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Self Care Behaviour of the Diabetic Patients in a Primary Health Center in Bali

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Abstract

The main problem of diabetes management is the patient's attitude toward their illness, because they have different concepts and beliefs. This study was to investigate the illness perception, the motivation, and the selfcare behavior in patients type 2 diabetes. This research was used cross-sectional approach. The sample size in this study was 177 patients with diabetes mellitus type 2. Stratified random sampling was used in this study. Motivation itself accounted for 43.2% of the variance in diet, 11.4% of the variance in exercise, 9.1% of the variance in blood sugar testing, 11.7% of the variance in medication adherence, 10.1% of the variance in foot care, $p < .005$. Illness perception accounted for 23.4% of the variance in selfcare behavior, 23.4% of the variance in selfcare behavior, 23.4% of the variance in selfcare behavior, 23.4% of the variance in selfcare behavior, 23.4% of the variance in selfcare behavior $p < .005$.

Keywords: *Illness perception, motivation, selfcare, diabetes mellitus.*

Introduction

Elderly population is increasing worldwide. Such a rapid growth in elderly population has challenged health care systems, to meet the complexities of caring for such a vulnerable population who are at risk of various health problems and disabilities[(1)]. Individuals with diabetes are at increased risk of developing microvascular and macrovascular complications, which could be prevented or delayed through essential self-care activities[(2)]. Nonadherence to self-care behaviors stems from a number of patient-related factors, including a decrease in motivation, self-efficacy, health literacy, and impaired disease perception[(3)].

Furthermore, there is a growing body of evidence corroborating that the perception of the disease plays an important role in the degree of compliance[(4–6)]. Previous research has shown that the extent to which patients adhere to diabetes self-care recommendations is strongly related to their perceptions of their illness and its treatment[(7)]. Illness perceptions are the central concept of the common-sense model of self-regulation of health and illness[(8)]. One's perception of his or her illness, i.e., illness perception, has been considered a critical psychosocial construct that could motivate the person with diabetes to undertake the required self-care activities. According to the common-sense model of self-regulation (CSM-SR)[(9)], individuals who are faced with a health threat, such as experiencing a diagnosis, tend to form emotional and cognitive representations that determine the selection of coping procedures and behaviors in response to the perceived health problem as well as the evaluation of treatment effects.

Motivation is an important conceptual variable in diabetes regimen adherence. As self-care for diabetes is ongoing, motivation may be best conceptualized for the process rather than a specific goal[(10)]. Cross-sectional studies have also found that motivation is associated with diabetes self-care behaviors[(11–13)]. Initiating and maintaining such a complex and demanding regimen is heavily dependent on developing and

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sustaining motivation, which is the key to establishing goal-directed behavior[14,15]. While adjustments to health behavior are not inherently motivating[16], autonomous self-motivation can play a crucial role in adherence to a dietary regimen in diabetes[17]. The aim of this study was to investigate the illness perception, the motivation, and the selfcare behavior in patients with type 2 diabetes and its association with the demographic information.

Method

A descriptive cross-sectional design was used for data collection from individuals with T2DM. Data were collected from January 2018 to February 2018. A multistage stratified proportional sample design was used to draw a random sample of 177 patients; the 2 stratification criteria were educational level and, sufficient number of patients with type 2 diabetes coming to the public health center, and public health center distribution of the practices (11 primary health center). The ethical considerations were met. Participants signed an informed consent. Moreover, their privacy, confidentiality, and volunteer participation were ensured. The study was approved by Health Research Ethics Committee Faculty of Nursing Universitas Airlangga (No. 611-KEPK).

Data gathering tool included three questionnaires, the first one was related to demographic information of the patients which was created by researchers, the second one was The Brief IPQ (Illness Perception Questionnaire) and the third one was the Treatment Self-Regulation Questionnaire (TSRQ). The Brief IPQ (Illness Perception Questionnaire) has nine items. The items were developed by forming one question that best summarized the items contained in each subscale of the IPQ-R. [6].

The Treatment Self-Regulation Questionnaire-diabetes (TSRQ-diabetes) is a measure used an assessment approach introduced by Ryan and Connell[18]. We used a version of the TSRQ adapted for diabetes[19]. The Summary of Diabetes Self-Care Activities—Revised (SDSCA) is a measure that includes scales for commonly recommended diabetes self-care behavior. Validity for the original subscales has been supported by correlations of the SDSCA with other measures of diet and exercise[20].

Descriptive statistics were used to describe the demographic information, motivation, levels of illness perception, and self-care behaviors. Multivariate linear regression analyses were conducted to examine the predictive relationships among illness perception, motivation and each self-care behavior. All data were analyzed using the SPSS statistical software package (version 16.0, SPSS Inc., Chicago, IL, USA), and a value of $P < 0.05$ was considered significant.

Result

Table 1 lists the characteristics of the 177 participants. The average age of the subjects was 57.35 ±4,89 years (range 36-65 years), and 53.1% of the subjects were male. The duration of T2DM in the participants was 5.85 ± 3.29 years. The mean Social economy status (Rp) was 1,532,800 (±1,098,200), and the mean BMI (kg/m2) was 22.96 (±2,93). In multiple regressions, after adjusting for relevant covariates, duration of diabetes ($\beta = 0.309$, $P < 0.05$), social economy status ($\beta = 0.405$, $P < 0.05$), personal control ($\beta = 0.202$, $P < 0.05$), treatment control ($\beta = 0.296$, $P < 0.05$), and concern ($\beta = 0.197$, $P < 0.05$) significantly accounted for the diet in self care behavior. Duration of diabetes ($\beta = 0.309$, $P < 0.05$), BMI ($\beta = 0.200$, $P < 0.05$), identity ($\beta = -0.233$, $P < 0.05$), assesses illness comprehensibility ($\beta = 0.094$, $P < 0.05$), autonomous regulation ($\beta = 0.267$, $P < 0.05$), and controlled regulation ($\beta = -0.356$, $P < 0.05$) significantly accounted for the exercise in self care behavior. BMI ($\beta = 0.269$, $P < 0.05$), emotions ($\beta = -0.255$, $P < 0.05$), autonomous regulation ($\beta = 0.433$, $P < 0.05$), and controlled regulation ($\beta = -0.454$, $P < 0.05$) significantly accounted for the blood sugar testing in self care behavior. Social economy status ($\beta = 0.161$, $P < 0.05$), treatment control ($\beta = -0.223$, $P < 0.05$), assesses illness comprehensibility ($\beta = 0.184$, $P < 0.05$) significantly accounted for the foot care in self care behavior. Autonomous regulation ($\beta = 0.260$, $P < 0.05$) significantly accounted for the medication adherence in self care behavior.

Table 1: Number and percentage of participants according to demographic characteristics

Variable	Mean(SD)	N = 177	%
Age (36-65), y	57.35 (±4,89)		
Gender			
Male		94	53.1
Female		83	46.9
Duration of diabetes, y	5.85 (± 3.29)		
Social economy status, Rp			
≥ Rp 2,173,000		51	28.8
< Rp 2,173,000		126	71.2
BMI, kg/m²	22.96 (±2,93)		

Table 2: Mean (SD) of participants according to illness perception, motivation, and self care behavior

Variable	Mean	(SD)	Range
Illness Perception			
Consequences	5.45	2.90	0-10
Timeline	4.47	2.62	0-10
Personal control	8.5	1.56	0-10
Treatment control	9.06	1.33	0-10
Identity	6.59	2.07	0-10
Concern	9.25	1.04	0-10
Assesses illness comprehensibility	7.2	1.97	0-10
Emotions	5.81	2.77	0-10
Motivation			
Autonomous regulation	3.33	0.34	1-4
Controlled regulation	3.26	0.35	1-4
Self care Behavior			**0-7**
Diet	4.98	1.24	0-7
Exercise	2.6	1.4	0-7
Blood sugar testing	1.07	0.95	0-7
Medication adherence	5.63	1.8	0-7
Foot Care	2.01	1.56	0-7

Table 3: Multistep linear regression on the association of demographic characteristics, motivation, and illness perception with self care behavior

Step	Variabel	Diet	Exercise	Blood sugar testing	Medication adherence	Foot Care
		R^2	R^2	R^2	R^2	R^2
1	Age	0.295*	0.098*	0.079*	0.021	0.051
	Gender					
	Duration of diabetes					
	Social economy status					
	BMI					
2	Consequences	0.432*	0.114*	0.091*	0.117*	0.101*
	Timeline					
	Personal control					
	Treatment control					
	Identity					
	Concern					
	Assesses illness comprehensibility					
	Emotions					
3	Autonomous regulation	0.014	0.049*	0.084*	0.040*	0.006
	Controlled regulation					

Note: *Significant at $P < 0.05$

Discussion

Overall, illness perception dimensions were associated with self-care behavior. Patients who perceived they had the ability to control their diabetes, reported to have been more physically active and to have followed the general guidelines for healthy eating and diet more often. These findings seem to support previous studies that identified control perceptions to be particularly influential on health behavior[7,21]. In addition to some of the illness perceptions dimensions, the presence of complications was found to be associated with certain self-care behavior, namely physical activity and foot care. These findings seem to partly support previous studies[22,23] suggesting that the perceived urge and need to make behavior changes primarily appear to arise in the presence of diabetes related symptoms.

We believe the relatively low proportion of significant associations between illness perceptions and self-care found in this study might be explained by several factors. First, it is difficult to determine whether the self-care behavior, with the exception of foot care, were actually performed as a part of the diabetes treatment regimen or rather as a part of an already existing lifestyle. Furthermore, the fact that we studied the effects of separate illness perception dimensions, rather than illness perception clusters, may

have contributed to the relatively few associations found with self-care behavior and lifestyle [24]; particularly considering the high perceived controllability and low perceived consequences that were generally found in this study. The low variation in selfcare behavior and illness perceptions in this group of relatively recently diagnosed T2DM patients, however, did not allow for clustering of perception dimensions.

This study found that autonomous and controlled motivation had a positive influence on exercise, but not on general diet, blood-glucose testing, medication adherence, and foot care. These findings are in line with other studies demonstrating a positive association between autonomous motivation and self-care behaviors [10,17,25,26] and between controlled motivation and exercise [10]. In the present case, controlled motivation was related to exercise in the first months after the diabetes course, whereas autonomous motivation was related to exercise in the long term, 12 months after the course. Thus, although controlled motivation can influence self-care behaviors, we can expect autonomous motivation to lead to more sustainable behavior change [10]. However, it should be noted that our results are inconsistent with other studies indicating that autonomous motivation is positively associated with dietary selfcare or blood-glucose testing [10,17,26].

Our results are consistent with previous research showing a positive association between autonomous motivation and success in maintaining health-related behavior. This body of work includes studies of smoking cessation, maintaining reduced body mass index and increased exercise following a weight loss program and improving diet and exercise among individuals with coronary artery disease [27–29]. Also consistent with this literature, feeling that one should perform self-management tasks because of the expectations of others or because one feels guilty (controlled motivation) did not predict frequency for any of the target behavior in our study [10]. In contrast to diet and blood glucose testing and in contrast with previous reports in the literature, our findings did not support an association between autonomous motivation and exercise. This may have been an artefact, at least in part, due to the very low rate of exercise among the participants in our sample. Another consideration is that our participants were not recruited as part of a training program, as was the case in studies reporting the associations between autonomous motivation and health-related behavior [27–29].

Conclusion

The illness perception and the motivation in patients with type 2 diabetes are associated with the self care behavior.

Conflict of Interest: The authors declare that they have no conflict of interest.

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

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