Ubar Kampung: indigenous knowledge and practice of medicinal, aromatic and cosmetic (MAC) plants used for the treatment of diabetes mellitus in the Tatar Sunda Region of West Java, Indonesia

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Chapter VII TRANSCULTURAL HEALTH CARE UTILISATION IN KABUPATEN BANDUNG

Following the general description of the accessibility and psycho-social factors of each medical system in Kabupaten Bandung as well as the research area, this chapter further presents the health profile and general patterns of transcultural health care utilisation in the research area. In general, this chapter focuses on the prevalence of the disease and the related health care utilisation behaviour by the 'patients'. An overview of the health status of the population in and prevalence of the disease in Kabupaten Bandung and the research area is presented in Paragraph 7.2. The data provides a sound basis for further description of patterns of transcultural health care utilisation reported by the respondents in the research area. In view of patterns of transcultural health care utilisation, this chapter assesses the overall utilisation rate of the plural medical system among the patients. Furthermore, this chapter discusses local concepts about diabetes mellitus which are experienced by the patients in the research area.

7.1 Concepts of Health and Illness among Sundanese Community

Cultural medical beliefs, values, and meanings play a vital role in understanding the causation of disease and its remedies (*cf*. Winkelman 2008). All medical belief arguably constructs all medical systems (*cf*. Pool & Geissler 2005). Gyasi *et al*. (2015) argue that socio-cultural health beliefs on the aetiology of diseases are accountable for the utilisation of the medical system. Likewise, Wei Xu (2019) points out that people's health belief is predicted to affect people's perception, knowledge, and health care utilisation behaviour. Cultural belief is one of the crucial factors for the individual to choose specific treatment (*cf*. Erickson 2007), e.g. the humoral theory of disease, which is one of the globally recognised medical beliefs. This theory is based on the notion that an equilibrium of four body elements (black bile, yellow bile, phlegm, and blood) maintains individual health (*cf*. Foster 1994).

In their research, Gyasi *et al*. (2016) elucidated the belief paradigm which emphasized the triadic of natural forces: mind, soul, and body. The capability of traditional medicine in the holistic healing process, taking into account the importance of mind, body, and soul, is an important component in the health-seeking process. In the same fashion, Sundanese cultural beliefs or cosmology are also based on a triadic structure known as '*tritangtu*'. It represents the balanced relationship within three elements, namely individual, spiritual, and universal. In his study, Saefullah (2019) argues that Sundanese cosmology has been reflected in their livelihoods such as landscape, housing, and ecological arrangements. Furthermore, Saefullah (2019) elaborates that the triadic principle is also applied in human interaction to achieve harmonious life within their community. Sundanese local wisdom '*silih asih, silih asah, silih asuh*'[1] represents mutuality interaction in the context of learning, loving, and caring in society.

The concepts of balance and harmony are not only observed among the Sundanese community but also the Javanese, known as *Triloka* [2] (*cf*. Yumarma 1996) and Balinese, known as *Tri hita karana* [3] (*cf*. Agung 2005). The notion of harmony regarding health, family, and society is also strongly embedded in the mindset of the Javanese. This concept of balance, particularly in the context of health, is arguably influenced by Chinese and Indian traditional healing practices (*cf*. Fatma *et al*. 2010).

The Sundanese place a high value on showing respect and care to other people. Among the Sundanese, the health condition of each other appears to be important and a common matter to be discussed. The first greeting when meeting a relation is '*kumaha damang*?' ('*Are you healthy*?'), to which the other may respond not only related to the physical condition but also the psychological condition. It is rather common that the response is '*nuju seueur emutan*' ('*I have many things in mind*'), which implies that the person may seem physically healthy but not

pyschologically[4]. The context of health is not only perceived as physical health but also psychological and social. A state of health is not only influenced by the physical characteristics of each individual but also the cultural and social characteristics of the community. As a result, being healthy means the absence of diseases and the ability to fulfil social obligations.

Local practices to improve health are incorporated into various habits, such as dietary with balanced nutrition, low consumption of fried foods, avoidance of tobacco, and keeping the environment clean. In addition, a good state of health also can be achieved by enough sleep, prevention of stress, and participation in religious activity. In her study, Erwina (2019) describes the concept of health among the Sundanese which is related to the four components, namely house, village, place, and food. Thus, the cause of an illness is also embedded within those components.

Several factors such as environmental condition, social stress, and lack of family support are often associated with the cause of illness. Table 7.1 presents the distribution of the activities which are perceived to prevent illness. The table presents multiple responses provided by study participants. In this case, study participants are requested to choose every possible answer which suits their perception. Among 360 respondents, a total of 1029 responses are recorded. Case percentage is calculated per answer category to the number of respondents. The total cases 285.8% indicate that all of the respondents provided at least two answers.

Table 7.1. Perceive Activities Related with Disease Prevention (N=360)

Activities	Responses	
	N	Percent
Kind to other people	52	14.4%
Pray and reciting Qur'an	90	25.0%
Exercise, physical activities	248	68.9%
Eat vegetables and fruits	289	80.3%
Drink water, less drink coffee and soda	208	57.8%
Clean house	116	32.2%
Other	26	7.2%
Total	1029	285.8%

Source: Household survey 2017

Table 7.1 indicates that in general, study participants perceived fruit and vegetables as healthy diets and routine consumption of fruit and vegetables can prevent diseases (80.3%, n=289). Furthermore, exercise or physical activity (68.9%, n=248) and drinking water (57.8%, n=208) are also perceived by the majority of respondents as healthy habits. Respondents in the research area also perceived that harmonious relationships with neighbours and regular praying can keep the body healthy and away from disease.

In relation with dietary patterns, which are perceived as the main measure to prevent disease, a study reports that low-level knowledge of nutritious foods and unhealthy dietary patterns are assumed as the main contributors of an increase in obesity in Indonesia (*cf.* Ministry of Health 2003). Fruit, vegetables, and high fibre grains are acknowledged for their benefit for health. An inadequate and unhealthy diet is strongly associated with a wide range of non-communicable diseases. While there is no information about behavioural patterns on food intake, according to the Basic Health Research survey (2017), most people in Indonesia (94%) did not consume an adequate amount of fruit and vegetables.

Furthermore, there is a trend to shift from traditional and home-cooked food to low-fibre high-fat processed food because of the growing number of multinational fast-food restaurants. A study reports that poor dietary habits such as high cholesterol intake, low-fibre intake, and high sodium intake are major risk factors for several metabolic diseases (*cf.* Fatwa *et al*. 2010). Nevertheless, Sundanese local dietary habits are characterised with a high intake of fibres, less deep-fried food, and low saturated fats, which have been associated with positive effects on human health (*cf.* Rahmawati & Handayani 2014).

Sundanese people consider that food consumption does not solely serve as the fulfilment of hunger but also the source of health. As with most people in Indonesia, rice is a staple food for almost all people in West Java. Sundanese dietary patterns consist of three meal times with different varieties of foods such as *beubeutian* (kind of foods derived from tubers) like sampeu (cassava), *hui* (sweet potato), and *talas* (taro), *seuseupanan* and *beubeuleuman* (steamed and roasted foods), and *lalaban* (fresh vegetables) such as *bonteng*, *terong*, *roay*, *jaat*, and *paria* (*cf.* Erwina 2019). A study conducted by Amrinanto *et al*. (2019) reveals that Sundanese dietary habits improve vegetable consumption and have a positive association with skin quality, β-carotene intake, and blood β-carotene levels. In the research area, people also limit consumption of meats. Apart from the relatively expensive price of meats, beef and chicken meats are also associated with the cause of several metabolic diseases. Furthermore, consumption of fresh vegetables for a long time period promotes various health benefits such as decreasing blood LDL, cholesterol, and triglycerides levels, reducing the risk of cancers, and reducing the risk of obesity and diabetes mellitus (*cf.* Rahmawati & Handayani 2014; Amrinanto *et al*. 2019).

In addition to the beneficial effect of Sundanese dietary and social participation, religious activities can also act as a means to maintain individual health. Gyasi *et al*. (2016) state that religion and spirituality have been inseminated into the medical system as a result of the perceived belief that health can be achieved by following religious activities. As the majority of Sundanese are Muslim, practicing the five pillars of Islam has been strongly embedded in Sundanese daily activities. In relation with dietary habits, Muslims are obligated to fast in the daylight hours during Ramadhan month, which lasts between 28-30 days.

Ramadhan fasting is similar to alternate day fasting which prohibits food and fluid intake for 12 hours in length on average, followed by a feasting period for another 12 hours. Despite the heterogeneous findings on the health-related effects of religious fasting, some favourable effects have been reported such as lowering total cholesterol, LDL, and body mass index (*cf.* Trepanowski & Bloomer 2010). In the first international congress in 'Health and Ramadhan' in 1994, it was suggested that Ramadhan fasting would be an ideal recommendation for the management of mild to moderate metabolic diseases such as type 2 diabetes mellitus and hypertension (*cf.* Ahmad *et al*. 2012). Furthermore, smoking is also forbidden during the fasting period. Therefore, during the Ramadhan month, smokers could experience a healthier lifestyle by smoking less. Overall, Ramadhan fasting is expected to mould positive behaviour and purify the body and soul to become an ideal human being (*cf.* Ahmad *et al*. 2012)

Furthermore, religious activities such as praying and reciting the Holy Quran are believed not only to produce tranquillity of mind but also protect from evil beings or spirits, hereby also contributing to preventing the disease. How religious activities are associated with disease prevention is not only observed among the Sundanese and in general Muslims, but also among other communities. In her study, Aiglsperger (2012) argues that religious rituals such as performing sacrifice, reading omens, and praying among community members in Crete have been specified as a means of protection against evil spirits.

In view of maternal and child health, the Sundanese also have a strong belief in their medical tradition. In her study, Ambaretnani (2012) explains that there are some rituals and *pamali* taboos for women during and after pregnancy. The taboos for pregnant women include eating from a large plate, consuming fermented cassava, and wandering around after dark.

The pregnant woman is also strongly advised to bring tiny sharp objects such as small scissors or a nail cutter with her and *panglay* (*Zingiber casumunar*) to cast out evil spirits. Essentially, women believe that they have to take good care of themselves and follow cultural rules to maintain the good condition of their infants.

After delivery, a woman is recommended to consume herbal medicines to restore her strength and stimulate breastmilk production. Similarly, the local community in the research area also practices the same traditions and rituals for the pregnant woman and infant such as *tujuh bulanan* during pregnancy, burying the placenta when the baby is born, *puputan* when the leftover of the baby's umbilical cord is naturally detached, and *nenjrag bumi*.

Furthermore, women in the research area also rely on traditional birth attendance (TBA) rather than a midwife during their pregnancy and delivery, not solely because of tradition. TBA is perceived not only as respect for the local traditions but also for giving the patients kindness and having a good relationship with patients, while a midwife or health care professional often fails to understand this traditional belief and practice (*cf*. Agus *et al*. 2012).

In addition to the locally defined concept of health, each community also has its own perceptions and interpretations when assigning symptoms of illness (*cf*. Apostolo *et al*. 2007; Metta *et al*. 2015). Clinically, symptoms can be defined as 'any subjective evidence of health problems as perceived by the patients'. How symptoms are interpreted is shaped by biological, psychological, and each community's cultural beliefs (*cf*. Rosendal *et al*. 2013). D'Andrade (1992) states that a community's cultural beliefs consist of schemes which determine how people respond to a particular phenomenon such as being ill. The schemes also shape people's actions and experiences as to how they seek treatment when the symptoms appear (*cf*. Apostolo *et al*. 2007; Metta *et al*. 2015). As Pujilestari *et al*. (2014) point out: *'recognising specific health and illness experiences in different cultures is necessary to achieve successful health promotion or disease prevention programs*'.

How community members perceived the symptoms of illness is presented in Table. 7.2. Among 360 respondents, a total of 935 responses are recorded. Case percentage is calculated per answer category to the number of respondents. The total cases 259.7% indicate that all of the respondents provided at least two answers.

Table 7.2. Perceived Symptoms of the Illness in the Research Villages (N =360)

Perceive Symptoms	Responses	
	N	Percent
Pain at particular body part	224	62.2%
Chill and fever	204	56.7%
Headache and fatigue	258	71.7%
Inability to work	45	12.5%
Cough and nausea	111	30.8%
Bleeding (because of a wound, blood in urine or stool)	66	18.3%
Emotionally unstable (become angry and sad easily)	14	3.9%
Anxious and depression	13	3.6%
Total	935	259.7%

Source: Household survey 2017

Table 7.2 shows that the majority of respondents perceive headache and fatigue as symptoms of illness (71.7%, n=258), followed by pain at a particular body part (62.2%, n=224), which is further expressed as back pain, joint pain, and lower back pain. The Institute for Health Metrics and Evaluation (IHME) lists lower back pain and headache as the disorders which cause the most disability in West Java in the past ten years (*cf*. IHME 2017). Furthermore, chill and fever accounted for 56.7% (n=204) of the total responses, followed by cough and nausea (30.8%,

n=111). Only a small number of respondents perceived emotional disturbance such as easily getting angry (3.9%, n=14) and anxiey (3.6%, = 13) as symptoms of diseases. Respondents in the research area perceive headache and fatigue as minor ailments even though several non-metabolic diseases have such symptoms. Studies in similar settings in Northern Tanzania report that many study participants have poor biological knowledge of chronic diseases such as hypertension, diabetes mellitus, and cardiovascular diseases (*cf*. Stanifer *et al*. 2015). A study reports that experience of symptoms is common but often ignored by the individual (*cf*. Rosendal *et al*. 2013). Furthermore, Rosendal *et al*. (2013) add that people are more likely to seek health care if the symptoms are perceived as severe illness.

In addition to the perceived symptoms of the disease, this study also identified the perceived susceptibility of local inhabitants towards diseases in the research area. Perceived susceptibility relates to the belief of individuals to develop a disease. Although local people believe that there is a link between spirits and illness, that doesn't mean that all kinds of illness have mystical causes. Local people also recognise the physical causes of disease, which requires medical responses. Inhabitants in the research area identified causes of illnesses as, in terms used by Foster (1976), both personalistic and naturalistic phenomena. The different type of illness is embedded with different ideas for causes. The following phenomena have been identified as potential causes of illnesss among Sundanese inhabitants (*cf*. Table 7.3).

Table 7.3. Perceive Cause of the Disease (N=360)

Perceive Cause	Responses	
	N	Percent
Environment (bad weather, water and air pollution)	152	42.2%
Emotion (anger, stress, depression)	132	36.7%
Unhealthy foods (deep-fried foods, processed foods, meats)	169	46.9%
Lifestyle (Lack of exercise and smoking)	174	48.3%
Ignoring hygiene (piling of trash, do not wash hands)	93	25.8%
Bacterial and viral infection	87	24.2%
Other (too tired, destiny, 'reminder/test' from God, evil spirits)	62	17.2%

Source: Household survey 2017

In the research area, community members understood that health is also influenced by environmental and biological factors. In fact, the majority of the study participants associate physical factors such as environment, food, and smoking as causes of illness. Table 7.3 indicates that the majority of respondents (48.3%, n=174) relate that lack of exercise and smoking can cause illness. Physical activities such as farming, gardening, and walking have a positive effect on the body. In accordance with the aforementioned general characteristics of the Sundanese, unhealthy food such as deep-fried foods, low fibre food, and meats are also considered as causes of illness (46.9%, n=169). Furthermore, people in the research area recognized that unhealthy environments such as pollution, trash, and frequent changes in weather can cause illness (42.2%, n=152).

It is also noteworthy that while only a small number of respondents perceived emotional instability as a symptom of illness, 36.7% (n=132), study participants perceived negative emotion such as anger, stress, and depression as the cause of disease and the percentage is higher than ignoring hygiene (25.8%, n=93) or bacterial and viral infection (25.8%, n=87). This finding is in contrast with the study conducted in East Java which reports that emotional disturbance is often ignored by the individual (*cf*. Browne 2001). The category 'other' accounted for 17.2% (n=62) of total responses representing the perceived cause of diseases such as physically demanding jobs, destiny, or spiritual causes. The mystical belief as the cause of

illness has gradually faded away among the community members as a ramification of globalization (*cf*. Nawiyanto 2017).

From the philosophical and religious point of view, illness is often perceived as a test, reminder, or punishment from God. It depends on who experiences the illness, perceived as punishment when it occurs to the misbehaving person. Conversely, for those who show good deeds, illness is a blessing and a test of their faith, to become more grateful and appreciate health.

7.2 Reported Diseases in the Research Area

Following a description of the concept of health and illness among the Sundanese, this paragraph presents the disease profile in West Java and the research area. Life expectancy in West Java is 75.7 years among women and 71.1 years among men, which is higher than the national average (71.2 years) (*cf*. Statistics Indonesia 2019). In view of the disease prevalence, Table 7.4 presents the disease profile in the region.

Table 7.4. Number of Cases of the 10 Most Common Diseases in Bandung Regency

The Type of Disease	Number of Cases
Upper respiratory tract infection	210.568
Primary hypertension	134.519
Common Cold	111.138
Myalgia	96.030
Dyspepsia	83.496
Gastritis	70.823
Fever with unknown cause	51.698
Diarrhoea	49.552
Dermatitis	46.635
Others	555.483

Source: Regency Department of Health Service of Bandung Regency (2016)

The disease profile of the population in Kabupaten Bandung is characterised by the high prevalence of infections as well as metabolic diseases. Cases of upper respiratory tract infection and hypertension accounted fors the first and second most frequent diseases and became the cause of premature mortality in the region.

Kabupaten Bandung is geologically shaped like a basin, which makes it a flood-prone area. A natural disaster like a flood could cause various losses including mortality, illness, damaged possessions, and disruption of social activities. In the context of health, several flood-related diseases have been reported such as skin diseases, respiratory infection, stomach disorders, and bacterial infections (*cf*. Susanti 2014). According to data recorded from *Puskesmas* Katapang, one of the public health centers in the research area, the most commonly reported diseases during floods are respiratory tract infection, gastritis, hypertension, myalgia, fever, pharyngitis, and diarrhoea.

Recent developments in the socio-economic, agricultural, and industrial sectors have created a general shift in employment from agriculture towards industry. In recent years, unmechanized agricultural practices have been replaced by mechanic instruments with consequent changes in patterns of physical activity. Farming practices, involving various physical activities such as walking over a considerable distance and other physical exercise have been replaced by less physical activity, leading to a sedentary lifestyle. Studies reveal that the lowest prevalence of diabetes is found among farmers, labourers, and fishermen, while higher incidence is found among occupations typical in the city and housewives (*cf*. Mihardja *et al*. 2009).

Furthermore, in patterns of food consumption, the Sundanese diet which is rich in fibre content and low calories has been replaced by high calorie diets in the form of processed foods. Recent changes in patterns of behaviour lead to an increase in health risk factors such as dyslipidaemia, hypertension, and obesity. IHME (2017) reports that dietary risks, high blood pressures, malnutrition, tobacco smoking, and high body-mass index are risk factors which have driven the greatest number of deaths and disabilities in West Java in the past decade. Moreover, a study on the intervention of NCDs points out that dyslipidaemia, hypertension, and obesity are risk factors for metabolic syndrome and risks increase with age (*cf*. Krishnan *et al*. 2011).

In line with the disease profile in Kabupaten Bandung, the inhabitants in the selected subdistricts also show a similar profile of disease and an increase in health risk factors. Out of 833 household members from 209 households, in addition to 212 household members who have diabetes mellitus, 148 members report other diseases, listed in Table 7.5.

Table 7.5. Distribution of Disease in the Each Village (N = 360)

Disease	Lamajang		Sukaluyu		Cipanjalu		Ciporeat		Katapang	
	N	%	N	%	N	%	N	%	N	%
Diabetes mellitus	46	47.4	34	57.6	43	61.4	25	71.4	64	64.6
Hypertension	10	10.3	2	3.4	5	7.1	2	5.7	10	10.1
Dyslipidemia	2	2.1	2	3.4	0	0.0	1	2.9	1	1.0
Coronary heart disease	1	1.0	0	0.0	0	0.0	0	0.0	3	3.0
Rheumatoid arthritis	3	3.1	7	11.9	7	10.0	3	9.6	1	1.0
Dysentriae	1	1.0	0	0.0	0	0.0	0	0.0	0	0.0
Bronchitis	3	3.1	2	3.4	1	1.4	0	0.0	0	0.0
Typhus	2	2.1	3	5.1	1	1.4	1	2.9	0	0.0
Tuberculosis	0	0.0	0	0.0	0	0.0	0	0.0	4	1.1
Cold and flu	18	18.6	1	1.7	8	11.4	0	0.0	3	3.0
Other	11	11.3	8	13.6	5	7.1	3	8.6	13	13.1
Total	**97**	**100**	**59**	**100**	**70**	**100**	**35**	**100**	**99**	**100**

Source: Household survey 2017

Table 7.5 indicates that in general, other than diabetes mellitus, the majority of respondents have reported experiencing common cold (8.3%, n=30) in the past 12 months. Additionally, hypertension (5.3%, n=29) and dyslipidaemia 1.6% (n=6) are also frequently reported by patients in the research area, which are in fact important risk factors for diabetes mellitus. As identified by ADA (2004), common risk factors of diabetes mellitus are hypertension and high triglyceride levels, in addition to family history (genetic factors) and physical inactivity.

Common cold is identified by the patients as: slightly feverish, cough, nasal congestion, sore throat, and headache. Common cold, locally known as '*salesma/pilek*', is related to changes in weather. Hot, cold, and wind play an important role in the body's health. Frequent changes in temperature are perceived to cause illness. Some respondents also associated common cold with '*masuk angin*', an illness which local people believe is caused by an excessive amount of wind element in the body. In order to restore the balance of the element in the body, the wind or air element has to be driven out. To do so, local people usually have '*kerokan*', scratching the back of the body using a coin and massage oil. It is interesting to note that 'kerokan'or rubbed back which makes the back turn a shade of purple is not only practiced the by the Sundanese and Javanese in Indonesia, but also by local communities in Vietnam (*cf.* Holleman 1991).

Primary hypertension, locally known as '*darah tinggi*', accounts for 5.3% (n=29) of all diseases reported by the respondents in the research area. Patients in the research area associated hypertension with a common disease without any particular symptoms. The patients generally experience headache, stiffness at the neck muscles, and joint pain. Patients generally found out

about the hypertension condition after they had their blood pressure checked at the *puskesmas*. The blood pressure check is standard procedure in a *puskesmas* for all patients. A study reports that hypertension is a key contributor to the development of cardio-metabolic diseases (*cf.* Miranda *et al.* 2019).

Rheumatoid arthritis (5.8%, n=21) is also one of the most reported diseases in the research area. The symptoms of rheumatoid arthritis are typically related to severe pain at the leg, joint, and back pain and inability to walk. This disease is perceived as a chronic disease which persists over several months and affects a patient's quality of life. Rheumatoid arthritis is associated with hard physical work, cold weather, and inappropriate dietary habits. IHME (2017) listed rheumatoid arthritis among the top ten health problems which cause the most disability in West Java.

Dyslipidemia accounts for 1.6% (n=6) of all diseases reported by patients in the research area. Respondents recognise dyslipidaemia as '*penyakit kolesterol*' which refers to a high level of cholesterol and triglycerides. In the research area, the prevalence of other diseases is relatively small; therefore, it is grouped into one category. The other reported diseases include migraine, gastrointestinal disorders such as diarrhoea or constipation, respiratory tract infection and urinary tract infection.

7.3 Patterns of Health Care Utilisation

7.3.1 Transcultural Health Care Utilisation for General Disease

Despite its philosophical view, illness, in any case, is an unwanted phenomenon. In this case, patients will take curative action. Medical pluralism, the use of multiple distinct approaches to health is often described as how people complementary use traditional medicine and modern medicine together. However, within the context of medical pluralism, the utilisation of different medical systems may be in a sequential or simultaneous pattern. Sequential utilisation occurs when individuals employ one form of the medical system: either traditional, transitional, or modern, at one time, and then follow through to the next health provider of the system after the completion of the current treatment. Conversely, the simultaneous pattern is depicted by the utilisation of more than one forms of treatment at one time, sometimes overlapping (*cf.* Ell & Castaneda 1998). The present study examines how patients adopt the medical system in the form of substitution, supplementary, or complementary.

Medical pluralism implies a patient's choice. Kiesser *et al.* (2006) argue that choice of biomedical or complementary approaches are related with 'what patients can access, what they can relate to, and what they believe works'. The patterns of medical pluralism tend to reflect hierarchical relations in the larger society (*cf.* Baer 2003). Medical pluralism is a common practice worldwide, as consumers switch from one medical system to another depending on its affordability (*cf.* Slikkerveer 1995; Djen Amar 2010; Aiglsperger 2012). It is also a key feature in the treatment of chronic diseases such as diabetes mellitus in Ghana, Cameroon, and Tanzania.

In the context of the availability of the plural medical system in the research area, the following paragraph presents the utilisation of the medical system by the patients. Based on the household survey, it is revealed that a considerable number of patients in the research area have used more than one medical system for the treatment of the disease, either simultaneously or successively. In other words, the patients take multiple steps in the process of health care utilisation within or between medical systems. The availability of several health providers within one medical system prompted patients to choose different health providers with similar characteristics. As Slikkerveer (1990) states: '*multiple utilisation may involve different medical systems or be within the same system*'. Accordingly, this study presents the multiple utilisation

of health providers within different medical systems. Figure 7.1 illustrates the patterns of utilisation of different medical systems in the research area.

In view of multiple health care system utilisation, among 360 patients, 2 patients abstained from using any medical system available in the research area, including self-medication, and were thus categorized as 'non-action patients'. 358 patients reportedly took action to treat reported diseases. The pattern of utilisation of the plural medical system by 358 patients amounted to a total of 611 utilisation rates. It means that, in addition to the 358 first contacts with the available medical system, 204 patients followed through with a second contact, and 49 patients who took the second contact followed through with a third contact. In other words, for the same illness episode during the recall period of 12 months, 358 patients had contact 611 times in the available medical systems. This is illustrated by the use of the plural medical system as presented in Table 7.6.

Table 7.6. Rates of the Household Members' Utilisation of the Plural Medical System (N=611).

Patients	Non – action	Action Patient										
		First step		Follow through	Second step		Follow through	Third step		Medical System	Utilisation rates	
N	N	N	%	N	N	%	N	N	%		N	%
360	2	45	12.6	29	76	37.3	7	35	71.4	Traditional	156	25.5
		195	54.5	112	19	9.3	4	0	0.0	Transitional	214	35.0
		118	33.0	63	109	53.4	38	14	28.6	Modern	241	39.4
Total		358	100.0	204	204	100.0	49	49	100.0		611	100.0

Source: Household survey 2017

In view of the number of steps taken by the patients, among 358 patients, 154 (43.02%) took one step to seek treatment. Following, 155 (43.30%) took two steps, whereas 49 patients (13.68%) took three steps to seek treatment. In the first step of a health-seeking practice, transitional medicine presents a dominant medical system, accounting for 54.5% (n=195) of utilisation. Out of 358 patients, 204 patients followed through with the second step, of which the majority of patients chose the modern medical system (53.4%, n=109). Furthermore, out of 204 patients who took second steps, 49 followed through with the third step, which is the final step; here, the majority of the patients (71.4%, n=35) used traditional medicine.

In the same way, Table 7.6 shows that out of 195 of the patients who contacted the transitional medical system in the first step, 112 patients (57.43%) took a second step, indicating negative results from the treatment. These findings are supported by the results of the study in Ghana and Malaysia which report that professional advice is usually sought when self-medication proves ineffective (*cf.* Azhar *et al*. 2013; Pereira 2017). Research suggests that the type of disease has been shown to be an important determinant which influences the choice of health service or medical system. Evidence shows that patients with chronic diseases tend to be associated with more frequent utilisation of medical systems than those with acute or non-fatal chronic diseases (*cf.* Park 2005; Leon-Munoz *et al*. 2007). Similarly, Table 7.7 explains the process of transformation of the number of patients into the utilisation rates.

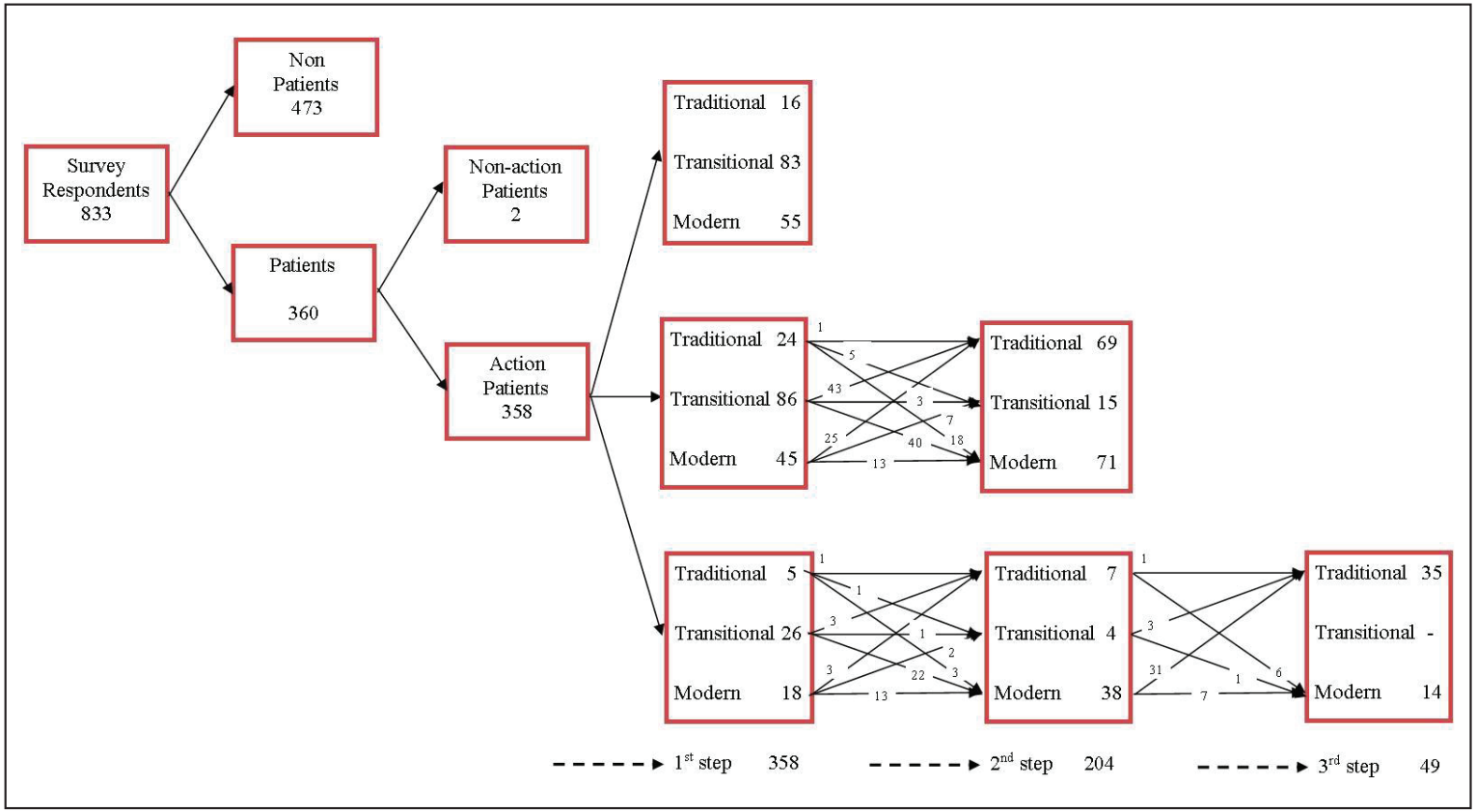

Figure 7.1. Patterns of Transcultural Health Care Utilisation (N=611)

Table 7.7. Frequency of the Utilisation of the Plural Medical System by the Household Members (N=611).

	Number of Patients	Number of Steps	Non - action	Utilisation rates						Frequency of utilisation	
				Traditional		Transitional		Modern			
				N	%	N	%	N	%	N	%
	2	0	2								
	154	1		45	12.6	195	54.5	118	33.0	358	100.0
	155	2		76	37.3	19	9.3	109	53.4	204	100.0
	49	3		35	71.4	0	0.0	14	28.6	49	100.0
Total	360		2	156	25.5	214	35.4	241	39.4	611	100.0

Source: Household survey 2017

Table 7.7 demonstrates that among 358 patients, the majority (54.5%, n=118) contacted the transitional medical system as their first treatment, followed by the modern medical system (33.0%, n=118), and then the traditional medical system (12.6%, n=45). In the present study the proportion of utilisation of modern medicine is higher than traditional and transitional medicine, in contrast with the study conducted by Pengpid & Peltzer (2018) using data from the national health survey in Indonesia in 2014-2015. In their study, utilisation of traditional and complementary medicine has a higher proportion than modern medicine. This finding can be related to the implementation of JKN in 2014. During that survey period, the participation of the community members was limited; consequently, people use traditional medicine which is more affordable.

In addition, Figure 7.1 also explains that among 154 patients who took one step in the health-seeking process, the majority (53.8%, n=83) use the transitional medical system. A single contact with the transitional medical system is generally prompted by an acute episode of a common cold or gastrointestinal disorder such as constipation or diarrhoea. This finding is in contrast with a study in Malaysia which reports that health care utilisation of primary care is higher among patients with acute conditions, particularly stomach pain and blood in the stool (*cf*. Lim *et al*. 2019)

Furthermore, 204 patients took a second step in the health-seeking process in which 109 patients (53.4%) followed up contact with the modern medical system. 76 patients (37.3) contacted the traditional medical system, while only 19 (9.3%) contacted the transitional medical system as a second follow-up treatment. In the case of chronic diseases such as metabolic disorder, patients generally followed through the treatment with the clinic or primary health care for diagnosis. In the present study, modern medicine is preferred in many cases because the respondents perceived it as exerting a stronger and faster effect.

A study in Ghana reveals that people choose modern health providers because they give a thorough diagnosis, while traditional healers involve trial and error (*cf*. Amangbey 2014). Similarly, in a study in Mexico, Young (1991) reports that the most common pattern in health care utilisation behaviour is the utilisation of modern medicine first, and then people seek alternative treatments if the current treatment is unsatisfactory. In addition, the majority of the patients who took two steps sought treatment in the form of a combination of the modern medical system and the traditional medical system. These results are affirmed by a study conducted by Pengpid & Peltzer (2018) which concluded that traditional medicine is often used in combination with modern medicine for the treatment of metabolic and chronic diseases. Pengpid & Peltzer (2018) point out a possible explanation for this finding:'…*a patient with a chronic and poorer health condition is engaged in increased health-seeking behaviour such as utilising various available health care sources particularly alternative to conventional medicine*'. Kasole *et al*. (2019) reported in their studies that the majority of the study participants used both traditional and conventional medicine and only a small number of

participants use traditional medicine alone because they believe traditional and modern medicine have complementary effects and use both medicines to provide better results.

Among 204 patients who took the second step in the health-seeking process, 49 decided to utilise the plural medical system for the third time. Hereby, the patients who took three steps in the health-seeking process used all of the medical systems in the research area. Among 49 patients, the majority chose the traditional medical system (71.4%, n=35), followed by the modern medical system (28.6%, n=14). Most of the patients who seek treatment from the traditional medical system already have contact with the modern medical system who report negative results from the previous treatment. However, none of the patients chose the transitional medical system at the third step.

Following a brief description of contact with the medical system, Table 7.8 highlights the distribution of utilisation rates in the research area, including the total utilisation of each medical system.

Table 7.8. Distribution of the Utilisation of the Plural Medical System of all Patients of the Sample over the Five Research Villages (N=611).

Medical	Lamajang		Sukaluyu		Cipanjalu		Ciporeat		Katapang		Total	
System	N	%	N	%	N	%	N	%	N	%	N	%
Traditional	47	29.4	29	27.6	29	24.2	9	16.7	42	24.4	156	25.5
Transitional	72	45.0	46	43.8	51	42.5	21	38.9	24	14.0	214	35.0
Modern	41	25.6	30	28.6	40	33.3	24	44.4	106	61.6	241	39.4
Total	**160**	**100.0**	**105**	**100.0**	**120**	**100.0**	**54**	**100.0**	**172**	**100.0**	**611**	**100.0**

Source: Household survey 2017

On the whole, the modern medical system presents as a dominant medical system in the research area, accounting for 39.4% of total utilisation, followed by the transitional medical system (35.0%, n=214), and traditional medical system (25.5%, n=156). Studies in Malaysia reveal similar findings where people would rather consult physicians when experiencing health problems than practice self-medication or consult with pharmacists (*cf.* Dawood *et al*. 2017).

However, there is a rather mixed distribution of health care utilisation in each village. In Lamajang, Sukaluyu, and Cipanjalu, the transitional medical system forms the most frequently used medical system which accounted for 45.0% and 43.8% of the total utilisation respectively. But in Ciporeat and Katapang, the most frequently contacted medical system is modern medicine. This finding is consistent with the study on the utilisation of traditional medicine, where rural residences have higher utilisation rates of traditional medicine than urban residences (*cf.* Peltzer & Pengpid 2017).

Following an analysis of the patterns of transcultural health care utilisation by patients in the research area, the results indicate that only 2 patients who reported an illness abstained from seeking treatment. The decision to not take any step to seek medical treatment is generally prompted by the duration of the disease. Patients who refrain from seeking any treatment report experiencing headache or '*meriang*' which lasted less than two days. Inhabitants in the research area generally seek treatment after experiencing an episode of illness longer than three days and affecting daily routine.

In contrast with the small number of patients who refrained from any health-seeking process, 358 patients use medical systems available in the research area. As indicated in Table 7.7, the utilisation of modern medicine accounted for 39.4% of the total utilisation in the research area. Given the limited and unequal distribution of the modern health care providers in the research area, the results of a household survey in the present study do not distinguish between public and private services. Patients generally contact modern medical services for severe and emergency conditions. Patients contact formal health care facilities to receive treatment for

chronic and infectious diseases. The therapies offered by the health care facilities comprise examination and laboratory check which cannot be provided by the transitional or traditional medical system.

Following, the second most frequently contacted medical system is the transitional, which accounted for 35% of the total utilisation. As previously discussed in Chapter V, the utilisation of transitional medicine is based on the self-reported treatment by the study participants and might include consultation with transitional health providers such as *mantri* or drug sellers. In the research area, transitional medicine is mostly practised in the form of self-medication. In relation to the reported diseases, self-medication or the utilisation of OTC medicine are common treatments for acute conditions such as common cold, diarrhoea, cough, and moderate pain. Similar findings are reported in the study conducted by Shafie *et al*. (2018) which reported headache, abdominal pain, and cough as the most common ailments treated using self-medication. Furthermore, patients also obtain frequently prescribed medicine directly from the pharmacy without any consultation with a doctor, hence also categorized as self-medication using OTC medicine. Prescription medicines for a chronic condition such as hypertension and other metabolic disorders are generally bought repeatedly

The most frequently used medication includes paracetamol, ibuprofen, *norit* (carbon active), sodium diclofenac, allopurinol and amoxicillin which can be easily obtained from the drug stores. While paracetamol, carbon active, and ibuprofen are non-prescription medicine, sodium diclofenac, allopurinol and amoxicillin are prescription-only medicine. The use of prescription-only medicine without medical advice from health care professionals is associated with the risk of inappropriate drug use which predisposes patients to drug interactions and bacterial resistance (*cf*. Ocan *et al*. 2015; Shafie *et al*. 2018).

Finally, traditional medicine presents as the least contacted medical system, accounting for 25.5% of total utilisation. As indicated in Table 7.5, traditional medicine is generally contacted as a follow-up from the utilisation of modern and transitional medicine in the second and third steps. Despite being the least used, traditional medicine represents the most frequently contacted medical system in the third step. A study by Gyasi *et al*. (2016) reveals that previous bad experience and dissatisfaction with conventional medicine pushes people to use traditional medicine. This finding is in contrast with a similar study conducted in Crete which revealed that the traditional medical system is most commonly contacted in the first step of health care utilisation (*cf*. Aiglsperger 2012). This finding may be explained by the type of perceived morbidity, as the morbidity in the present study is dominated by chronic diseases. Patients in the research area generally use traditional medicine simultaneously with modern medicine for the treatment of chronic diseases such as hypertension, diabetes, and rheumatoid arthritis. Similar findings are reported by Pengpid & Peltzer (2017) of which the highest prevalence in the utilisation of both traditional and modern medicine was for the treatment of diabetes mellitus, followed by stroke, arthritis and hypertension. Several studies identified factors related to the parallel use of traditional medicine and conventional medicine including the presence of chronic conditions such as hypertension, joint disease, and cancer (*cf*. Choi *et al*. 2017; Peltzer & Pengpid 2017; Pearson *et al*. 2018).

In the research area, the utilisation of traditional medicine is generally in the form of herbal remedies which are either home-made or commercially available at the market and taken as complementary to prescription medicine. The following medicinal plants have been used for several ailments not only in the research area but also in other regions in West Java: *babadotan* (*Ageratum conyzoides*), *antanan* (*Centella asiatica*), *daun baluntas* (*Clerodendron buchananii*), *cecendet* (*Physalis angulata*), *calincing* (*Physalis corniculata*), *biji mahoni* (*Swietenia mahagoni*), *daun jambu klutuk* (*Psidium guajava*), *daun kelor* (*Moringa oleifera*), *jawer kotok* (*Plectranthus scotellaroides*), and *daun sembung* (*Blumea balsamifera*) (*cf*. Roosita *et al*. 2011; Sihotang 2011; Wiwaha *et al*. 2012).

7.3.2 Transcultural Health Care Utilisation among Diabetes Mellitus Patients

Diabetes is a chronic disease which demands biological, social, and psychological components of care. As previously discussed, diabetes mellitus requires long-term and comprehensive treatment not only by the patients but also by their family and community. A very large body of knowledge on the pathophysiology and epidemiology of diabetes mellitus is available; however, health providers still have difficulties convincing the patients and their family to adopt any approach for treating and preventing the disease. These difficulties are associated with the lack of understanding about what people believe to be the cause and best treatment for diabetes mellitus (*cf*. Alzubaidi *et al*. 2015). This kind of knowledge may contribute to providing specific and locally adaptive strategies which can be implemented effectively (*cf*. Cravey *et al*. 2001). Several studies on how sociocultural characteristics influence patients' views about diabetes in various cultural backgrounds have been reported (*cf*. Raj & Angadi 2010; Mendenhall *et al*. 2016; Siddique *et al*. 2017; Kasole *et al*. 2019). However, information on health beliefs, knowledge, and perception of diabetes mellitus are still limited in Indonesia. To date, there are only a few qualitative studies to understand how the community views diabetes and its risk factors. Pujilestari *et al.* (2014) report that rural communities in Central Java generally have 'unrealistic optimism' with regards to diabetes risk factors due to poor understanding on how particular behaviour such as smoking and sedentary lifestyle can lead to diabetes.

Diabetes mellitus is often regarded as the silent disease because of no particular symptoms at an early stage and is often mistaken with other diseases. Global reports on undiagnosed cases of diabetes reveal that 45.8%, or 174.8 million diabetes cases in adults are estimated to be undiagnosed, ranging from 24.1% to 75.1% across data regions. An estimated 83.8% of all cases are in low- and middle-income countries (Beagley *et al*., 2014). It is estimated that about 80% of diabetes cases are undiagnosed in Africa because it produces only mild symptoms, or it is attributed to other diseases (*cf*. Kasole *et al*. 2019). However, it can develop into a life-threatening condition when it remains undiagnosed or inadequately treated. The early detection and initiation of treatment can prevent complications of the disease (*cf*. Metta *et al*. 2015). A study reveals that most Indonesians consider themselves healthy if they are able to perform their daily activities; consequently, many people do not realise they are developing diabetes until the condition is severe (*cf*. Widayanti *et al*. 2020). As Porta *et al*. (2014) conclude in their study: *'type 2 diabetes may arise 4-6 years before a clinical diagnosis is reached…*'.

The experience of symptoms was expressed in relation to the recognition of diabetes status and in assessing illness severity. Common symptoms such as inability to do routine work, increased thirst, frequent urination, and spasm sensation led most patients to seek health care. The vast majority (including those who had close family members with diabetes) did not relate the symptoms to diabetes mellitus. The patients tend to delay or ignore the symptoms until the symptoms become evident. Study participants report that unless they are seriously ill, they are too busy with daily activities to be concerned with minor ailments. Some respondents perceived that symptoms of diabetes overlap with the general symptoms of other diseases. Some patients found that they had diabetes when they seek treatment for knee pain or heaviness of the head. The majority of people from the community demonstrate a lack of knowledge of the symptoms of diabetes. Some participants, who are not diabetes patients, reported having heard of *kencing manis/penyakit gula* but did not recognise diabetes and cannot describe the symptoms.

Table 7.9 listed the perceived symptoms of diabetes mellitus experienced by the study participants. These symptoms were not mutually exclusive, and respondents often marked several or all possibilities. The total responses provided by 212 patients are 763 responses, indicating that each patient experienced more than one symptom during an episode of disease.

Table 7.9. Perceived Symptoms of Diabetes Mellitus (N=212)

Perceived Symptoms	Responses	
	N	Percent
High frequency of urination at night	175	82.5%
Often feeling hungry and thirsty	136	64.2%
Inability to do routine work	25	11.8%
Drastic decrease in body weight	96	45.3%
Tiredness and fatigue	132	62.3%
Blurred vision	111	52.4%
Itch and dry skin	49	23.1%
Other	39	18.4%
Total	763	360.0%

Source: Household survey 2017

Table 7.9 shows that the vast majority of patients experience high frequency urination at night (82.5%, n=175), often feel hungry and thirsty (64.2%, n=136), tiredness and fatigue (62.3%, n=132) and blurred vision (52.4%, n=111). Respondents often perceived the symptoms as *beser* (frequent urination), severe thirst and hunger, difficulty in walking, *singsireumeun* (numbness of the hands and feet), heaviness of the head, and delay in healing wounds. Based on the guidelines developed by the *Perkumpulan Endokrinologi Indonesia* (Indonesian Society of Endocrinology), the aforementioned symptoms are the classic symptoms of type 2 diabetes mellitus and require an examination of fasting blood glucose levels or random blood glucose. Early recognition of symptoms is believed to improve the control of diabetes mellitus (*cf.* Widayanti *et al*. 2020)

This study shows that the majority of diabetes patients in the research area have a low to average level of knowledge on diabetes symptoms, risk factors, and treatment. Similar findings have been reported in previous studies with similar settings in India and Bangladesh (*cf*. Raj *et al*. 2010; Siddique *et al*. 2017). Patients' level of education, income, and occupation have been reported to have a significant association with the level of knowledge on symptoms, risk factors, and treatment of diabetes mellitus (*cf.* Al Shafaee *et al*. 2008; Siddique *et al*. 2017).

People without diabetes often ignore the risk factors or causes of diabetes mellitus. The lack of knowledge on cause and risk factors of the disease leads to a negative attitude towards diabetes prevention (*cf*. James-Daniel 2017). A study in Kenya reveals that more than 70% of respondents are lack of accurate knowledge regarding the causes and effects of diabetes mellitus (*cf.* Maina *et al.* 2010). Regarding the perceived cause of diabetes mellitus, local inhabitants believe that consuming an excessive amount of sugars will cause diabetes mellitus. On the other hand, others also believe that their activities and heredity make them resistant to diabetes mellitus regardless of the type of food they consume. A qualitative study in Central Java also reports similar findings where some study participants believe they could not have diabetes because their family did not have diabetes (*cf*. Pujilestari *et al*. 2014)

Likewise, to assess the perceived causes of diabetes mellitus, study participants are able to choose more than one perceived cause. The total responses provided by the study participants are 469, which indicates that the majority of the respondents gave more than one perceived cause of diabetes mellitus. Table 7.10 presents the distribution of perceived causes of diabetes mellitus among patients.

Table 7.10. Perceive causes of Diabetes Mellitus (N=212)

Perceive Cause	Responses	
	N	Percent
High consumption of sugars	108	50.9%
Negative emotions (sad, stress, anger)	33	15.6%

High consumption of fatty foods	133	62.7%
Lifestyle (lack of exercise, laziness, and smoking)	101	47.6%
Ignoring hygiene (dirty house, piling of trash)	7	3.3%
Hereditary	51	24.1%
Other (destiny, evil spirits, infection)	36	17.0%
Total	469	221.2%

Source: Household survey 2017

Like most non-communicable diseases, diabetes mellitus is linked to several risk factors including hypertension, obesity, smoking, physical inactivity, and air pollution (*cf*. Miranda *et al*. 2019). Chang *et al*. (2000) identified that genetic, epigenetic, environmental, and medical variables influence the development of diabetes. The study identifies novel risk factors of diabetes including exposure to pollutants, depression and short sleep duration (*cf*. Wahid *et al*. 2016). Table 7.10 indicates that the majority of respondents perceived the high consumption of fatty foods as the main cause of diabetes mellitus (62.7%, n=133), followed by high consumption of sweet foods (50.9%, n=108). While the term sugar is not only referring specifically to some foods with a sweet taste but also other forms of sugars and carbohydrates, respondents in the research area are generally not aware that rice and other carbohydrates are classified as sugar. In this case, awareness of which carbohydrates are bad for health needs to be raised (*cf*. Kasole *et al*. 2019). Furthermore, some respondents in the research area also perceived that a sedentary lifestyle and lack of exercise are risk factors of diabetes mellitus (47.6%, n=101). However, only 24.1% of the study participants related diabetes with heredity factors.

In addition, 15.6% of the study participants associated negative emotions such as sadness, anxiety, anger, and work-related stress as causes of diabetes mellitus, whereas some studies reveal the opposite, that people with diabetes are more susceptible to depression and other emotional problems (*cf*. Ciechanowski *et al*. 2000; Anderson *et al*. 2001; Ali *et al*. 2006). Either way, managing stress can be considered as the prevention and intervention measure of diabetes mellitus.

In relation to the perceived causes of diabetes, this study moreover finds that people who perceive diabetes as inherited think that it cannot be prevented, whereas people who think that it is caused by dietary habits argued that the change in the way they cook, and modernization makes them suffer diabetes. People also attributed bad dietary habits to the lack of self-control. While heredity and genetic factors are a natural occurrence, many factors such as lifestyle, environment, and dietary habits are modifiable (*cf*. Bramswig & Kaestner 2012).

Thus, knowledge of these factors is important. Furthermore, social support from family and community members is believed to be highly influential in helping the individual with diabetes, especially in maintaining lifestyle changes (*cf*. Rintala *et al*. 2013). A qualitative study in Indonesia[5] reveals that religious leader involvement may also be beneficial in supporting the management of the disease as religious practices encourage people to implement healthier habits (*cf*. Widayanti *et al*. 2020)

Although most of the study participants have a strong belief in local medical practice, only a small number of respondents perceived that diabetes is caused by evil spirits or the will of God (17.0%, n=36). This study is in contrast with the results of a similar study conducted in Bangladesh, where the majority of respondents believed that diabetes is caused by God's will (*cf*. Siddique *et al*. 2017). The proper identification of the cause of the disease is accordingly resulting in an adequate measure for health-seeking solutions. As Stanifer *et al*. (2015) state: *'the biological understanding of disease including its causes, symptoms, consequences, and treatment, played a fundamental role in the decision to use traditional medicine*'. This finding is supported by the result of health care utilisation among study participants where the majority

of diabetes patients in the research area seek care from the modern health care provider. In the case where the traditional medical system is employed, the practice is in the form of consumption of herbal remedies (*cf*. Table 7.10).

In the same way, this study identified how the local community perceived susceptibility to diabetes. Knowledge on how the local community perceived the risk of developing diabetes will form the basis for designing a culturally appropriate preventive and therapeutic strategy to lower diabetes incidence among vulnerable community members (*cf*. Unnikrishnan *et al*. 2017). The National Institute of Diabetes identified the following individuals as more likely to develop diabetes: overweight or obese, with a family history of diabetes, giving birth to a baby weighing more than four kilograms, having depression, and aged 45 or older. Within this context, participants were asked to identify an individual with high susceptibility to diabetes. Similar to other questions with multiple responses, study participants were allowed to choose more than one possible answer except when choosing the answer 'everyone'. Table 7.11 presents the distribution of an individual who is perceived at risk of diabetes.

Table 7.11. Individual Prone to Diabetes Mellitus (N=212)

Category	Responses	
	N	Percent
Everyone	120	56.6%
Children (younger than 16 years old)	4	1.9 %
Adults (16-60 years old)	32	15.1%
Elderly (older than 60 years old)	47	22.2%
Smoker	9	4.2%
Overweight person	61	28.8%
Pregnant women	1	0.5%
Depressed and stresses person	4	1.9%
Others (having family member who has diabetes, underweight)	2	0.9%
Total	280	132.1%

Source: Household survey 2017

Table 7.11 indicates that most of the study participants perceived diabetes mellitus to be experienced by everyone (56.6%, n=120), and there are no specific physiological conditions or risk factors to make them prone to diabetes mellitus. Following, being overweight (28.8%, n=61) and older (22.2%, n=47) are also considered in making the individual prone to diabetes mellitus. Only a small number of respondents perceived that chain smokers (4.2%, n=9), depressed people (1.9%, n=1.9), and pregnant women (0.5%, n=1) are susceptible to diabetes mellitus. A study reveals that the incidence of diabetes among children and young adults is gradually increasing (*cf*. Deshpande *et al*. 2008; Widayanti *et al*. 2020)

Diabetes mellitus has been identified as a major contributor to high health service use (*cf*. Zhang *et al*. 2010). Additionally, diabetes patients with complications were associated with the increasing utilisation of health care services (*cf*. Westert & Van den Bos 2006). While several modern medicines are available for the treatment of diabetes, people with diabetes also use other complementary or herbal medicines (*cf*. Tulunay *et al*. 2015).

Following the same data construction, as discussed in section 7.3, 212 diabetes patients generated 388 utilisation rates. The pattern of utilisation of medical services for diabetes patients is presented in Figure 7.2.

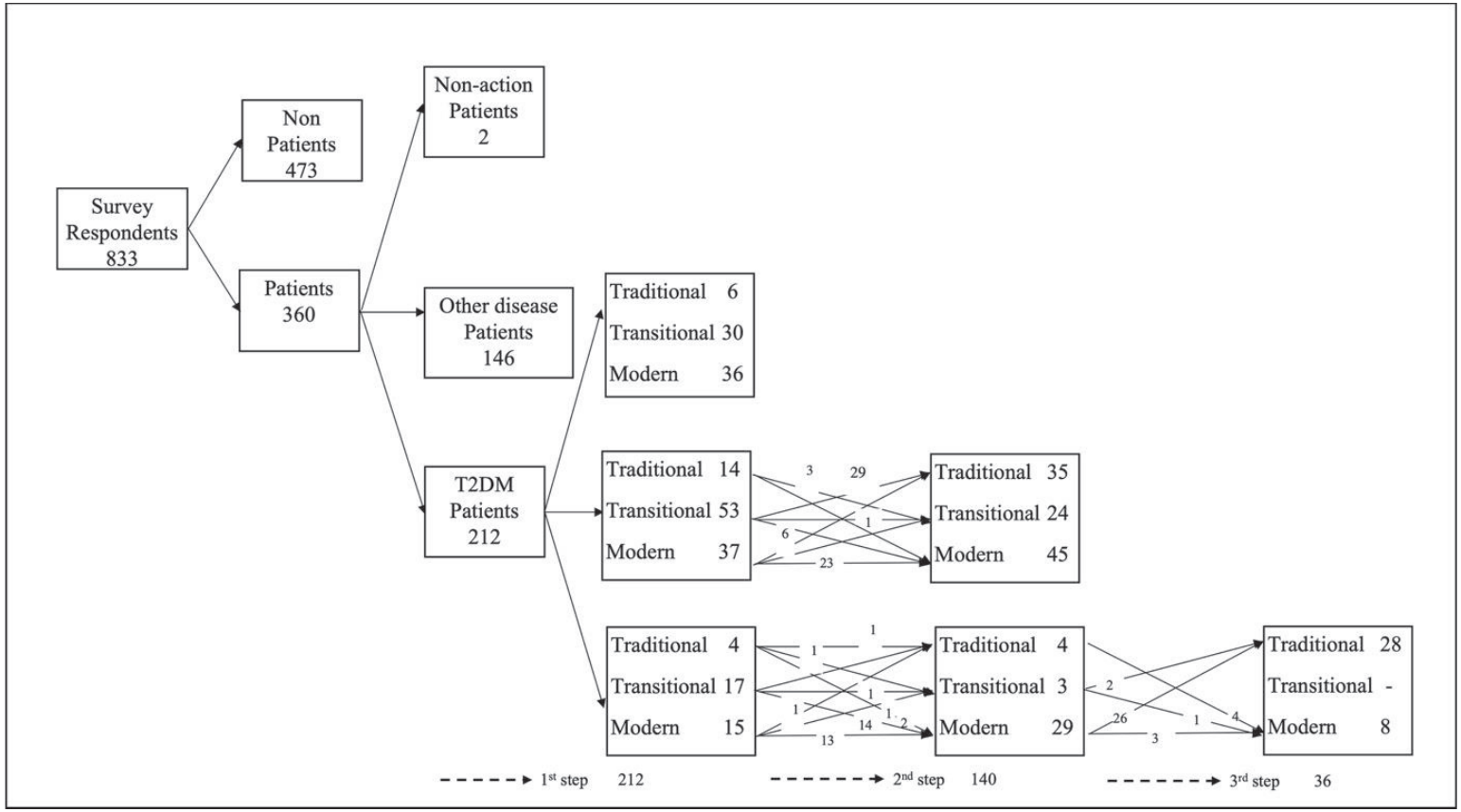

Figure 7.2 Pattern of Transcultural Health Care Utilisation among Diabetes Patients (N=388)

Figure 7.2 shows that among 212 patients who contacted the plural medical system, 140 patients took a follow-through step to contact health providers either within the same system or from a different system. Following, out of 140 who took the second step in health care utilisation, 36 patients followed through with the third step, generating a total of 388 utilisation rates among 212 diabetes patients. Table 7.12 similarly describes the distribution of the utilisation of the traditional, transitional, and modern medical systems.

Overall, out of 388 utilisation rates, traditional medicine accounted for 27.1% utilisation, transitional 29.5% and modern 43.8% by diabetes patients. Table 7.12 shows that the vast majority of diabetes patients choose transitional medicine as the first choice of treatment (47.2%, n=100). This finding is consistent with the aforementioned perception of diabetes symptoms. Most patients do not recognize the symptoms; consequently, they practice self-medication or consult with the *mantri* for their ailments. Although patients' utilisation of formal health care services as the first choice of treatment is almost equally as high as transitional medicine (41.2%, n=88), only less than 5.7% utilise transitional medicine. A study indicates that modern health facilities often represent a point of departure or initial treatment before patient follow-through with other health providers (*cf*. Millar 2001). However, at the follow-through step, the modern medical system presents as the predominantly utilised medical system accounting for 52.9% of the total utilisation. At the final step, the majority of the patients seek care from the traditional medical system (77.8%, n=28).

Table 7.12. Rates of the Utilisation of the Plural Medical System among Diabetes Patients (N=388).

	Action Patient										
Patients	First step		Follow through	Second step		Follow through	Third step		Medical System	Utilisation rates	
N	N	%	N	N	%	N	N	%		N	%
212	24	11.3	18	53	37.9	4	28	77.8	Traditional	105	27.1
	100	47.2	70	13	9.3	3	0	0.0	Transitional	113	29.1
	88	41.5	52	74	52.9	29	8	22.2	Modern	170	43.8
Total	212	100.0	140	140	100.0	36	36	100.0		388	100.0

Source: Household survey 2017

Overall, a high proportion of diabetes patients (43.8%, n=170) use conventional medicine. This finding is similar to a study conducted in Peru where the plural medical system is available; people chose modern medicine for chronic and severe illnesses (*cf*. Reyes 2009). Study participants found that traditional medicine did not really have a significant effect on their diabetes condition. Most of the study participants regard traditional medicine as a complementary treatment to conventional medicine [6]. Similar findings are also reported from the study conducted by Chidozie *et al*. (2014) in the Imo States, where conventional medicine has higher utilisation than traditional medicine among diabetes patients in the studied community. Additionally, some respondents perceived that the physician provides higher quality services to manage serious diseases. In addition, since the majority of patients have BPJS, the service in the public health facility is free.

With regards to health care utilisation, diabetes patients in the research area report taking diabetes medicine on a regular basis. As is known, compliance to take medicine among patients with chronic diseases is low (*cf*. Tulunay *et al*. 2015); thus it is encouraging that most of the study participants are well aware of the severity of diabetes and take adequate measures for the treatment of the disease. However, blood glucose levels are only measured when they visit *puskesmas*, at least every three months when they also collect antidiabetic prescriptions.

Furthermore, the present study also found that study participants often use herbal medicine and oral hypoglycaemic medicine such as metformin and glimepiride simultaneously. Studies in Tanzania also report similar findings where traditional-modern medicine doctor-shopping is frequent among patients with chronic diseases (*cf.* Stanifer *et al*. 2015). Common reasons for parallel use of herbal and modern medicines are to increase the effect of biomedicine and that herbal medicines are harmless. Skalli *et al*. (2019) argue that the appropriate use of the combination of medicinal plants and conventional medicine has a positive impact on the quality of life of diabetes patients. Although herbal medicines are perceived to be safe by consumers, the concomitant use of herbal medicine with conventional medicine may lead to several adverse effects caused by herb-drug interaction (*cf.* Bush *et al.* 2007; Tulunay *et al*. 2015; Kasole *et al*. 2017). To date, several studies on herb-drug interaction have been reported. For example, concomitant use of *Panax ginseng* and oral antidiabetic may increase the risk of hypoglycemia (*cf*. Kim 2012). Another example is the use of garlic and anticoagulants. Garlic (*Allium sativum)* has been accepted as a scientifically validated medicinal antidiabetic plant (*cf.* Jarald *et al*. 2008). However, its concomitant use with anticoagulants such as clopidogrel, which is commonly used by diabetes patients who have cardiovascular complications, may cause herb-drug interactions and increase the risk of bleeding (*cf.* Samuels *et al*. 2005). Consequently, patients who take several prescription medicines are strongly recommended to consult with their doctors before using herbal medicines.

Notes:

1. *Silih asah, silih asih,* and *silih asuh* are considered to be the application of *tritangtu* in social interaction which guides people's behaviour through the principles of self-empowerment, respect for other human beings, and taking care of each other.
2. *Triloka,* a Javanese spiritual belief, indicates the three worlds including the human world, the underworld, and the upper world, which are connected with one another. A broken relationship between the world and human life will cause a disturbance in harmonious life (*cf.* Yumarma 1996).
3. *Trihita karana*, the traditional philosophy of the Balinese, refers to three principles of well-being or harmonious life, which are: harmony with God, harmony among people, and harmony with nature or the environment. The principles are applied in many aspects, including a natural irrigation system, known as *subak* (*cf.* Agung 2005).
4. *'Kumaha damang*' is a colloquial greeting among the Sundanese, meaning 'how are you' or 'hello'. However, the question or greeting is rather commonly said among adults or from older people to the young to express care and affection.
5. The study is conducted in settings where the predominant religion is not only Islam but also Christian; consequently, the term 'religious practices' in this context refers to both religions.
6. In the present study, there are six study participants who perceived having the diabetes condition by recognizing the symptoms from their spouse or relatives. In this case, they admitted experiencing some symptoms such as dizziness, fatigue, and increased urination at night, and consumed herbal medicines to relieve the symptoms. Likewise, thirty patients who sought care from transitional health care providers reported to have 'diabetes-like symptoms' and were given analgesics by *mantri* or used over-the-counter medicine.