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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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# 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 States, 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  $\geq 80$  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 transient 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- $\beta$ 1), 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  $\beta$ -adrenoceptor-mediated responses
- Preservation of  $\beta$ -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  $\beta$ -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  $\rightarrow$  decreased ability to elevate heart rate in response to exercise

Decreased sensitivity to  $\beta$ -adrenergic receptor stimulation  $\rightarrow$  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 100,800 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 (atheromas). 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  $\geq 140$  mmHg and/or diastolic blood pressure  $\geq 90$  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 tradisional* (‘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* (indigenous 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).

