Eksakta
Berkala Ilmiah Bidang MIPA
http://www.eksakta.ppj.unp.ac.id/index.php/eksakta

Article

Accidental Sampling Study on Quality of Life for Diabetes Mellitus Patients and Family Support System

Hendrawati[1], Ridhyalla Afnuhazi[1*], Ahsan[2], Rifka Putri Andayani[3], Devi Purnamasari[4]

[1]Departement of Nursing, Akademi Keperawatan (AKPER) Nabila Padang Panjang, Indonesia
[2]Department of Nursing, Faculty of Medicine, Universitas Brawijaya, Malang, Indonesia
[3]Sekolah Tinggi Ilmu Kesehatan (STIKES) Mercubaktijaya Padang, Indonesia
[4]Department of Radiology Engineering, Sekolah Tinggi Ilmu Kesehatan (STIKES) Awal Bros Pekanbaru, Indonesia

Abstract. Family support is a major factor in maintaining metabolic control that will affect quality of life. The research objective was to analyze family support and life quality of Diabetes Mellitus (DB). This research is a cross sectional study using the Accidental Sampling method. It was conducted at the Puskesmas Kebun Sikolos with a total of 90 respondents. The statistical test used was chi-square. The results showed a relationship between family support and life quality of DB with a value of p = 0.000 <α (0.05).

Corresponding Author :
Hendrawati
Akademi Keperawatan (AKPER) Nabila Padang Panjang, Indonesia
Email : hendrawati40@gmail.com

1. Introduction

The prevalence of DM in the world has increased from 108 million in 1980 to 422 million in 2014. The global prevalence of diabetes in adults has increased from 4.7% to 8.5%. This incidence is increasing more rapidly in middle and low income countries. Nearly half of all deaths directly caused by high blood glucose occur before the age of 70 years [1,2]. Indonesia with diabetes sufferers as many as 8.4 million people ranks fourth as the country with the most diabetes population both in 2000 and 2030. In 2030, the estimation of DM prevalence in Indonesia will reach 21.3 million people [3]. The prevalence of Diabetes mellitus in West Sumatra is as much (1.3%) in 2014 which is

estimated that the population diagnosed with DM is 44,561 people, which ranks 14 out of 33 provinces in Indonesia. Based on age, many sufferers were in the age range 56-64 years with a prevalence of (4.8%). From the data obtained by the Padang Panjang City Health Office (2016), it was found that there were 482 DM sufferers who were ranked 2nd after hypertension, this number has increased from 2015, namely there were as many as 364 people with DM in all Puskesmas Kota Padang Panjang. Data from the Padang Panjang City Health Office (2017) there were DM patients with 258 new patients and 2,527 old patients. The prevalence of DM in the work area of Kebun Sikolos Padang Panjang health center is 597 people.

Diabetes mellitus has common symptoms such as polyuria, polyphagia, polydipsia, weight loss, weakness, fatigue, tingling, itching, decreased vision, sores/ ulcers, and vaginal discharge [1,4]. As with other diseases, DM also has complications which include an increased risk of heart disease and stroke, neuropathy (nerve damage), diabetic retinopathy and kidney failure [5]. DM complications can affect the quality of life of the sufferer [6]. Poor quality of life will worsen the condition of a disease, can cause psychological problems, metabolic disorders, stress and other complications [7]. Quality of life is a feeling of well-being in the individual, which comes from the individual's feeling of satisfaction or dissatisfaction with an area of life that is important to him [8].

Quality of life is very important to get serious attention, because this quality of life is something that is closely related to morbidity and mortality. The low quality of life of DM patients is influenced by various complications of diabetes mellitus such as obesity, hypertension, and changes in sexual function, in addition to complications, the quality of life of DM patients is strongly influenced by family support and is the most important factor for maintaining the patient's quality of life [9].

Family support is a form of assistance provided by a family member to provide physical and psychological comfort when someone is sick [10]. Family has a very important role for the survival of people with DM. Family has a strong relationship with the health status of people with diabetes, lack of family support will affect blood sugar control and so that the quality of life can decrease [11].

Family has a role in the health status of patients with chronic diseases such as DM. Family support has a positive impact on care management compliance in DM sufferers. Patients who get family support tend to make behavioral changes to be healthier than sufferers who do not get support. Good family support is significant with the survival of DM patients. Family support plays an important role in the mental health of DM patients. Family support is not only about providing assistance, but also how the recipient perceives the meaning of the assistance [12].

Based on the data obtained in the working area of Kebun Sikolos Health Center, there were 597 people with Diabetes Mellitus. When conducting interviews with 10 Diabetes Mellitus sufferers, 7 out of 10 Diabetes Mellitus patients said that they came to the center for treatment sometimes by their families and their families often reminded them to take control to the Puskesmas, and the patients said they were happy with the attention given by their families while 3 others said they felt they were not cared for by their families, so that patients felt they were not considered in their families. The research objective was to analyze family support and life quality of DM patients in the working area of Kebun Sikolos Health Center, Padang Panjang.

2. Method

This type of research is quantitative, with a descriptive analytic research design that is to determine the relationship between two variables. The variable in question is family support with the quality of life of people with diabetes mellitus in the working area of Kebun Sikolos Health Center, Padang Panjang. This study uses a cross sectional approach, which is a study that studies the dynamics of

the correlation between risk factors and effects, by approaching, observing or collecting data at once (point time approach) [13].

Based on preliminary data obtained by researchers, there were 597 people suffering from Diabetes mellitus. The sampling technique uses the Accidental Sampling method. This research was conducted in the work area of the Kebun Sikolos Padang Panjang Health Center from March to August 2018. Data obtained through questionnaires distributed to respondents to determine the variables of family support and quality of life which are closed, where respondents can choose answers that have been made. The analysis used univariate and bivariate analysis and the data collected was then processed by computerization (SPSS).
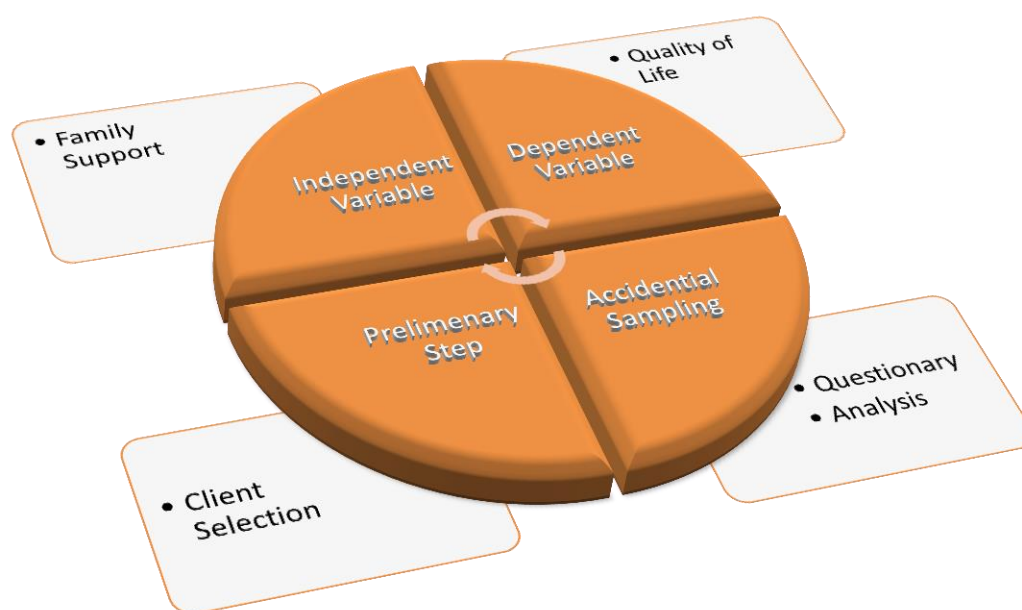

Figure 1. Research Schematic of Accidental Sampling

3. Results and Discussion
In this study, it is described through a univariate analysis of family support with the quality of life of people with diabetes mellitus in the working area of Kebun Sikolos Padang Panjang Health Center, which is presented as follows:

Tabel 1 Frequency Distribution of Family Support for Diabetes Mellitus Patients

No	Family Support	(*f*)	(%)
1	Not Good	38	42.2
2	Good	52	57.8
	Total	**90**	**100.0**

Based on the table above, it is known that more than half of the respondents received good family support, namely as many as 52 people (57.8%). This is also in line with research conducted by

Rantung, Yetti, and Herawati (2015) that there is a relationship of family support to the quality of life of people with diabetes mellitus, there are 80.8% of respondents who have good family support [14]. Ramadhani, Agusman, and Hadi (2016) also explained that there are 100 respondents (55%) who have supportive family support [15]. Family support in the form of attitude and acceptance plays a very important role in community life at large [6].

Based on the results of the research and the above theory, the researcher assumes that family support plays an important role in healing DM sufferers so that patients are able to accept the illness they are suffering from. For this reason, it is advisable for families to provide encouragement, motivation or assistance to DM sufferers in dealing with their illness so that they can arouse the patient's spirit of life, have a positive impact on patient self-care so that they can provide physical and psychological comfort.

Tabel 2 Distribution of Quality of Life for Diabetes Mellitus Patients

No	Quality of Life	(f)	(%)
1	Disturbed	41	45
2	Good	49	54
	Total	**90**	**100.0**

Based on the table above, it is known that more than some respondents have a good quality of life, namely as many as 49 people (54%). Ramadhani et al., (2016) in their research on the analysis of the relationship between family support and quality of life, showed that the higher the value of family support, the higher the value of quality of life [15]. In a study conducted by Tamara, Bayhakki, and Nauli (2014) it can be seen that (41.3%) respondents have a high quality of life (26.1%) have a low quality of life [16]. Based on the values above, it can be seen that there is a relationship between family support and the quality of life for DM sufferers.

Quality of life is the degree of a person enjoying his life, this enjoyment has two components, namely experience and satisfaction with life [12]. Khairani (2016) explains that quality of life is a feeling of well-being that comes from an individual's sense of satisfaction or dissatisfaction with an area of life that is important to him [18]. The same thing was conveyed by Mirza (2017) that quality of life describes an individual's ability to maximize physical, social, psychological, and work functions which are indicators of recovery or adaptability in chronic diseases [6].

Meanwhile, according to researchers, the quality of life is that a person can perceive the goodness of several aspects as a degree of satisfaction with the acceptance of the current life atmosphere so that DM sufferers can go through their lives after being convicted of DM DM sufferers are enthusiastically satisfied with what they are doing, do not lose their passion in life, do not feel depressed or are depressed due to their illness. It is hoped that the family can improve the quality of life in patients with the quality of life so that DM patients get more attention. Quality of life is something that is closely related to morbidity and mortality in DM patients.

Quality of life is reflected in two aspects, namely physical aspects and psychological aspects. In the physical aspect, it can be seen from the choice of food such as carbohydrate, protein and fat content. The choice of food by measuring the glycemic index also determines how it affects a person's quality of life. Foods with a high glycemic index will cause a potential increase in sugar levels in a person's body. Therefore, consideration in choosing food becomes an important part of the aspect of quality of life physically [24,25].

Qualities related to psychological, are various burdens of thoughts and feelings that affect a person's psyche. This can also cause disturbances in carbohydrate metabolism, causing an increase in sugar levels and the potential for DM. Therefore, DM patients who have a psychological burden will be vulnerable to experiencing the risk of experiencing chronic acute DM. Cortisol production is one of the triggers for increased sugar levels in a person's body. Cortisol is triggered by the influence of psychological stresses such as stress and depression [24,25].

Table 3 Family Support for Quality of Life for Diabetes Mellitus Patients

Family Support	Quality of life		p Value
	Disturbed	Good	
Noot Good	100	0	
Good	5.8	94.2	0.000
Total	**45.6**	**54.4**	

Based on the table above, it is known that the results of the analysis of the relationship between family support and the quality of life of people with diabetes, that is, from 90 respondents, 38 people (100%) DM sufferers whose family support is not good, the overall quality of life is disturbed. Meanwhile, from 90 respondents, 52 respondents got good family support and there were 49 respondents (94.2%) who had a good quality of life too. From the results obtained, there is a significant relationship between family support and quality of life for people with Diabetes mellitus in the working area of Puskemas Kebun Sikolos Padang Panjang.

The results of this study are in line with research conducted by Retnowati and Satyabakti (2015) that family support has a significant relationship with the quality of life of DM sufferers besides that there is also a strong category relationship which is used to determine the strength of the relationship between two variables [17]. In the research of Tamara et al., (2014) stated that there is a relationship between family support for the quality of life of diabetes mellitus patients, with high family support, the quality of life will be high because an increase in one domain of family support will improve the quality of life [16].

This research is in line with the theory that family support is related to welfare and health where the family environment is a place for individuals to learn for life. Family support is defined as an important factor in disease management adherence to adolescents and adults with chronic disease. Family support is significant in overcoming eating barriers for DM patients. Family support is the strongest indicator of having a positive impact on self-care in diabetes patients [15]. This study is also in line with Henserling's theory which developed a family support measurement scale with the name Henserling Diabetes Family Support Scale (HDFSS), where this scale shows the validity of content for measuring patient perceptions of support provided by the family. HDFSS measures the family support felt by DM patients [15].

Meanwhile, according to researchers, the relationship of family support with the quality of life of DM sufferers is very close, because patients in their management need a lot of help from their families starting from their care, dietary arrangements such as regulating predetermined food amounts, predetermined eating schedules, dietary restrictions, all require support. from the family so that the quality of life of people with DM increases. It is hoped that after carrying out research on the relationship of family support with the quality of life of people with diabetes, it can increase knowledge to diabetics about family support and quality of life.

The continued implementation of this research is how the role of the family in preventive efforts against the incidence of DM in the family. Support efforts in the form of understanding information

on the potential of DM both in lifestyle aspects, including diet and daily habits, as well as on nutritional choices from food, are very urgent. This decision is a determining factor for someone to be affected and suffer from DM. In this implementation, the attitudes of support and rejection of the habits that have been formed so far are also factors that make the DM study aspects closely related to the quality of life and the increasing number of DM sufferers in Indonesia [18-23].

4. Conclusion

There is a significant relationship between family support and the quality of life of people with diabetes mellitus in the working area of Puskemas Kebun Sikolos Padang Panjang with a value of $p = 0.000 < \alpha$ (0.05).

Acknowledgment

References

[1]   WHO. (2018). Diabetes 30. 30 October 2018, (October 2018), 5. Retrieved from https://www.who.int/es/news-room/fact-sheets/detail/diabetes

[2]   ADA. (2014). Diagnosis and Classification of Diabetes Mellitus. Diabetes Care, 37(January), 81–90. https://doi.org/10.2337/dc14-S081

[3]   Jayaningrum, F. (2016). Aktivitas Media Smart Book dalam Meningkatkan Pengetahuan Tentang Penatalaksanaan Diabetes Mellitus pada Pasien Diabetes Mellitus di Puskesmas Kedungmundu Kota Semarang. Journal of Health Education, 1(2), 8–13.

[4]   Huang, I. (2018). Patofisiologi dan Diagnosis Penurunan Kesadaran pada Penderita Diabetes Mellitus. Medicinus, 5(2), 48–57. https://doi.org/10.19166/med.v5i2.1169

[5]   Ogurtsova, K., Fernandes, J. D. R., Huang, Y., Linnenkamp, U., Guariguata, L., Cho, N. H., Makaroff, L. E. (2017). IDF Diabetes Atlas: Global estimates for the prevalence of diabetes for 2015 and 2040. Diabetes Research and Clinical Practice, 128, 40–50. https://doi.org/10.1016/j.diabres.2017.03.024

[6]   Mirza, R. (2017). Memaksimalkan Dukungan Keluarga Guna Meningkatkan Kualitas Hidup Pasien Diabetes Mellitus. Jurnal Jumantk, 2(Dm), 12–30.

[7]   Nuari, N. . (2016). Development of Self Empowerment Model and Quality of Life Improvement for Patients with Diabetes Mellitus Type 2. Jurnal Ners Lentera, 4(2), 152–165.

[8]   Khairani, R. (2016). Prevalensi diabetes mellitus dan hubungannya dengan kualitas hidup lanjut usia di masyarakat. Universa Medicina, 26(1), 18–26.

[9]   Rahman, Hh. F., Yulia, & Sukarmini, L. (2017). Self Efficacy, Adherence, and Quality of Life of Patients with Type 2 Diabetes. E-Jurnal Pustaka Kesehatan, 5(1), 108–113. Retrieved from https://jurnal.unej.ac.id/index.php/JPK/article/view/4059/3172

[10]   Jatmika, Y., Fitriyana, P., Komari, J., Nisak, C., Puspitasari, N., Nurkamilah, N., … Rasni, H. (2018). Effect of Family Therapy on Family Support in Caring for Clients with Diabetes Millitus. The Indonesian Journal of Health Science, (September), 114–122.

[11]   Bertalina, B., & Purnama, P. (2016). Hubungan Lama Sakit, Pengetahuan, Motivasi Pasien dan Dukungan Keluarga dengan Kepatuhan Diet Pasien Diabetes Mellitus. Jurnal Kesehatan, 7(2), 329. https://doi.org/10.26630/jk.v7i2.211

[12]   Nuraisyah, F., Kusnanto, H., & Rahayujati, T. B. (2017). Dukungan keluarga dan kualitas hidup pasien diabetes mellitus. Berita Kedokteran Masyarakat, 33(1), 25. https://doi.org/10.22146/bkm.7886

[13]   Notoadmojo, S. (2012). Notoadmojo 2010.Pdf. Jakarta: PT Rineka Cipta.

[14]   Rantung, J., Yetti, K., & Herawati, T. (2015). Hubungan Self-Care Dengan Kualitas Hidup Pasien Diabetes Mellitus (Dm) Di Persatuan Diabetes Indonesia (Persadia) Cabang Cimahi. Jurnal Skolastik Keperawatan, 1(01), 38–51

[15]   Ramadhani, D. Y., Agusman, F., & Hadi, R. (2016). Karakteristik, Dukungan Keluarga dan Efikasi Diri pada Lanjut Usia Diabetes Mellitus Tipe 2 di Kelurahan Padangsari, Semarang. Jurnal Ners Lentera, 4(2), 142–151

[16]   Tamara, E., Bayhakki, & Nauli, F. A. (2014). Hidup Pasien Diabetes Mellitus Tipe Ii Di Rsud Arifin Achmad Provinsi Riau. Jom Psik, 1(2), 1–7. https://doi.org/S1413-81232011001200004 [pii]

[17]   Retnowati, N., & Satyabakti, P. (2015). Hubungan Dukungan Keluarga Dengan Kualitas Hidup Penderita Diabetes Melitus Di Puskesmas Tanah Kalikedinding. Jurnal Berkala Epidemiologi, 3(1), 57–68

[18]   Arifin B, Probandari A, Purba AKR, Perwitasari DA, Schuiling-Veninga CCM, Atthobari J, et al.(2020). 'Diabetes is a gift from god' a qualitative study coping with diabetes distress by Indonesian outpatients. Quality of life research : an international journal of quality of life aspects of treatment, care and rehabilitation;29:109-25.

[19]   Nindrea RD, Sari NP, Harahap WA, Haryono SJ, Kusnanto H, Dwiprahasto I, et al.(2020). Survey data of multidrug-resistant tuberculosis, Tuberculosis patients characteristics and stress resilience during COVID-19 pandemic in West Sumatera Province, Indonesia. Data in brief;32:106293.

[20]   Pamungkas RA, Chamroonsawasdi K.(2020). Family Functional-based Coaching Program on Healthy Behavior for Glycemic Control among Indonesian Communities: A Quasi-experimental Study. Oman medical journal;35:e173.

[21]   Soegondo S, Widyahening IS, Istantho R, Yunir E.(2011). Prevalence of diabetes among suburban population of Ternate--a small remote island in the eastern part of Indonesia. Acta medica Indonesiana;43:99-104.

[22]   Subrata SA.(2020). The nursing outlook of the self- and family management support programs among Indonesian with diabetes: An umbrella review. Diabetes & metabolic syndrome;15:109-19.

[23]   Sukartini T, Theresia Dee TM, Probowati R, Arifin H.(2020). Behaviour model for diabetic ulcer prevention. Journal of diabetes and metabolic disorders;19:135-43.

[24]   Greenstein B, Wood DF, Greenstein B. The endocrine system at a glance. 2nd ed. Malden, Mass., USA: Blackwell Pub.; 2006.

[25]   Salway JG, Greenstein B. Medical biochemistry at a glance. 2nd ed. Malden, Mass.: Blackwell Pub.; 2006.