Relationship between family support with quality of life among type 2 diabetes mellitus patients at Amplas primary health care in Medan, Indonesia

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Abstract. In diabetic patients, adherence and ability to self-regulated are needed to patients is needed adherence and ability to self-regulate on prevent complications and decreased the quality of life. Family support is an important factor that can impact on self-management and compliance of diabetic patients. This study aimed to determine the relationship between family support and the quality of life of patients with type 2 Diabetes Mellitus at the Amplas Primary Health Care (PHC) in Medan. The design of this research is analytic method with the cross-sectional approach. The studied population was patients with Type 2 diabetes mellitus at the Amplas PHC Medan. The number of samples was 100 patients determined by consecutive sampling; inclusion and exclusion criteria were also considered. The primary data is that from direct interviews using questionnaire guidelines. Patient family support was measured using a validated family support questionnaire. For the quality of life, the Short Form-36 (SF-36) questionnaire was translated into Indonesian. All respondents filled out informed consent. Data were analyzed using Chi-square test done by SPSS computer program. The results showed the support of the family of diabetic patients at Amplas PHC in Medan is categorised as supportive family support (52%). The quality of life of diabetic patients in Amplas PHC is good (83%). Chi-Square Test results showed that there was a strong relationship between family support and quality of life of DM Type 2 patient at Amplas PHC in Medan (p<0.05).

1. Introduction

To prevent the occurrence of complications of type 2 DM, therapeutic and orderly management are required through proper lifestyle changes, firm and permanent. Management of type 2 diabetes includes dietary restriction, increased physical activity, appropriate treatment regimen, regular medical and metabolic media through laboratory examination [1]. Treatment of type 2 DM takes a long time because diabetes is a chronic disease that will last for life, and is very complex. It requires not only treatment but also lifestyle changes, causes patients tend to become discouraged by the therapy program. Such circumstances may affect the physical, psychological and social functional capacities and well-being of people with diabetes mellitus [2]. The family can affect the psychological client that will lead to an adaptive coping mechanism so that the best psychological state of diabetics is to avoid stress. Role of family in self-behavior and good self-management can control Blood Sugar Level (BSL) and results in good quality of life [3, 4, 5, 6].
Family support is defined as the assistance provided by other family members to enhance physical and psychological comfort for people to faced stressful situations [7]. Family social support is a process that occurs over a lifetime, with the nature and type of social support varying in each stage of the family life cycle. However, in all stages of the life cycle, family social support allows the family to function fully and can improve adaptation in family health [8]. The quality of life is the perception of an individual with his position in life-based on the cultural context and the judgmental system in life, and linked to outcomes, expectations, standards and will [9]. In research conducted by Retnowati et al. the majority of respondents who expressed satisfaction on the quality of life was the respondents who get good support from the family and no complications [10]. This study aimed to determine the relationship between family support and the quality of life of patients with type 2 Diabetes Mellitus at the Amplas Primary Health Care (PHC) in Medan.

2. Materials and methods

This study was conducted at Amplas PHC in Medan from July to November 2017. The population of this study was all patients with diabetes type 2 in the working area of Amplas PHC. The inclusion criteria were (1) patients with Type 2 Diabetes in the working area of Amplas PHC aged 35-65 years; (2) patients who visited the health center independently; (3) patients who were willing to participate in the research. On the other hand, the exclusion criteria were diabetic patients with complication who could not visit the health center independently and pregnant diabetic patients. The number of samples was 100 patients determined by the formula for the hypothesis of the population proportion while the samples were recruited with consecutive sampling method. Prior to the study, the study protocol was approved by the Ethical Commission of the Medical Faculty of Universitas Sumatera Utara and all patients participating in the study filled out an informed consent. The source of data is primary data from interviewing the patients using valid questionnaire. Family support assessment used a questionnaire consisting of 18 valid and reliable questions [11], while for a quality of life assessment, a 36-question SF-36 was used. Data were analyzed by using chi-square test of SPSS computer program. The confidence interval was set at 95%, and a p-value of <0.05 was considered significant.

3. Results

Table 1 shows that majority patients in the late elderly group (67%), female (60%), unemployed patients (36%), bachelor (34%), duration of illness is less than 10 years (67%). For the marital status of Type 2 Diabetes patients at Amplas PHC, as many as 98 patients (98%) who suffer from diabetes are married and only 2 patients (2%) are not married.
Table 1. Basic Characteristics of Patients with Diabetes type 2 at Amplas PHC in Medan

| Characteristics         | Frequency | Percentage |
|-------------------------|-----------|------------|
| Age                     |           |            |
| Mature (36-45 years)    | 9         | 9          |
| Early elderly (46-55 years) | 24        | 24         |
| Late elderly (56-65 years) | 67        | 67         |
| Sex                     |           |            |
| Female                  | 60        | 60         |
| Male                    | 40        | 40         |
| Job                     |           |            |
| Unemployed/ Housewife   | 36        | 36         |
| Farmer/ Trader/ Labor   | 0         | 0          |
| Government employee/ Army/ Police | 6    | 6          |
| Private employee        | 11        | 11         |
| Self Employed           | 26        | 26         |
| Retired                 | 21        | 21         |
| Level of education      |           |            |
| Illiterate              | 0         | 0          |
| Primary                 | 20        | 20         |
| Secondary               | 17        | 17         |
| High school             | 29        | 29         |
| Graduate school         | 34        | 34         |
| Duration of Illness     |           |            |
| <10 years               | 67        | 67         |
| ≥ 10 years              | 33        | 33         |
| Marital status          |           |            |
| Married                 | 98        | 98         |
| Not Married             | 2         | 2          |

Table 2 shows the patients with supportive family support and have good quality of life were present in 50 patients (50%). Analysis using Chi-Square with significance level 0.05 (α = 5%), obtained p-value is 0.010 (p <0.05) meaning that there is a relationship between family support with the quality of life of type 2 Diabetes Mellitus patients.

4. Discussion

4.1 Characteristics of Type 2 Diabetes mellitus patients at Amplas PHC Medan

Age affects the risk and incidence rate of type 2 diabetes. Age is closely related to the increase in blood glucose levels, so the increasing age of the prevalence of Type 2 diabetes and impaired glucose tolerance is higher. The aging process takes place above 30 years resulting in anatomical, physiological, and biochemical changes [5]. According to WHO, after the age of 30 years, the glucose level will rise 1-2 mg/ dl/year at the time of fasting and will rise 5.6-13 mg/dl at 2 hours after meals [5]. This condition was not only caused by the age factor but depends also on the length of the patients persisted in the condition. Some studies have shown that diabetes increase in cases up to age 60 years.
From gender, it was found that the number of female patients was more than male patients. The prevalence of Type 2 diabetes mellitus in women is higher than men because physically women have a greater chance of increasing body mass index. The monthly cycle syndrome (premenstrual syndrome), post-menopause that makes the distribution of body fat become easily accumulated due to hormonal process so that women at risk of diabetes mellitus type 2 [5] [11]. In this study, it is mentioned that the activities done by patients who are housewives are more than people who have activities outside the home. Physical activity can increase insulin sensitivity and have an effect in decreased blood glucose levels [12-13].

Furthermore, the level of patient’s education known that the most patients had the last education level of bachelor (34%). Based on previous research, patients with Type 2 Diabetes were most prevalent in patients with primary school education [13]. The level of education has a connection with the incidence of Type 2 diabetes mellitus. People with a high level of education will usually have a lot of knowledge about health. With such knowledge, people will have awareness of maintaining their health. However, after further analysis of the study, the conclusion obtained is no significant relationship between education and the incidence of Diabetes Type 2 [13].

Based on the results of research, it is found that most patients with Type 2 diabetes are less than 10 years. Long-term suffering from Type 2 Diabetes is often associated with the occurrence of complications in diabetic patients and related to the quality of life of patients. Most of the respondents are married. Marital status is believed to be related to the incidence of diabetes mellitus in the community. Marital status is believed to have an influence on habits or lifestyle and diet and physical activity performed [13].

4.2 Family support of Type 2 Diabetes mellitus patients at Amplas PHC Medan

Research shows that most patients with Type 2 diabetes in Amplas PHC have supportive family support. Family support is attitudes, actions and family acceptance of sick people. Support can come from other people (parents, children, husbands, wives or relatives) close to the subject where the form of support is information, certain behaviors or material that can make individuals feel loved, cared for and loved [13-14]. Family support is indispensable as patient’s adherence is required in the course of therapy, such as restrictions on dietary intake, physical activity, and independent monitoring of blood sugar levels [6] [15]. From the results of interviews with patients with Type 2 diabetes in Amplas PHC, it was found that most of the patients stated that their families provided support to always adhere to the treatment.

4.3 Quality of life of Type 2 Diabetes mellitus patients at Amplas PHC Medan

The results of the study showed that the most diabetic patients had a good quality of life. The quality of life is the perception of an individual with their position in life-based on the cultural context and the judgmental system in their life, and linked to their outcomes, expectations, standards and will [9]. Factors influence the quality of life of diabetic patients, include complications, age, socioeconomic status, female sex, marital status, HbA1c, and patients BMI [16]. The presence or absence of complications is associated with the length of patients suffering from diabetes. There is a correlation between the long-suffering from diabetes with the quality of life, the longer of suffering from diabetes the worse the quality of life of patients [2] [10]. Married people usually have a more regular diet, marital status also has an influence on the psychological condition of a person [10] [12]. Married individuals have a higher quality of life scores than unmarried [16].
4.4 Relationship between family support with quality of life in Type 2 Diabetes melitus patients at Amplas PHC Medan

The results of this study indicate a relationship between family support and the quality of life in patients with Type 2 DM at the Puskesmas Amplas. The family is the main source of support. The support provided is viewed from 4 dimensions, namely the emotional dimension, the dimensions of appreciation, the instrumental dimension, and the information dimension. It was also conveyed that the support of the family is closely related to the patients’ compliance with treatment so that it will affect the quality of his life [7] [13]. Patients who are in the family environment and paid attention to family members will be able to feel secure and comfort that will motivate to carry out self-care. Feelings of comfort and safety that arise in patients with type 2 DM will appear because of the support emotional, reward, instrumental and information from the family. This condition will prevent the emergence of stress and reduce anxiety in patients with type 2 diabetes mellitus [13].

5. Conclusion

The result of the research shows the relationship between family support and quality of life of DM Type 2 patients at Amplas PHC in Medan. Patients with good and supportive Family support can improve the quality of life because it can improve patient’s compliance in running the management of diabetes therapy provided. Patients also feel supported in terms of emotional, instrumental, reward, and information.

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