The Correlation Between Self-Care and Family Support With The Quality of Life of Type II Diabetic Mellitus Patient in Public Health Center I of West Denpasar

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Abstract Diabetes mellitus (DM) is a metabolic disease with characteristics of hyperglycemia. Type 2 DM that is not handled properly will result in complications that affect the quality of life. Type 2 DM patients need to do self-care as one of the DM treatment. In addition to self-care, the quality of life of DM patients is also related to family support. This study aims to determine the relationship between variables of self-care and family support with the quality of life of patients with type 2 DM. The study was conducted on 26 March-23 April 2019. This study was a quantitative study with a cross sectional approach. The number of the respondents were 59 people, obtained through consecutive sampling technique. Self-care was measured using a summary of diabetes self-care activity (SDSCA) questionnaire, family support was measured using the diabetes family behavior checklist II (DFBC II) questionnaire, and quality of life was measured using the diabetes quality of life (DQOL) questionnaire. The data analysis was done using Pearson Product Moment test. The results showed that there was a relation between self-care and quality of life (p = 0.000, r = 0.548) and there was a relation between family support and quality of life (p = 0.005, r = 0.365). Health workers are expected to develop health education which is not only needed for type 2 DM patients but also their families in order to realize optimal quality of life.

Index Terms— **family support, quality of life, self-care, type 2 DM**

I. INTRODUCTION

Diabetic Mellitus (DM) is a group of metabolic syndrome characterized by high blood glucose levels which happened due to the inadequate insulin production or inadequate sensitivity of cells to the action of the insulin. Generally, DM was classified into two types, type I DM and type II DM [1]. WHO predicted that in 2040, type II DM is going to reach 642 million survivors [2]. DM also becoming a public health concern in Indonesia. The highest DM prevalence in Indonesia was found in Yogyakarta (2.6%) and followed by Bali (1.3%) [3].

Bali Province Health Office confirmed that there were 4,526 types II DM survivors in Denpasar City. Public Health Center (PHC) I of West Denpasar noted that type II DM cases in 2018 were two times higher than type II DM cases in 2017, from 396 cases in 2017 to 801 cases in 2018. These cases covered 18% of cases of type II DM in Denpasar City [4]. This could be happened due to the sedentary lifestyle and social-economic factor [3].

Uncontrolled type II DM can be lead to many health complications [5]. A study conducted by Soewondo, Ferrario and Tahapary, 2017) showed that 50% of type II DM patient was having complication because of the disease [6]. The complications happened were strongly correlated with their quality of life [7].

Quality of life on the DM patient can be defined as a satisfied and content feeling which affected the way of DM patient run their daily activity [7]. There is four quality of life domains on the type II DM patient: physical health, physicological, social relation, and environment [8]. A study conducted by Chaidir, Wahyuni, and Furkani in PHC

III of Balen showed that 52.8% of the 89 DM patients were having a poor quality of life.5 This poor quality of life can be affected by some factors, such as age, educational background, duration of DM, complication, self-care, and family support [9].

Self-care is a factor that highly affected the quality of life on type II DM patients, but rarely being a concern for the health care provider. Self-care is a behavior that is carried out consciously, universal and is limited to oneself. The objective of the self-care on the DM patient is to prevent the complications and control the blood glucose level [5]. There were five components of self-care on the DM patient, they are maintaining healthy eating patterns, regular physical exercise, self-monitoring of the blood-glucose level, adherence to medication, and proper foot-care [10].

Family support also affecting type II DM patient's quality of life [9]. Family support can be defined as a form of support given by the family member to provide physical and psychological comfort to the sick family member. Those supports can be provided by giving some material and information related to the patient's health, showing particular behavior, and motivate the sick family member to accept the health status. This support could make the sick family member feel loved [11]. Yusra stated that there are four domains on the family support, they are (1) emotional, (2) appreciation, (3) instrumental, and (4) informational support [9].

A pilot study conducted in PHC I of West Denpasar showed that two from ten type II DM patients were having a poor quality of life, two from six type II DM patients were having poor self-care, and one from six type II DM patients were having poor family support. This study aimed to know the correlation between self-care and family support with the quality of life of type II DM patient in PHC I of West Denpasar

II. METHOD

This research was a quantitative research with korelatif analytic method. Pearson Product Moment test was used to know: (1) the correlation between the self-care and the quality of life and (2) the correlation between the family support and the quality of life on the type II DM patients in the PHC II of West Denpasar.

The study population was all the type II DM patients in PHC II of West Denpasar. Participants who participated in this study were chosen based on the inclusion and exclusion criteria. The inclusion criteria were (1) DM patients who were aged ≥ 26 years old, (2) ever or were having complications because of the type II DM, (3) living with family, and (4) willing to participate in the study. The exclusion criteria were having a mental disorder. Based on those criteria there were 59 type II DM patients participated in this study.

The data collection was done using Summary Diabetes of Self Care Activity Questionnaire (SDSCAQ), Diabetes Family Behaviour Checklist II (DFBC II), and Diabetes Quality of Life (DQL). SDSCAQ provided 14 statements

to measure the self-care ability (r=0.266-0.809, with a reliability score of 0.810). DFBC II consisted of 16 statements to measure the family support variable in this study (r=0.301-0.672, with a reliability score of 0.792). DQL questionnaire was used to measure the participant's quality of life. This questionnaire provided 14 statements with the r-value range from 0.296-0.781 and the reliability score was 0.845.

III. RESULT

The analysis was done on 59 participants. Analysis showed that the majority of the participants were female (52.5%), were on the age of 56-57 years old (33.9%), were graduated on senior high school (42.4%), were diagnosed as DM patient for < 5 years (42.4%), were having neuropathy complication (35.5%), were having moderate self-care ability (67.8%), were having moderate family support (66.1%), and were having moderate quality of life (56%).

Based on the Kolmogorov-Smirnov normality test, the value of p on the self-care was 0.200 (p>0.05), on the family support was 0.200 (p>0.05), and on the quality of life was 0.061 (p>0.05). These results indicated that the self-care, family support, and the quality of life was distributed normally. Based on this normality test, the Pearson-Product Moment test was conducted to know the correlation between the self-care and family support with the quality of life of the type II DM patient (confidence of interval 95%, α: 0.05). The analysis showed that there was a moderate and positive correlation between self-care and the quality of life with p=0.000. The statistical analysis on the family support and patient's quality of life also showed a weak and positive correlation with p=0.005.

IV. DISCUSSION

Diabetic self-care consist of 5 domains: (1) healthy eating pattern, (2) physical exercise, (3) self-monitoring of blood glucose level, (4) adherence to medication, and (5) foot-care. Self-care is aimed to decrease the complication risk and to control the blood glucose level of type II DM patients [12]. Based on this study, we found that the level of participant's self-care could be categorized as a moderate level of self-care, but according to the domain, the participants still couldn't do the foot-care and self-monitoring of blood glucose properly. This study found that the self-care of the type II DM patient in PHC of Kalingungkurat Surabaya was also categorized as a moderate level of self-care, but the practice of the foot-care and the self-monitoring of the blood glucose was still poor. This can be happened due to the low knowledge level and inappropriate perception about the importance of foot-care in preventing DM complications [13].

Our finding also yielded a positive and moderate correlation between the self-care and the quality of life on the type II DM patient. This finding was parallel with a

study conducted by Chaidir, Wahyuni, and Furkhani which also found that there was a strong and positive correlation between self-care and quality of life on type II DM patient [14]. This result indicated that a higher level of self-care is resulting in a higher level of quality of life. Other studies conducted in Indonesia are also supporting these findings [15].

Uncontrolled type II DM could be lead to various health complications which could affect the quality of life. Applied proper self-care routinely would decrease the risk of type II DM complications, which in the end could be improved the quality of life [9]. Most participants in this study were having neuropathy. A study conducted by Ruth also found that the majority of the type II DM patients were having micro-angiopathy as the disease complication. Neuropathy or micro-angiopathy could be decreased the patient's quality of life gradually [15]. Proper and routine self-care needed to be conducted by type II DM patients to reduce the risk of complications and improving their quality of life [14].

Family support also played an important role in improving type II DM patients' quality of life. Family support can be defined as a family member's attitude, practice, and acceptance of the sick family member [16]. Based on our finding, the majority of participants was getting a moderate level of family support, but 11 participants were getting poor family support. A study conducted by Supriati, Nasution, and Limansyah also found that 67% of 34 participants were getting a moderate level of family support [17].

This study yielded a weak and positive correlation between family support and the quality of life of type 2 DM patients. This finding is parallel with the findings on the study conducted by Retnowati and Setyabakti in PHC of Tanah Kalikadinding which found that family support correlated with the quality of life on the type II DM patient significantly (p= 0.000, p <0.05) [10]. A study conducted by Tamara, Bayhakki, and Nauli also found that there was a correlation between family support and quality of life with the value of p: 0.030, p <0.05 [18].

Family support is defined as a form of support given by the family member which could provide comfort, safety, and content feeling to the sick family member. Stressors perceived by the type II DM patients is usually high, due to the complexity of the management and complication of the disease [16]. These stresses could lead to a higher risk of DM complications. Stress-induced the secretion of cortisol hormone which could disrupt the glucose absorption process. This mechanism causes a higher blood glucose level on the type II DM patient. If the stress persists, the complication of DM could happen which finally would reducing their quality of life [13].

V. CONCLUSION

Further study needed to identify and analyze other variables that affected type II DM patient's quality of life, such as social-economic status, emotional, motivation,

knowledge, and communication with the health care provider. Another questionnaire that provided fewer and more simple statements also needed to use in the next study.

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