THE EFFECT OF AN EDUCATIONAL INTERVENTION TO IMPROVE HALTHCARE PROFFESSIONALS ATTITUDE TOWARDS PEOPLE WITH DIABETES IN CORRECTIONS

University of Massachusetts Lowell

William Thuo MSN AGACNP-BC

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Scholarly Project Chair: Ramraj Gautam Ph.D.

Introduction

People with diabetes make a range of complex, yet routine self-care decisions involving medication, nutrition, physical activity, blood glucose monitoring, and stress management on a daily basis (Bani-Issa, Eldeirawi, & Tawil, 2015).This is not the case for people with diabetes who are incarcerated. They do not have the opportunities to make important decisions about their disease, and they depend on healthcare professionals to attend to their healthcare needs throughout their time in custody.

Background of the Problem

Managing diabetes in correctional facilities is challenging due to the special circumstances associated with corrections such as security needs, access to medical personnel during transportation to court and transfer to other correction facilities. These patients have no ability to choose a healthy diet, and "canteen" choices are mainly high in sugar and low in nutrition (Rosenbloom, Shlafer, Stang, & Harnack, 2018).They have limited exercise during recreation time and during security lockdown. In order to have better patient outcomes healthcare professionals need to monitor, advocate for, and express positive attitudes towards diabetes and inmates with the disease.

Pharmacotherapy is an important part of managing diabetes in correction settings. However, medications are often misused within these settings; this is an important issue to consider when deciding which medications to be prescribed and route of administration. Inmates, for instance, seek prescription medicines for a psychotropic effect rather than the intended therapeutic or licensed use (Mills, 2019). Furthermore, medications are limited based on the formularies provided to healthcare providers. For example, drugs used in general practice for

diabetes neuropathy such as Neurontin are highly sought after, and have high trade value, in correctional settings for their inherent abuse potential. For these reasons, Neurontin is not available for prescribing to inmates with diabetic neuropathy.

Patient adherence to treatment regimens is crucial to control diabetes and its complications. Healthcare professionals (HCPs) play a vital role in fostering a lasting change in patient behaviors, motivating patients toward adherence to diabetes regimens and helping them to make proper decisions leading to favorable health outcomes. Some inmates may not have been in prison before and may have relied on parents or spouses for support with their glucose control. In correctional settings, they must rely on healthcare professionals to manage their diabetes.

Inmates must contact security officers in order to access healthcare staff. When they do not have access to help quickly, it can be extremely stressful, resulting in the inmate taking some extreme measures. Some prisoners may intentionally allow their glucose levels to run higher to avoid the risk of hypoglycemia, particularly if they have previously experienced nocturnal hypoglycemic episodes. Inmates can also be manipulative by refusing Insulin or medication in order to be sent to the hospital due to diabetic ketoacidosis.

When clinicians encounter patients, their attitude toward treatment efficacy can counteract patients' frustrations toward diabetes management (Nam, Chesla, Scotts, Kroon &Janson, 2011). Different methods of educational interventions have been reported and can be used to facilitate improved attitudes and knowledge of health professionals (Opadeyi, Fourrier-Réglat, & Isah, 2019). In a resource constrained setting such as Correctional facilities, a single educational intervention may be useful in improving the knowledge and attitudes of healthcare

professionals. This brief report will describe the outcome of HCPs attitudes toward caring for and managing diabetes in a correctional facility following a single educational intervention.

Method

Design

This was a pre-test post-test study in which 35 healthcare professionals were selected through purposive sampling in a medium security Correction Facility in Northeast. Data collection were conducted using Diabetes Attitude Scale questionnaire. Data analysis was conducted using IBM SPSS version 25.

Participants and Setting

Healthcare professionals were recruited by sending an email to all healthcare professionals working in the facility, after University of Massachusetts Lowell Institutional Review Board approval and a permission letter from a Northeast Correctional Facility superintendent were received.

Measure

Participants were asked to complete the third version of Diabetes Attitude Scale (DAS-3), a 33-item survey that contains five subscales. The subscales were attitudes toward the following: (1) need for special training to provide diabetes care, (2) seriousness of type 2 diabetes, (3) value of tight glucose control, (4) psychosocial impact of diabetes, and (5) attitude toward patient autonomy. The survey was designed by the University of Michigan Diabetes Research and Training Center and it is suitable for the evaluation of professional education programs. The DAS-3 has adequate psychometric properties with internal consistency reliability

of Cronbach's alpha ranging from 0.65 for psychosocial impact of diabetes to 0.80 for seriousness of diabetes (Anderson, Fitzgerald, Funnell, & Gruppen, 1998). Validity of the DAS-3 is supported through consistency of findings with previous DAS surveys and through content validity established by the rigorous Delphi revision process (Anderson, Fitzgerald, Funnell, & Gruppen, 1998). The content validity of DAS-3 is assured by having been created by a panel of 22 diabetes experts.

Procedure

All healthcare professionals were informed of the study and IRB approval in a recruitment email. Informed consent was imbedded in the pre intervention survey, which was given to healthcare professionals before the start of the training Session. During the first 15 minutes, a pre intervention survey was offered followed by a 30 minutes long training session. The presentation utilized a PowerPoint presentation on type 2 diabetes management based on the five subscales of the Diabetes Attitude scale version 3. The source of the PowerPoint presentation was the American Diabetes Association, and the National Diabetes Education Program (American Diabetes Association,2019). This was followed by an immediate post intervention survey. Post intervention survey was conducted again via email 60 days following the intervention. Multiple education intervention sessions (for morning, afternoon, and evening shifts) were offered to provide opportunity for health care providers to participate in the project. All participants were requested to provide their email addresses on their post intervention surveys to facilitate administration of the 60-day post intervention survey using Qualtrics Survey Software. The surveys were collected in anonymous envelopes at the end of the education session.

Data Analysis

Descriptive statistics such as frequency, percentage and mean were used. Paired sample t-test was used to examine pre and post intervention mean differences in healthcare providers' diabetes knowledge attitude.

Results

All healthcare professionals had previous experience taking care of patients with diabetes. All participants were employed by a healthcare provider agency contracted to provide healthcare in the facility. A total of 35 nurses participated in the intervention. 27 License Practical Nurses (77%), seven registered nurses (20%) and One Nurse practitioner (3%).

Table 1 describes the sample characteristics.

Table 2 provides the mean attitude scores for the five subscales included in the education intervention before and immediately after the intervention. The "need for special training" and "psychosocial impact of Diabetes" subscales had significant mean differences between pre and immediate post intervention surveys.

Table 3 provides the mean attitude scores for the five subscales included in the intervention immediate after the intervention and 60 days' post intervention. The "need for special training" subscale had the significant mean differences between immediate and 60-day post intervention mean scores. Which was the case between the pre, and immediate post intervention surveys mean scores. The "Psychosocial impact of diabetes" subscale had the lowest mean scores for both immediate and 60-day post intervention survey

Discussion

This quality improvement project was designed to improve the healthcare professionals' attitudes towards inmates with diabetes, by providing an educational intervention to a group of healthcare professionals in a medium security correctional facility. The sample size comprised 98% of all healthcare professionals in the facility, which makes the sample representative in this setting.

In all subscales of the DAS-3, scores were above four on a scale of one to five, which means healthcare professionals in the facility have a positive attitude towards diabetes and had good knowledge about diabetes care. The scores remained high even after 60 days, which means there was good retention of the training material. This was not expected in this study because most of the healthcare professionals surveyed were licensed practical nurses. From previous studies, training has a significant impact on diabetes attitude subscales (Bani-Issa, Eldeirawi & Tawil, 2015). The high attitude scores can be attributed to an increase in evidenced based information on diabetes available to healthcare professionals.

There was a significant change between the pre and post intervention scores (P value 0.01) on the need for special training subscale. The "need for special training" indicates the participants believe they would benefit from specific training with regards to counselling, communicating, educating patients, and involving patients in goal setting. The need for special training may also reflect that participants understand the complexity of diabetes and its management. Training will help in improving outcomes for diabetes patients and will enable healthcare professionals to keep up with new innovations in the care and management of diabetes.

On the other hand, the lowest mean attitude score was on psychosocial impact of diabetes (M = 4.0808). The subscale measured the attitudes towards the impact of diabetes on the quality of life of the sufferer. The results were expected because most health care professionals relate to diabetes on clinical guidelines and pathophysiology to prevent complications (Alhaiti, et al., 2019). This highlights the need for interdisciplinary collaboration in diabetes management with other disciplines such as psychiatric and social work providers.

The post intervention survey was conducted immediately after the intervention, and therefore only the short-term effects of the intervention on healthcare professionals' attitude and knowledge towards diabetes could be measured. Further research is needed to evaluate the long-term effects of such an educational intervention.

To the best of my knowledge there have been no projects of this nature conducted in a correctional facility this is one strength of the study in trying to minimize health disparity in underserved patient populations. The significance of the need for special training subscale demonstrates the need for continuing education for healthcare professionals.

Limitations

The limitation of this study includes the short duration of the project, and therefore only the immediate effects of the intervention on healthcare professionals' attitude and knowledge towards diabetes could be measured. The findings cannot be generalized to all healthcare professionals working in correctional settings due to the small sample size.

Conclusion

The educational intervention improved health professionals' attitudes towards people with diabetes in corrections, though not significantly. A more structured educational intervention over a longer period may reflect a significant change in health professionals' attitude towards inmates with diabetes. The significant change in the need for special training is an indication that healthcare professionals valued the information they received from the educational intervention. Specialized training programs and continuing education focused on improving diabetes related attitudes for healthcare professionals could improve diabetes care outcomes. Future studies could also benefit by assessing the long-term effects of such educational interventions.

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Appendix A

Table 1.

Demographic characteristics of healthcare professional

	Minimum	Maximum	Mean
Age	22	63	39.69
Years of experience	1	41	8
Years in the facility	1	13	3.89

Table 2.

Mean differences between pre and immediate post intervention surveys.

Subscale	Pre-Intervention Mean (SD)	Post-intervention Mean (SD)	P Value
Need for special training	4.39 (0.49)	4.58 (0.51)	0.01
Seriousness of DM	4.19 (0.46)	4.20 (0.48)	0.91
Value of tight control	4.12 (0.46)	4.13 (0.47)	0.96
Psychosocial impact of DM	3.93 (0.52)	4.08 (0.62)	0.08
Patient autonomy	4.00 (0.46)	4.13 (0.47)	0.13

*Scale from 1-5 with 5 as the best score

DM=diabetes mellitus

SD=standard deviation

Table 3.

Mean differences between immediate post intervention and 60-days post intervention surveys

Subscale	Post intervention Mean (SD)	60-day post intervention Mean (SD)	P value
Need for special training	4.56 (0.47)	4.35 (0.50)	0.05
Seriousness of DM	4.16 (0.47)	4.01 (0.66)	0.34
Value of tight control	4.08 (0.48)	4.01 (0.68)	0.69
Psychosocial impact of DM	3.99 (0.61)	3.94 (0.61)	0.73
Patient autonomy	4.13 (0.50)	3.93 (0.54)	0.11

*Scale from 1-5 with 5 as the best score

DM=diabetes mellitus

SD=standard deviation