British Journal of Medicine & Medical Research
14(8): 1-8, 2016, Article no.BJMMR.24943
ISSN: 2231-0614, NLM ID: 101570965

SCIENCEDOMAIN *international*
www.sciencedomain.org

Perception of Educators about Quality of Diabetes Education Services at Primary Health Care Level in Khartoum State, Sudan

Siham Ahmed Balla[1*], Kamil Mirghani Ali Shaaban[1], Haiedr Abu Ahmed Mohamed[1], Mohamed Ali Awadelkareem[1] and Asia Abdullah Belal[1]

[1]Department of Community Medicine, Faculty of Medicine, University of Khartoum, Sudan.

Authors' contributions

This work was carried out in collaboration between all authors. Author SAB designed the study, wrote the protocol, and wrote the first draft of the manuscript. Authors AAB and SAB revised the thematic analysis. Authors MAA and KMAS revised the final themes and the literature searches. Authors HAAM and MAA revised the discussion. All authors read, revised the manuscript for consistency and approved the final manuscript.

Article Information

DOI: 10.9734/BJMMR/2016/24943
Editor(s):
(1) Kate S. Collison, Department of Cell Biology, King Faisal Specialist Hospital & Research Centre, Saudi Arabia.
Reviewers:
(1) Vaya Konstantikaki, Hospital of Thessaloniki "THEAGENEIO", Greece.
(2) Rajendra Nath, King George's Medical University, Lucknow (UP), India.
Complete Peer review History: http://sciencedomain.org/review-history/13780

Original Research Article

Received 9th February 2016
Accepted 7th March 2016
Published 21st March 2016

ABSTRACT

Introduction: Promoting positive life style is a strategy for delaying and reducing the incidence of diabetes complications.
Objective: To determine the perception of educators about the quality of education services provided to diabetic patients at the health centers in Khartoum State.
Methods: A qualitative descriptive study carried out among 22 educators working at governmental and non-governmental health centers. Mini focus groups of discussion were moderated by a qualified social researcher and a trained note taker. The guiding questions included general information and several questions about education services for diabetic patients. Ethical clearance was obtained from relevant ethical committees. Informed consent was obtained from educators. Content analysis of data was carried and organized in to themes. The themes were organized according to the dimensions of quality of care, structure, process and outcome.

**Corresponding author: E-mail: semam44@yahoo.com;*

Results: All educators were females. Their ages were between 25-55 years. The majority were holders of a university degree with different basic disciplines. The working duration ranged between 3 to 25 years. Ten of them were working in governmental health centers and 12 in non-governmental ones. Few educators were trained on diabetes education (structural quality care). Most of them agreed on the lack of diabetes education materials and specific education program (structural quality care). The majority agreed on the absence of team work and their role is to weight the patients. Most of educators educate individuals rather than groups (process quality care). The majority was not satisfied with education services at the health centers and most of educators reflected the poor knowledge and negative behaviour of the diabetic patients (outcome quality care).

Conclusions: Diabetes education services at primary health care are insufficient. Most of educators were not certified educators. Education services lack team work and strategic plans. Diabetic patients have poor knowledge and behaviour regarding diabetes management.

Keywords: Diabetes; education; health centers; quality of care; educators.

1. INTRODUCTION

Diabetes mellitus is becoming the most common epidemic among non-communicable diseases in low- and middle-income countries [1]. Patients with diabetes and non-diabetic population, both need the full information and education to control diabetic status as well as prevent the occurrence of the disease respectively. Promoting positive life style is a composite strategy for delaying and reducing the incidence of diabetes and its complications as well [1].

Educators can contribute to change the patients` lifestyle through provision of scheduled education sessions [2]. Education of diabetic patients had a significant effect on metabolic control measures of diabetic status that makes the patients value the services [2]. Patients that value and adhere to health information could affect the perception of all care providers at health care system including educators [3]. The frequent in-service training of care providers on diabetes had an effect on the effectiveness of education of patients` attitudes and behaviors [4].

To the best of our knowledge, qualitative studies regarding quality of diabetes education were almost absent particularly at primary care level in the Sudan.

The aim of this study is to determine the perception of educators about the quality of education services provided to diabetic patients at the health centers in Khartoum State.

2. MATERIALS AND METHODS

2.1 Study Design

This is a qualitative study carried out among educators working at primary care level in Khartoum State.

2.2 Study Area

The study area was the health centers of two types, the ones that established and managed by the government and the others that established and managed by international and national organizations (Non-governmental health centers). Both provide primary care services and supervised by Khartoum State Ministry of Health.

2.3 Study Population

The study population was employed educators in both types of the health centers regardless of any inclusion criteria.

2.4 Sample Size

The sample size was determined on saturation of data provided during focus group discussion. The method of sampling selection was carried as follows:

1. Involvement of the Department of Non-Communicable Diseases (DNCDs) in Khartoum State Ministry of Health in the purpose of study.
2. Educators were invited by the DNCDs for Mini Focus Group Discussion (MFGD) that was carried out at Khartoum State Ministry of Health.
3. Saturation was obtained after four rounds of MFGD that resulted in 22 educators, 5-6 members in each group.

2.5 Data Collection Method

The discussion was moderated by a qualified social researcher using guiding open ended questions and supervised by the first author. A trained note taker registered all the data yielded

Table 1. Guiding questions for MFGD

General	Let us know your qualification, career duration and training rounds you attended regarding diabetes disease
Education services for diabetic patients and constraints	How education sessions are conducted, duration and the content? What are the methods of education and schedules? What are the education materials you are using for the education session? How you follow up the diabetic patient after education? Let us know about your satisfaction with education services provided in the health centers. Describe some outcomes and constraints of diabetes education that happened during your work as educator and constraints.

in the groups' discussion. Timely cross checking was made by the first author. The duration of MFGD sessions lasted between 60-90 minutes. After completion of data collection, the educators were involved in a diabetes education workshop run by DNCDs.

The guiding questions included general information and several questions were about education services for diabetic patients [Table 1 above].

2.6 Data Analysis

Content of the notes taken from the educators` discussion was prepared into themes by two independent researchers. Themes were organized according to the dimensions of quality of care, structure, process and outcome [5] that were endorsed by all authors.

3. RESULTS AND DISCUSSION

3.1 Characteristics of Educators

All educators were females, their age ranged between 25-55 years. The majorities were holders of a university degree and graduated from different disciplines mainly: Faculties of Art, Animal Production, Accountancy, Commercial, Business and Management, Finance and Mathematics. Some were holders of secondary school Sudanese certificate and few of them were nurses with bachelor degree in nursing sciences [Table 2]. The working duration ranged from 3 to 25 years. Few of them were employed for less than three years prior to the study. Ten were working in governmental health centers and 12 in nongovernmental ones.

Almost all educators at the health centers in Khartoum State were not certified educators. They were having qualifications from different basic backgrounds that far away from education and counseling domains of health issues. This is an area of weakness in diabetes education services at primary care level; where qualifications and higher education levels have an effect on the knowledge and the efficiency of provision of diabetes education [6,7]. Most of diabetes education services in other countries are run by nurses [8,9]. Nurses are more appropriate and relevant to health issues and have the potentials for providing diabetes education even if they are not trained specifically for education of diabetic patients.

3.2 Quality of Diabetes Education Services

3.2.1 Structure quality care

The majority of educators presented negative perception about the availability of resources for diabetes education. Most of them not trained on diabetes education. Some agreed on the absence of specific education units for education. Some said there are no specific plans or strategies for education services [Table 3].

In this study, some audio-visual tools were installed in some health centers, but none of them were used for diabetes messages. This is an area of system weakness where frequent monitoring and maintenance of equipment ensure the continuous flow of services. Using audio-visual tools for education had a significant effect on the patients` knowledge regarding diabetes [10]. The types of educational tools and methods have a great effect on the support of self-management among diabetic patients [11].

> Most of the educators from governmental health centers: *"Few posters and educational materials are available for diabetes in the health centers……. We have an education flip chart booklet concerning*

integrated management of child illnesses; it does not contain any messages about diabetes."

Three educators from non-governmental health centers added: "*We have a television in our center but we do not have a video……..Our video is not functioning……In our center, a video and television are there but disseminate other health information not related to diabetes because it belongs to specific programs and installed by donors".*

Some educators mentioned lack of special unit for education. This is an area of privacy concern for individual education. Individual education was shown in few studies to have a positive effect of self-management and the knowledge of the patients [12].

Most of educators from governmental health centers: *"The previous educator was trained on diabetes and I am not trained……. Our location is far away from the clinic where the physician located…….. We tell the physician to tell the patients to meet us for education…… Patients do not attend according to pre-determined plan……..Education for diabetes should have special office."*

In this study most of the educators were not trained on diabetes. Specific training on diabetes could improve the knowledge and skills of the educators to perform proper counseling and promote diabetes self-management education of the patients [13].

3.2.2 Process quality care

The majority of educators agreed on the absence of team work and the absence of diet plan for diabetes. Almost all agreed on the absence of standard models of education, lack of follow up system for diabetic patients and absence of registration of patients' information. Few educators used to replicate the material handed to them during their training and used it for educating the patients. Most of them agreed on the need for standards and relevant materials for diabetes education. Very few educators conducted education sessions for diabetic children.

Table 2. Qualifications and basic training (n=22)

Higher education qualifications	No.	Secondary education	No.	Academy of health science	No.
Art	2	secondary school Sudanese certificate	7	Nurse	2
Animal production	1				
Account	4				
Commercial	1				
Business -Management	3				
Finance	1				
Mathematics	1				

Table 3. Structural quality of education services (content themes)

Education unit	Training	Education plan and strategy	Education materials
No specific office	Trained	No specific program	Specific material
No specific office	Trained	No specific program	Specific material
No specific office	Not trained	No specific program	Specific material
No specific office	Not trained	No specific program	No specific material
	Not trained		No specific material
	Not trained		No specific material
	Not trained		No specific material
	Not trained		No specific material
	Not trained		No specific material
	Trained		No specific material
	Trained		No specific material
	Not trained		No specific material
	Not trained		No specific material

Table 4. Process quality of education services (content themes)

Mode of education	Team work	Diabetes care provided	Follow up	Documentation & registration
Group session	Positive	For malnutrition	For Weighing	No
Audio-visual	Negative	For malnutrition	For Weighing	No
Individual	Negative	For diabetes	For Weighing	No
Individual	Negative	For anti-natal care	No follow up	No
Individual	Negative	hypoglycemia	No follow up	No
Individual	Negative	hypoglycemia	No follow up	No
	Negative		No follow up	No
	Negative		No follow up	No

Table 5. Outcome quality of education services (content themes)

Patients' knowledge	Patients behaviour	Satisfaction with education services
Poor	Negative	Satisfied
poor	negative	Not satisfied
poor	negative	Satisfied
		Satisfied
		Not satisfied
		Not satisfied
		Not satisfied
		Not satisfied
		Not satisfied
		Not satisfied

Most of educators: "*The doctors usually provide diabetes education to diabetic patients during the consultation session…… Neglecting our role because we are not adequately trained ……. The physicians refer patients for weighing only."*

One educator from governmental health center added: *"The doctor refers the diabetic patients to me and he friendly monitors the patients` status with me……usually we discuss the status of each patient."*

In this study the education services were provided on individual bases. It had shown that patients value the education services provided by a group of providers and adhere to information given [14]. Changing the knowledge of the diabetic patients towards positive attitude needs multidisciplinary team which was absent in this study [15].

One educator: *"I was trained on diabetes education by department of non-communicable diseases at Khartoum State Ministry of Health ……. I used the material given to me to draw some pictures related to diabetes signs and symptoms, diabetes complications and control measures…… I used my drawings for education during the visit of the diabetic patients to measure their weight…… I asked the patients to have a small notebook to register all my comments and the investigation they have done."*

Another two trained educators added*: "The materials we have from the training courses were not enough to be used for the large number of diabetic patients in the health center……Although we were trained on diabetes education; but doctors do not refer diabetic patients and they refer children with malnutrition for education."*

In this study educators could use their potentials to provide the education services to diabetic patients. Care provider had shown willingness to learn more and change their performance in counseling for better services [16].

3.2.3 Outcome quality care

Most of the educators were not satisfied with the diabetes services provided at the health centers. The majority of educators mentioned that they were not satisfied for one or more of the following reasons:

1. The irregular attendance of the physicians contributed to the low attendance rate of the patients
2. Turnover of doctors disturbed the monitoring of patients' status
3. Sometimes investigations are not available in the centers
4. Lack of educational tools
5. Lack of diet therapy guidelines
6. Poor patient knowledge and behaviour towards the disease management

One educator: *"Patients 'knowledge about diabetes is poor and their behaviour for management of diabetes depends on their knowledge".*

Two educators added: *"I am not satisfied with the education services provided to diabetic patients who require specific education to increase their knowledge to have healthy behaviour…… A mother brings her daughter to me in coma, she told me that she is diabetic and prevent her from eating much and deprive her from playing with children. I gave the girl some honey and she recovered from hypoglycaemia, I am not trained but I gave the mother some education based on what I gained from my experience."*

Another educator added: *"I had two diabetic patients, the first usually likes to consume sweets and sugar and he was not able to avoid these foods…. the second was obese and usually gaining weight. Both had high blood sugar levels at each visit. I was convincing both at each visit to stop taking sweets and sugar, reduce the weight and do physical exercise. It took long time for them to respond and long time to reduce their blood sugar level to normal."*

In this study the educators reflected some behaviour of diabetic patients regarding diabetes management. Behavioural change of diabetic patients needs time to step forward towards positive health. Poor knowledge of diabetic patients on diabetes management makes them under the spell of local habits which delays their access to health system care until the occurrence of complications [17]. In this study; frequent absence of doctors and insufficient laboratory investigations make the educators dissatisfied. Instability of trained health care providers disturbs the flow of services that leads to dissatisfaction of other providers [18]. In general; patients need qualified care providers and quality organization structure to help in diabetes management. It is worth mentioning that non-diabetic persons were seeking diabetes education and counseling in well-equipped and staffed centers [19]. The practical diabetes education guidelines and frequent training are needed with emphasis on quality curriculum, skills of problem solving, communication and decision making [20]. Poor provider-patient communication and inadequate organizational structure are major causes of dissatisfaction of educators. This is reflected on the lack of adherence of patients to self-care measures [21]. Our study is supported by evidence obtained from a qualitative study conducted among nurses 'educators [22]. They lacked the adequate knowledge about counseling of diet and physical activities and communication skills [22]. The poor coordination with health providers and insufficient educational material are the main obstacles as reflected by nurses [22].

4. CONCLUSION AND RECOMMENDATION

Diabetes education services at primary health care are insufficient and need strong organization structures. Most of educators were not certified as health educators. The majority of educators agreed on the absence of team work, standard mode of education, follow up system and standard guidelines. Most of educators reflected the poor knowledge and behaviour of diabetic patients regarding diabetes management. Diabetes education services need to be considered by the Khartoum State Ministry of Health.

ETHICAL CLEARANCE

Ethical clearance was obtained from ethical committees in the Ministry of Health in Khartoum State and Faculty of Medicine in University of Khartoum. Written detailed informed consent was signed by each educator prior to discussion. The informed consent included benefits, risks and the data confidentiality.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. WHO. Diabetes Fact sheet N°312; 2011. [Online] Available:http://www.who.int/mediacentre/factsheets/fs312/en/ (Accessed 2011 Aug).
2. Mollaoğlu M, Beyazıt E. Influence of diabetic education on patient metabolic control. Applied Nursing Research. 2009;22(3):183-90.
3. Porter ME. What is value in health care? New Engl J Med. 2010;363(26):2477-81.
4. Nam S, Chesla C, Stotts NA, Kroon L, Janson SL. Barriers to diabetes management: Patient and provider factors. Diabetes Research and Clinical Practice. 2011;93(1):1-9.
5. Trivedi AN, Matula S, Miake-Lye I, Glassman PA, Shekelle P, Asch S. Systematic review: Comparison of the quality of medical care in veterans affairs and non-veterans affairs settings. Medical Care. 2011;49(1):76-88.
6. Cronenwett L, Dracup K, Grey M, McCauley L, Meleis A, Salmon M. The doctor of nursing practice: A national workforce perspective. Nursing Outlook. 2011;59(1):9-17.
7. Young JL. Educating staff nurses on diabetes: Knowledge enhancement. Medsurg Nursing. 2011;20(3):143.
8. Franciosi M, Lucisano G, Pellegrini F, Cantarello A, Consoli A, Cucco L, et al. ROSES: Role of self-monitoring of blood glucose and intensive education in patients with Type 2 diabetes not receiving insulin. A pilot randomized clinical trial. Diabetic Medicine. 2011;28(7):789-96.
9. Avdal EU, Kizilci S, Demirel N. The effects of web-based diabetes education on diabetes care results: A randomized control study. Computers Informatics Nursing. 2011;29(2):101-6.
10. Kandula NR, Nsiah-Kumi PA, Makoul G, Sager J, Zei CP, Glass S, et al. The relationship between health literacy and knowledge improvement after a multimedia type 2 diabetes education program. Patient Education and Counseling. 2009;75(3): 321-327.
11. Schillinger D, Handley M, Wang F, Hammer H. Effects of self-management support on structure, process, and Outcomes among vulnerable patients with diabetes A three-arm practical clinical trial. Diabetes Care. 2009;32(4):559-66.
12. Duke S, Colagiuri S, Colagiuri R. Individual patient education for people with type 2 diabetes mellitus. Cochrane Database Syst Rev. 2009;1(1).
13. Tshiananga JKT, Kocher S, Weber C, Erny-Albrecht K, Berndt K, Neeser K. The effect of nurse-led diabetes self-management education on glycosylated hemoglobin and cardiovascular risk factors: A meta-analysis. The Diabetes Educator. 2012;38(1):108-123.
14. Otero-Sabogal R, Arretz D, Siebold S, Hallen E, Lee R, Ketchel A, et al. Physician–community health worker partnering to support diabetes self-management in primary care. Quality in Primary Care. 2010;18(6):363-72.
15. Funnell MM, Brown TL, Childs BP, Haas LB, Hosey GM, Jensen B, et al. National standards for diabetes self-management education. Diabetes care. 2009; 32(Supplement 1):S87-S94.
16. Stotland NE, Gilbert P, Bogetz A, Harper CC, Abrams B, Gerbert B. Preventing excessive weight gain in pregnancy: How do prenatal care providers approach counseling? J Women's Health. 2010; 19(4):807-14.
17. Nwankwo CH, Nandy B, Nwankwo BO. Factors influencing diabetes management outcome among patients attending government health facilities in South East, Nigeria. Int J Trop Med. 2010;5(2):28-36.
18. Assayed AA, Muula A, Nyirenda M. The quality of care of diabetic patients in rural Malawi: A case of Mangochi district. Malawi Medical Journal. 2015;26(4): 109-14.
19. Hwee J, Cauch-Dudek K, Victor JC, NG R, Shah BR. Utilization of diabetes education centres in ontario by people without diabetes. Canadian Journal of Diabetes 2014;38(3):186-90.
20. Nettles A, Belton A. An overview of training curricula for diabetes peer educators. Fam Pract. 2010;27(S1):i33-i9.
21. Sanchez I. Implementation of a diabetes self-management education program in primary care for adults using shared

medical appointments. The Diabetes Educator. 2011;37(3):381-91.
22. Jansink R, Braspenning J, van der Weijden T, Elwyn G, Grol R. Primary care nurses struggle with lifestyle counseling in diabetes care: A qualitative analysis. BMC Family Practice. 2010;11(1):41. Available:http://www.biomedcentral.com/1471-2296/11/41/

Peer-review history:
The peer review history for this paper can be accessed here:
http://sciencedomain.org/review-history/13780