om de bio-culturele diversiteit van de Soenda regio te behouden. Teneinde de zorg voor ouderen met CVD te verbeteren dienen de verpleegkundigen ook over speciale competenties beschikken, die aansluiten op de lokale cultuur en tradities van gezondheid en ziekte..

Op basis van de uitkomsten van dit ethnomedisch onderzoek in Sumedang is het van belang, dat de verpleegkundigen bekend zijn met traditionale kennis en praktijken van gebruik van *kearifan kesehatan lokal, jamu* en *ubar kampung* voor preventie en behandeling van CVD, en daarmee hun zorg voor de ouderen te integreren in een nieuw systeem van verpleging voor ouderen met CVD in de Soendanese samenleving, zodat zij niet alleen als zorgverleners gezondheidsvoorlichters kunnen optreden, maar ook als bemiddelaars tussen bestaande verpleegkundige instellingen en ouderen met CVD als pleitbezorgers kunnen optreden voor cliënten en patiënten die behoefte hebben aan primaire, secundaire en tertiaire verpleegkundige voorzieningen die aansluiten op hun socio-culturele levenswijze en verwachtingen voor geïntegreerde ouderenzorg.

Deze geïntegreerde strategie wordt vervolgens als een modelschema gebruikt dat wordt voorgesteld als een Geïntegreerd Verpleegkundig Instellingsmodel. Er wordt verwacht dat op deze wijze misverstanden als gevolg van culturele misverstanden tussen patienten en gezondheidswerkers en tussen zorgverleners onderling tot een minimum worden beperkt en ij gevolg de tevredenheid van ouderen met CVD kan worden verhoogd, waardoor hun genezing wordt verbeterd en de gezondheidsfuncties worden geoptimaliseerd. Vandaar, dat culturele competentie in het curriculum van de verpleegkundige opleiding met speciale aandacht voor traditionele geneeskundige instituties wordt bepleit, zodat studenten hun verpleegkundige praktijken kunnen toepassen in een geïntegreerd nationaal systeem van transitionele geneeskundige zorg voor ouderen met CVD. Bovendien zal de erkenning en integratie van traditionele medische kennis, geloof en praktijken van *kearifan kesehatan lokal, jamu* en *ubar kampung* als de voorgestelde transitionele verpleegkundige zorg voor ouderen met CVD ook aanzienlijk bijdragen aan de bevordering van duurzame verpleegkundige zorg als onderdeel van een nationaal systeem van gezondheidszorg voor de gehele bevolking van Indonesië in de toekomst.

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Curriculum Vitae

Raini Diah Susanti is the youngest of ten children, born in Sumedang, Indonesia, on August 16th, 1978. She is married to Budi Satia Nugraha and has a daughter, Fathimah Kamila Luthfiah and a son, M. Hasan Nasrullah. She grew up and received her primary education up to her scholarship in 2001. She continued her Master of Nursing at the School of Nursing and Midwifery at Flinders University, Adelaide, South Australia, and received in 2009 the Flinders Bursary Award.

Currently, she is an appointed Lecturer at the Faculty of Nursing of Universitas Padjadjaran, Indonesia and is engaged in gerontology nursing (elderly care), family health nursing and community health nursing. Before becoming a Lecturer, she worked as a nurse and clinical instructor at the Public Health Center and the Sumedang Regional General Hospital. In 2014 she attended the Training on Geriatric Curriculum Development, supported by the Japan International Cooperation Agency (JICA) project for Enhancement Nursing Competency through In-Service Training in Japan.

Raini became a Trainer of Gerontology/Geriatric Nursing at the Batam Health Training Center Indonesia. She received a scholarship from the Directorate of Higher Education, Ministry of Education and Culture of the Republic of Indonesia, to continue her doctoral studies at Leiden University in The Netherlands.

By the end of 2015, she joined the Leiden Ethnosystems And Development Programme (LEAD) at the Faculty of Science of Leiden University, The Netherlands to conduct her PhD research under the supervision of Prof. Dr. Dr (H.C) L. Jan Slikkerveer in order to obtain her Doctoral Degree.

During her doctoral studies, Raini also attended various international conferences, seminars, and workshops organised by the Leiden Ethnosystems And Development Programme (LEAD) of Leiden University, and other organisations involved in research and education on culture, nursing, health promotion, and the health and care of the elderly.

Raini has also competed many publications, some together with her colleagues and supervisors in the field of nursing of the elderly with special health conditions, the implementation of Indigenous Medical Knowledge Systems into integrated nursing for the elderly, and later onwards practical guidelines for bridging the gap to improve Covid-19 prevention and care based on the Covid-19 Task Force Perspectives. She has also provided several systematic reviews, including the measurement of the effectiveness of tele-education for university students in the health field as a learning method during a Covid-19 pandemic.