WORLD JOURNAL OF ADVANCE HEALTHCARE RESEARCH

ISSN: 2457-0400
Volume: 1.
Issue: 1.
Page N. 67-72
Year: 2017

Research Article www.wjahr.com

MANAGING DIABETES MELLITUS: ATTITUDES AND PRACTICES AMONG FAMILY AND GENERAL PRACTITIONERS OF OMAN

Dr. Firdous Jahan*[1], Shaikh M. Naeem[2], Muhammad Moazzam Khan[3], Muhammad A. Siddiqui[4], Ramla Hamdan Abdullah Al Ajmi[5] and Fahima Humaid Hamood Al Manji[5]

[1]Associate professor, Head of the Department, Family Medicine Oman Medical College, Sohar, Oman Po 391, PC321, Al Tareef, Sohar-Sultanate of Oman.
[2]Department of Family Medicine, Oman Medical College, Sohar, Oman.
[3]Department of Family Medicine, Oman Medical College, Sohar, Oman
[4]Department of Community Health and Nursing, University of Calgary, Calgary, Alberta, Canada.
[5]Medical Student, Oman Medical College, Sohar, Oman.

Received date: 24 May 2017 **Revised date:** 13 June 2017 **Accepted date:** 02 July 2017

Corresponding author: Dr. Firdous Jahan
Associate professor, Head of the Department, Family Medicine Oman Medical College, Sohar, Oman Po 391, PC321, Al Tareef, Sohar-Sultanate of Oman. Email Id: firdous@omc.edu.om

ABSTRACT

Introduction: Family and general physicians are the main providers of diabetes care. The aim of this study was to assess knowledge, attitudes and practices in diabetes management among general practitioners and family physicians in an area of rapidly growing diabetes prevalence. **Methods:** A cross sectional study conducted in the CME program at Oman Medical College. Data was collected with self-filled questionnaire incorporating physician's knowledge, attitude and perception in research. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Data was expressed in frequencies and percentages for questionnaire responses. Independent sample t-test and Mann-Whitney test was used to compare differences between groups. **Results:** A total of 46 participants were enrolled in which 43.5% were male. More than half of the participants (45.7%) were aged between 30-40 years of age and 58.7% of the participants had MD qualification without any postgraduate degree. Among all 45.7% had 5-10 years and 28.3% has less than 5 years of clinical experience and nearly half (45.7%) were managing more 15 diabetic patients in a week. Male and female participants did not differ significantly in their response about source of knowledge (p=0.331; 95% CI-1.11-3.23). Response about physician perception regarding self-care in diabetes mellitus was not significantly different among male and female (p=0.7; 95% CI-1.225-1.809). Male (Mean rank-22.25) and female (Mean rank- 22.15) participant's responses did not differ significantly (p=0.43) in their responses about statements regarding recommendation for self-care. **Conclusion:** Family and General physician's knowledge and practices towards diabetes mellitus were adequate, and need to promote their capacities regarding diabetes management. Primary care physicians can facilitate self-care activities in diabetic patients, promoting self-care practices among diabetic patients to avert any long-term complications. Clinician's attitude, knowledge and effective communication play an important role in self-care management to improve medication adherence, foot care and life style changes.

KEYWORDS: Diabetes Mellitus, Family Physicians, General Practitioners, Clinical Practice.

INTRODUCTION

Diabetes and its complications bring about substantial economic loss to people with diabetes and their families, and to health systems and national economies through direct medical costs and loss of work and wages. Globally, an estimated 422 million adults were living with diabetes in 2014, compared to 108 million in 1980 (Global report on diabetes).[1] Diabetes mellitus is an increasingly prevalent chronic condition associated with multiple comorbidities such as heart disease, hypertension, kidney disease, and blindness.[2] The most recent study conducted in Oman related to diabetes reports that the prevalence of diabetes is 12%. Diabetes related complications such as retinopathy and microalbuminuria are escalating in prevalence.[3] The complexity and difficulties of diabetes care in management should be recommended to individual

patients' need.[4] Improvement in care may depend on prioritizing diabetes care recommendations for patients as individuals, improving physicians' motivational counseling skills and enhancing their ability to deal with challenging patients, and developing office systems and performance enhancement efforts that support cost-effective practice and patient adherence.[5]

The primary care provider, general practitioner (GP) or family physician (FP), has a unique role in the team, particularly with regard to providing information about self-care. Primary care services has first medical contact for the individual with diabetes and has a comprehensive understanding of all health issues and follow-up.[6-7] Most patients with diabetes receive their care from a primary care physician and specialist support may be needed through shared care as interdisciplinary team member.[8-9] The patient and the general practitioner need to have an agreed understanding of the patient's diabetes and associated problems and agree on the management strategies being adopted.

Diabetes management would be successful if self-management is appropriate and helping them to recognize the personal benefits and effectiveness of treatment which can increase adherence. Self-management, self-care practices and education improves control of diabetes, especially when delivered as short message with frequent interval.[10] In self-care realistic goal setting and formulating a feasible plan of care is essential meeting individual patient needs. The reasons for noncompliance with diabetes self-care recommendations, from patients' attitudes and beliefs, to health motivation, readiness to change, language barriers, medication regimens, and trust in the medical profession.[11] The aim of this study was to assess knowledge, attitudes and practices in diabetes management among GP and family physicians in an area of rapidly growing diabetes prevalence.

METHODOLOGY

A cross sectional study was conducted in the continuous medical education (CME) program at Oman Medical College on attitudes and practices among family physicians and general practitioners. A structured questionnaire was designed incorporating physician's knowledge, attitude and perception regarding diabetes that were identified through an extensive literature search of the Pub Med database. After consensus of all study investigators, few questions were included, which were particularly important to local scenario. Questions about past research involvement and experiences were also included. Research proposal was approved by Ethical Review Committee, Oman.

Survey questionnaire has three components. The first part of the questionnaire was about the demography such as age, gender, highest degree, designation; Second part of the questionnaire was about knowledge and attitudes toward diabetes self-care management. Third part is about physician's perception and recommendations regarding self-care in diabetes mellitus. The format of all the responses is in Likert scale 1-5, by choosing appropriate responses among already given options. Face and content validity of the questionnaire was obtained through a review process with experts in the field. After incorporating the identified inconsistencies and inaccuracies, the questionnaire was piloted.

The survey questionnaire was distributed, and collected during the same session, so as to maximize respondents' compliance. The principal investigator (PI) ensured uniformity and two trained research assistants assisted PI in data collection. After research assistant's communication with all participants explaining the importance and objective of the study in one of the CME and after informed consent, participants were requested to respond anonymously to written questions about their sources of knowledge about diabetes, the methods of diabetes management they advise their patients, their knowledge of diabetes medication treatments, and their attitudes toward diabetes treatment and barriers of not doing self-care.

Data was analyzed using Statistical Package for Social Sciences (SPSS) version 20 for percentage, frequency and mean. Data was expressed in frequencies and percentages for questionnaire responses. Independent sample t-test and Mann-Whitney test was used to compare differences between groups.

RESULTS

A total of 46 participants were enrolled of which 20 were male and 26 were female. Nearly half of the participants (45.7%) were aged between 30-40 years of age and 58.7% of the participants had MD qualification without any postgraduate degree. Among all 45.7% had 5-10 years and 28.3% has less than 5 years of clinical experience. Nearly one third (73.9%) of participants were general practitioners and 17.4 were family practitioners. Majority of participants (84.8%) were Arabic speaking and nearly half (45.7%) were managing more 15 diabetic patients in a week (Table 1).

Table 1: Selected demographic characteristics of participants.

	Frequency	Percentage
Gender		
Male	20	43.5
Female	26	56.5
Age		
<30	13	28.3
30-40	21	45.7
40-50	8	17.4
>50	4	8.7
Qualification		
MD	27	58.7
MRCGP	6	13
Others	13	28.3
Year of Practice		
< 5 years	13	28.3
5 – 10 years	21	45.7
>10 years	12	26.1
Designation		
GP	34	73.9
Family Physician	8	17.4
Specialist	3	6.5
Senior Specialist	1	2.2
Native Language		
Arabic	39	84.8
English	3	6.5
Urdu	4	8.7
No of Patients/week		
<5	10	21.7
5-10	10	21.7
10-15	5	10.9
>15	21	45.7

Participants were asked multiple questions regarding their source of knowledge and attitudes toward diabetes self-care management. Their answers were coded from 1 to 5 where 1 was strongly agree and 5 was strongly disagree. The most frequent response was disagree (45.7%) and strongly disagree (26.1%). Overall participant's responses were neutral or negative regarding question about their source of knowledge (Table 2). Male and female participants did not differ significantly in their response about source of knowledge (p=0.331; 95% CI-1.11-3.23).

Table 2: Source of knowledge and attitudes toward diabetes self-care management (%).

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Learning from medical journals	0	0	28.3	45.7	26.1
Professional colleagues	0	2.2	10.9	76.1	10. 9
CME activities	0	2.2	17.4	54.3	26.1
Medical school	0	0	15.2	65.2	19.6
Social media	0	10.9	26.1	47.8	15.2
Educational websites	0	0	8.7	43.5	47.8
Medical Conferences	0	2.2	6.5	45.7	45.7
Reading from books	0	2.2	6.5	43.5	47.8
Interacting and teaching students	2.2	0	10.9	47.8	39.1
MOH informative guide	0	0	10.9	47.8	41.3

In the questionnaire, participants were asked about their perception regarding self-care in diabetes mellitus using options 1 to 5 where 1 is strongly agree and 5 is strongly disagree. Nearly half of participants don't think that most patients have low compliance in medication (disagree-54.3%; strongly disagree-6.5%), and have more difficulties in changing their lifestyle than do other people (disagree-43.5%; strongly disagree-13%).

Majority of participants were neutral and in disagreement with the statements regarding self-care in diabetes mellitus (Table 3). Response about physician perception regarding self-care in diabetes mellitus was not significantly different among male and female (p=0.7; 95% CI-1.225-1.809).

Table 3: Physicians' Perception Regarding Self-care in Diabetes Mellitus (%).

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Diabetics have more difficulties in changing their lifestyle than do other people	4.3	17.4	21.7	43.5	13
Most patients have low compliance in medication	0	21.7	17.4	54.3	6.5
Target HBA1C under 6.5 % is not recommended for all age groups	19.6	19.6	10.9	23.9	26.1
Nutritional and caloric labeling of food would contribute to glucose control	0	2.2	8.7	45.7	43.5
Insulin is the most effective medication for reducing HbA1c level	0	15.2	21.7	39.1	23.9
GLP1 analogs causes weight gain	15.2	15.2	28.3	39.1	2.2

Participants were asked about barriers of diabetes self-care. Majority of participants were neutral and in disagreement with the statements regarding barrier of self-care (Table 4). More than half of participants don't think that lack of knowledge about self-care is a barrier (disagree-50%; strongly disagree-32.6%), and lack of motivation is the culture is a barrier for selfcare (disagree-52.2%; strongly disagree-19.6%). Male (Mean rank-21.38) and female (Mean rank- 25.13) participant's responses did not differ significantly (p=0.346) in their responses about statements regarding recommendation for self-care.

Table 4: Physicians' Perception Regarding Barriers of Self-care.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Lack of knowledge about self-care	2.2	4.3	10.9	50	32.6
Physician/ doctors/Nurse doesn't give enough information/lack of continuity of care	2.2	19.6	21.7	39.1	17.4
Lack of family and social support	2.2	6.5	23.9	52.2	15.2
It's a lifelong management, time constrain	4.3	23.9	6.5	41.3	23.9
Cost is a barrier	4.3	26.1	19.6	34.8	15.2
Lack of motivation is the culture	0	15.2	13	52.2	19.6
Depression causes lack of personal interest	2.2	8.7	19.6	50	19.6
Low literacy levels hinder knowledge gain	4.3	19.6	17.4	45.7	13
Availability of drugs	8.7	23.9	15.2	41.3	10.9
Delayed referral to specialist clinic	6.5	32.6	19.6	30.4	10.9
Inadequate laboratory support	2.2	50	13	23.9	10.9

In the questionnaire, part pants were asked to select recommendation for self-care of diabetes. Agreement was highest (87%) for the statements regarding regular follow-up, increase physical activity and counselling about diabetic complications. Thirteen percent of the participants disagree to provide lesser portion of food in patient's diet (Figure 1). Male (Mean rank-22.25) and female (Mean rank- 22.15) participant's responses did not differ significantly (p=0.43) in their responses about statements regarding recommendation for self-care.

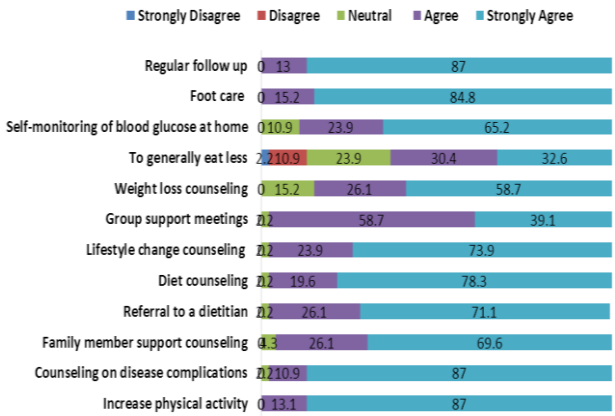

Figure 1: Physicians' Recommendation for self-care of Diabetes.

DISCUSSION

Managing diabetes in primary care is a big challenge. Literature has been reported that adequate control of diabetes can delay complications and comorbidities related to them. Patient might have poor adherence to treatment regimens due to poor attitude towards the disease and poor health literacy.[12] Home blood glucose monitoring and use of glycosylated hemoglobin as an indicator of metabolic control has contributed to self-care in diabetes. Healthy eating, being physically active, monitoring of blood sugar, compliant with medications, found to be positively correlated with good glycemic control, reduction of complications and improvement in quality of life.[13-14]

In our study more than half participants had 5-10 years of clinical experience and they were mostly general practitioners. Participants source of knowledge and updates regarding diabetes self-care were unsatisfactory. Majority of participants were not involved in the CMEs, medical conferences and following recently published articles and guideline to update their self-regarding diabetes care. The primary purpose of CME is to maintain and improve clinical performance . There are several very positive trends in continuing medical education in primary care, which seem to incorporate adult learning principles.[15-16]

The perception regarding barriers of self-care showed delated referral, inadequate lab reports, drug availability and cost are the main barriers. Same findings are reported in literature. Socio-demographic and cultural barriers such as poor access to drugs, high cost, and patient satisfaction with their medical care. Another study results revealed that patients as reluctant to discuss their self-care behaviors primarily because of fear of being judged, guilt, and shame. Physicians and patients trust, permissive acceptance, open communication, and providing patients hope for living with diabetes as important factors for successful self-care communication.[17-18]

In this study physician recommendation for self-care included diet counseling, physical activity, self-monitoring of blood sugar, foot care and regular follow up. Physicians also supported the weight loss counseling and group support meeting. Literature supports these findings in diabetic self-care management. The importance of proper self-care practices for effective management of diabetes should be emphasized in diabetes care centers and patients must have sufficient knowledge for proper self-care.[19-21]

Physicians can assist patients with their diabetes self-care by discussing self-care challenges during medical visits. A clinician should be able to recognize patients who are prone for non-compliance and thus give special attention to them [22-23]. Primary health care centers need good diabetes self-management education programs with emphasis on motivating good self-care behaviors especially lifestyle modification.[24]

CONCLUSION

General practitioners and family physicians recognize the importance of self-care in diabetes. Conducting an assessment of current self-care practices and diabetes problem solving can identify areas for adjustment and assist in planning. Appropriate self-care behaviors have been found to be positively correlated with good glycemic control, reduction of complications and improvement in quality of life.

Declarations

Competing interest

There was no conflict of interest to be stated.

AUTHORS CONTRIBUTIONS

FJ involved in the conception and design of study, manuscript writing and supervised the study. MAS involved in the analysis, interpretation and reporting of results and participated in the drafting and revising of manuscript. RHAA and FHHA involved in the data collection and writing of first draft of manuscript. All authors read and approved the final manuscript.

REFERENCES

1. Global report on diabetes. World Health Organization. [Online]. Available at < http://apps.who.int/iris/bitstream/10665/204871/1/9789241565257_eng.pdf> (Accessed June 2017).
2. Diabetes fact sheet. 2009. [Online]. Available at <http://www.who.int/mediacentre/factsheets/fs312/en/index.html> [Accessed March 2017].
3. Al-Lawati JA, Mabry R, Mohammed AJ. Peer reviewed: addressing the threat of chronic diseases in Oman. Prev Chronic Dis., 2008; 5: 1e7.
4. Forbes JM, Cooper ME. Mechanisms of diabetic complications. Physiol Rev., 2013; 93(1): 137-188. doi: 10.1152/physrev.00045.2011.
5. American Diabetes Association Standards of Medical Care in Diabetes. Diabetes Care, 2017; 40(Suppl. 1): S1–S2 | DOI: 10.2337/dc17-S001d2017, January 2017; 40(1).
6. Cabana MD, Jee SH. Does continuity of care improve patient outcomes? J Fam Pract., 2004 Dec; 53(12): 974-80.
7. Griffin SJ, Kinmonth AL. Withdrawn: Systems for routine surveillance in people with diabetes mellitus. Cochrane Database Syst Rev., 2009 Jan; 21(1): CD000541.
8. Freeman JS. The increasing epidemiology of diabetes and review of current treatment algorithms. J Am Osteopath Assoc., 2010; 110(7 Suppl 7): eS2-6.
9. Tricco AC, Ivers NM, Grimshaw JM, Moher D, Turner L, Galipeau J, Halperin I, Vachon B, Ramsay T, Manns B, Tonelli M, Shojania K. Effectiveness of quality improvement strategies on the management

of diabetes: a systematic review and meta-analysis. Lancet, 2012 Jun 16; 379(9833): 2252-61.
10. Hilal Alrahbi. Diabetes self-management (DSM) in Omani with type-2 diabetes. International Journal of Nursing Science, 1; 2014: 35 2e3 59.
11. Funnell MM, Brown TL, Childs BP, Haas LB, Hosey GM, Jensen B. National standards for diabetes self-management education. Diabet Care, 2012; 35: 101e8.
12. Lorig K, Ritter PL, Villa FJ, Armas J. Community-based peerled diabetes self-management a randomized trial. Diabet Educ, 2009; 35: 641e51.
13. Al-Khawaldeh OA, Al-Hassan MA, Froelicher ES. Self -efficacy, self-management, and glycemic control in adults with type 2 diabetes mellitus. J Diabet Complications, 2012; 26: 10e6.
14. Al-Mandhari A, Al-Zakwani I, El-Shafie O, Al-Shafae M, Woodhouse N. Quality of diabetes care: a cross-sectional observational study in Oman. Sultan Qaboos Univ Med. J., 2009; 9: 32e6.
15. Mathew R, Gucciardi E, Melo MD, Barata P. Self-management Experiences among Men and Women with Type 2 Diabetes Mellitus. BMC Fam Pract., 2012; 13(122).
16. Cantillon P, Jones R. Does continuing medical education in general practice make a difference? BMJ 1999; 318Levine DM, Barsky AJ III, Fox RC, et al. Trends in medical education research: past, present, and future. J Med Educ., 1974; 49: 129–36.
17. Marilyn D Ritholz, Elizabeth A Beverly, Kelly M Brooks, Martin J Abrahamson, Katie Weinger. Barriers and facilitators to self-care communication during medical appointments in the United States for adults with type 2 diabetes. Chronic Illness, 2014; 10(4): 303–313.
18. Khan A. R, Al Abdul Lateef Z. N, Khamseen M. B, Al Aithan M. A., Khan S. A, Al Ibrahim I. Knowledge, attitude and practice of ministry of health primary health care physicians in the management of type 2 diabetes mellitus: A cross-sectional study in the Al Hasa District of Saudi Arabia. Nigerian Journal of Clinical Practice, 2011; 14(1): 52–59.
19. Grant R.W, Schmittdiel J. A. Adults with diabetes who perceive family members' behavior as unsupportive are less adherent to their medication regimen. Evidence Based Nursing, 2013; 16(1): 15–16.
20. Saurabh RBLS, Prateek SS, Jegadeesh R. Role of self-care in management of diabetes mellitus. Journal of Diabetes & Metabolic Disorders, 201312: 14 DOI: 10.1186/2251-6581-12-14.
21. Tewahido D, Berhane Y. Self-Care Practices among Diabetes Patients in Addis Ababa: A Qualitative Study. PLoS ONE, 2017; 12(1): e0169062. doi:10.1371/journal.pone.0169062.
22. Elizabeth A. Beverly, Melanie F. Worley, BS, Autumn B. Court, BS, Kayla E. Prokopakis, BS, Nedyalko N. Ivanov, BS. Patient-Physician Communication and Diabetes Self-Care, November 2016; 23(11).
23. Ahmad NS, Ramli A, Islahudin F, Paraidathathu T. Medication adherence in patients with type 2diabetes mellitus treated at primary health clinics in Malaysia. Patient Preference and Adherence, 2013; 7: 525±30. doi: 10.2147/PPA.S44698 PMID: 23814461.
24. Beverly EA, Ganda OP, Ritholz MD, Lee Y, Brooks KM, Lewis-Schroeder NF, et al. Look who's (not) talking, diabetic patients' willingness to discuss self-care with physicians. DIABETES CARE, 2012; 35: 1466±72. doi: 10.2337/dc11-2422 PMID: 22619085.