
Self-Efficacy As A Correlate Of Coping Among Patients With Diabetes Mellitus In Federal Teaching Hospital Abakaliki, Nigeria

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Abstract

This study examined the roles of self-efficacy on coping amongst patients with diabetes mellitus in Federal Teaching Hospital Abakaliki, A total of 202 patients with diabetes mellitus from Federal Teaching Hospital Abakaliki served as participants, 109 (54.0%) were males, while 93 (46.0%) were females. The ages of the participants ranged from 19 to 60 years with a mean age of 32.50 and standard deviation of 11.6. Two instruments were used in the study. They include 30 item self-efficacy scale and 30 item personal function index. The design of the study was correlational design and linear regression was adopted as the statistical tool to test the hypotheses. The result indicated that self efficacy significantly predicted coping among diabetic patients at $\beta=.53; t= 28.76, P<.05$ level of significance. In conclusion, the findings showed that self-efficacy is among the significant positive predictors of coping among patients with diabetes mellitus attending diabetic clinic Therefore psychotherapists should map out ways of boosting self efficacy of patients with diabetes mellitus through the use of psychological skills and techniques to ensure an appropriate coping

Keywords; Self-efficacy, Coping and Diabetes mellitus

1 .INTRODUCTION

Diabetes mellitus (DM) commonly referred to as diabetes is a heterogeneous metabolic disease characterized by chronic hyperglycemia and impaired metabolism of carbohydrates, fats and protein. It is consequently caused by defects in insulin secretion or function [4]. There are three main types of diabetes mellitus according to world health organization [24]. The Type 1 DM results from the body's failure to produce enough insulin. This form was previously referred to as insulin-dependent diabetes mellitus (IDDM) or Juvenile diabetes. The second type is Type 2 (DM) which begins with insulin resistance, a condition in which cells fail to respond to insulin properly. As the disease progresses, a lack of insulin may also develop. This form was previously referred to as "non insulin-dependent diabetes mellitus" (NIDDM) or "adult-onset diabetes, Gestational diabetes, is the third main form and occurs when pregnant women without a previous history of diabetes develop high blood glucose level. For the purpose of this study all the three types of diabetes mellitus will be considered without any disintegration.

In the year 2000 it was estimated that 171 million people in the world were with diabetes and this is projected to increase to 366 million by 2030. This increase in prevalence is expected to be more in the Sub-Saharan Africa and India [25]. In Africa, the

estimated prevalence of diabetes is 1% in rural areas, up to 7% in urban sub-Sahara Africa, and between 8-13% in more developed areas such as South Africa and in population of Indian origin[19]. The prevalence of diabetes in Nigeria varies from 0.65 % in rural mangu (North) to 11% in urban Lagos (South) [11] and data from World Health Organization (WHO) suggest that Nigeria has the greatest number of people living with diabetes in Africa. This does not imply that Nigeria as a country has the highest global rate of prevalence but has the highest number of people with this disorder when compared against her large population [25].

According to American Diabetes Association [5], diabetes can only be managed and the main goal of diabetes management is, as far as possible to restore carbohydrate metabolism to normal state. To achieve this goal, individuals with an absolute deficiency of insulin require insulin replacement therapy, which is given through injections or insulin pump. Insulin resistance, in contrast, can be corrected by dietary modifications and exercise. Other goals of diabetes management are to prevent or treat the many complications that can result from the disease itself and from its treatment.

To paraphrase Chawla and Kalra, many people think that diabetes treatment is very straightforward, once the right amount of medication or insulin has been determined. Unfortunately, management is much more complicated than this. Diabetes is a disease that is managed primarily by a complicated regime of self-care behavior. The management of diabetes includes following a daily routine of medication or insulin usage, self-testing of blood glucose levels many times per day, as well as specific diet and exercise. All of these tasks may be performed daily in a highly coordinated fashion.[10]

Chawla et al further noted that diabetes self care is difficult for a number of reasons. For example, the demands of diabetes self management can be overwhelming. Ideally, when people learn new and complicated routines, they try out new behaviors in a gradual way, eventually making them part of a new routine, but with diabetes the individual must quickly learn a large number of new behaviors and they must begin performing them all and at once. In general, research shows behavior changes occur best when simple changes are made first and change occurs gradually over time. However, the individual with

diabetes has to try to manage all of the factors simultaneously in a right way.[10].

In addition to behavioral demands of diabetes, there are emotional and social problems that can arise. Diabetes may often be perceived as a burden. It may be hard to accept the disease and feelings of depression (feeling overwhelmed), anxiety (fear of complications or hypoglycemia) and frustration (with demands of self care or medical system) may be common [23]. According to Steven et al, many individuals who do not have diabetes find it difficult to understand the needs of someone with diabetes. Even if they mean well, those without diabetes often act in ways that may not be supportive. For example, friends or relatives may encourage a person with diabetes to eat something they shouldn't because "once can't hurt". Well meaning mothers and aunts may prepare calorie-rich foods for their diabetic children, not realizing the harm they are doing.[23]

Steven et al further noted that Psychosocial issues may exert substantial influence on glycemic control in diabetic patients. Psychological factors (e.g stress, anxiety, depression e.t.c) have been shown to increase the risks of poor glycemic control, brittle diabetes (hard to control type 1 DM), and diabetic ketoacidosis. [23]

Diabetes presents a significant challenge and stress for diabetics and those around them. Considering the stress that is associated with diabetes regimen or behavioural management of diabetes mellitus, coping can be difficult and there is need for researchers to understand coping as a variable and to focus on those psychological factors that can influence coping with diabetes. Bearing this in mind the present study is aimed at finding out the role self-efficacy play in coping among diabetic patients.

Due to individual differences people respond to or cope with perceptions of threat, harm, stress and loss in diverse ways. Coping is often defined as efforts to prevent or diminish threat, stress, harm, and loss, or to reduce associated distress. Some prefer to limit the concept of coping to voluntary responses [12]. Others include automatic and involuntary responses within the coping construct [22]. Of course, distinguishing between voluntary and involuntary responses to stress is not simple; indeed, responses that begin as intentional and effortful may become automatic with repetition. Furthermore coping is a process by which

persons face stressful situations, and active coping have proved effective in disease control. The process of coping involves two components, appraisal and coping [18]. Appraisal is the act of perceiving a stressor and analyzing one's own ability to deal with the stressor. Appraisal can be made in three different conditions: when we have experienced a stressor, when we anticipate a stressor and when we experience a chance for mastery or gain [18]. Once we appraise a stressful situation we must decide how we will respond or cope with the stressor, either choosing to master it, reduce it or tolerate it. The coping style we engage in is ultimately determined by whether we believe we have the resources to resolve the stressor. There appears to be three main coping styles that people employ when attempting to resolve or remove a stressor: problem-focused coping, emotion-focused coping and avoidant coping.[18]

Problem-focused coping involves altering or managing the problem that is causing the stress and is highly action focused. Individuals engaging in problem-focused coping focus their attention on gathering the required resources (i.e. skills, tools and knowledge) necessary to deal with the stressor. This involves a number of strategies such as gathering information, resolving conflict, planning and making decisions [17].

Emotion-focused coping which is the second coping style can take a range of forms such as seeking social support, acceptance and venting of emotions [9]. Although emotion-focused coping styles are quite varied they all seek to lessen the negative emotions associated with the stressor, thus emotion-focused coping is action-orientated [1].

The third main coping style is avoidant coping. Avoidant coping can be described as cognitive and behavioural efforts directed towards minimizing, denying or ignoring dealing with a stressful situation [15]. Although some research group avoidant coping with emotion-focused coping styles together, the styles are conceptually distinct [15]. Avoidant coping is focused on ignoring a stressor and is therefore passive, whereas emotion-focused coping is active [15]. However, among diabetics, the adoption of a particular coping style may be anchored on some psychological factors. Such factors may include self efficacy.

Self-efficacy by definition is a person's belief in his or her ability to overcome the difficulties inherent in a specific task in particular situation. Self-efficacy influences the choices a person makes, the effort

applied to a task and how long a person will persist when confronted with obstacles or failure. People tend to pursue the tasks for which they have self-efficacy, and repeatedly it has been found to be a significant predictor of health-related behavior [13].

In addition, the concept of self-efficacy may be described as personal beliefs, people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with the judgments of what one can do with whatever skills one possesses [7]. According to Bandura judgments of self-efficacy contribute to the quality of individual functioning by affecting how people feel, think, act, and motivate themselves [6]. The concept self-efficacy, has received considerable support from empirical literature demonstrating its significant effect on health functioning among individuals diagnosed with diabetes mellitus in particular. The literature has established a link between self-efficacy appraisals and adoption in maintenance of disease management behaviors [2]. Hattori-Hara, Luisa and González Celis (2013) examined the association between coping strategies and self-efficacy in DM2 management in a group of 126 Mexican adults over 54 years old ($X = 68.57$, $SD = 7.19$), which answered an interview about socio demographics data, self-efficacy in diabetes and coping strategies. The most common kind of coping used by the sample was self-recreation and religious faith and in self-efficacy the domain of taking the medicines had the greater score. Total score in self-efficacy had significant correlations with active coping ($r = .402$, $p \leq .01$) and self-recreation ($r = .291$, $p \leq .01$). They concluded that there are relationships between self-efficacy, beliefs in diabetes management and active coping, to buttress the above findings Alipour , Zare , Poursharifi, Sheibani, and Ardekani (2012) investigated the intermediary role of self-efficacy in relation with stress, glycosylated haemoglobin and health-related quality of life in patients with type2 diabetes. All women with diabetes in Yazd Diabetes Research Centre, in 2012, were considered and 80 women were selected by random sampling. They completed Shirer's self-efficacy scale questionnaire, depression, anxiety and stress scale (DASS), and ADDQOL19 questionnaire. Then they were introduced to the lab for blood test. Data were analyzed by SPSS software and stepwise regression method, Pearson correlation test results showed that the hemoglobin A1c ($r = 0.35$) and Quality of Life ($r = -0.22$) are associated

with stress ($P < 0.05$). As so hemoglobin A1c ($r = 0.83$) and Quality of Life ($r = 0.37$) with variable of self-efficacy are associated positively and significantly ($P < 0.05$). Results of stepwise regression also showed that self-efficacy and stress scales 0.697 of variance hemoglobin A1c and 0.140 of variance of Quality of life explaining to do. Also Padgett (1991) investigated a relationship between diabetes self-efficacy and the adherence to the diabetic regimen (i.e., following specific doctor's orders) among 147 non-insulin dependent diabetes mellitus patients. In the study, both medical patients and their physicians rated the frequency of self-care behaviors related to blood glucose monitoring, diet, exercise, urine testing, foot care, and oral medication. The results of study revealed that both physician- and self-rated adherence were positively related to the maintenance of a diabetic regimen ($r = .20, p < .05, r = .40, p < .01$, respectively).

Still on this Sarkar, Fisher, Schillinger. (2006) examined the relationship between diabetes self-efficacy and self-management behavior in an urban, diverse, low-income population with a high prevalence of limited health literacy. They administered an oral questionnaire in Spanish and English to patients with type 2 diabetes at two primary care clinics at a public hospital and measured self-efficacy, health literacy, and self-management behaviors using established instruments they performed multivariate regressions to explore the associations between self-efficacy and self-management, adjusting for clinical and demographic factors. They tested for interactions between self-efficacy, race/ethnicity, and health literacy on self-management. The study participants were ethnically diverse (18% Asian/Pacific Islander, 25% African American, 42% Latino/a, and 15% white), and 52% had limited health literacy (short version of the Test of Functional Health Literacy in Adults score < 23). Diabetes self-efficacy was associated with four of the five self-management domains ($P < 0.01$). After adjustment, with each 10% increase in self-efficacy score, patients were more likely to report optimal diet (0.14 day more per week), exercise (0.09 day more per week), self-monitoring of blood glucose (odds ratio 1.16), and foot care (1.22), but not medication adherence (1.10, $P = 0.40$). The associations between self-efficacy and self-management were consistent across race/ethnicity and health literacy levels. They concluded that Self-efficacy was associated with self-management behaviors in this vulnerable population, across both race/ethnicity and health literacy levels.

However, the magnitude of the associations suggests that, among diverse populations, further study of the determinants of and barriers to self-management is warranted. Policy efforts should be focused on expanding the reach of self-management interventions to include ethnically diverse populations across the spectrum of health literacy.

In addition, a multiple regression analysis revealed that higher levels of self-efficacy were predictive of higher self-ratings of adherence and lower levels of depression.

To solidify the above Williams and Bond (2002) found that self-efficacy beliefs assessed among 94 diabetic patients accounted on average for over 26% of the variance in their self-care behaviors, including diet, exercise, and blood glucose testing. Bernal, Woolley, Schensul, & Dickinso (2000) noted a predictive power of self efficacy beliefs for activities related to diet and insulin management among 97 insulin dependent diabetes patients. Similarly, Kavanagh, Gooley, and Wilson (1993) investigated the association between self-efficacy beliefs and treatment adherence among 63 diabetes mellitus patients. The investigators demonstrated that self-efficacy was a significant predictor of adherence to diet and exercise components of treatment regimen concurrently and at the two-month follow up. Furthermore, this relationship was present when statistically controlling for the initial rates of adherence, metabolic control, and a number of demographic variables. In a similar longitudinal study, Hurley and Shea (1992), documented that self-efficacy appraisals accounted for 33% of the variance in illness management behaviors at a one-month follow up.

Finally, the empirical literature establishes a link between self-efficacy appraisals and emotional adjustment to a chronic illness, such as diabetes. In general, diabetic patients reporting greater self-efficacy obtain lower scores on measures of depressive and anxiogenic symptomatology (Padgett, 1991). Gray, Boland, Yu, Sullivan-Bolyai, & Tamborlane, (1998) showed that higher diabetes self-efficacy appraisals were associated with greater life satisfaction, better coping, and lower levels of depressive symptoms in adolescent patients diagnosed with diabetes. This relationship is consistent with the notion that affective states and physiological arousal constitute one of the four sources of information pertaining to personal perceptions of self-efficacy (Bandura, 1986).

In summary, self-efficacy judgments have crucial implications for illness management behaviors, psychological adjustment and life satisfaction of individuals coping with chronic medical condition. The relevant literature on diabetes is a prime example. Although literature documents the implications of self efficacy beliefs on self-management and adherence in diabetes mellitus patients, further research is needed to examine the mechanisms through which self-efficacy operates on diabetes self-care.

2. PURPOSE OF STUDY

To determine if self-efficacy will be a significant positive predictor of coping among patients with diabetes mellitus at Federal Teaching Hospital Abakaliki.

3. Hypotheses

Self-efficacy will significantly predict coping among patients with Diabetes Mellitus.

4. METHOD

4.1 Participants

A total of 202 patients with diabetes mellitus from Federal teaching hospital Abakiliki served as participants in the study. 109 (54.0%) were males while 93 (46.0%) were females. The participants were selected through convenience sampling technique. The ages of the participants ranged from 18 to 60 years with a mean age of 32.50 and standard deviation of 11.6..

4.2 Instruments/ Measure

Two instruments were collapsed and used in the study. They included 30 item self efficacy scale by Sherer, Maddox, Mercandante, Prntice-Duna, Jacobs & Rogers (1982) and Personal Function Index that

measures coping with 30 items by Kohn, O'Brien-Wood, Pickering and Decicco (2003). The scale on self efficacy was organized in the form of 5 point likert scale with the expressions of “disagree strongly”, “disagree moderately”, “Neither agree nor disagree”, agree moderatejy”, “Agree strongly” while that of coping were also based on five point likert format ;(1) strongly agree, (2) agree, (3) neutral, (4) strongly disagree, (5) disagree. The original psychometric property of Personal Function Index was provided by Kohn et al (2003) using Canadian samples while Umeh (2004) provided the properties for Nigerian samples. Sherer et al (1982) provided the original psychometric properties of the self efficacy scale using American samples while Ayodele (1998) provided the properties for Nigerian samples.

4.3 Procedure

A formal permission was obtained from Ethical Committee of Federal Teaching Hospital Abakaliki. Subsequently, questionnaires were given to the participants on the days of their clinic visitation. Some of the patients filled the questionnaire and returned it same day while some that came late for their clinic were allowed to go home with the questionnaires and return on next clinic day. Two nurses were employed and trained on how to assist with the distribution and collection of the questionnaires and the data collection lasted for 4 months. Out of 250 questionnaires distributed only 202 were utilized, 30 were not returned and the remaining 18 questionnaire were not properly filled and as such were discarded.

4.4 Design/ Statistics

The research was survey while the design was correlational design. Based on the research design and the nature of hypotheses linear regression was adopted as the statistical tool to test the hypothesis using SPSS version 20.

5. RESULTS

Table 1: Summary table of linear regression on self efficacy as predictors of coping.

Model		Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig
		B	Std. Error			
1	(Constant)	2.54	.92		2.75	.01

self efficacy	1.90	.07	.53	28.76	.00
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A Dependent Variable: coping

The above table indicated that the hypothesis which stated that self efficacy will significantly predict coping among patients with diabetes mellitus was confirmed at $\beta = .53$; $t = 28.76$, $P < .05$ significant level. This indicates that self efficacy is among the potent and significant predictors of coping among diabetics.

6.1 DISCUSSION

This study sought to know if self-efficacy will significantly predict coping among patients with diabetes mellitus in Federal Teaching Hospital Abakaliki. Out of two hundred and two patients that participated in this study, 109 (54%) were males and 93 (46%) were females. The result of this study indicated that self-efficacy is the second most potent positive predictor of coping among diabetics. This finding is in line with the findings of HaHori, Luisa and Gonzalez-celis (2013), who examined the association between coping strategies and self-efficacy in DM2 Management in a group of 126 Mexicans. They concluded that there are relationships between self-efficacy belief in diabetes management and active coping. Also Alipour, Zare, pour, sharifi, sheibani and Ardekani (2012) investigated the intermediary role of self-efficacy in relation with stress, glycosylated hemoglobin and health related quality of life in patients with type 2 diabetes. They found out that self-efficacy associated positively and significantly with stress, glycosylated hemoglobin and health related quality of life. Furthermore Aljasen (2001) investigated the role of self-efficacy judgment within the expanded health believe model. The investigator showed that anticipated benefits of treatment, perceived barriers to treatment and self-efficacy independently predicted self-care behaviours among 309 diabetic patients. Specifically they reported that the appraisals of self-efficacy accounted for over 10% of the variance in self-care behaviours when statistically controlling for diabetic specific treatment barriers and patients characteristics. One possible explanation of this result is the belief one has in his/her ability to manage the physical and psychological problems that is associated with this

chronic disorder affects the level at which the patients cope with the disease and in the society at large,

6.2 Limitations

The respondents may have given opinions that did not actually represent their situations. Also the relatives of these patients may have interfered with the opinions of the respondents as they were allowed to fill the questionnaires at home. Findings should therefore not be generalized and interpreted with caution.

6.3. Conclusion

The findings showed that self-efficacy is among the significant predictors of coping among patients with diabetes mellitus attending diabetic clinic.

Recommendations

The study recommended that psychotherapists should map out ways of boosting the personality traits of patients with diabetes through the use of psychological skills and techniques to effect an appropriate coping.

7. Acknowledgment

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