

Original Research Article

Improvement of self efficacy through bibliotherapy in diabetes patient

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ABSTRACT

Background: Diabetes Mellitus is also known diabetes, as a chronic disease which will trigger various complications both microvascular and macrovascular. This is what leads diabetes patient to have high risk of low self-efficacy. Low of self-efficacy causes a decrease in self care. Therefore, to improve the patient's self-efficacy is changing their mindset. Bibliotherapy is a treatment using written materials to guide and encourage the patients to challenge unhelpful thoughts. This research aims at discovering the influence of bibliotherapy on self-efficacy of diabetes patients.

Methods: This is a quantitative research using quasi-experimental with control group design. The number of samples in this research is 40 respondents, consisting of 20 intervention groups and 20 control group by simple random sampling method. The sample in this research is diabetes patients with such inclusion criteria as (1) 36-60 years of age, (2) having the ability to read well, (3) willing to be a research respondent. Meanwhile, the exclusion criteria are (1) diabetes patient with weak condition, (2) experiencing loss of consciousness, (3) having visual and audio problems, and (4) diabetes patient with mental disability. The intervention group undergoes bibliotherapy for 8 session, each session for 60 minutes. The Diabetes Management Self Efficacy Scale (DMSES) to determine the total score of self-efficacy.

Results: Most respondents are middle-aged adults (36-55 years) in both groups. Most respondents have suffered from diabetes for less than 5 years, unemployed and tend to have normal BMIs and also obese category 1. The mean score post test in intervention and control group is 37.00 and 25.65 respectively. The results show that there are differences in self-efficacy scores after treatment in control and intervention groups ($p=0.000$).

Conclusions: From our study we concluded that bibliotherapy could improve self-efficacy in diabetic patients.

Keywords: Bibliotherapy, Diabetes, Self-efficacy

INTRODUCTION

The number of diabetes patients worldwide is expected to increase significantly from 176 to 370 millions between 2000 and 2030, where more than 80% of them live in developing countries.¹ Based on the data of 2007 Basic Health Research, it is found that 12.5 millions Indonesian people suffer from diabetes and it is expected that in 2020 there will be 178 millions people of 20 year of age suffering from diabetes.² The prevalence of diabetes in

Central Java province is 7.8% and intolerance glucose tolerance is 13.1%. The data from Health Office of Banyumas Regency suggest that the number of diabetes patients in 2012 is 1,583. North Purwokerto District has 164 people with diabetes.

The increased blood glucose in long term will eventually cause many chronic serious complications both macrovascular and microvascular such as cardiac disease, peripheral vascular disease, kidney failure, nerve damage and blindness. The blindness relates to diabetic

retinopathy which attacks 12,000 to 24,000 people each year and has been the cause of new blindness in people of 20-47 years of age. As much as ten to 21% of people with diabetes have developed into kidney diseases because of the diabetic nephropathy which is the most common cause of end stage renal disease.³

Furthermore, diabetes patient has twice to four times the risks of experiencing stroke. Lastly, around 60-70% people with diabetes experience nerve damage from mild to severe level, where those experiencing severe nerve damage could trigger an amputation to their lower parts of body. Epidemiologic studies suggest that 2.5% of diabetic patients develop diabetic foot (DF) ulcers each year and 15% develop DF ulcers during their lifetime.⁴

Many complications accompanying diabetes patients can be prevented by controlling the blood glucose well. This blood glucose control can be done through diet, education, exercise, insulin and medication. This administration to diabetes patients take time for their whole lives. This is because diabetes is one incurable yet controllable disease.

The chronic nature of diabetes disease and the administration which should be performed for their entire lives are worsened by the complications accompanying diabetes patients, leading to their vulnerability to emotional disorder. Previous research states that about 65.7% of diabetes patients are depressed.⁵ Another study suggests that diabetes patients have twice the chance of experiencing anxiety and stress as compared to general population.⁶

The anxiety these diabetes patients experience is caused by the maladaptive thought in implementing the rule of diabetes lifestyle such as having diet, exercises, blood glucose control and consuming medicine regularly. The anxiety experienced by diabetes patients could reduce their self-efficacy level in implementing diabetes care pattern.

Decreased self-efficacy could lead to another decrease in diabetes care pattern. Another study suggests that patients with good self-efficacy have the 20 times the chance of undergoing diabetes treatment as compared to those lacking belief in their own ability (OR:20,12).⁷ Self-efficacy is a factor with significant influence on diabetes self-treatment which will result in metabolic control and improved one's ability to perform self-treatment.⁸ This self-efficacy is constantly influencing diabetes treatment behavior, where patients with high self-efficacy will indicate better diabetes treatment behavior. From the interviews with 10 diabetes patients, it is found that all of them do not really believe they will successfully implement the prescribed diet. At the initial stage, they do believe they can do it but after some time they eventually think they would not make it.

There are many treatment methods to increase self efficacy which bibliotherapy is one those ways. Bibliotherapy is a method which is used for treatment by information specialists and with cooperation of therapies. In this method, selected readings are used for clients and proposed to them in order to help them during treatment. These resources are offered to individuals and help them to resolve issues related to their health needs to gain new insights. Bibliotherapy is the activity of using books which match the conditions experienced by someone, and it is usually followed by discussion about the problem this someone is facing. The tendency of an individual to identify characters in a story makes bibliotherapy a powerful tool to give an example of coping, normalizing the feeling of loss and solving problems.⁹

METHODS

Research design

This research aims at proving the influence of bibliotherapy on the improvement of diabetes patient's self-efficacy. This research uses two diabetes patient groups receiving bibliotherapy intervention for one hour within 8 session and a control group receiving a book about motivation related diabetes management. The design of this research is pre test-post test with control group design

Sample

The number of sample in this research for each group is 20 respondents each, by simple random sampling. The sample in this research is diabetes patients with such inclusion criteria as (1) 36-60 years of age, (2) having the ability to read well, (3) willing to be a research respondent. Meanwhile, the exclusion criteria are (1) diabetes patient with weak condition, (2) experiencing loss of consciousness, (3) having visual and audio problems, and (4) diabetes patient with mental disability.

Setting

The study was conducted at Medical Ward Margono Soekarjo Hospital. The data were collected between October 2016 till the end of July 2017.

Tools for data collection

To determine Self Efficacy, they were asked using The Diabetes Management Self-Efficacy Scale (DMSES), This instrument was adopted from Ismonah consist of 15 items and has a four-point Likert response scale.⁷ The responses are scored as follows: not at all confident (0), less confident (1), more confident and (2) totally confident (3).

Procedure

After obtaining approval from Margono Hospital and informed consent from respondents, researchers divided respondents into two groups, 20 as intervention groups and 20 as control groups, using simple random sampling technique. Odd numbered of respondent as intervention groups. Respondents filled out the DMSES questionnaire. Followed by a bibliotherapy session with comfortable conditions for 8 sessions, which are carried out for 60 minutes with the stages of reading the books that have been provided, reflecting on the contents of the reading that has been read, discussing the content of reading and evaluation.¹⁰ One to seven session is ended by appointment for the next session. At the end of the eighth session, respondents refilled the DMSES questionnaire.

RESULTS

Data were analyzed using SPSS 21 (IBM statistics 21). Descriptive statistics (frequencies) was computed for the frequency of characteristics of respondent including age, duration of suffering diabetes, employment and Body Mass Index (BMI). Forty diabetes patients completed the study. The Levine test was used to evaluate homogeneity of variance within groups. Intervention and control group were similar in age (p=0.555), duration of diabetes (0.157), employment (1.000) and BMI (0.475). Most respondents are middle-aged adults (36-55 years) in both groups. Most respondents have suffered from diabetes for less than 5 years, unemployed and tend to have normal BMIs and also obese category 1 (Table 1).

Table 1: Characteristics of respondents.

Characteristic	Intervention group	Control group	p-value
Age			
Middle-aged adults (36-55 years)	11 (54%)	12 (60%)	0.555
Older adults (56-60 years)	9 (46%)	8 (40%)	
Duration of suffering			
<5 years	14 (70%)	16 (80%)	0.157
>5 years	6 (30%)	4 (20%)	
Employment			
Employed	7 (35%)	7 (35%)	1.000
Unemployed	13 (65%)	13 (65%)	
BMI			
Thin	1 (5%)	1 (5%)	0.475
Normal	7 (35%)	6 (30%)	
Over	1 (5%)	2 (10%)	
Risky	3 (15%)	3 (15%)	
Obese 1	5 (25%)	7 (35%)	
Obese 2	3 (15%)	1 (5%)	

There is no significant difference the mean score of self-efficacy before treatment between intervention and control

group (p=0.444). (Table 2). There are significant difference the mean score of self-efficacy before and after treatment in intervention group (p=0.000) and also in control group (0.030) (Table 3). However, intervention group had higher mean levels of self-efficacy (mean = 37; SD = 3.21) when compared with the control group (mean = 25.65; SD = 1.69). The difference score of self-efficacy before and after the intervention was 12.05 (the mean of self-efficacy before treatment 24.95 and after treatment 37). It indicates that after giving bibliotherapy the level of self-efficacy of diabetic patients tends to be high.

Table 2: Self-efficacy score illustration.

Group	Mean	SD	p value
Intervention	24.95	1.57	0.444
Control	25.35	1.69	

Table 3: The self-efficacy score difference prior to and after treatment in intervention group (n=20) and control group (n=20).

Group		Mean	SD	p value
Intervention	Pre	24.95	1.57	0.000
	Post	37.00	3.21	
Control	Pre	25.35	1.69	0.030
	Post	25.65	1.69	

Table 4: Self-efficacy mean difference after treatment in intervention group (n=20) and control group (n=20).

Group		Mean	SD	P value
Intervention	Post	37.00	3.21	0.000
Control	Post	25.65	1.69	

There is significant difference the mean score of self-efficacy after treatment between intervention and control group (p=0.000). The mean score post test in intervention and control group is 37.00 and 25.65 respectively. (Table 4). It shows that bibliotherapy can improve self-efficacy among diabetics.

DISCUSSION

The research results indicate that before the bibliotherapy is given all respondents have self-efficacy mean score of 24.95 in the intervention group and 25.35 in the control group. These scores show that the self-efficacy in both the intervention and control groups fall in low to medium category. This research result is similar from Mohebi et al, research states that self efficacy rate is low among diabetic patients.¹¹ Before the therapy is given, the patients seem sad with the diabetes mellitus they are suffering from. They also say that since they suffer from it they become more sensitive and negative thoughts frequently come to their minds. Most of these patients know that diabetes mellitus is incurable and requires a

lifelong handling. The fact that it is incurable has driven these patients to feel despair and they also think that they will die soon. These patients are afraid of losing their husbands and children, they think they are no longer of use for others and only cause others more troubles.

The research data indicate that the respondents are mostly middle adults (36-55 years). This age range can be a critical period or stress period for an individual. This critical period occurs because the individual has not fully reached what they expect. The stress period occurs because at a middle adulthood an individual will experience physical and psychological changes just like diabetes mellitus which results in psychological problems. It is characterized by despair, negative thoughts and behavioral change. When an individual comes to middle adulthood they will develop towards generativity vs stagnation. Generativity include the plans to be done to equip the next generation with something useful. Stagnation is self-absorption when an individual cannot execute the plan as they wish.¹² After the bibliotherapy is given respondents has the believing self-efficacy. The patients say they begin to experience a change in their thoughts, they learn that their thoughts have been incorrect, they will try to rectify the way they think when such weird thought comes, they seem to be more optimistic in playing their role and they will try to do the best for themselves and they know what they should do with their current situation. This self-efficacy improvement is a result of short-term intervention. These patients think they can have themselves taken care of with ease as they wish because they have the knowledge and experience about how to manage disease so that they can change their own self-management behavior.¹³

The self-efficacy increases because bibliotherapy can influence an individual's thought pattern. Furthermore, bibliotherapy has its own attractions to present information, to explain a process as well as to influence the patient's emotion and thought pattern. Bibliotherapy is the one involving ways of thinking, feeling and behaving within oneself. Bibliotherapy aims at changing the negative, irrational belief and perception into the positive ones.¹⁴ Meanwhile, a story based on a diabetes patient's direct experience is used as a media of learning by developing cognitive behavioral therapy which has the ability of influencing an individual's emotion and thought pattern to allow them to have positive thoughts.

The story in this research tells about motivation, education, and direct experience of diabetes mellitus patient. Motivation can improve self-efficacy because the patients feel the supports given by others, making these patients brave enough to face their disease and hence the patients' psychological problems vanish. In addition, according to Trief and Zareban education can be a way to improve the self-efficacy in diabetes mellitus patients.^{15,16}

The reading in this bibliotherapy is turned into a stimulus to be delivered to the patient's sight sense until it forms a

perception that their thoughts have been incorrect. The patients realize their thoughts so far and this eventually leads them to think to solve the problems (intelligence). Intelligence can be used by the patients to assess the preparations they should make in relation to their own care. In addition, the experience of others in the reading can be used by the patients to motivate themselves. When this motivation appears, the patients begin to want to reach their goals and the patients' affect is formed by convincing themselves that they can do what they desire.¹⁷

Therefore, it is expected that the patients will be able to have themselves treated well. The result of Yuan, et al, study suggests that bibliotherapy can reduce the depression felt of diabetes mellitus patients.¹⁸ As the depression decreases, the self-efficacy of diabetes patient will increase.

After the bibliotherapy is given, the patients show a cognitive change where they change from being distorted previously into a more rational person thanks to cognitive restructuring. This cognitive restructuring will influence the patients' perception in changing their negative thoughts into more positive ones. The patients however have different level of cognition such as negative automatic thoughts (NATs) from the patients, dysfunctional assumptions (DAs), and core belief. Core belief serves as the key to how an individual sees themselves, others and it is associated into high emotion. Dysfunctional assumptions (DAs) are a principle which guides an individual to behave and determine how they act. NATs are the result of core belief and DAs which is interpreted into an individual's daily experience.¹⁹ The level of cognition is tightly related to body, hence it is expected that patients would learn the importance of paying attention to what they are thinking. The patient's cognitive perception will be combined with others' experience to strengthen the behavior they desire based on their own ability. Self-efficacy can be formed from, among other things, the experiences of others (vicarious experience). A story book containing others' experiences in the bibliotherapy can be a problem solver for the patients. They can read the story as an example of how to think and behave as they wish. Others' experiences can convince an individual that they have the same ability when encountered by the same problem. Others' experiences can also be a process of learning by mimicking their behaviors. These experiences can improve the diabetes mellitus patient's self-efficacy particularly when they think they have the equal or even better ability than those in their learning subjects.

The cognitive change takes place because all respondents are still in their middle adulthood. Such age is the peak age of individuals in reaching what they desire, hence these individuals will strive to achieve their wish. In addition, during their middle adulthood people are relatively easy to be influenced such as the ever changing feelings.¹⁹

The emotional elements can be turned into the final phase for the patients to decide on the action they think is right. Emotions begins with assessment, evaluation of context, preparedness, and tendency. Assessment is described when the patients see and listen to others' experiences, and thus the thinking process (evaluation of context) is formed in determining the positive behavior. The patients begin to prepare themselves for treatment, and they eventually have the hope to solve their problems appropriately.

CONCLUSION

The research results indicate that bibliotherapy can improve the self-efficacy of diabetes mellitus patients because the reading in this research tells about education, motivation, and others' experiences. It is characterized by the patient's awareness of the negative perception related to their treatment and disease and the patient's wish to have themselves treated. People with high self-efficacy have certain characteristics such as believing that they will succeed, showing high performance when doing their duties, being persistent until they reach their goals, capable of controlling their stress and anxiety, and finally being creative and innovative.

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