



## Communities behavior in diabetes mellitus treatment among Luwu Buginese Ethnic, South Sulawesi

Nilawati<sup>1</sup>, Alimin Maidin<sup>2</sup>, Asiah Hamzah<sup>3</sup>, Burhanuddin Bahar<sup>4</sup>

- 1- Postgraduate Program, Medical Faculty, Public Health Study Program, Hasanuddin University, Indonesia.
- 2- Hospital Management Department, Faculty of Public Health, Hasanuddin University, Indonesia.
- 3- Health Administration and Policy Department, Faculty of Public Health, Hasanuddin University, Indonesia.
- 4- Biostatistics and Demographic Department, Faculty of Public Health, Hasanuddin University, Indonesia

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### Corresponding Author:

Nilawati, Postgraduate Program, Medical Faculty, Public Health Study Program, Hasanuddin University, Indonesia.

E-mail: [nilawati@gmail.com](mailto:nilawati@gmail.com)

### Abstract:

Luwu Buginese society perceives diabetes is a disease caused by rice and sugary drinks. At first they perceives their selves suffered from diabetes mellitus based on the symptoms experienced. The aims of this study was to identify the behavior of Luwu Buginese ethnic of diabetes mellitus (lása golla) and the role of the herbal treatment for diabetes mellitus. The research method used was a qualitative study ethnologic types i.e., describe the behavior of people with diabetes mellitus and type of herbal medicine used in patients with diabetes mellitus in Luwu Buginese ethnic, with service providers confirm the offender as an informant. Result described that some informants revealed that diabetes is caused by excessive consumption of sweet foods. Boo informant although states do not like to eat sweet foods but he understands diabetes mellitus is caused by eating too much sugar. Informant Pls and stated that diabetes is a disease caused by a lot of sweet foods, while Pm states that diseases caused by consuming sugar rice containing sugar. After the informant know the status of their blood sugar, they prefer to do herbal remedies. Boo informants choose to use herbal remedies because he felt there was no change in use of medical drugs. He used to grow his own leaf *bib'bi* tree, informers Pls take herbal medicine in forest. Informant Pls use health / medical services, he also uses herbs to lower blood sugar levels because they feel bored to do checks blood sugar levels. Informants Add and PMM despite having health insurance card to take advantage of free medical services, but he also felt happier taking the herbs in this case medical treatment is not addressed the issue of the cost of treatment to choose the type of treatment of diabetes mellitus. The selection of the use of these herbs is based on dissatisfaction use medical services.

**Key words:** Behavior, diabetes mellitus, informants, ethnology

**Introduction:**

In the initial fact-finding in patients with diabetes mellitus in Palopo, it was found the presence of diabetes mellitus-related deaths in 2011 were 6 people, in 2012 were 7 people and by 2013 were 7 people. Cases of death due to diabetes mellitus can be due to complications or delay disease and medical treatment [1]. They were late handled moreover suffering severe injuries that can no longer be cured through surgery can increase the number of deaths due to diabetes mellitus, [2,3]. Data also found that patients with diabetes mellitus hospitalized in Palopo town in 2011 as many as 199 people, in 2012 were 205 people and in 2013 were 124 people. Despite an increase in cases treated in 2012 there were 6 people but do not rule out the possibility that this is just a case of diabetes mellitus are numbered because there are many people with diabetes mellitus who do not want to do the examination or treatment in health care.

Data morbidity for patients with diabetes mellitus in South Wara health centers in 2012 amounted to 102 visits in which pain diabetes mellitus visit amounted to 12 visits in January, March totaled 7 visits, totaling 10 visits in April, the month of May 14 visit, June 10 visits, months September 12 visit, the month of October 13 visits, visits in November 11, and December 13-month visit [4].

In addition, the recording and reporting of results and development activities in health centers elderly northern Wara (Palopo) that the number of cases of diabetes mellitus in February 2013 amounted to 6 people, in March amounted to 6 people, as many as 2 April, in June amounted to 9 people, months July amounted to 14 people, in August amounted to 7 people (Health Department

2012; elderly PHC Reports North Wara, 2013). Based on the above data, the researcher intends to know the behaviors related to diabetes mellitus and its treatment.

**Materials and Methods**

Palopo district consists of 9 subdistricts namely Wara subdistrict with a population of 32 026 inhabitants, an area of 11.49 km<sup>2</sup>, the number of villages there are 6 with a population density of 2.787 people / km<sup>2</sup>. Telluwanua sub-districts with a population of 12 076 inhabitants, an area of 34.34 km<sup>2</sup>, the number of villages there are 7 and population density 352 people / km<sup>2</sup>. Wara Subdistrict North with a population of 19 628 inhabitants, an area of 10.58 km<sup>2</sup> consists of 6 villages with a population density of 1,855 people / km<sup>2</sup>. Wara Subdistrict West with a population of 9706 inhabitants, an area of 54.13 km<sup>2</sup>, consists of 5 villages with a population density of 176 people / km<sup>2</sup>. East Wara Subdistrict with a population of 31 998 inhabitants, an area of 12.08 km<sup>2</sup>, consisting of seven villages with a density of 2,649 people / km<sup>2</sup>. Mungkajang sub-districts with a population of 7,205 inhabitants, an area of 53.80, comprising 4 villages with a population density of 134 people /. Sendana sub-districts with a population of 5915 inhabitants, an area of 37.09 km<sup>2</sup>, consisting of 4 villages with a population density of 159 people / km<sup>2</sup>. Bara sub-districts with a population of 23 701, an area of 23.35 km<sup>2</sup>, consists of 5 villages with a population density of 1,015 people / km<sup>2</sup>. Wara Subdistrict South with a population of 10 448 inhabitants, an area of 10.66 km<sup>2</sup>, consisting of 4 villages with a population density of 980 people / km<sup>2</sup>. The map below illustrates the location of the research in Palopo.

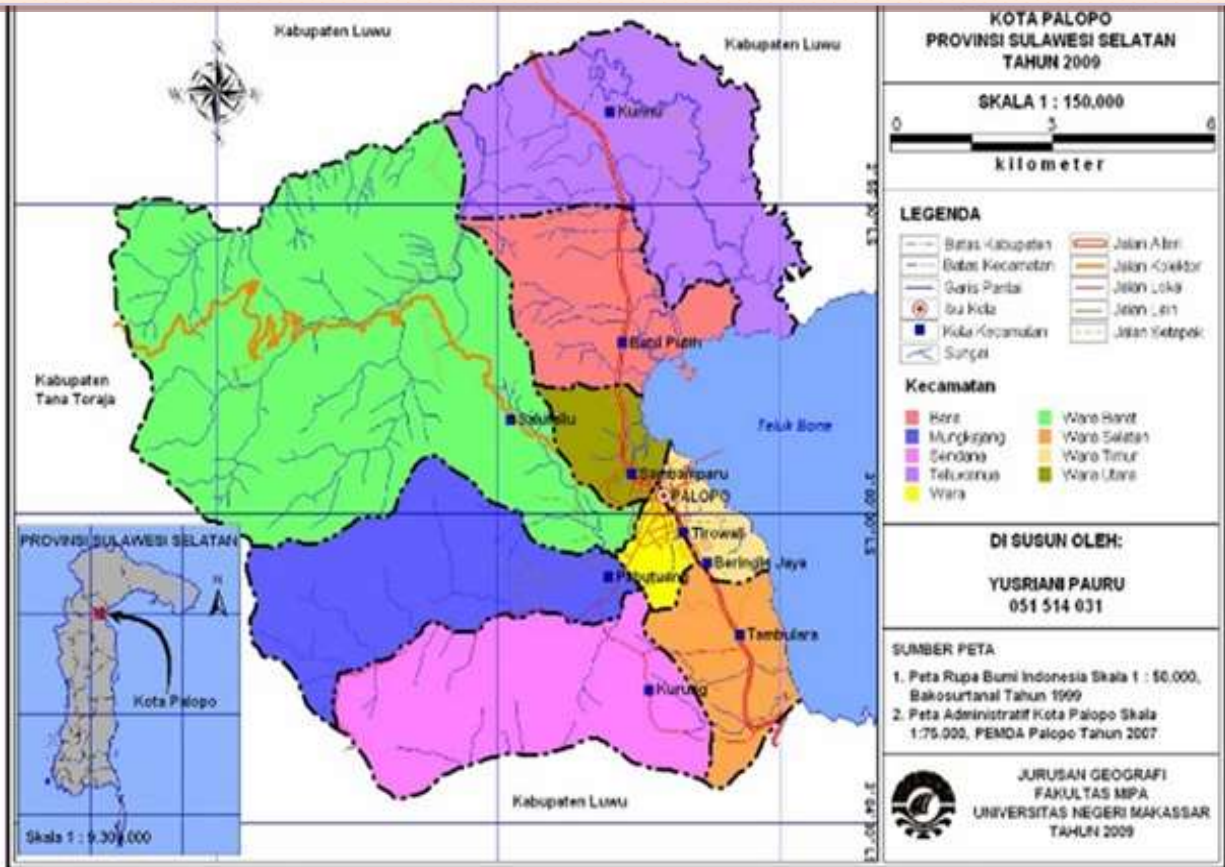


Figure 1. Map of the research site in Palopo City, South Sulawesi. (Majid, 2010)

This study uses the study of ethnological because of the similarity in the behavior of people with diabetes mellitus through familiarity with traditional herbal medicine in Luwu Buginese ethnic.

conclusions or draw an inference based on the fact that already exist. The input of the logic is a premise or fact - a fact recognized by the truth so that the process of logical reasoning can be formed an inference or conclusion that is true as well [5].

**1. Inductive Logic**

Logic process is the process of forming

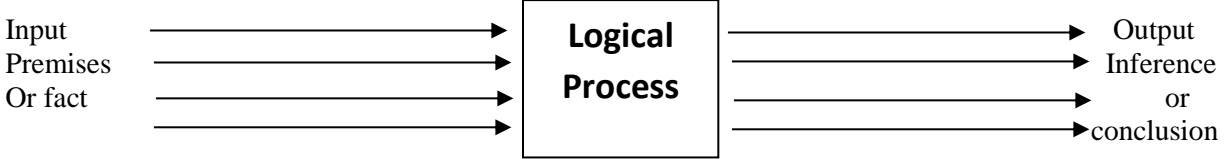


Figure 2. Logical Inductive

Inductive reasoning: Starting from the facts - the facts specific to the conclusion [6]. A new conclusion is considered valid (invalid) if the inference is done in a certain way. The way this conclusion is called logic. More broadly defined as logic "to think is lacking valid assessment". Way of

drawing conclusions based on scientific reasoning, namely inductive logic and deductive logic. Inductive logic is the conclusion of a real individual cases (specifically) to general conclusions, while deductive logic is the conclusion of a general nature to be the case that individual (special) (Surya

Sumantri, 2013) and which will be used in research this is inductive logic.

Inductive, emphasizing the empirical approach to obtain generalization. Drawing conclusions based on observation of reality and develop repeated statements that serve to describe and explain the existence of these statements. Induction is a way of thinking to draw general conclusions from the cases that individual. The reasoning starts from the realities of a special nature and limited and ends with the statement of a general nature [6].

**Results and Discussion**

**Type Herbal Medicine Used by Patients with Diabetes Mellitus**

The use of herbal medicine has been known long before the use of modern medicine but has not been proven scientifically. After modern medicine developed various studies have confirmed the herbal treatment as alternative treatment of disease [7].

Findings Type Herbal Medicine Used by Patients with Diabetes Mellitus

i. Types of herbal remedies used by people with diabetes mellitus undergoing changes is sugar apple leaf (Yya Informant, Informants Jju, RRU informant, informant Bbu), bitter leaf (Informant Jju, RRU, YYB), leaf if (Informant Yya, Mme), leaf betel (Mme informant, XD), leaf cat whiskers (Mme informant, RRU), mangosteen rind (RRU informant, Yyp), betel nut (informant Yya, XD), leaves Bibbi (informant Mma), guava leaves, cinnamon , white turmeric, turmeric original, tamarind, brown sugar

(informant XD), high leaf chlorophyll, leaf mulberry (informant Yyp), bark jar (informant Aar), betel root (informant Yya), Bagore (informant Lli), fruit bananas, dried corn (informant Wwe), crown god (informant Bbu), herbal medicine bottles purchased (informant Jju), herbs (informant Yyp)

ii. Types of herbal remedies used by people with diabetes mellitus who did not change when the leaves (Informant Dda, XD, Bbe, Iis, Aag, Ees), bitter leaf (Informant Ssh, Ssu, HHE, Tth), sugar apple leaf (Informant Ssh, hha, Ssu), wood seppang (FFA informant, Aag, Ees), teba coppeng (FFA informant, XD, DDE), leaves caddies (informant Ssh, Bbe), leaves Bibbi (informant hha, Iis), Cempa-Cempa sibokori (informants YYE, XD), papaya leaf (Dda), fruit mahogany, ebony leaf, leaf-dinging dinging, leaf insulin, Te'ba black (informant Ssh), herb leaves purchased, bay leaf, betel leaf, medicinal herbal bottles purchased (informant FFA), leaves miyana, coppeng leaves, roots durian, corn feathers (informants XD), leaf-lappo lappo, betel root (informant Ssu), leaf concoction, squash (informant Aaa), leaf color green, ebony leaf (informant Rra), leaf malaysia (informant Tth), guava leaves, vinca, cinnamon (informant Iis), leaf-like leaf Lombok (informant Ees), black sticky rice water (informant Bbe), herbs (informant MMW). Table 1 below describes the compound and the reagents used base on the researcher observation. Then, table 2 indicates the content of the herbal compound used.

**Table 1.** Group compound found along reagents and hail observations

No	Compound group	Reagent	Observation results
1	Alkaloid	Dragendrof	Colored of orange
2	Antrakuinon	KOH metanolik	Fluorescence with yellow wish green
3	Steroid	Liebermann-Burchard	Colored of green
4	Terpenoid	Liebermann-Burchard	Colored with red purple
5	Tannin	FeCl3	Colored dark blue blak
6	Flavonoid	Sitroborat	Fluorescence with yellow wish green
7	Saponin	Vanilin-Asam Sulfat	Colored of yellow

**Table 2.** The content of the herbal compound used

No	Sample name	Detected compound
1	Durian roots	Alkaloid, terpenoid, steroid, flavonoid, antrakuinon dan tannin
2	Permot herb	Terpenoid, steroid, antrakuinon, dan flavonoid
3	Maja leaf	Terpenoid, steroid, flavonoid
4	Red leaf	Flavonoid, steroid, saponin, dan antrakuinon
5	Singapura leaf	Flavonoid, steroid, tannin, dan saponin

### 3.2 Analysis of Meaning by Type Herbs Used in Diabetes Mellitus

Types of herbs used by people with diabetes mellitus are likely the same as the type of herb that is used by other people with diabetes mellitus in Luwu Buginese ethnic. The similarity is due to the same feelings in the community. They believe that because they come from the same background, same culture, same habits, then they will tend to choose the same type of herbs that have been chosen by the people in the group, but if they have not found a suitable herbs that they will continue to try herbal new they know that has been used by groups with diabetes mellitus.

If people with diabetes mellitus in Luwu Buginese ethnic find herbal remedy that works for him then he will continue to take the medicine, and for not feel any change, people with diabetes will continue to try new drugs. The use of herbs is based on advice received by people with diabetes mellitus. they tend to try to find a suitable drug for themselves by trying herbal successful in others. Luwu Buginese ethnic using herbs they know even though it sometimes brought in from outside the area Luwu. There are specific content of some compounds that could cure diabetes mellitus and not all plants contain these compounds. Patients with diabetes mellitus in Luwu Buginese ethnic not pay attention to the content of the herbal medicines they are taking, as long as there are people who have proven the success of the herbal medicine mean that sugar is a drug, just sometimes there are people who fit and some are not compatible with the drug. Ethnic Communities in Bugis Luwu believe that each person will be different types of herbal use because there are people who feel different symptoms, some have a lot of symptoms and some are not suitable because of the severity of her diabetes mellitus. Type of herb that is used in

patients with diabetes mellitus in Luwu Buginese ethnic ranging from leaves, stems, fruits and roots. Utilization of the plant is based on the species. Luwu Buginese ethnic utilize these herbs in accordance with the advice or examples from people around.

#### 3.2.1 Use of Leaf for Herbal

The use of the leaves as a herb in Bugis society in Luwu same as the use of vegetables are eaten daily because the vegetable has many benefits, the leaf herb is also believed to have many benefits. In Bugis society in Luwu vegetable consumption is also believed to be a drug of some diseases such as papaya leaves, potato leaves, in addition to the herbal leaves are used to treat diabetes mellitus are papaya, guava leaves, sugar apple leaf, bitter leaf and leaf when. Leaves on many types grow around the house so that supplies can be in large numbers so that it can be used anytime. The use of leaves as herbs for diabetes mellitus is done based on the advice of the people who are around people with diabetes mellitus so that utilization of the leaf is closely related to knowledge of diabetes mellitus or based on information in the get.

#### 3.2.2 As the Roots Herbal

In addition to use as a medicinal herb leaves Bugis community in Luwu also used as a medicinal root. Root is not a taboo that cannot be consumed in the Bugis community in Luwu. The use of root foods such as cassava tubers have been used by the Bugis community in Luwu, the whole lappo lappo tree-used from the roots to the leaves, the roots of the weeds also use already known to the public at Bugis Luwu long ago. The root of the tree and the amplifier begins a substance needed by the tree roots therefore considered to have the nutrients that are good for

and the root areca durian. These roots grow easily obtained because a lot around the house. In the process of processing the root to be consumed as a herbal medicine of diabetes mellitus is not a barrier for people with diabetes mellitus in choosing the type of the root as a herbal medicine. Processing is also quite simple with brewed or boiled.

### 3.2.3 Use of Stem for Herbs

The use of stems of plants as food for people in Luwu Buginese ethnic also known as banana stem which is used as a vegetable, which contains sago stems are used as a staple food in Ethnic Bugis Luwu. Trunk has a great significance as a part that has a lot of benefits to the tree and depicted as something beneficial for many health or human life. To treat diabetes mellitus, stem and bark are more widely used community Bugis Luwu such as wood, cinnamon bark, bark coppeng. Wood seppang sugar has been known as a drug for the Bugis people in Luwu because the color red when boiled or brewed considered efficacious for the Bugis people in Luwu as different from the others, presenting seppang wood color is beautiful and interesting. Selection of the use of the rod as herbs that can be consumed not be new to the community in the Bugis Luwu because the use of the rod as herbs or even as a meal has been entrenched in the Bugis community in Luwu. The use of stem chosen because it can be taken in very small amounts (an inch) to be consumed. The use of the rod there is processed by boiling or brewed and there is also a way chopped or mashed then squeezed to take water.

### 3.2.4 Using Fruit and Seed for Herbs

Parts of the plant that is often used as an herb for the Bugis people in Luwu also is the fruit or seeds such as betel nut, Cempa fruit, banana fruit. Penang has long been known as a medicinal herb. Pinang for the Bugis people in Luwu has many health benefits therefore highly recommended for treating the disease. Bugis people believe that the betel nut as a symbol of goodness as has been done by people before the Bugis community in Luwu which always provide areca and betel chewing with hope for the good of the gods will be poured. Use of fruits and seeds as herbal bring a change of symptoms in some patients with diabetes mellitus. The fruit is used because it does not lead to a sense that not delicious. The selection of fruit and herb seeds as well as closely related with diabetes mellitus

## 3.3 Analysis of Herbal Medicine Meaning How to Obtain

### 3.3.1 Analysis of Meaning around Getting Herbal Home

Herbal remedies can be obtained easily and do not need to spend a lot of money as if taking medicine physician. Some people with diabetes mellitus in ethnic Bugis Luwu the use of certain herbal medicines because the drug was only available at that time, if no then replaced with other herbal remedies available. Ease of obtaining herbal medicine can be seen from the habits of the Bugis in Luwu were also happy to farm or grow crops either in the garden or kitchen garden house. The habit of farming that has traditionally been done by the old people of Luwu society makes it easy for people with diabetes mellitus in Luwu community to grow their own herbs they need as a diabetic drug. This farming knowledge to help people with diabetes mellitus in ethnic Bugis in Luwu herbal plants to treat well.

If anyone has any medicinal plants around her house in the view of the Bugis in Luwu means the person is concerned about his health. They are regarded as a good and diligent in accordance with the characteristics of the Bugis community someone who diligently worked. It also will reduce shame Because someone had to ask the other person something they can actually plant themselves without having to ask the property of others. People who are happy to ask the person regarded as someone who is useless and does not have *siri* 'in him. Giving to others it is better than receiving because those who receive it have a lower social status in the society. How to get herbal medicine in patients with diabetes mellitus undergoing changes and diabetes mellitus who are not experiencing the largest change is taken around the house. Ease of getting this herb to be one of the reasons people with diabetes mellitus using herbs because it can be planted around the house or even some that grow wild. It is easier for the patient to still be able to get herbs when they need it, especially when they have felt the symptoms of diabetes mellitus who began to relapse again.

### 3.3.2 Analysis of Meaning Getting Herbs From Family / Friends

There is also a person who earns by way of herbal medicine is sourced by family or friends. Culture of helping each other in Bugis Luwu society reflects the implementation of humanitarian values are sublime. They are served by their own children or

people who have a lower status than those who served is something that is reasonable in Bugis Luwu society because social strata which is still strong in Luwu Buginese ethnic so it is not a disgrace for

people who have served as the positions thereof. Ethnic Communities in Bugis Luwu were not able to get yourself a herbal medicine he needs will be assisted by his son to get it at a neighbor's house or the garden itself. They were able to find your own herbal medicines they need are those who are still able to indulge more and still not too old in age. Patients with diabetes mellitus will tend to be given herbal medicine by children if they are ill and was confined to the home or herbal remedies imported from outside the region so that people with diabetes mellitus cannot take their own herbs.

### 3.3.3 Analysis of the Meaning of Getting Herbs How to Buy

One way that is also used in herbal obtain the Bugis community in Luwu is by way of buying these herbs. In Bugis society in Luwu someone who has the money or property which is able to buy all their needs is one way to elevate the social status. They were not born of noble descent, but have the money to meet its needs in excess is one of the ways in which people outside the royal bloodline weeks to get recognition in the community. They are considered to be able to buy all their needs will be respected in the community. Buying herbal medicine is an easy way to get herbs for diabetes mellitus that could become a more popular option and it is also closely related to the value in the Bugis society to maintain social degrees.

### 3.3.4 Analysis of Herbal Getting Meaning of Regional Affairs

Self-image in the Bugis community in Luwu is something that must be maintained and continuously improved. The position is an important factor to show the existence of a person in the community. Someone who has a long association, known by many people, have visited various other countries will be able to add a person's self image. When someone asked about how to get a drug that does not exist in its region will give rise to pride themselves by saying that they are getting the drug from outside the region or abroad. Indirectly, this situation will make it more confident because they are able to get something that is difficult to be obtained others.

In Ethnic Bugis in Luwu they assume that all plants are only the use and utilization of drugs they

do not know. There are many types of medicinal herbs of unknown properties but, for those who have a good education is able to determine the efficacy of these plants so that disseminate it to be used by

Patients with diabetes mellitus in Luwu Buginese ethnic still have enough land to plant herbal medicine they need, if they do not own their planting, they may take the herbal remedies in the neighbor. Because Luwu Buginese ethnic a wide range of community and great neighbors so it is not rare to find them is their close relatives with diabetes mellitus as well so not too difficult to take herbal remedies if it was at home of their neighbors. If herbal medicine diabetes mellitus in ethnic Bugis Luwu use comes from outside the region, people with diabetes mellitus also try to plant the herbs around the house by taking a seed that comes from outside the region.

Ease of obtaining herbal medicine is one of the strong reasons for people with diabetes mellitus in ethnic Bugis Luwu to prefer the use of herbal medicine in the treatment of diabetes. Since time immemorial people have used herbs in Bugis treatment and a symbol of strength. As betel and areca nut to gain favor and protection. How to get this herbal medicine influence the selection of herbal use by the community. This group will use certain herbs which they think is easy and they get to have efficacy after use.

### 3.4 How to Use Herbal Medicine Information Dissemination

#### 3.4.1 How to Use Herbal Information Dissemination in Patients with Diabetes Mellitus

The speed of information dissemination has been uneven in nearly all regions in Indonesia, especially in urban areas Quickly Palopo can enter information through electronic media or information from person to person.

#### 3.4.2 Dissemination Method Findings in Patients with Diabetes Mellitus

- i. Method of information dissemination in Patients with diabetes mellitus undergoing changes after taking the herbs are from family, friends or neighbors WHO suffer from diabetes mellitus (Informant Jju, Mme, RRU, XD, Aam, Bbu, Lli, Mma, Wwe), from family, friends or neighbors WHO do not have diabetes mellitus (Yya informant, Wwe, Aar, RRU, YYB, XD, Bbu, Lli)
- ii. Method of information dissemination in Patients with diabetes mellitus WHO did not change after

Ssh, FFA, Ssu, MMW, Aaa, DDE, HHE, Rra, Tth, Iis, Ees), from family, friends or neighbors WHO suffer from diabetes mellitus (informant Dda, YYE, Ssh, Bbe, DDE, Aag).

### 3.4.3 Meaning Analysis Information Dissemination Method Using Herbs

Information is Believed the use of herbal remedies based on the story of the family or the people around the patient with diabetes mellitus who have had diabetes melli and healed around people or have family or friends who have suffered from diabetes mellitus and cured with certain herbs. Information on the use of certain herbs are known of people who have managed to prove the decrease in blood sugar due to drinking herbal. Spread of information has no limits of space and time is because of the speed of information circulating through many media then transmitted all people. Opera-received by people with diabetes mellitus regarding the use of herbs derived from Patients with diabetes mellitus who had been cured and or from family / friends who never get his information about the successful use of herbs from reading or watching mediated or from the experience of the people around who suffer from diabetes mellitus and has successfully recovered as certain herbal remedies.

Meaning Analysis Dissemination of People Suffering from Diabetes Mellitus A person who had suffered from diabetes mellitus and then cured for using herbs will serve as an example for other people with diabetes mellitus in line with the understanding of the Bugis people in Luwu that experience will teach someone about things that hardly taught through words. Someone who feels pain when dropped will try to be more careful in walking in this sense it is said that the experience would the make someone have new knowledge and then teach that knowledge to others. How to learn from experience is a way of learning through a more convincing evidence could be another person of the truth of the incident. As public confidence in the Luwu Bugis to older people in the community because they have been through the trials of life and take a life lesson from this experience so that should be followed by the next generation.

### 3.4.4 Analysis of Information Dissemination People Not from Suffer Diabetes Mellitus

Information on the use of herbs also from his own family. In Bugis society in Luwu family is the closest person who will always keep and protect

Therefore the useful information for people with diabetes mellitus in a family that comes from a close family regarded as the truth Because it is not possible in the Bugis community in Luwu someone wanted to betray his family or one of his family is in trouble is because of the Difficulties of the people in the family are all family Difficulties of. Use information derived from the herbs are also sometimes signifies your neighbors in Bugis society in Luwu as the nature of cooperation, keep each other indigenous groups. People who are bound in the same tribe, the same area will have a mutual feeling bound to one another.

For dissemination of information ranging from diabetes mellitus undergoing changes and that has not changed, shaman and nurse, circulating information about the type of mouth or utilizing herbs used by herbalists and medical services nurse. Dissemination of information related to the use of herbs Reviews These use herbs that are consumed by people with diabetes mellitus. if they get the information that states that the drug successfully in patients with diabetes mellitus have similarity whose symptoms in Patients with diabetes mellitus, then people with diabetes mellitus will try to use reviews these herbs. Dissemination of information relating to the use of herbal *Pacce* concept 'in Bugis Luwu society where empathy Becomes virtue of this Luwu Ethnic communities are constantly trying to share information that is helpful to others.

### Conclusion

Luwu Buginese Ethnic perceive diabetes mellitus is a disease caused by a person consumes sugar (sweets) that can lead to excessively difficult of wound healing. Patients with diabetes mellitus were included in the Ethnic Bugis of Luwu use herbal remedies such as sugar apple leaf, sambiloto leaf, sirih leaf, Kumis kucing leaf, Skin Mangosteen, areca fruit, leaves caddies, Bibbi leaves, wood seppang, teba coppeng, Cempa-Cempa sibokori, herbs, roots nut, cinnamon, singapore leaves, guava leaves.

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