Babali Nursing Research
2021, Vol. 2, No. 3, 128-138
https://doi.org/10.37363/bnr.2021.2348

Original Research

Empowering the Role of the Integrated Foster Post Cadres in Improving the Quality of Life of Diabetes Mellitus Patients

Fitri Firranda Nurmalisyah[1*], Alik Septian Mubarok[1], & Desy Siswi Anjar Sari[1]

[1]*STIKES Pemkab Jombang, Jombang, Indonesia*

Article Info

Article history:
Received:
20 February 2021
Accepted:
29 November 2021

Keywords:
empowerment, cadre, quality of life, Diabetes mellitus

Abstract

Introduction: Nurses as one of the health workers have a role in managing Diabetes Mellitus patients, the quality of life of Diabetes Mellitus patients affects physical health, psychological conditions, level of dependence, social relations and the patient's relationship with the surrounding environment. Actions and interventions in controlling Diabetes Mellitus disease require appropriate therapeutic regimens, as well as involving families. By empowering the health cadres, it can improve the quality of life of people with Diabetes Mellitus who are in the working area of the Kesamben Health Center, Jombang Regency.
Methods: This research is a quasi-experimental study with a non-randomized control group pre-test post- test design. In this study, the treatment group was given a treatment in the form of training for Integrated Foster Post Cadres to improve for Diabetes Mellitus, while the control group was not given any treatment.
Results: The results showed that there was a significant difference in the quality of life between the treatment group and the control group due to skills improvement training for Integrated Foster Post Cadres Diabetes Mellitus with the results of the independent t test on self-efficacy obtained t value of 25.055 (p = 0.000), while the value t of quality of life is 25,790 (p = 0,000).
Conclusion: Nurses can empower Integrated Foster Post Cadres in the community by improving the quality of life for people with Diabetes Mellitus. Integrated Foster Post Cadres play an active role in the community in the scope of knowledge, signs and symptoms, complications of Diabetes Mellitus which can encourage DM sufferers to be motivated to improve the quality of life.

*Corresponding Author:
e-mail: fitri@stikespemkabjombang.ac.id

INTRODUCTION

Along with the increasing welfare of people in developing countries, the incidence of various degenerative diseases is also increasing, one of which is Diabetes Mellitus. Diabetes Mellitus (DM) which is better known as diabetes is a group of metabolic diseases characterized by high levels of glucose in the blood (hyperglycaemia) due to abnormalities in insulin secretion, insulin work disorders, or a combination of both [1]. If it continues, this hyperglycaemia will result in damage and failure of various organs, especially the eyes, kidneys, nerves, heart and blood vessels [2].

According to the health belief model (HBM) theory, if a person only has certain knowledge, attitudes, and skills without high self-efficacy which shows the assurance that he/she is able to do something, it is unlikely that person will carry out any action or behaviour to prevent it [3].

Bandura in [4] states that self-efficacy affects how a person thinks, feels, motivates himself, and acts. Self-efficacy is very influential on how a person makes decisions and acts as expected. According to [5], self-efficacy is related to increasing quality of life in chronic diseases. In patients with DM, which is a chronic disease, it is requires independent management when discharged from the hospital. This is very important because with good management, acute and chronic complications of diabetes can be avoided.

The illness that is suffered and the treatment that is undertaken can affect the functional capacity, psychological and social health as well as the welfare of people with diabetes mellitus which is defined as the quality of life (QOL). According to WHO, quality of life is an individual's perception of their position in life and the cultural context and value system in which they live and in relation to individual goals, expectations, standards and concerns [6]. Quality of life affects physical health, psychological conditions, level of dependence, social relationships and the patient's relationship with the surrounding environment [7].

From the results of the study it is believed that DM has a significantly less good effect on quality of life, where women have a significantly lower quality of life than male patients. Low QOL is also significantly associated with low socioeconomic levels, low levels of education and poor physical activity habits [8]. In addition, the length of suffering from diabetes also affects the patient's confidence in diabetes mellitus care. This of course will affect the quality of life of patients with diabetes mellitus [9].

Nurses as one of the health workers have a role in managing DM patients, through providing information and health education in controlling DM and preventing complications, both macrovascular and microvascular complications. Among the actions and interventions in controlling DM disease are diet control, increased physical activity, regular medical control and appropriate therapeutic regimens and involving families in nursing care. The implementation of comprehensive nursing care for DM patients is expected to be able to overcome and avoid complications and a good quality of life can be achieved.

METHODS

Study Design

This research is a quasi-experimental study with a non-randomized control group pre-test post- test design. In this study, the treatment group was given a treatment in the form of training for Integrated Services Post Cadres to improving skills for Diabetes Mellitus, while the control group was not given any treatment.

Study Population

This research was conducted from July to September 2020 with 32 respondents divided into 16 respondents in Gumulan Village. while the treatment group and 16 respondents in Jatiduwur Village as a control group in the Work Area of the Kesamben Community Health Center, Jombang Regency.

Sample and Sampling Technique

The research process for each group was preceded by a pre-test of knowledge. In the treatment group, 3 educational sessions were carried out on for the Integrated Foster Post Cadres Diabetes Mellitus. The control group was only given health education. At the end of the session, all groups were given a post test for respondents' knowledge about the quality of life of patients with Diabetes Mellitus.

Data Analysis

Instrument

The research instrument used was the Characteristics Questionnaire to obtain data on the characteristics of the respondents and the Diabetes Quality of Life Clinical Trial Questionnaire (DQLCTQ) to assess the respondents' quality of life.

Descriptive analysis

This analysis is used to provide a description of the data presented in tabular form. This analysis is used to describe the characteristics of respondents and research variables. Variables that are categorically (gender, occupation, level of education) or categorized (quality of life) are presented in the form of proportions. Meanwhile, numerical variables (age, total income, and duration of illness) are presented in the form of central tendency values in the form of mean, median, mode and with standard deviation of 95% CI.

Univariate Analysis

In this study, univariate analysis was carried out to describe the characteristics of each variable measured in the study. Characteristics of respondents which covers gender, age, education, economic status, complications and duration of suffering from diabetes are categorical data which analysed to calculate the frequency and percentage of variables. Age and duration of the suffers from diabetes are numerical data analysed to calculate the mean, median, standard deviation, 95% confidence interval, maximum and minimum values.

Bivariate Analysis

To prove major, minor research hypotheses,

and the equality of respondent characteristics. Prior to testing the hypothesis, a test for the equality of family characteristics between groups according to age and duration of suffering from diabetes was carried out, which was analysed using an independent t-test, while variables: education, gender, and social status between groups were tested using the chi-square test.

Bivariate analysis was carried out to prove the research hypothesis, namely to analyse the empowerment of cadres on the quality of life of DM sufferers.

Ethical Considerations

This research has received approval from the STIKES Pemkab Jombang Ethics Committee number 0620070006/KEPK/STIKES-PEMKAB/JBG/VII/2020. In this study, we consider other applicable ethical, legal, social and non-clinical principles. We use respondent codes to ensure the privacy and dignity of respondents. In addition, we store data on the computer with a password and only researchers can access the data to ensure confidentiality principles.

RESULTS

Quality of Life in the treatment group

Based on the research results, it can be seen that the level of quality of life in the treatment group before the intervention was mostly in the moderate category, namely 8 respondents (50%). After the intervention was carried out, most of them had a very high level of quality of life. Based on table 2, it can be seen that there was an increase in the average value of quality of life in the treatment group by 16.

Quality of Life in the control group

From the results of the study, it is known that the level of quality of life in the control group at the time of the pre-test was mostly in the moderate category, namely 8 respondents (50%). Meanwhile, at the time of the post test, most of the respondents' quality of life level was in the high category, namely 10 respondents (62.5%). Based on table 4, it can be seen that there was an increase in the average value of quality of life in the control group by 3.

Differences in Quality of Life in the treatment and control groups

Based on the research results, it can be seen that there was an increase in quality of life in both groups. However, the increase that occurred in the treatment group was higher than in the control group.

Quality of Life Level based on the characteristics of respondents

Based on table 6, it can be seen that the type of education of most respondents in the treatment and control groups is in elementary. In the treatment group, 57.1% of respondents with primary education had a level of quality of life in the medium category and after the intervention all respondents experienced an increase into the very high category. In the control group, at the time of the pre-test, most of the respondents with primary education had a level of quality of life

in the medium category. Meanwhile, at the time of the post test, only 71.4% of respondents experienced an increase in the quality of life in the high category.

Based on table 7, it can be seen that most of the respondents in the treatment group were high. Where 55.6% of respondents with high income in the treatment group had a level of quality of life in the medium category. Meanwhile, after the intervention, all respondents with high income experienced an increase into the high category. In the control group, at the time of the pre-test, 62.5% of respondents with high income had a high quality of life level. Meanwhile, at the time of the post test, only 62.5% of high-income respondents still experienced an increase in the quality of life in the high category.

Based on table 8, it can be seen that most respondents in the treatment group experienced complications of DM disease. Where 66.7% of respondents who experienced complications in the treatment group had a quality of life level in the medium category. Meanwhile, after the intervention, all respondents who experienced complications increased into the high category. In the control group, at the time of the pre-test, 50% of respondents who experienced complications had a level of quality of life in the medium category. Meanwhile at the time post-test only 50% of respondents who experienced complications still experienced Quality of Life in the medium and high categories.

Table 1
Quality of Life Level in the Treatment Group

No	Quality of Life	Pre-test		Post- test	
		Amount	%	Amount	%
1	Very Low	-	-	-	-
2	Low	2	12,5	-	-
3	Moderate	8	50	3	18,8
4	High	6	37,5	8	50
5	Very High	-	-	5	31,3
	Total	16	100%	16	100

Table 2
Differences in Quality of Life in the Treatment Group

Respondent Code	Pre- test		Post- test		Difference (□)
	Value	Category	Value	Category	
1	96	Moderate	118	High	22
2	78	Low	99	Moderate	21
3	101	Moderate	117	High	16
4	99	Moderate	101	Moderate	2
5	113	High	129	Very High	16
6	111	High	121	High	10
7	77	Low	98	Moderate	21
8	101	Moderate	115	High	14
9	110	High	127	Very High	17
10	94	Moderate	117	High	23
11	100	Moderate	119	High	19
12	121	High	132	Very High	11
13	108	High	115	High	7
14	95	Moderate	126	Very High	31
15	96	Moderate	115	High	19
16	114	High	125	Very High	11
Total	1614		1874		260
Mean	101		117		16

Table 3
Quality of Life Level in the Control Group

No	Quality of Life	Pre- test		Post -test	
		Amount	%	Amount	%
1	Very Low	-	-	-	-
2	Low	1	6,2	-	-
3	Moderate	8	50	6	37,5
4	High	7	43,8	10	62,5
5	Very High	-	-	-	-
	Total	16	100	16	100

Table 4
Differences in Quality of Life in the Control Group

Respondent Code	*Pre -test*		*Post -test*		*Difference* (Δ)
	Value	Category	Value	Category	
1	116	High	105	High	-11
2	92	Moderate	114	High	22
3	78	Low	99	Moderate	21
4	106	High	111	High	5
5	95	Moderate	109	High	14
6	96	Moderate	99	Moderate	3
7	115	High	109	High	-6
8	97	Moderate	99	Moderate	2
9	115	High	116	High	1
10	98	Moderate	108	High	10
11	110	High	104	High	-6
12	121	High	110	High	-11
13	94	Moderate	95	Moderate	1
14	107	High	113	High	6
15	98	Moderate	97	Moderate	-1
16	94	Moderate	99	Moderate	5
Total	1632		1687		55
Mean	102		105		3

Table 5
Differences in Quality of Life in the Treatment and Control Groups

No	Variable	Mean		Mean Difference
		Beginning	End	
1	Quality of Life in treatment group	101	117	16
2	Quality of Life in control group	102	105	3

Table 6
Quality of Life by Type of Education

Quality of Life	*Pre test*									
	Never went to school	**%**	**elementary**	**%**	**Junior high**	**%**	**Senior high**	**%**	**College**	**%**
Treatment Group										
Very low	-	-	-	-	-	-	-	-	-	-
Low	-	-	1	14,3	1	20	-	-	-	-
Moderate	1	100	4	57,1	1	20	2	100	-	-
High	-	-	2	28,6	3	60	-	-	1	100
Very high	-	-	-	-	-	-	-	-	-	-
Total	1	100	7	100	5	100	2	100	1	100
Control Group										
Very low	-	-	-	-	-	-	-	-	-	-
Low	1	100	-	-	-	-	-	-		
Moderate	-	-	4	57,1	3	50	-	-	1	50
High	-	-	3	42,9	3	50	-	-	1	50
Very high	-	-	-	-	-	-	-	-	-	-
Total	1	100	7	100	6	100	-	-	2	100
	Post test									
	Never went to school	**%**	**Elementary**	**%**	**Junior high**	**%**	**Senior high**	**%**	**College**	**%**
Treatment Group										
Very low	-	-	-	-	-	-	-	-	-	-
Low	-	-	-	-	-	-	-	-	-	-
Moderate	-	-	1	14,3-	1	20	1	50	-	-
High	1	100	4	57,1	2	40	1	50	-	-
Very high	-	-	2	28,6	2	40	-	-	1	100
Total	1	100	7	100	5	100	2	100	1	100
Control Group										
Very low	-	-	-	-	-	-	-	-	-	-
Low	-	-	-	-	-	-	-	-	-	-
Moderate	1	100	2	28,6	2	33,3	-	-	1	50
High	-	-	5	71,4	4	66,7	-	-	1	50
Very high	-	-	-	-	-	-	-	-	-	-
Total	1	100	7	100	6	100	-	-	2	100

Table 7
Quality of Life in the Treatment and Control Groups Based on Income

Quality of Life	***Pre test***				***Post test***			
Treatment Group	**Low**	**%**	**High**	**%**	**Low**	**%**	**High**	**%**
Very low	-	-	-	-	-	-	-	-
Low	1	14,3	1	11,1	-	-	-	-
Moderate	3	42,9	5	55,6	1	14,3	2	22,2
High	3	42,9	3	33,3	5	71,4	3	33,3
Very high	-	-	-	-	1	14,3	4	31,3
Total	7	100	9	100	7	100	9	100
Control Group								
Very low	-	-	-	-	-	-	-	-
Low	-	-	1	12,5	-	-	-	-
Moderate	6	75	2	25	3	37,5	3	37,5
High	2	25	5	62,5	5	62,5	5	62,5
Very high	-	-	-	-	-	-	-	-
Total	8	100	8	100	8	100	8	100

Table 8
Quality of Life in the Treatment and Control Groups Based on Complications of Diabetes Mellitus

Quality of Life	***Pre test***				***Post test***			
Treatment Group	**Did not experience**	**%**	**Experienced**	**%**	**Did not experience**	**%**	**Experienced**	**%**
Very low	-	-	-	-	-	-	-	-
Low	1	14,3	1	11,1	-	-	-	-
Moderate	2	28,6	6	66,7	2	28,6	1	11,1
High	4	57,1	2	22,2	3	42,8	5	55,6
Very high	-	-	-	-	2	28,6	3	33,3
Total	7	100	9	100	7	100	9	100
Control Group								
Very low	-	-	-	-	-	-	-	-
Low	1	12,5	-	-	-	-		
Moderate	4	50	4	50	4	50	2	25
High	3	37,5	4	50	4	50	6	75
Very high	-	-	-	-	-	-	-	-
Total	8	100	8	100	8	100	8	100

DISCUSSION

From the results of this study, there was a positive and significant relationship between the role of Kader and quality of life both before and after the intervention in the treatment group ($p < 0.05$). In addition, both groups also showed an increase in the correlation value at the time of the post test. However, the correlation value and the increase in the correlation rate in the treatment group were higher than in the control group.

The results of this study are in accordance with behavioral theory [10] that the behavior of a person or society about health is determined by the knowledge, attitudes, beliefs, traditions and others of the person or society concerned. In addition, the

availability of facilities, attitudes and behavior of health workers towards health will also greatly influence and strengthen the formation of these behaviors.

According to the health belief model (HBM) theory, if a person only has certain knowledge, attitudes, and skills without high self-efficacy which shows the assurance that he/she is able to do something, it is unlikely that person will carry out any action or behaviour to prevent it [3].

Bandura in [4] states that self-efficacy affects how a person thinks, feels, motivates himself, and acts. Self-efficacy is very influential on how a person makes decisions and acts as expected. According to [5], self-efficacy is related to increasing quality of life in chronic diseases. In patients with DM, which is a chronic disease, it is requires independent management when discharged from the hospital. This is very important because with good management, acute and chronic complications of diabetes can be avoided.

The illness that is suffered and the treatment that is undertaken can affect the functional capacity, psychological and social health as well as the welfare of people with diabetes mellitus which is defined as the quality of life (QOL). According to WHO, quality of life is an individual's perception of their position in life and the cultural context and value system in which they live and in relation to individual goals, expectations, standards and concerns [6]. Quality of life affects physical health, psychological conditions, level of dependence, social relationships and the patient's relationship with the surrounding environment [7].

From the results of the study it is believed that DM has a significantly less good effect on quality of life, where women have a significantly lower quality of life than male patients. Low QOL is also significantly associated with low socioeconomic levels, low levels of education and poor physical activity habits [8]. In addition, the length of suffering from diabetes also affects the patient's confidence in diabetes mellitus care. This of course will affect the quality of life of patients with diabetes mellitus [9].

Nurses as one of the health workers have a role in managing DM patients, through providing information and health education in controlling DM and preventing complications, both macrovascular and microvascular complications. Among the actions and interventions in controlling DM disease are diet control, increased physical activity, regular medical control and appropriate therapeutic regimens and involving families in nursing care. The implementation of comprehensive nursing care for DM patients is expected to be able to overcome and avoid complications and a good quality of life can be achieved.

CONCLUSION

Nurses can empower Integrated Foster Post Cadres in the community by improving the quality of life for people with Diabetes Mellitus. Integrated Foster Post Cadres play an active role in the community in the scope of knowledge, signs and symptoms, complications of Diabetes Mellitus which can encourage DM sufferers to be motivated to improve the quality of life. The role of nurses

is to provide training and the latest knowledge to cadres so that they have updated knowledge that can be given to the community, especially people with diabetes.

REFERENCES

[1] S. C. O. Smeltzer and B. G. Bare, *Smeltzer and Bare's Textbook of Medical-surgical Nursing*, 3rd ed. Philadelphia: Lippincott Williams & Wilkins, 2013.

[2] American Diabetes Association (ADA), "Standards of Medical Care in Diabetes--2012," *Diabetes Care*, vol. 35, no. Supplement_1, pp. S11–S63, Jan. 2012, doi: 10.2337/dc12-s011.

[3] M. C. Edberg, *Essentials of health behavior : social and behavioral theory in public health*. Burlington: Jones & Bartlett Learning, 2018.

[4] A. Bandura, "Self-Efficacy Mechanism in Physiological Activation and Health-Promoting Behavior," in *Adaptation, Learning and Affect*, J. Madden, S. Matthysse, and J. Barchas, Eds. New York: Raven, 1989, pp. 1169–1188.

[5] U. Sarkar, L. Fisher, and D. Schillinger, "Is Self-Efficacy Associated With Diabetes Self-Management Across Race/Ethnicity and Health Literacy?," *Diabetes Care*, vol. 29, no. 4, pp. 823–829, Apr. 2006, doi: 10.2337/diacare.29.04.06.dc05-1615.

[6] World Health Organization, "International statistical classification of diseases and related health problems, 10th revision, Fifth edition, 2016," 2016. [Online]. Available: https://apps.who.int/iris/handle/10665/246208.

[7] B. A. Issa and O. Baiyewu, "Quality of Life of Patients with Diabetes Mellitus in a Nigerian Teaching Hospital," *East Asian Arch. Psychiatry*, vol. 16, pp. 27 – 33, 2006.

[8] Y. Gautam, A. Sharma, A. Agarwal, M. Bhatnagar, and R. Trehan, "A cross-sectional study of QOL of diabetic patients at tertiary care hospitals in Delhi," *Indian J. Community Med.*, vol. 34, no. 4, p. 346, 2009, doi: 10.4103/0970-0218.58397.

[9] L. Wu, H.-W. Hsu, Y.-C. Chen, C.-C. Chiu, Y.-I. Lin, and J. A. Ho, "Antioxidant and antiproliferative activities of red pitaya," *Food Chem.*, vol. 95, no. 2, pp. 319–327, Mar. 2006, doi: 10.1016/j.foodchem.2005.01.002.

[10] L. W. Green and M. W. Kreuter, *Health promotion planning: An educational and environmental approach*. California: Mayfield Publishing, 1991.