Self-efficacy, self-care and glycemic control in Saudi Arabian patients with type 2 diabetes mellitus.

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Introduction:

Diabetes self-management (DSM) is a very challenging task and demands the involvement and contribution of multiple treatment areas. Diabetes self-management adopts healthy lifestyle behaviors, which have an effect on glycemic control for patients with diabetes mellitus. Diabetes is a disease that requires change in behavior, and behavioral changes are affected by several factors. One of the crucial factors in attaining behavioral goals is self-efficacy; defined as the individual's beliefs about personal capabilities to perform specific behaviors that are necessary to achieve their goals. Diabetes management self-efficacy, therefore, refers to the patient's confidence in his/her ability to perform several of the DSM behaviors; and improving DSM is an ongoing challenge for health care teams globally, including the Kingdom of Saudi Arabia (KSA). As a result, identifying DSM behaviors and diabetes management self-efficacy and examining their effects on glycemic control, as well as identifying which areas of diabetes management self-efficacy and DSM behaviors patients need additional support in, can assist health care teams in achieving better diabetes control.

Aim:

To determine the prevalence of diabetes self-care activities among patients with type 2 diabetes and to examine the association between socio-demographic and clinical parameters, diabetes self-care activities, and glycemic control among patients with type 2 diabetes.

Methods:

A cross sectional study was conducted among 123 patients with diabetes at the Sultan Bin Abdulaziz Humanitarian City (SBAHC) in Riyadh, Saudi Arabia. In order to be included in the study, patients must have been diagnosed with type 2 diabetes, they had to be 25 years of age and above, mentally competent, and able to communicate verbally and provide informed consent. Patients with type 1 diabetes, pregnant women, patients experiencing cognitive impairment and any patient who did not agree to participate in the study were excluded. Interviews took place in the visit room individually and lasted approximately 15 minutes. Subject's verbal and written consent was obtained.

The data were collected via medical records and a face-to-face interview was undertaken with consecutive patients attending SBAHC. During the interview, the Diabetes Management Self-Efficacy Scale (DMSES) and the revised Summary of Diabetes Self-Care Activities Scale (SDSCA) questionnaires were completed for each participant. A regression model was used to examine the variables that predicted glycemic control. Moreover, a regression analysis examining the effect of each self-efficacy subscale on its respective diabetes self-management (DSM) behavior was carried out.

Result:

The most frequently reported DSM behaviors were foot care (mean $\pm$ SD = 4.4 $\pm$ 1.83, median = 4.5) followed by medication taking self-management behavior (mean $\pm$ SD = 4.15 $\pm$ 1.68, median = 3.5). The least frequently reported DSM behaviors were exercise self-management behavior and blood sugar testing behavior. Spearman regression analysis showed that self-efficacy was associated with higher levels of diet, exercise, blood sugar testing, and foot care self-management behaviors.

Spearman regression analysis assessing the association between self-efficacy and self-management behavior in relation to the five listed parameters.

Independent variables	R	Adjusted R2	P value
Diet	0.390	0.145	0.000
Exercise	0.505	0.248	0.000
Blood sugar testing and control	0.318	0.094	0.000
Medical treatment	0.082	0.002	0.369
Foot care	0.439	0.186	0.000

A final parsimonious regression model done including all of the statistically significant predictors from the subset analysis showed that diet self-management behaviors and oral hypoglycemic agents use were independent predictors of glycemic control HbA1c < 7% (53 mmol/mol) (<0.05).

Multivariate logistic regression of the seven variables and glycemic control.

Variable	Wald	P-value
Oral hypoglycemic agents	10.3	0.001
Diet self-efficacy	2.9	0.084
Exercise self-efficacy	0.007	0.933
BS testing self-efficacy	0.730	0.393
Diet self-management	17.7	0.000
Exercise self-management	1.2	0.273
BS testing self-management	3.4	0.065

Conclusion:

The findings from this study can serve to help clinicians have a better understanding on the extent to which different self-efficacy parameters have an influence on self-management behaviors, which will in turn lead to better glycemic control and thus improved A1c levels. Further prospective studies are needed to further understand the effect of self-efficacy on self-management behaviors and what that means in terms of obtaining good glycemic control.