

## ORIGINAL ARTICLE

# Cultural, Belief, And Lifeway Factors in Diabetes Patients: An Ethnonursing Study

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## ABSTRACT

**Introduction:** The people of Sumba prefer traditional medication from shamans as they believe that diabetes they suffer from the *Marapu*, hence incurable by modern medical means. This study aimed to derive a picture regarding diabetes patients' cultural values, beliefs, and lifeways in the East Sumba ethnic of Indonesia. **Methods:** This study uses a qualitative design with an ethnographic approach which was conducted in 2018. The main participants in the study were seven diabetic patients, were determined purposively. Focused discussions were held with the person in charge of the non-communicable disease program from seven Public Health Centers. Data were collected from interviews, focus group discussions, field notes and observation sheets. All data were analyzed by content analysis method corresponding to the 4 phases in ethnonursing. **Results:** Five themes were generated in this study with details of three themes describing the cultural values of diabetic patients (subthemes traditional ceremonies, chewing happa, and traditional medicine), one theme describing the beliefs of diabetic patients (subthemes perceptions about diabetes) and one theme describing the lifestyle of diabetic patients (subthemes eating/drinking patterns, spiritual values, rest/sleep habits, and daily activities). The culture of diabetics depicted in *adat* ceremonies, *happa* or betel nut chewing, and traditional medication, which is still thick in East Sumba and their beliefs on the disease they suffer from, exert influence on their daily lives, including their eating or drinking patterns, spiritual values, resting or sleeping patterns, and daily activities. **Conclusion:** This finding can be helpful for the effort to improve nursing for diabetes patients by cultural approaches.

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## INTRODUCTION

Diabetes is a silent-killer disease that is chronic as the onset of this disease often slips the sufferers' notice (1,2). The patients do not typically recognize that they have developed the illness until advanced complications occur (3). There were 9.1 million diabetes patients in Indonesia, marking the country's rise in rank from seventh place in 2013 to fifth in 2015, and will rise to 6th position in 2040 among countries with the most diabetes patients in the world (2,4).

The surge in the number of diabetes patients in Indonesia is inextricably linked to unhealthy lifestyles and imbalanced eating patterns (5), although genetic factor has more control over the disease prevalence (6,7). However, some previous works found that the three aforementioned are not the only factors influencing diabetes. Various studies have been conducted comprehensively on the relationship between knowledge, attitudes, and actions of diabetic patients with diabetes prevalence, to the relationship between culture, beliefs, and dietary management factors in diabetic patients (8,9). As done by Adejoh (8), who stated that knowledge and thoughts about health affect diabetes management. Komelian (9) suggested in the publication of the results of his research on Canadian immigrants in Iran, that clinically, values, religious and

socio-cultural norms should be considered in planning self-care for diabetic patients.

On average, the patients diagnosed with diabetes by doctors in Indonesia accounted for a rate of 1.5%, with the prevalence in East Nusa Tenggara nearly touching such a rate at 1.2%. Meanwhile, the diabetes diagnosis rate computed by health personnel was 2.1%, with a 3.3% diabetes prevalence in East Nusa Tenggara, which has exceeded the national average. The Health Service of East Sumba Regency data showed that diabetes ranked second among the ten most prevalent diseases in 2016 and 2017. The diabetes prevalence was reported, increasing from 756 cases in 2016 to 1132 in 2017 (2,10). While the Pusdatin report in 2020 (11) wrote that the prevalence of diabetes in East Nusa Tenggara decreased in 2018 (0.9%). However, this cannot be underestimated because diabetes does not kill immediately but damages the body slowly and causes various fatal complications (11).

East Sumba Regency is located on the island of Sumba and has 22 sub-districts with a distribution of health care facilities as many as four public hospitals, 23 health centers (12 of which have inpatient facilities), three primary clinics, and seven pharmacies (12,13). The number of health workers in East Sumba Regency is 934 people consisting of doctors, dentists, nurses, midwives, pharmaceutical workers, Medical Laboratory Technicians, Nutritionists, Public Health Workers, and Environmental Health Workers (13). This fact is reinforced by research conducted by Nappoe and Kurniawan (14) in 2020 that the limitations of health facilities in East Nusa Tenggara, including health personnel and equipment, have prevented the benefits of JKN from being maximized in NTT. The condition of health care facilities in East Sumba is still far from expectations (14,15). Regarding staffing, the ratio of health workers in East Sumba is still quite far from the national standard. Primary health workers such as general practitioners, dentists, nurses, and midwives are still difficult to fulfil (14).

According to the ethnographic research by Dwiningsih et al.(16) in 2014, in a village in East Sumba, diabetes is known to the Sumbanese by the term *kanjawang*, while the term diabetes itself is unknown. The people of Sumba prefer traditional medication from shamans as they believe that the diabetes they suffer from originates from the *Marapu* (*Marapu is an original religion or traditional belief that is still practiced by most people on the island of Sumba*), hence incurable by modern medical means. Dwiningsih et al. wrote the expression of his research participants who said that they were forbidden from consuming fatty meats and sweet drinks. However, this is difficult to obey because various traditional events in East Sumba serve these foods and drinks. At the same time, it is an obligation to eat what a host does as a gesture of respect for the host (16).

Based on the problems and the description of the data above, the research team conducted a study to obtain an overview of the cultural values, beliefs, and lifestyles of diabetics in East Sumba Regency using the Transcultural Care Model.

## MATERIALS AND METHODS

### Research team and flexivitys

The first researcher acts as the primary interviewer, a female lecturer in the nursing study program college in East Sumba. She grew up on the island of Sumba in 1981 and has completed her master's degree in nursing, which has published several qualitative research results in accredited national journals. The second researcher lives far from the Sumba island but plays a role in research design and data analysis. The third and fourth researchers, together with the first researcher, are responsible for data collection and analysis.

### Study design

This study uses a qualitative design with an ethnosing approach to obtain a comprehensive picture of the variables studied (17,18), while maintaining trustworthiness in data collection methods, sampling strategies, and selecting the appropriate unit of analysis (19,20). This study was performed freely and informally from July through October 2018 at seven public health centers in East Sumba Regency, using the participants' subjectivity as the research's viewpoint.

### Participants

The population in this study were all diabetic patients who received treatment at the East Sumba District Health Center, numbering 272, while the sample was some of the population, selected based on the following inclusion criteria: aged  $\geq 20$  years, diagnosed by the doctor with diabetes, having taken medication at some point from Public Health Center, being of good communication ability, willing to participate in the research, and native to East Sumba.

The research team coordinated with the person in charge of non-communicable disease program (NCDP) at the Public Health Center to get the names of diabetic patients who were in the working area of the Public Health Center. Researchers together with the person in charge of non-communicable diseases at the Public Health Center to select participants based on inclusion criteria and research objectives. We emphasize that our participant recruitment process and data collection process is carried out in accordance with health research ethics and does not abuse the authority or power of the researcher or the person in charge of non-communicable diseases at the Public Health Center.

The main participants in this study were determined purposively to fulfill the aims and objectives of the study, namely seven people with diabetes. The seven

participants came from seven Public Health Centers, which were the research locations. The number of participants is determined because the resulting data has reached the saturation point. Recruiting participants is carried out by taking into account ethical values in research, where participants give informed consent after explaining the study's objectives, procedures, and benefits. The key participants in this study were the seven persons in charge of the non-communicable disease program (NCDP) in the seven Public Health Centers. They played an active role in the focus group discussion (FGD).

### **Data Collection**

Data were collected by interview method, focus group discussion, field note-taking, and observation. The research team conducted the entire participant interview process by visiting the participants' homes at least twice. The FGDs in this study were conducted directly by the research team together with persons in charge of the NCDP at Public Health Center. The FGDs were carried out in a relaxed but focused manner so that the research team could obtain and confirm a lot of data that had been previously obtained from the participants. All interviews and FGD processes were recorded using a recorder. Field notes in these studies record things found during the interview process, such as participant gestures, non-verbal expressions, and other terms that are not usual in everyday life. Other research members filled out field notes during the interview process. The filling in the field notes are included in the interview transcript and used to sharpen data analysis. The research team observed the participants and their surrounding environment, including the responses of the participants' families. These observations were made every time the research team visited the participants at their homes. The observation sheet is filled in based on the researcher's observations to strengthen the analysis of the interview data.

Upon collecting data from the diabetes patients and persons in charge of the NCDP at Public Health Center, the researchers held the first meeting with the prospective participants to introduce themselves and interact with them to nurture a relationship of mutual trust and explain the purpose, significance, and procedure of the research and involvement scope, rights and obligations, and rights assurance of the participants. At this stage, observation was also conducted on the participants' physical conditions and surrounding environments.

After the prospective participants expressed their voluntary willingness to participate in the research, the researchers requested that they fill and sign a statement of desire to participate in the study. The researchers then agreed regarding the time and place of interviews. The researchers employed the in-depth interview technique to interview the seven main participants with open, semi-structured questions to allow the participants to

describe their cultural values and lifeways. Nearly all participants were willing to be interviewed at their respective homes, but two, on accounts of geographical hindrances (remoteness), we're eager to be interviewed at the Public Health Center following their control and drugs withdrawal schedules at the Public Health Center. The researchers developed the interview guide based on the research purpose to contain three parts, namely, opening questions, core questions, and concluding questions, with a total of 11 questions. The opening questions consisted of four questions to elicit information regarding the participants' perception and knowledge of the disease they were suffering. The core questions consisted of six things to guide the course of the interview, and other questions were developed based on the participants' answers. The six items of core questions were intended to explore the participants' experiences and feelings regarding their cultural values, beliefs, and lifeways as diabetes patients. Meanwhile, the concluding question was designed to let the participants convey other things related to their diabetes. The average duration of each interview was about 60-90 minutes.

### **Ethical consideration**

This research has been approved by the board of examiners of the research proposal seminar of the Health Poltekkes of the Ministry of Health of Kupang, and ratified in the decision of the Director of Poltekkes of the Ministry of Health of Kupang number HK.02.03/1/3114/2018. This research has obtained ethical approval from the relevant agencies in East Sumba Regency as evidenced by the research permit numbered 184/DPMPTSP-IP/VIII/2018. Afterward, the researchers proposed for approval for the conduct of this research to the Office of Investment and One-stop Integrated Services of East Sumba Regency and forwarded the research approval to the Health Service of East Sumba Regency and lastly to the Public Health Center set as the research locations. The Public Health Center was officially contacted by researchers regarding implementing this study to obtain the names of patients who have diabetes in their working area. The researcher explained the research procedure to the participants before getting research approval by emphasizing that the data submitted during this study was confidential and that they could freely stop the interview or stop being involved in the research.

### **Data analysis**

All data obtained in this study were then analyzed with content analysis method according to the ethnonursing phase proposed by Leininger (17,19,21). Four ethnonursing stages were undertaken gradually until main themes were generated as the research findings. The first phase focused on the preliminary data collection related to the diabetes disease in East Sumba Regency from the Health Service of East Sumba Regency. In this phase, the researchers also observed past phenomena by conducting data and relevant journal tracing. The second phase was where the researchers identified

and categorized the data descriptors and components pertinent to the topic investigated. The researchers conducted the third phase during the data collection, where they started by identifying the patterns of values, beliefs, and practices of the participants, in this case, the cultural values, beliefs, and lifeways of diabetes patients (17,22).

Participants were involved from the beginning of the data analysis process by asking them to read verbatim and clarify the interpretation of the research results. Finally, the fourth phase was carried out to identify significant themes, findings in research, and dominant patterns in nursing practice to produce recommendations based on research findings. The authors made statements about the significance and limitations of this study.

**Rigor**

The study’s rigor was made using four criteria from the Lincoln and Guba framework to prove the validity of the study. Trustworthiness in this study includes credibility, dependability, confirmability, and transferability. The authenticity of the research data is ensured by considering the results of the interviews. Interview transcripts were prepared within 48 hours of discussion. The researcher did not return the interview transcripts to all participants, but some participants whom the researcher visited to clarify some unclear statements. The reliability of the research is done by building good relations with the participants, from the participant recruitment stage, data collection, to transcript clarification. The intrinsic value of the study is guaranteed, and it is ensured that the data obtained are representative because only participants who meet the inclusion criteria are selected and transferable

**RESULTS**

The seven main participants in this research belonged to the 43–63 age range, the majority of whom were females (four participants), while the participants’ level of education ranged from dropping out of elementary school to completing undergraduate education (S1). The participants’ occupations varied, including teaching, farming, running entrepreneurship, and serving as housewives (Table I). The other seven participants in the FGD were persons in charge of the NCDP at Public Health Center with the latest primary education in diploma III nursing program and a minimum working experience of two years (Table II).

This research resulted in 5 themes and nine sub-themes. The first theme is Custom events or Ceremonies with the sub-theme Response to the invitation. The second theme is *Happa* (betel nut chewing) with the sub-theme Pattern of consumption. The third theme is Traditional medication, with sub-themes Herbal ingredients use and Alternative medication. The fourth theme is Patients’

**Table I: Characteristics of Main Participants**

Participant’s id	Age (yo)	Occupation	Level of education	Gender
O1	49	Government employees	Bachelor	Male
O2	43	Farmer	No school	Male
O3	60	Housewife	Junior high school	Female
O4	62	Farmer	No school	Male
O5	48	Merchant	Primary school	Female
O6	63	Housewife	Primary school	Female
O7	60	Housewife	Senior High School	Female

**Table II: Characteristics of FGD participants**

FGD participant’s id	Age (yo)	length of time working as the person in charge of the NCDP (year)	Level of education	Gender
F1	34	4	Nursing diploma	Male
F2	31	3	Nursing diploma	Female
F3	42	2	Nursing diploma	Female
F4	40	5	Nursing diploma	Female
F5	38	4	Nursing diploma	Female
F6	36	3	Nursing diploma	Male
F7	35	2	Nursing diploma	Female

perception of the diabetes disease with the sub-theme Health and illness concept. The fifth theme is Everyday habits with the sub-themes Eating or drinking pattern, Spiritual values, Rest or sleep, and Daily activities. The themes and sub themes are presented in Table III.

**Table III: Themes and subthemes related to the cultural values, beliefs, and lifeways of diabetes patients**

Themes	Subthemes
1 <i>Adat</i> events/ceremonies	1.1 Response to invitations
2 <i>Happa</i> /betel nut chewing	2.1 Pattern of consumption
3 Traditional medication	3.1 Herbal ingredients use
	3.2 Alternative medication
4 Patients’ perception on the diabetes disease	4.1 Health and illness concept
	5 Everyday habits
	5.2 Spiritual values
	5.3 Rest/sleep
	5.4 Daily activities



### **Adat events/ceremonies (Response to the invitations)**

Participants talked about their reaction when they received an invitation; some immediately said they could not attend, but some said otherwise, but in the end, they chose to stay at home and missed the invitation. This reluctance because they assume that if they participate in traditional events/ceremonies, they will find a variety of delicious foods, while (basically) they

*"It's often hard for me to attend an invitation of a party because I know that I will be served the mouthwatering meals. I'm afraid I can't refuse them". (Case 1).*

*"When I go to a funeral ceremony, I have some delicious meals made of meat of the animals which are sacrificed and cooked for the mourners. (Case 3).*

### **Happa/betel nut chewing (The pattern of consumption)**

In ancient times, *happa* was only served in traditional ceremonies. However, nowadays, *happa* has become a daily habit for East Sumba, where *happa* is served during traditional ceremonies and given to guests who visit the house, even as snacks consumed by the community, especially after eating. The participants showed this culture, where researchers were presented with *happa* when researchers visited their homes. They said it was a form of respect for their guests.

*When I was a child, I used to have a happa. After school, I chewed happa. I would have happa again after a nap, after dinner, and before I went to bed (case 4).*

*Traditional ceremonies and happa quids are inseparable. We have no choice but to accept the happa offering, otherwise we'll be considered arrogant (Case 7).*

Figure 1 shows "*happa* quids" in a woven lontar container which the East Sumba people usually use to place *happa* ingredients, namely lime, betel stalks, and betel nuts or pinang. At the time of this image capture, the participants were out of betel stalk, so only some dried nuts and lime were served (bottled).

### **Traditional medication**

#### **Herbal ingredients use**

The intensifying development of information on traditional medication with herbal ingredients has won the participants' favor for these herbal ingredients to treat their diabetes disease. However, lacking knowledge of herbal medicines, the participants used various ingredients like meroa, guava leaves, soursop leaves, Mutingia calabura leaves, cinnamon, Gynura procumbens leaves, and bay leaves almost simultaneously with arbitrary dosing.

*Once a Sumbanese told me to have a meroa drink, a boiled mixture of water and a few barks of some giant trees. I did what he told me but nothing happened. So now I replace meroa with guava leaves (case 1)*



**Figure 1: Happa quids typical of East Sumba**

### **Alternative medication**

The alternative medicines the participants revealed in this research included the effort to seek shaman's help and an allegation that the disease is due to black magic. *Occasionally, some patients go to shamans for alternative medication because they feel that the hospital medication they take don't cure them. Sumbanese go to shamans to get some massage for ailulu disease (ailulu: local term describing diseases of the male genitalia, red). (case 3)*

### **Patients' perception of the diabetes disease**

Health and illness concept.

The diabetes disease the participants were suffering from directly influenced their perception of health and illness. They believed that this disease was fatal, difficult to recover from, and highly harmful as it causes terrible complications such as blindness, kidney failure, and amputation. Some diabetes symptoms known to the participants are weakness, sleepiness, fatigue, frequent urination, hunger, and thirstiness.

*As far as I know, diabetes is like a deep wound. There are various kinds of damages INSIDE the body. There was no sign of injury on the skin, but I could feel it inside. I could only sleep after the massage (Case 4).*

*I often feel thirsty. I drink more and pee more too. I also*

*get hungry faster. I often feel like eating, but the doctor said I should just eat a little and no more than three meals in a day. I should not eat anything in the evening* (Case 1).

### **Everyday habit**

#### ***Eating or drinking patterns***

The participants' eating and drinking habits changed from before their illness. They admitted to being fond more of sweet food and drinks. Besides, they also conceded that eating often and orderly was their past "guilt," which had caused them to suffer from diabetes. *When I was young, I always had a massive plate of rice to fill me up (participant smiled while pointing at her stomach), to give me the energy to work — a big plate full of rice, especially when I was hungry* (Case 4).

*Before I had diabetes, I liked sugary drinks, especially during the day. I didn't think it's enough to drink tea or coffee; that's why I always added sweetened condensed milk to the tea or coffee* (Case 3).

Since they were declared suffering from diabetes, slowly they made efforts to make better their eating patterns, for example, by reducing consumption of sweet food or drinks or withholding the desire to eat delicious food in significant portions, although they conceded that it was often hard for them to keep such efforts up.

*My doctor told me to eat just a little, but since I am used to eating a large portion, it seems that I can't reduce it. That's why I told him that I can't eat just a little. I must eat a lot* (Case 3).

*I must drink a glass of sweet coffee every morning and late afternoon. When there is a guest coming, I have to serve him coffee or tea, and I will have another coffee too. It is improper to refuse it because we consider it as a fortune* (Case 7).

#### ***Spiritual values***

The medical diagnosis addressed to them made the participants realize that health is a blessing from God. Before the illness, the participants' spiritual lives were full of praying and submission, but they grew even closer to God after developing the disease: they diligently prayed together and performed shalat or novena.

*I have diabetes now, but I feel nothing in particular. I don't want to think about it too much. What else can I do? If God commands "sail" (die), then I must obey* (Case 7).

*First of all, I always seek God's blessings of guidance and strength, health, and good chances, for He is the Healer for all the ill, and Him alone grants us the cure* (Case 3).

#### ***Rest/sleep***

The participants' resting and sleeping habits also

changed if compared to what they were before the illness. Excessive sleepiness caused them to sleep more often, but their sleep quality was disturbed due to frequent urination, particularly during the night.

*My nighttime sleep usually lasts for just 5 hours. I usually wake up at 4 or 5 in the morning and then can't get to sleep again* (case 3).

*I often wake up between 11 pm and 3 am because I feel like urinating. This situation makes me feel dizzy because I constantly have to go to the toilet* (Case 6).

#### ***Activity***

Nearly all the participants admitted to a lack of a routine exercise schedule. Their daily activities were dominated by low-intensity household chores (sweeping the floor, cooking, and tending livestock) and taking a morning walk if they had the time.

*I admit that I don't do any exercises, but I get up at five every morning and start to sweep the floor right away. Isn't it the same as exercise? I clean the whole house and also the back yard until I'm soaked in sweat* (Case 3).

### **DISCUSSION**

This research generated five themes: adat events/ceremonies, *happa*/betel nut chewing, traditional medication, patients' perception of diabetes disease, and everyday habits. The five themes represent the cultural values, beliefs, and life views of the diabetes patients in East Sumba, which refers to the fourth factor in the Sunrise Model.

The Sunrise Model describes the nature of nursing in a transcultural context where nurses are supposed to have adequate knowledge on the global scale regarding the developing cultural dimensions and social structures before providing care. The dimensions of culture and social network, according to Leininger, are influenced by seven factors. The first factor is technology, followed by philosophical-religious, social-kinship, life-culture, legal-political, economic, and the last factor is education. This Leininger concept shows the wholeness of situations or meaningful experiences of behavior and interactions between humans in various aspects of their lives such as physiological, ecological, cultural, and socio-political, which are ethnohistorical because they refer to the overall facts, events, and experiences of individuals in their lives (22,23).

Silveira et al. put ethnonursing down as a research methodology which is applied to approach the cultural and nursing contexts in health in a given culture about the application of Leininger's proposed method, in which case the four steps in ethnonursing are not isolated but interconnected to one another in a complex way (24).

#### ***Adat events/ceremonies***

East Sumba is a regency on the Sumba Island, which hosts

227 kabihu (clans) as a home for the association of native East Sumba people (16,25). The regency is diverse in its culture, which, to date, is still thick and preserved in its authenticity. One of the most distinct cultural practices that persist today is adat events or ceremonies, either in a state of condolence such as funeral ceremonies or in joy situations such as weddings, birth, and anniversary ceremonies. As with parties, the adat events hosted by the people of East Sumba are equitable to “big meals” or “feasts” with dishes of pork, beef, or carabeef served on top of a plateful of rice in big chunks. Both mournful and joyful ceremonies with a bit of modernization touch alike serve various main ingredients like rice and pork or beef.

This theme is as described in this research’s first theme: adat events or ceremonies. The participants said that the adat events held by their families, relatives, or acquaintances set them an obstacle to keeping their diabetes medication. They are afraid of being tempted to taste these delicious foods which eventually causes their blood sugar levels to rise.

Napier et al. (26) write about the substantial differences in perceived physical and psychological well-being in society regarding the first theme. However, the individuals’ cultures often fuse and change, ensuring that diverse lifestyles and beliefs prevail, allowing the value system to remain autonomous and distinct (26,27). In this case, Napier et al. emphasize that, in essence, culture is the practice of values in life and not just habits or human well-being. Unfortunately, this concept cannot be fully applied in clinical settings because standard trends in human nature can be paradoxical due to the lack of relevance between awareness of such diversity, patient needs, and the nurse’s duties (26).

### **Happa/betel nut chewing**

The second theme in this research is *happa*/betel nut chewing. This East Sumbanese tradition is closely related to adat ceremonies in which the host is obliged to serve *happa*, or betel nut, to the attending guests. This tradition is well-preserved by the East Sumba people to date. Even to the Sumbanese, *happa* has become a chief social instrument and a basic necessity after the food for daily consumption. If some guests are paying a visit or a party is held, then the guests—big or small, high officials or low, foreigners or locals—must be served with *happa*. In East Sumbanese believed mannerism, the host must accept whether the guests take the *happa* or not: whether it is to be given away to others eventually, taken home, or just left for the host. The guests might also take the *happa* for the chewing, leaving the lime, to appreciate the host.

*Happa* or betel nut chewing refers to masticating betel leaf (*sirih*) and young areca fruit or dried areca slice mixed with lime. The outcome of proper *happa* chewing is a deep red color of *happa* paste in the mouth.

Chewing the *happa* mixture soft gives a particular sensation of pleasure to the people of East Sumba. The “softened” *happa* paste is not swollen but removed bit by bit. *Happa* chewing causes thickening of the tongue and even leaves nearly permanent red residue in the mouth cavity, particularly on teeth and the language if mouth hygiene is not well observed. The thickening of the *happa* residue on the tongue may degrade the taste sensation, although this still requires clinical evidence. The East Sumbanese people often claim not to taste the sweet taste until the tea or coffee drunk is added with sugar in a large amount, and this is also the case with the salty taste in food.

Aklima et al. concluded that patients’ diet behaviors are related to a couple of factors: independent learning, unstructured education program, social support from the family, belief, and cultural considerations. Their ability to recognize and consume the right amount of calories is still low, which might be associated with their awareness, food taste, and difficulty measuring calorie need (28).

### **Traditional medication**

Traditional medication is the third theme in this research. The participants confirmed the practice of seeking traditional medicines among the East Sumba society, who admitted to using herbal medicines of various kinds of leaves and roots recommended by their closest ones. Theoretically unknowledgeable on herb mechanisms, including the side effects, the participants would change the herbal ingredients they would consume depending on the outcome they felt. The persons in charge of the NCDP at Public Health Center, too, agreed that many patients were still consuming herbal medicines while taking doctor-prescribed drugs.

This finding is consistent with an ethnographic study on the Using Tribe, which revealed that myth is an ingrained factor in health-related behaviors and physical maintenance (29); to deal with physical and psychological health problems, the Using Tribe either uses herbs or sees shamans. Generally speaking, the behavior of using herbal plants goes hand in hand with modern medical science as a complementary therapy, but its practice is fading due to scarce application; hence, it is necessary to strengthen the positive behaviors that have been carried out by the community so that they can achieve optimal health levels.

Herbal treatment that is carried out without a scientific basis can worsen the patient’s health condition. Therefore a proper understanding of alternative medicines must be possessed by diabetic patients and their families (30). This statement is in line with the results of Adejoh’s investigation that diabetes management is influenced by knowledge about diabetes and beliefs related to diabetes treatment, where these two factors are cognitive factors that cannot separate from other factors (8).



### Patients' perception of the diabetes disease

The fourth theme in this research is patients' perception of diabetes disease. Virtually all the participants accepted the doctor's diagnosis that they had diabetes. One claimed that he was prepared for the worst possibility he might be facing because everything is within God's control. At the same time, the other participants stated that they had received education from doctors or nurses regarding the diabetes disease, including causes of the disease and possible complications that might arise.

As pointed out by Harvey et al. (31), health education on diabetes presents necessary knowledge, but self-care is often sub-optimal despite its chief role in diabetes management. Their perceptions or beliefs will determine the extent to which patients would exercise the doctor's or nurse's recommendations regarding various self-care behaviors (31,32).

Explicitly, the participants in this research described that their eating and drinking habits before their illness served as dominant factors that influenced their condition. Several studies were conducted (33–35) that proves that unhealthy lifestyle behaviors such as being overweight, little physical activity, hypertension, dyslipidemia, unhealthy eating patterns, a history of impaired glucose tolerance or a history of problematic fasting blood glucose, and smoking habits are correlated with diabetes risk, all of which are related to the behavior of the patient's life.

### Everyday habits

The fifth theme in this research is everyday habits, consisting of eating/drinking patterns, spiritual values, resting/sleeping patterns, and daily activities. All the participants said that their regular practices had significantly changed from before contracting the diabetes disease. For example, they now would restrict themselves from the patterns of eating meals in large amounts or of high-calorie levels or consuming sweet food/drinks, although, at some point in time, they would be "tempted" to relapse to their old habits.

So was the case with their spiritual lives, where they became more frequent in praying according to their respective religions and beliefs and tried to become closer to God. At the same time, their daily activities would affect their resting and sleeping patterns. All the participants said that they would make efforts to routinely visit the Public Health Center or the doctor to have a health examination and participate in other programs such as Prolanis (a health program for elderly) for them to get to perform routine activities like gym while taking medication.

They did so out of their wish to recover from the diabetes disease they were currently suffering from; they shared their intention to follow the doctor's/nurse's advice

for better diabetes management despite limitations in knowledge and other resources (32). This theme is supported by many article (32,36–41). Shrestha (41), stating that, in fact, medication regiment compliance still poses general issues to individuals with diabetes, making it challenging to achieve glycemic control. The research concluded that diabetes patients who attended counseling on diabetes and had adequate knowledge demonstrated good compliance, while longer disease duration would reduce the glycemic control.

### CONCLUSION

Cultural factors in this study represented by adat events (ceremonies), *happa* (betel nut chewing), and traditional medication had a reasonably strong presence within the life of the East Sumbanese society, while diabetes patients' beliefs on the disease they suffered from exerted influence on everyday life in such aspects as eating-drinking patterns, spiritual values, resting (sleeping habits), and daily activities. This finding has an important implication for nurses in understanding the ethnonursing concept to develop nursing practice strategies.

Leininger's theory was well-applied in the nursing process from the first stage of the study through the implementation, giving a critical meaning in fulfilling nursing needs beneficial for the patients (17,18). Therefore, in conducting humanitarian nursing practices, nurses are expected to understand the culture-based nursing theories and methods applied in transcultural care by preserving, negotiating, and restructure culture (18).

Although they might differ, a competent nurse in the cultural field can skillfully identify the patients' artistic value and belief factors. This competency would help nurses set specific nursing objectives according to the patients' needs (22). We hope that this research's findings will benefit nurses in conducting nursing practices through a cultural approach to provide more concrete care according to the patients' needs.

The advantage of this research is that this research was conducted in a remote area by considering cultural aspects. Health workers, especially nurses, can use the results obtained to overcome problems that can be caused by cultural misinterpretation to solve patient health problems. This study has several limitations, such as the small number of participants. Although the researcher judges that the research data has reached the desired saturation level, it would be better if the number of participants could be further increased. In addition, to trust the research results, interview transcripts should be shown back to all participants. Another weakness in this research is the lack of opinion of traditional leaders or community leaders as key informants.



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## REFERENCES

1. Kazi AA, Blonde L. Classification of diabetes mellitus [Internet]. World Health Organization. 2019. Available from: <https://apps.who.int/iris/rest/bitstreams/1233344/retrieve>
2. Kementerian Kesehatan RI. InfoDATIN: Situasi dan Analisa Diabetes. 2014. p. 1–2.
3. Sari MP, Putri AR, Achmadi NK. Gambaran Penyakit Komplikasi pada Pasien Diabetes di RSUD Kardinah Kota Tegal. *Parapemikir J Ilm Farm*. 2019;8(2):36–9. doi: 10.30591/pjif.v8i2.1471
4. PERKENI. Pedoman Pemantauan Glukosa Darah Mandiri [Internet]. Perkeni. PB Perkeni; 2019. 28 halaman. Available from: <https://pbperkeni.or.id/wp-content/uploads/2019/12/Pedoman-Pengelolaan-Glukosa-Darah-Mandiri-2019.pdf>
5. Triselia Monika; Kridawati A. Eating Patterns and Physical Activity to Reduce Diabetes Melitus Type 2. *Indian J Public Heal Res Dev*. 2019;10(3):668–75. doi: 10.5958/0976-5506.2019.00585.0
6. Kementerian Kesehatan Republik Indonesia. Potret sehat indonesia dari riseksdas 2018. [www.depkes.go.id](http://www.depkes.go.id) [Internet]. 2019;2018–20. Available from: [www.depkes.go.id](http://www.depkes.go.id)
7. Oscar Primadi DB. PROFIL KESEHATAN INDONESIA TAHUN 2019 [Internet]. Boga Hardhana, Farida Sibuea WW, editor. Kementerian Kesehatan Republik Indonesia. Jakarta: Kementerian Kesehatan Republik Indonesia; 2020. 497 p. Available from: <https://pusdatin.kemkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Profil-Kesehatan-indonesia-2019.pdf>
8. Adejoh SO. Diabetes knowledge, health belief, and diabetes management among the Igala, Nigeria. *SAGE Open*. 2014;4(2). doi: 10.1177/2158244014539966
9. Zahra Komeilian. A Focused Ethnography of Iranian Canadian Women's Experiences of Diabetes [Internet]. Faculty of Nursing University of Alberta. University of Alberta; 2016. Available from: <https://era.library.ualberta.ca/items/bb70d091-7603-43a5-8d62-f01fca91b0e9>
10. Ministry of Health. Data dan Informasi Profil Kesehatan Indonesia 2017 [Data and Information for Indonesian Health Profile 2017]. 2018; Available from: [http://www.pusdatin.kemkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Data-dan-Informasi\\_Profil-Kesehatan-Indonesia-2017.pdf](http://www.pusdatin.kemkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Data-dan-Informasi_Profil-Kesehatan-Indonesia-2017.pdf)
11. Kementerian kesehatan Republik indonesia. Tetap Produktif, Cegah Dan Atasi Diabetes Mellitus. pusat data dan informasi kementerian kesehatan RI. 2020.
12. Sumba Timur BPS. Sumba Timur in Figures 2018 [Internet]. Waingapu; 2018. Available from: <https://sumbatimurkab.bps.go.id/publication/2018/08/16/4f508994eda28cb262e840f4/kabupaten-sumba-timur-dalam-angka-2018.html>
13. BPS Sumba Timur. Sumba Timur Dalam Angka 2021. 2020;247. Available from: <https://sumbatimurkab.bps.go.id/publication/2021/02/26/f17fce45ab782ea4a5d951c7/kabupaten-sumba-timur-dalam-angka-2021.html>
14. Stevie Ardianto Nappoe dan Muhamad Faozi Kurniawan. Evaluasi Capaian Pemerataan Layanan Kesehatan yang Berkeadilan di Era JKN di Provinsi Nusa Tenggara Timur. *Pus Kebijakan dan Manaj Kesehat Fak Kedokteran, Kesehat Masyarakat, dan Keperawatan Univ Gadjah Mada* [Internet]. 2020;1–14. Available from: <https://kebijakankesehatanindonesia.net/datakesehatan/file/equity/Equity-Provinsi-NTT.pdf>
15. Dinkes Provinsi NTT. Rencana Strategis Dinas Kesehatan Provinsi Nusa Tenggara Timur Tahun 2019-2023. 2019;53(9):1689–99. Available from: <https://e-renggar.kemkes.go.id/file2018/e-performance/1-249007-2tahunan-292.pdf>
16. Dwiningsih S, Mulyani S, Kawarakonda S, Roosihermiatie B. Belenggu Apung. 2014.
17. McFarland MR, Mixer SJ, Webhe-Alamah H, Burk R. Ethnonursing: A qualitative research method for studying culturally competent care across disciplines. *Int J Qual Methods*. 2012;11(3):259–79. doi: 10.1177/160940691201100306
18. Leininger M. Overview of Leininger's Ethnonursing Research Method and Process. 2005;33. Available from: <http://www.madeleine-leininger.com/cc/researchmethod.pdf>
19. Elo S, Kääriäinen M, Kanste O, Pölkki T, Utriainen K, Kyngäs H. Qualitative Content Analysis: A focus on trustworthiness. *SAGE Open*. 2014;4(1):215824401452263. doi: 10.1177/215824401452263
20. Stahl N, King J, Lampi J. Expanding Approaches for Research: Design Research. *J Dev Educ*. 2019;42(3):29.
21. NowellLS, NorrisJM, WhiteDE, MoulesNJ. Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *Int J Qual Methods*. 2017;16(1):1–13. doi: 10.1177/1609406917733847
22. Leininger M. Culture care diversity and universality theory. *Nursing (Lond)*. 1991;
23. Leininger M. Culture care theory: A major contribution to advance transcultural nursing knowledge and practices. *J Transcult Nurs*. 2002. doi: 10.1177/10459602013003005
24. Silveira RS da, Martins CR, Lunardi VL, Lunardi Filho WD. [Ethnonursing as research methodology for the congruence of care]. *Rev Bras Enferm*.

- 2009;
25. SumbaTimur PK. KEBUDAYAAN SUMBA TIMUR. <https://www.sumbatimurkab.go.id/>. 2020.
  26. Napier AD, Ancarno C, Butler B, Calabrese J, Chater A, Chatterjee H, et al. Culture and health. *The Lancet*. 2014, 384(9954):1607-39. doi: 10.1016/S0140-6736(14)61603-2
  27. Dong G, Qu L, Gong X, Pang B, Yan W, Wei J. Effect of Social Factors and the Natural Environment on the Etiology and Pathogenesis of Diabetes Mellitus. *Int J Endocrinol*. 2019;2019:8749291. doi: 10.1155/2019/8749291.
  28. Aklima, Charuwan Kritpracha PT. Dietary Behaviors among Patients with Type 2 Diabetes Mellitus in Indonesia. *Nurse Media J Nurs*. 2013. doi: 10.14710/nmjn.v3i1.4453
  29. Hanny Rasny, Tantut Susanto EID. Penggunaan terapi komplementer pada suku using banyuwangi. *J Ners*. 2014;9(1):133–7.
  30. Brown EE, Kumar S, Rajji TK, Pollock BG, Mulsant BH. Anticipating and Mitigating the Impact of the COVID-19 Pandemic on Alzheimer’s Disease and Related Dementias. *Am J Geriatr Psychiatry*. 2020; 28(7):712-721. doi: 10.1016/j.jagp.2020.04.010
  31. Harvey JN, Lawson VL. The importance of health belief models in determining self-care behaviour in diabetes. *Diabetic Medicine*. 2009; 26(1):5-13. doi: 10.1111/j.1464-5491.2008.02628.x.
  32. Shiferaw WS, Gatew A, Afessa G, Asebu T, Petrucka PM, Aynalem YA. Assessment of knowledge and perceptions towards diabetes mellitus and its associated factors among people in Debre Berhan town, northeast Ethiopia. *PLoS One [Internet]*. 2020;15(10 October):1–14. doi:10.1371/journal.pone.0240850
  33. Ayu Erika K. Contribution of Lifestyle and Obesity to the Incidence of Pre-Diabetes. *Folia Medica Indones*. 2010;46(4):263–9.
  34. Wahyuni Y, Nursiswati, Anna A. Kualitas hidup berdasarkan karakteristik pasien diabetes melitus tipe 2. *J keperawatan padjadjaran [Internet]*. 2014;2(April):25–34. Available from: <http://jkp.fkep.unpad.ac.id/index.php/jkp/article/view/79/75>
  35. Betteng R. Analisis Faktor Resiko Penyebab Terjadinya Diabetes Melitus Tipe 2. *J e-Biomedik [Internet]*. 2014;2(2). Available from: <https://ejournal.unsrat.ac.id/index.php/ebiomedik/article/view/4554/4082>
  36. Tay CL, Ho XL. Impact of Healthy Lifestyle Education among Patients with Diabetes Mellitus in a Primary Care Clinic. *Malaysian Journal of Medicine and Health Sciences*. 2021;17(8):63–9.
  37. Jing X, Chen J, Dong Y, Han D, Zhao H, Wang X, et al. Related factors of quality of life of type 2 diabetes patients: a systematic review and meta-analysis. *Health Qual Life Outcomes*. 2018;16(1):189. doi: 10.1186/s12955-018-1021-9.
  38. Chiang JK. Short duration of sleep is associated with elevated high-sensitivity C-reactive protein level in Taiwanese adults: A cross-sectional study. *Journal of Clinical Sleep Medicine*. 2014;10(7):743–9. doi: 10.5664/jcsm.3862.
  39. Smith AD, Crippa A, Woodcock J, Brage S. Physical activity and incident type 2 diabetes mellitus: a systematic review and dose–response meta-analysis of prospective cohort studies. *Diabetologia [Internet]*. 2016;59(12):2527–45. doi:10.1007/s00125-016-4079-0
  40. Maayeshi N, Mousavi SM, Ranjbaran H, Mirshekari M. The Relationship between Nutritional Knowledge and Food Habits and Some Cardiometabolic Risk Factors in Patients with Diabetes in Shiraz , *International Journal of Nutrition Sciences*. 2019;4(March):36–42. doi:10.30476/ijns.2019.81733.1012
  41. Shrestha S, Thapa P, Saleh F, Thapa N, Stray BP, Khanom K. Knowledge of diabetes mellitus among pregnant women in three districts of Nepal. *Journal of Nepal Health Research Council*. 2013;11(25):259–63. doi: 10.33314/jnhrc.v0i0.401