



Socio-Cultural Aspects of the Risk of Diabetes Mellitus in Tolotang Traditional Chairman (UWA) in Sidrap District

Mulfi Jumliah Agustin^{a,1*}, Usman^{a,2}, Fitriani Omar^{a,3}

^aUniversitas Muhammadiyah Parepare, Indonesia

¹almulfijumliahagustin123@gmail.com, ²usman12345@gmail.com, ³fitriani55@gmail.com

Received: 25-09-2022

Accepted: 27-11-2022

Published: 20-12-2022

ABSTRACT

Diabetes Mellitus cases are high in South Sulawesi, especially in Sidrap Regency, reaching (2.7%) while the national prevalence rate is (2.1%). The Tolotang culture respects traditional leaders by serving sweet foods, so there is a risk of Diabetes Mellitus. This study was to identify socio-cultural and dietary patterns to the risk of Diabetes Mellitus in Tolotang traditional leaders. This type of research is a mixed method. Informants in this study were traditional leaders and the Tolotang community in Sidrap Regency. Sampling was done by snowball sampling method. The results obtained are related to socio-culture; people often serve heavy foods high in calories and carbohydrates accompanied by snacks such as cakes and sweet drinks. The presentation of food for traditional leaders when tradition is done and specially prepared on a tray (large round tray made of iron) containing rice and side dishes, then using the board (a typical Bugis Makassar container used to serve cakes) filled with various types of cake snacks. It is different from people who do as usual by taking their food, which has been prepared during the ritual. The results showed that (60.0%) of traditional leaders had diabetes based on their current blood sugar levels. The traditional leader's calorie consumption (35.0%) is more, and (50.0%) is sufficient. Carbohydrate consumption (35.0%) is more, and (55.0%) is adequate. It was concluded that the traditional leader's diet was, on average, high in calories which contained many sources of carbohydrates and fats. It is suggested that there is a need for education to educate the public to serve healthier foods that are low in calories and fibre, such as vegetables and fruits.

Keywords: socio-cultural, diabetes mellitus, diet.

*Corresponding Author



INTRODUCTION

Diabetes Mellitus (DM) is a group of metabolic diseases with characteristics including hyperglycemia resulting from insulin abnormalities, insulin action, or a combination of insulin abnormalities and insulin action (Raj et al., 2022). Diabetes Mellitus is a case that is often found and accounts for around 90% of cases of all DM in the world (Ruze et al., 2023). In Southeast Asia, 82 million were recorded in 2017. Indonesia is the seventh country out of the top 10 countries, which are estimated to have a total of 5.4 million Diabetes Mellitus sufferers in 2045 and have low blood sugar control rates (Adri et al., 2020).

A report on the results of Basic Health Research (Riskesdas) of the Ministry of Health of the Republic of Indonesia (Depkes, 2013) shows that the average prevalence of DM in each province of Indonesia based on a doctor's diagnosis of residents aged ≥ 15 years in 2013 reached 1.5%, and increased in 2018 reaching 2%. The prevalence of diabetes Mellitus based on blood tests of residents aged ≥ 15 years with the 2011 Indonesian Endocrinology Association (Perkeni) consensus in 2013 reached 6.9%. It increased in 2018 to get 8.5% (Sukmawati, 2019).

An increase in cases of Diabetes Mellitus in Indonesia occurs in various provinces, one of which is the province of South Sulawesi which ranks 4th as a non-communicable disease with a percentage of 6.65% and ranks fifth as a cause of death in South Sulawesi (Kristina et al., 2015). The prevalence of diabetes in South Sulawesi, diagnosed by a doctor, is 1.6%. DM diagnosed by a doctor or based on symptoms by 3.4%.

Sidenreng Rappang Regency is one of the three districts with the highest prevalence rate of diabetes in South Sulawesi, where the prevalence rate for diabetes mellitus is above the national prevalence rate of 2.7%. In contrast, the national prevalence rate is 2.1%. The highest prevalence of diabetes diagnosed by doctors was in Pinrang Regency (2.8%), Sidrap Regency (2.7%), Makassar City (2.5%), North Toraja Regency (2.3%) and Palopo City (2.5%). 1%) (Sukmawati, 2019) .

The consequences of uncontrolled blood sugar levels are various diseases, such as hypertension, coronary heart disease, and stroke, and can even cause death. Therefore, it is necessary to maintain a diet and always pay attention to the food's nutritional content to prevent diabetes (Endrawati, 2020).

The factors that cause diabetes mellitus most influence are unhealthy lifestyle factors such as wrong eating patterns and tend to be excessive, causing obesity (Sudargo et al., 2018). Obesity is very closely related to type 2 diabetes mellitus. Then sedentary activity causes a lack of burning calories, and high stress causes increased blood triglycerides and the use of corticosteroid class drugs in the long term. Other causative factors, such as age and heredity, cannot be changed (Muthia Varena, 2019).

Poor eating patterns are also at risk of obesity and diabetes (Nicolau et al., 2022). Some unhealthy eating patterns, such as excessive amounts of food and drink consumed that are not needed by the body, can cause diabetes and obesity. Then the type of food does not contain the nutrients the body needs and consumes too much sweet food (Okoduwa & Abdulwaliyu, 2023). Drinks will increase blood sugar, and eating fried foods increases calories. Then the frequency and schedule of eating that are irregular and not good can cause digestive disorders (Widiyoga et al., 2020).

Socio-culture is very closely related to disease, as for the problems that often occur today, one of which is due to the culture of the community itself. Culture or culture can shape habits and responses to disease in society regardless of their level. For example, in social culture, the Bugis Makassar tribe has instilled a rule in the family that when they eat together, it is one of the things that must be done and has become an obligation for generations.

In addition, the custom of the Bugis Makassar people at certain celebrations is to serve high-calorie foods that contain lots of carbohydrates and fats, such as rice, sticky rice, galangal chicken, chicken curry, free range, leppe-leppe, along with fish. The cakes are konde-konde, decrepit, suwella, Doko-Doko, bandang, fried bananas, concur bayao, green bananas, barongko, and Dutch fried bananas, made using eggs and sugar so that the taste of this cake is very sweet. In addition, foods made from high fat and calories, such as konro, Makassar Coto, and brother soup, have become the daily food of the people of Makassar. When related to the culture of the people, the majority of Makassar Bugis specialties are, on average, high in calories and contain lots of sources of carbohydrates and fat, which, if consumed continuously, will risk obesity and diabetes (Raditya et al., 2016).

Tolotang (Tolottang or Towani Tolotang) is a belief that is adhered to by the majority in several areas within the province of South Sulawesi, especially in the Sidenreng Rappang Regency. Around 5,000 residents in the Amparita area, Sidrap Regency adhere to beliefs passed down from generation to generation. Not only in the Amparita area, but Tolotang adherents have also spread in several areas, including the Kanyuara Village and its surroundings (Rusli, 2012). Some sources say that the founder of Tolotang is La Panaungi. These Tolotang adherents know that God exists, and they know him better by the name Dewata SeuwaE (God Almighty), who has the title PatotoE (The One Who Determines Destiny) (Maidin, 2016) .

According to UT (43 years), in socio-culture Tolotang adherents state that in various large processions, for example, in ritual processions such as Mappenre Inanre, Tudang Sipulung, Mappano'-pano', Mappadendang, even Sipulung which is held once a year, always provide or present food in large portions. During the procession, they always carry it out in the presence of Uwatta (traditional leader) or ritual leader, who is still a direct descendant of the founder of the Towani Tolotang community (Rismayani, 2018).

Tolotang culture, when given food, they serve several menus and portions of food for traditional leaders and the community. Serving food is separated between the community and the customary leader. The model for serving food to the community is different from the traditional leaders who are given a special menu present during the procession of ritual events (Putri, InPutri, Indah Riadi, Faida, Lies Rahayu Wijayanti, Fandeli, Chafid, & Purwanto, 2017). Then when serving food, the traditional leader (USA) is given food three times, namely first in the form of cakes and drinks, then followed by heavy food, and after that, snacks (Hunowu, 2020). Most of the food they serve is in the form of food and sweet drinks. It is high in calories on average and contains lots of carbohydrates and fat sources, which, if consumed continuously, will risk causing obesity and diabetes (Sukma & Margawati, 2014).

METHOD

This research is a mixed method research, namely qualitative and quantitative. The qualitative research with an ethnographic design was conducted to obtain data on the socio-cultural aspects of Tolotang, which are at risk of diabetes mellitus. Then a quantitative study with a descriptive design was carried out to determine the diet and blood sugar levels of the Tolotang customary leader. This research was conducted in Sidenreng Rappang Regency. The time of research was carried out in June-July 2022. To obtain socio-cultural data, informants were used, namely traditional and community leaders in Sidenreng Rappang Regency, for community informants as many as seven people. Then for the variable diet and checking blood sugar levels, 20 traditional head informants were carried out. How to select samples or informants with the snowball sampling method.

a. Data analysis

- Qualitative Analysis

This analysis uses content analysis which is carried out by interviewing the socio-cultural aspects of Tolotang traditional leaders using a questionnaire.

- Quantitative Analysis

This analysis was conducted using a nutritional survey on dietary patterns through a 2x24-hour food recall and measurement of blood sugar levels in Tolotang customary leaders by processing data using the SPSS version 28 application.

RESULTS AND DISCUSSION

A. RESULTS

a. Dietary habit

Data on the total consumption of calories, carbohydrates and blood sugar levels during the customary head can be seen in the table below.

Table 1. Distribution of Consumption of Calories, Carbohydrates and Blood Sugar LevelsAs Traditional Leader in Sidrap Regency in 2022

Variable	n	%
Calories		
Not enough	3	15.0
Enough	10	50.0
More	7	35.0
Carbohydrate		
Not enough	2	10.0
Enough	11	55.0
More	7	35.0
Current Blood Sugar Levels		

Variable	n	%
DM	12	60.0
Normal	8	40.0
Total	20	100.0

Source: Primary data 2022

Table 1 shows the calorie and carbohydrate intake results through a 2x24 *food recall*. From 20 respondents from the head of the adat, there were calorie intakes included in the low category, namely three people (15.0%), sufficient variety ten people (50.0%) and seven categories (35.0%) respondents. Carbohydrate intake is included in the low sort, namely two people (10.0%), the good type is 11 people (55.0%), and the more class is 7 (35.0%) respondents.

The results of blood sugar levels when obtained were 12 people (60.0%) had DM or blood sugar levels > 200 mg/dL, and eight people (40.0%) were included in the normal category or blood sugar levels <200 mg/dL

Table 2. Distribution of DM History in the Family and Diagnosis Suffering from DM in Traditional Leaders in Sidrap Regency in 2020

Variable	n	%
Family history of DM		
There is History (Father)	5	25.0
History (Mother)	2	10.0
No History	13	65.0
Diagnosed with DM		
Suffering DM	2	10.0
Not Suffering DM	18	90.0
Total	20	100.0

Source: Primary data 2022

Table 2 shows that the results of the 20 traditional head respondents found that 5 (25.0%) had a history of DM from the family, namely the father, 2 (10.0%) had a history of DM from the family, namely the mother and 13 (65.0%) did not. have a family history of DM. Then, of the 20 traditional head respondents diagnosed with DM, only two people (10.0%) and 18 people (90.0%) had never been diagnosed with DM.

B. DISCUSSION

a. Socio-Cultural Aspects of the Tolotang Community

Towani Tolotang is a belief held by most people in several areas within the province of South Sulawesi, especially in the Sidenreng Rappang District. About 5,000 residents in Amparita, Sidrap Regency, adhere to beliefs passed down from generation to generation. Not only in the Amparita area, but Tolotang adherents have also spread in several areas. The distinctive feature of the Towani Tolotang ideology is that the men wear black skullcaps accompanied by sarongs. In contrast, the women wear kebaya, and most do not wear footwear to walk towards the southwest of Amparita to take part in the big day celebration, which is called *Sipulung*, which is held once a year in January. in Panrinyameng Amparita.

The results of research based on socio-culture related to the way of serving food for traditional leaders during ritual traditions which have been done on a *tray* (large round tray made of iron) containing rice and side dishes than using *bosara* (a typical Bugis Makassar container used to help cakes) which filled with various types of cake snacks and drinks provided for traditional leaders. The types of food often served during traditions include heavy meals in the

form of rice, sticky rice, galangal chicken, chicken curry, free-range, leppe-leppe, and fish. Then snacks include konde-konde cakes, older adults, suwella, doko-doko, bandang, fried bananas and drinks in the form of sweet tea, coffee and usually accompanied by sweet wine. The majority of foods consumed on average are high in calories and contain lots of sources of carbohydrates and fats, which, if finished continuously, will be at risk of obesity and diabetes. For this reason, people need to serve healthier foods low in calories and fibre, such as fruits.

This research is in line with study conducted by (Anwar, 2021) stating that the types of food that are often served are heavy foods such as rice, nasu likku, leppe-leppe and various kinds of Bugis cakes and sweet drinks where the cakes are arranged on top of *bosara* which is a cake container or place typical of the Bugis Makassar which is often used during party events in the Bugis Makassar community.

b. Risk of Diabetes Mellitus

Diabetes Mellitus is when blood sugar (glucose) levels increase or are above normal limits (Swaby & Randell, 2021). Glucose accumulates in the blood due to not being properly absorbed by the body's cells, which can cause various organ disorders. In addition, insulin receptors on cells throughout the body, including muscles, are reduced in number and less sensitive. Insulin resistance increases with obesity which can block glucose from entering power and fat cells so that glucose in the blood rises.

Food influences socio-cultural behaviour so that it interferes with one's eating pattern. Frequent attending events cause disorders in eating habits, so they often consume food and drinks that trigger diabetes mellitus.

Based on the study's results, it was found that when the respondent's blood sugar levels were 12 people (60.0%) had DM, and eight people (40.0%) were included in the normal category. This is because, at the time of tradition, the majority of food consumed was in the form of heavy food such as rice, sticky rice, galangal chicken, chicken curry, buras, and leppe-leppe, along with fried fish. Apart from that, they also consume cake snacks in the form of konde-konde, older adults, suwella, doko-doko, bandang, fried bananas and drinks in the form of sweet tea and coffee accompanied by sweet wine. On average, foods that are high in calories and contain lots of carbohydrates and fat sources, which, if consumed continuously, will be at risk of obesity and diabetes.

The study also found that seven people (35.0%) were included in excess calories and seven people (35.0%) had more carbohydrates. Judging from the diet, the average type of carbohydrate most often consumed is white rice which is consumed > 1x a day. Then the sweet drinks most often consumed were sweet tea and coffee, which were consumed >1x a day, and the types of sweet foods most often consumed were konde -konde and the elderly, which were consumed 1-2x/week. In addition, those who had DM also had a family history. Namely, two people (25.0%) had a history of DM from their father, 2 (10.0%) had a history of DM from their mother, and only two people (10.0%) had a history of DM. Ever been diagnosed with diabetes mellitus?

This research is in line with (Oktaviani, 2022) which states that If you eat too many foods per day, especially those high in calories and contain carbohydrate sources such as rice, it will be difficult for glucose to enter cells and increase blood glucose levels. Eating excessively and exceeding the number of calories needed by the body can trigger Diabetes Mellitus.

This research is in line with (Hariawan et al., 2019), which states that excessive eating patterns and an unhealthy lifestyle will cause instability in blood sugar levels, leading to diabetes mellitus.

CONCLUSION

Based on the research results, it can be concluded that: 1.) In socio-cultural terms, the Tolotang people respect the traditional leaders by serving special food specifically for the traditional leaders. The type of food that is often performed by the community is in the form of heavy meals such as rice and side dishes which are served on trays' (large round trays made of iron) then use bosara (a typical Bugis Makassar container used to help cakes) filled with various types of cake snacks and sweet drink provided specifically for traditional leaders. 2.) The average traditional leader's diet is high in calories. It contains many carbohydrates and fat sources, so she is at risk of diabetes. The study found that seven people (35.0%) had more calories, and seven people (35.0%) were included in more carbohydrates. Then obtained blood sugar levels were as many as 12 people (60.0%) had Diabetes Mellitus, and eight people (40.0%) were included in the normal category.

REFERENCE

- Adri, K., Arsin, A., & Thaha, R. M. (2020). Faktor Risiko Kasus Diabetes Mellitus Tipe 2 dengan Ulkus Diabetik di RSUD Kabupaten Sidrap. *Jurnal Kesehatan Masyarakat Maritim*, 3(1). Google Scholar
- ANWAR, A. (2021). *Perkembangan Tari Pakkuru Sumange'Di Desa Sungsang II, Kecamatan Banyuasin II, Kabupaten Banyuasin*. UIN Raden Fatah Palembang. Google Scholar
- Depkes, R. I. (2013). Riset kesehatan dasar. *Jakarta: Badan Penelitian Dan Pengembangan Kesehatan Kementrian Kesehatan RI*. Google Scholar
- Endrawati, N. R. L. (2020). *Hubungan Diabetes Self Management Education Dengan Status Gizi Pada Penderita Diabetes Melitus Tipe 2 di RT 001-004 Desa Mlideg Kedungadem Bojonegoro*. STIKes Insan Cendekia Medika Jombang. Google Scholar
- Hariawan, H., Fathoni, A., & Purnamawati, D. (2019). Hubungan gaya hidup (pola makan dan aktivitas fisik) dengan kejadian diabetes melitus di Rumah Sakit Umum Provinsi NTB. *Jurnal Keperawatan Terpadu (Integrated Nursing Journal)*, 1(1), 1–7. Google Scholar
- Hunowu, M. (2020). *Linula Molalahu: Sejarah, Tradisi dan Kearifan*. Insan Cendekia Mandiri. Google Scholar
- Kristina, P. L., Dina, B., & Oster, S. (2015). Gambaran Penyebab Kematian di Kabupaten Gowa Provinsi Sulawesi Selatan Tahun 2011. *Buletin Penelitian Sistem Kesehatan*, 18(1), 57–64. Google Scholar
- Maidin, A. M. R. (2016). Struktur Dan Pola Hubungan Sosial Dalam Komunitas Tolotang Benteng Di Amparita Kab. Sidrap Provinsi Sul-Sel. *Jurnal Ilmiah Ecosystem*, 16(1), 1–13. Google Scholar
- Muthia Varena, M. V. (2019). *Asuhan keperawatan pada Ny Z dengan diabetes melitus di ruang rawat inap ambun suri lantai 3 RSAM Bukittinggi tahun 2019*. stikes perintis padang. Google Scholar
- Nicolau, J., Pujol, A., Tofé, S., Bonet, A., & Gil, A. (2022). Short term effects of semaglutide on emotional eating and other abnormal eating patterns among subjects living with obesity. *Physiology & Behavior*, 257, 113967. <https://doi.org/https://doi.org/10.1016/j.physbeh.2022.113967> Scopus
- Okoduwa, S. I. R., & Abdulwaliyu, I. (2023). Dietary approach for management of Type-2 diabetes: An overview of glycemic indices of commonly consumed foods in Nigeria. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 17(1), 102698. <https://doi.org/https://doi.org/10.1016/j.dsx.2022.102698> Scopus
- Oktaviani, N. K. S. (2022). *Hubungan Tingkat Konsumsi Karbohidrat Dan Frekuensi Olahraga Dengan Kadar Glukosa Darah Pasien Dm Tipe 2 Pada Masa Pandemi Covid-19 Di UPTD Puskesmas Ii Denpasar Barat*. Poltekkes Kemenkes Denpasar Jurusan Gizi 2022. Google Scholar
- Putri, InPutri, Indah Riadi, Faida, Lies Rahayu Wijayanti, Fandeli, Chafid, & Purwanto, R. H. (2017). (2017). Tradisi Masyarakat Selo Dan Pariwisata Di Taman Nasional Gunung Merbabu, Boyolali Jawa Tengah. *SASDAYA: Gadjah Mada Journal of Humanities*, 1(2), 199–218. Google Scholar
- Raditya, M. H. B., Widyastutiningrum, S. R., Supanggah, R., Walujo, D., Sudiharto, S., Tirtokusumo, S., Maruti, R., Suharti, T., Sutton, R. A., & Stebinger, A. (2016). *Sal Murgiyanto: Hidup untuk Tari*. ISI Press. Google Scholar
- Raj, S. K., Babu, M. R., Vishwas, S., Chaitanya, M. V. N. L., Harish, V., Gupta, G., Chellappan, D. K., Dua, K., & Singh, S. K. (2022). An overview of recent advances in insulin delivery and wearable technology for effective management of diabetes. *Journal of Drug Delivery Science and Technology*, 75, 103728. <https://doi.org/https://doi.org/10.1016/j.jddst.2022.103728> Scopus
- Rismayani, R. (2018). *Dinamika Proses Sosial Masyarakat Towani Tolotang dengan Masyarakat Lokal Kelurahan Amparita Kabupaten Sidrap*. Universitas Islam Negeri Alauddin Makassar. Google Scholar
- Rusli, M. (2012). Kearifan Lokal Masyarakat Towani Tolotang di Kabupaten Sidenren Rappang. *Al-Ulum*, 12(2), 477–496. Google Scholar
- Ruze, R., Chen, Y., Xu, R., Song, J., Yin, X., Wang, C., & Xu, Q. (2023). Obesity, diabetes mellitus, and pancreatic carcinogenesis: Correlations, prevention, and diagnostic implications. *Biochimica et Biophysica Acta (BBA) - Reviews on Cancer*, 1878(1), 188844. <https://doi.org/https://doi.org/10.1016/j.bbcan.2022.188844> Scopus

- Sudargo, T., Freitag, H., Kusmayanti, N. A., & Rosiyani, F. (2018). *Pola makan dan obesitas*. UGM press. Google Scholar
- Sukma, D. C., & Margawati, A. (2014). *Hubungan pengetahuan dan sikap dalam memilih makanan jajanan dengan obesitas pada remaja di SMP Negeri 2 Brebes*. Diponegoro University. Google Scholar
- Sukmawati, D. A. (2019). *Asuhan keperawatan pasien diabetes melitus gangren pada NY. R dan TN. S dengan masalah keperawatan kerusakan integritas jaringan di ruang melati RSUD Dr. Haryoto Lumajang Tahun 2019*. Fakultas Keperawatan Universitas Jember. Google Scholar
- Swaby, R., & Randell, T. (2021). Strategies for optimising blood glucose control in diabetes mellitus. *Paediatrics and Child Health* 31(4), 146–152. <https://doi.org/https://doi.org/10.1016/j.paed.2021.01.004> Scopus
- Widiyoga, R. C., Saichudin, S., & Andiana, O. (2020). Hubungan tingkat pengetahuan tentang penyakit diabetes melitus pada penderita terhadap pengaturan pola makan dan physical activity. *Sport Science and Health*, 2(2), 152–161. Google Scholar