Research Article

Factors Associated with Quality of Life among Diabetes Mellitus Patients in Prolanis

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DOI: https://doi.org/10.24321/2455.9199.201816

Abstract

Background: Diabetes mellitus is a major public health problem is approaching epidemic proportions in the world today, including Indonesia. Various types of government programs in the health sector were launched to overcome them, one of which was prolanis aimed at improving the quality of life of patients.

Objectives: The objective of the study was to determine the factors associated with quality of life among diabetes mellitus patients in prolanis.

Methods: This is a analytical study with a cross sectional study design. The data was collected on May 20 to June 3, 2018 by interviewing using the WHOQOL-BREF questionnaire and secondary data observation conducted on 52 respondents. Multivariate analysis using logistic regression.

Results: The results showed that the patients activeness factor in prolanis was related to their quality of life among diabetes mellitus patients with p-value 0.003 <0.05, with the highest OR Exp (B) value of 0.863 and 95% CI = 0.782-0.9953.

Conclusions: It was concluded that the patients activeness factor in prolanis was related to their quality of life among diabetes mellitus patients in Lambaro Meurasi General Clinic of Ingin Jaya District, Aceh Besar, Aceh Province.

Keywords: Self-Management, Patients Activeness, Prolanis, Diabetes Mellitus, Quality of life

Introduction

Diabetes mellitus is a non-communicable disease that can be one of the main challenges for global health in the 21st century. This is due to complications caused such as blindness, kidney failure, gangrene, heart disease and stroke.[1] Therefore, it needs an effort to overcome it, one of which is a service program for chronic disease (called prolanis). Prolanis is a health service system and a proactive approach that is implemented in an integrated manner. This program involves participants, health care facilities and Health Insurance Service Agency (called BPJS Health). This service is intended to maintain health of participants who suffer from chronic diseases. They are expected to achieve optimal quality of life with effective and efficient health care costs so that it can prevent the occurrence of complications of the disease.[2]

Quality of life is not only related to physical health conditions but also psychological/ mental health. In general, the quality of life (quality of life, QoL or QOL) is the quality that is felt in the daily lives of individuals, namely an assessment of his well-being. This covers all emotional, social, and physical aspects in the individuals lives.[3] Based on the observations of researchers in early July 2017 in Banda Aceh and Aceh Besar, there were several health care centers and pre-primary health care facilities (called puskesmas) that had implemented prolanis, such as Puskesmas Baiturrahman, Puskesmas Ulee Kareng, Puskesmas Kuta Alam, Puskesmas Ingin Jaya and Lambaro Meurasi General Clinic. Based on

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the results of observations conducted by researchers is noted that Lambaro Meurasi General Clinic is one of the first pre-medical health care facilities that has been actively carrying out prolanis since 2013.

Based on secondary data from prolanis managers, the amount of registered participants up to January 2018 was more than 60 people. The activities are held every Sunday, precisely in first and third week. The activities consist of health counseling; morning exercise; examination of blood sugar levels (called KGD) and blood pressure; laboratory test (in collaboration with Prodia Laboratory); and home visits. The researcher is one of the participants of this program since the beginning of January 2018. Researchers found the fact that not all participants actively and they often come in turns. This condition can be observed until the research is carried out.

The results of interviews conducted by researchers in early March 2018 with 5 participants revealed that they already knew the condition of the illness. They also knew what actions must be taken to reduce the severity of the disease, especially those related to KGD. They have positive and constructive coping attitudes, are always upbeat and optimistic. Some participants who actively acknowledge that they can share experiences, gather with friends in pain, empathize and motivate to keep their spirit alive. However, the inactive participants admitted that they were afraid when the KGD examination would be carried out, they were afraid that the results would be bad so they thought it would be better not to be examined at all. Researchers also found that some participants were unable to complete morning exercise due to fatigue, body aches, lackluster and unstable KGD. This shows that they have problems in managing the disease so that it has an impact on quality of life. This condition found in early May 2018.

Based on preliminary research, it was found that participants who regularly follow prolanis activities had the ability to manage their disease well. They get the ability from their experience in prolanis. Therefore, the research question is whether more dominant factors affect the quality of life among diabetes mellitus patients. WHO (1997) explained that quality of life (QoL) is influenced by many factors as such as gender, age, ethnicity, education, employment, and marital status, duration of therapy, stage of the disease, medical management undertaken, physical health, psychological conditions, social relations, and environment.[3] In this study added two other factors are patient's activeness and patient self-management in prolanis. Based on these problems, the objective of the study was to determine the factors associated with quality of life among diabetes mellitus patients in prolanis.

Methods

This study used cross sectional method in analytical descriptive type of research. This research was carried out at Lambaro Meurasi General Clinic in Aceh Besar District, Aceh Province. The sample were patients with diabetes mellitus who follow prolanis actively. A sample of 52 respondents was calculated using the total sampling. To assess the patients activeness using secondary data from attendance of prolanis participants, while to assess self management and quality of life was measured by using the WHOQOL-BREF questionnaire. Data is collected on May 20 to June 3, 2018. Data processing stages are editing, coding, transfering and tabulating. Multivariate data analysis using logistic regression. The research scheme can be described as follows:
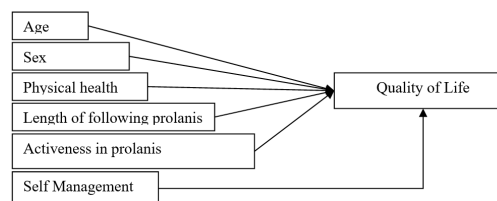

Figure 1.Scheme of research

Results

Characteristics of Respondents

Characteristics of respondents in terms of age, sex, level of education, length of illness, and length of following prolanis based on respondents activeness, self management and quality of life. In detail it is illustrated in the tables 1 to 3 below:

Characteristics of Respondents and activeness in prolanis

Characteristics of respondents were reviewed in terms of age, sex, level of education, length of illness, and length of following prolanis based on respondents activeness.

Based on the table above it is known that of 52 respondents, activeness were dominated by the age group of 45-60 years as many as 14 people (48.3%), female as many as 14 people (53.8%), high education as many as 15 people (53.6%), length of illness 1 -5 years as many as 14 person (56.0%). Whereas those who were less active in following prolanis activities were dominated for a period of 1 to 2 years in prolanis as many as 20 people (55.6%).

Characteristics of Respondents and conditions of self management

Characteristics of respondents were reviewed in terms of age, sex, level of education, length of illness, and length of following prolanis based on self-management conditions.

Based on the table above it can be seen that from 52 respondents, poor self-management conditions were found in the age group 45-60 as many as 17 people (58,6%), female as many as 15 people (57,7%); high education as many as 17 people (60.7%), and found in the group following prolanis 1-2 years as many as 22 people (61.1%). On the other hand, is found to be almost balance frequency between good and poor self-management for 1-5 years of illness with more than 5 years.

Table 1.Characteristics of respondents and activeness in prolanis

Characteristics		n	%	Respondents Activeness			
				Active	%	Less active	%
Age	< 45 years	5	9.6	4	80.0	1	20.0
	45-60 years	29	55.8	14	48.3	15	51.7
	> 60 years	18	34.6	7	38.9	11	61.1
Sex	Male	26	50	11	42.3	15	57.7
	Female	26	50	14	53.8	12	46.2
Level of education	Basic	2	3.8	0	0.0	2	100
	Middle	22	42.3	10	45.5	12	54.5
	High	28	53.8	15	53.6	13	46.4
Length of Illness	< 1 years	2	3.8	0	0.0	2	100
	1-5 years	25	48.1	14	56.0	11	44.0
	> 5 years	25	48.1	11	44.0	14	56.0
Length of following prolanis	< 1 years	3	5.8	2	66.7	1	33.3
	1-2 years	36	69.2	16	44.4	20	55.6
	>2 years	13	25	7	53.8	6	46.2

Table 2.Characteristics of respondents and self management conditions

Characteristics		n	%	Self Management			
				Good	%	Poor	%
Age	< 45 years	5	9.6	4	80.0	1	20.0
	45-60 years	29	55.8	12	41.4	17	58.6
	> 60 years	18	34.6	7	38.9	11	61.1
Sex	Male	26	50	12	46.2	14	53.8
	Female	26	50	11	42.3	15	57.7
Level of education	Basic	2	3.8	1	50.0	1	50.0
	Middle	22	42.3	11	50.0	11	50.0
	High	28	53.8	11	39.3	17	60.7
Length of Illness	< 1 years	2	3.8	0	0.0	2	100
	1-5 years	25	48.1	11	44.0	14	56.0
	> 5 years	25	52.1	13	48.0	12	48.1
Length of following prolanis	< 1 years	3	5.8	2	66.7	1	33.3
	1-2 years	36	69.2	14	38.9	22	61.1
	>2 years	13	25	7	53.8	6	46.2

Characteristics of Respondents and Quality of Life

Characteristics of respondents were reviewed in terms of age, sex, level of education, length of illness, and length of following prolanis based on quality of life.

Based on the table above it is known that the majority of respondents who have good quality of life aged 45-60 years as many as 17 people (58.6%), male as many as 16 people (61.5%), high education as many as 17 people (60.7%), length of illness of more than 5 years as many as 12 people (54.5%). Whereas those who were poor quality of life in following prolanis activities were dominated for a period of 1 to 2 years in prolanis as many as 22 people (61.1%).

Comparison of the activeness and self management to quality of life

Comparison of the activeness and self management to quality of life between respondents as seen below:

The table above shows that the majority of respondents who have a good quality of life (68.0%) are active in prolanis and have good self management (91.3%).

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Table 3. Respondent characteristics and quality of life

Characteristics		n	%	Quality of life			
				Good	%	Poor	%
Age	< 45 years	5	9.6	4	80.0	1	20.0
	45-60 years	29	55.8	17	58.6	12	41.4
	> 60 years	18	34.6	9	50.0	9	50.0
Sex	Male	26	50	16	61.5	10	38.5
	Female	26	50	14	53.8	12	46.2
Level of education	Basic	2	3.8	1	50.0	1	50.0
	Middle	22	42.3	12	54.5	10	45.5
	High	28	53.8	17	60.7	11	39.3
Length of Illness	< 1 years	2	3.8	1	50.0	1	50.0
	1-5 years	25	48.1	13	52.0	12	48.0
	> 5 years	25	48.1	16	64.0	9	36.0
Length of following prolanis	< 1 years	3	5.8	2	66.7	1	33.3
	1-2 years	36	69.2	14	38.9	22	61.1
	>2 years	13	25	7	53.8	6	46.2

Table 4. Comparison of the activeness and self management of quality of life

		Quality of life				Total
		Good	%	Poor	%	
Activeness	Active	17	68.00	8	32.00	25
	Less active	13	48.15	14	51.85	27
Self-Management	Good	21	91.30	2	8.70	23
	Bad	9	31.03	20	68.97	29

Multivariate analysis

In multivariate analysis, this study used logistic regression test to determine the most dominant independent variable to quality of life. In the initial stages, the independent variables were selected are length of illness, age, sex, level of education, length of following prolanis, physical health, patients activeness and self management factor among diabetes mellitus patients in prolanis was related to their quality of life, so that variables that had a significant value of <0.025 respectively were as follows.

Based on the significant value, a selection is made by issuing variables that have the greatest significant value. After three stages of selection, there are two variables which have the smallest significant value are variable of patient's activeness and self-management, as in the following table.

Table 5. Relations on quality of life among Diabetes Mellitus Patients in Prolanis

Quality of life	B	S.E	Sig.	Exp (B)	95% Cl
Sex	-0.074	0.836	0.93	0.930	0.18-478
Physical health	-0.431	0.300	0.15	0.650	0.36-1.17
Length of following prolanis	-1.136	0.607	0.061	0.321	0.92-1.05
Self Management	-0.192	0.085	0.024	0.825	0.69-0,97
Activeness	-0.197	0.079	0.013	0.822	0.70-0.96
Age	0.123	0.079	0.003	1.131	0.96-1.32

Table 6. Analysis with Logistic Regression Test

Quality of life	B	S.E	Sig.	Exp(B)	95% Cl
Activeness	-0.147	0.050	0.003	0.863	0.782-0,953
Self Management	-0.151	0.066	0.022	0.860	0.755-0,979

Logistic regression analysis result as seen above (table 6) shown that are not too significant and not much different value between patient activeness in prolanis and self-management. Therefore patient activeness is more significantly related to quality of life than self-management variable. Although patients activeness variable has p-value 0.003 <0.05, the highest OR or Exp (B) value was 0.863 and 95% CI = 0.782-0,953. Its mean, even though patients who regularly follow prolanis activities was related to their quality of life but only has a chance of 0.863 times to improve quality of life than patients who are less active.

Discussion

The quality of life among patient or community is a very important indicator in assessing health care programs.[6] Moreover, the patients activeness or community is a strategic factor in supporting a successful health program. The results of this study found that the majority (68%) of respondents who had a good quality of life were those actively following prolanis (table 4).

Statistical tests show that the patient activeness factor in prolanis is related to the quality of life among diabetes mellitus patients, although this value it does not distinguish the opportunity beetwen active patients and less active, but the activity of patients taking prolanis program has affected to their quality of life. This is because participants follow many activities in prolanis, such as health education, medical consultations, KGD examination, healthy exercise and home visits. Through this activity, participants can also socialize with each other to share experiences in handling their illness. These things certainly at least have provided moral support among participants in improving physical and mental health conditions. Furthermore, their quality of life has improved, despite many other factors that can be used to assess quality of life, such as meeting physical needs and socioeconomic conditions[7] but health is a very important factor. A study shows that the socialization or meeting of diabetics patiens is very important in improving the mental health of participants.[8]

Quality of life is an individual's view of the comparison of the quality of life with his desires, measured in terms of physical health, psychological conditions, social relations, and the environment.[3] Quality of life is also influenced by demographic and medical factors. Socio demographic factors as gender, age, ethnicity or ethnicity, education, occupation and marital status. Medical factors are length of therapy, stage of illness, and medical management. The comparison with the results of this study clearly illustrates that in terms of age more than 90% of respondents aged 45 years and over and 53% were highly educated. Age factors greatly affect once the quality of life of participants, which age 45 years and over is the age of having emotional maturity which will greatly affect perceptions and attitudes, especially in adjusting themselves to the condition of the disease. Likewise with the education factor, higher education is certainly a big asset for participants to obtain information in recognizing their illness and knowledge in

the effort to handle the disease. These two demographic factors strongly support participants to achieve a good quality of life. In the medical aspect, this study found two factors that were very supportive i.e length of illness and length of following prolanis. In this study, most of the respondents had participated in prolanis for more than 2 years, which was dominated by people with diabetes mellitus for more than 1 year (96.2%). This also greatly influenced the creation of a good quality of life. Participants activeness in prolanis indirectly has actually formed good self management.

The patients activeness and self management are two interrelated factors. The relationship between the patients activeness in prolanis and self management has formed an ability to organize themselves, manage a lifestyle that is in accordance with the demands of the management of the disease. Health education or counseling activities contained in prolanis, is an on going process of facilitating the knowledge, skills and abilities needed for self-care of diabetic patients. This process combines needs, goals and life experiences. The education forms self management so as to support decision making, self-care behavior, problem solving, working with health care teams and to improve the quality of clinical outcomes of KGD, health status, and quality of life.[9]

Self management for diabetes mellitus patients is referring to several activities i.e monitoring signs and symptoms, maintaining and improving health behavior, and overcoming the negative effects of the disease on the patient's physical function, emotional feelings, and interpersonal relationships.[10] The results of study confirm that the key to preventing diabetes mellitus type 2 is to change the lifestyle of patients.[11] The importance of this self-management for diabetes mellitus patients has an impact on the control of KGD.[12-14]

There have been many studies that prove that self-management education has an impact on increasing respondents knowledge, KGD monitoring frequency and accuracy, and dietary settings.[15] This study makes it clear that although there is a significant relationship between patient activeness and their quality of life. The relationship between patient activeness and self-management among diabetes mellitus patients can be seen indirectly. Its mean that self-management factor improves patients. This study illustrated that 91.30% of respondents who had good self-management, they had good quality of life too, and 68.97% of respondents who had bad self-management, they had poor quality of life too (as seen in table 4). In this case the patient's activeness in prolanis significantly improved their quality of life. Research shows that health education programs that are followed by diabetic patients are very important for controlling diabetes. Health education would increasing diabetic patient's knowledge and increasing their awareness. Health education is suitable for various levels of age, sex and education.[16] In this study, of course, strongly supported by the education level of respondents

more than 53% of the categories of higher education as described in the section above.

Basically, many programs for patients with diabetes are similar to prolanis, such as the Diabetes Outpatient Intensive Treatment (DOIT) program. This program is recognized as effective in better diabetes care and can improve treatments related to diabetes and diabetes positively. Despite the timing, commitment, and careful coordination with many health care.[17] In the end, Prolanis has been able to manage the potential possessed by participants to shape good self-management and have an impact on the quality of life of patients. This program is recognized as effective in promoting better diabetes care and positively influencing self-care behaviors associated with glycemia and diabetes. However it requires time, commitment and careful coordination with many professional nurses.[17] This is supported by several results of studies such as Primahuda and Sujianto (2016), found a relationship between prolanis adherence to the stability of blood sugar among patients at Babat Health Center (Lamogan Regency), so that this program can be used as a reference for people with diabetes to improve compliance so that diabetes patients have sugar stable blood (Primahuda & Sujianto, 2016). And Dewi Ratih et al. (2014) found an association between blood glucose levels and the quality of life of patients with type 2 diabetes mellitus who were recorded in prolanis as well as health insurance participants in Surakarta (Dewi, Romadhon, & Candrasari, 2014).

In the end the chronic disease service program (prolanis) has been able to manage the potential possessed by active diabetes mellitus patients to form good self-management so that it has an impact on the quality of life of patients.

Study Limitations

This study was conducted with a small sample size, without observing differences in self-management and quality of life among groups of patients with diabetes mellitus who followed prolanis with those who did not. Therefore, more advanced research is recommended.

Conclusion

This study shows that the patient's activeness factor in prolanis is related to their quality of life rather than self-management factor with values that are not too significant and not much different between two variables.

Conflict of Interest: None

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