

Perceptions of Type 2 Diabetes Patients Towards Diabetes Management Visits at Public Primary Health Care Centers with Diverse Opinions Towards Nurse-led Clinics in Muscat, Oman: A Pilot Qualitative Study

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ABSTRACT

Objectives: The literature has described several positive outcomes related to diabetes management via nurse-led clinics. This is especially true where a shortage of physicians is recorded within a team-based approach. We sought to explore the perceptions of patients with type 2 diabetes towards the current diabetes management visits at public primary health care centers in Muscat, Oman and their opinions towards nurse-led diabetes management clinics. **Methods:** This pilot qualitative study included seven semi-structured interviews with type 2 diabetes patients from four purposely selected public primary health care centers in Muscat. Qualitative thematic analysis was applied. **Results:** Patients with type 2 diabetes expressed their satisfaction with the present diabetes management visits at public primary health care. Their opinions towards nurse-led clinic were diverse and divided patients into three categories: those who totally refused the nurse-led clinics, those who accepted the clinics but with reservations, and patients that totally accepted the nurse-led clinics. The patients' main concern was the nurses' abilities to handle and understand the disease and its management. **Conclusions:** Our pilot study revealed type 2 diabetes patients' satisfaction with the current diabetes management clinics. However, transformation to nurse-led clinics within team-based approach requires further studies with a bigger sample size. Further studies on requirements related to the Omani health care system and a better understanding of patients' worries and their readiness to accept the concept of nurse-led clinics and their outcomes are also recommended.

The World Health Organization (WHO) has defined chronic health diseases as conditions that require continuous management and support over a period of time.¹ The conditions include: 1) non-communicable diseases, such as cardiovascular disease and cancer; 2) persistent chronic illnesses, such as diabetes and HIV/AIDS; 3) certain long-term mental disorders such as schizophrenia and bipolar diseases; and 4) ongoing impairments in structure such as amputations, paralysis, and blindness. The prevalence of chronic conditions is significantly increasing around the world, and the WHO predicts that chronic conditions will contribute to > 60% of the global burden of diseases by 2020.¹ Accordingly, the development of health care services to occupy prevention, acute episodic care, and continuous support for patients throughout

their life span with chronic conditions, is essential and ultimately requires actions towards chronic care model, which supports team-based approach services for chronic health diseases and eventually could lead to a recognition of nurse-led clinics.²

Attention is directed on/towards health care teams and their organization due to the growing evidence that care provided by the teams to patients with chronic diseases is inadequate and should continuously rely on a multi-professional approach.³ Consequently, the nurse-led clinics within a team-based approach appear to be a successful model for good chronic disease management and patients' satisfaction. Additionally, they are well known to be practical and provide a cost-effective approach.^{4,5}

Globally, it is known that a humanistic philosophy guides the nursing profession, and patients are not only seen as biological identities but also as holistic

identities.⁶ Therefore, the nurse-led clinics that follow patients without serious complications, and are delivered by trained nurses are well-accepted alternatives to standard care delivered by a physician.⁵ These clinics has also reported to have positive outcomes⁷⁻⁹ with an existence of over 30 years.^{10,11}

The concept of nurse-led clinics within a team-based approach service is well supported by the literature. In this regard, the clinics have shown strong evidence of practicality, cost-effectiveness, and the provision of continuous enhancement for patients' adherence to healthy behaviors.^{4,7,12} No literature was found opposing the concept of nurse-led clinics. In fact, the literature emphasizes and supports easy access to nurse-led clinics more than the physician's clinics. Therefore, the approach could provide strength to the clinics, nurses, and empowerment for patients' self-management. Consequently, this could help in understanding the importance of the nurse-led clinics and the need for their implementation, especially in the context of an increasing number of patients and the shortage of physicians.¹³

In Oman the epidemic of type 2 diabetes is known to have a burden on the Ministry of Health (MOH) and the country.¹⁴⁻¹⁶ Therefore, the diabetes management clinics at public primary health care in Oman adopted a team-based approach through National Diabetes Guidelines to provide the best management available to patients. However, the challenges related to the service continued to rise at the health care center, care provider, and patient level.¹⁷⁻¹⁹ The overloaded physicians and overcrowded clinics encountered at diabetes management clinics in primary health care could be resolved by nurse-led clinics.²⁰ Previous studies have shown dissatisfaction with the provided diabetes management service. Hence, close collaboration with patients, their families, and team members to improve the service was advised.¹⁷ However, it is not known what patients would say about the current service within a team-based approach, what is the optimum approach for the team, and if nurse-led clinics could be seen in primary health care clinics in Oman.

Therefore, this pilot study aimed to explore the perception of type 2 diabetic patients towards the current diabetes management visits at public primary health care centers in Muscat and to explore their opinions towards nurse-led diabetes management clinics.

METHODS

This pilot qualitative study is part of a bigger project exploring a team-based approach at diabetes management clinics. In this project, an introductory quantitative study was followed by three qualitative studies. The quantitative study²¹ included 26 public primary health care centers in Muscat, Oman that provide diabetes management services for the population. Health care providers who participated in the previous two qualitative studies^{20,22} were chosen from five purposely selected public primary health care centers available in Muscat. Type 2 diabetes patients for this study were chosen from four out of the five centers where the team-based approach was available. The fifth center where the single-physician approach was steered was excluded from this study because the opinions towards the nurse-led clinics had to be explored within a team-based approach.

The entire project, including the current study, was approved on October 22, 2014 by The Research and Ethical Review and Approve Committee in MOH, Oman (MH/DGP/R&S/PROPOSAL). The participants were verbally informed about the study and written consents were obtained.

The health care system in Oman is divided into three health care levels, primary, secondary, and tertiary, and is delivered through public or private sectors. At the national level, the MOH is the main body for health service delivery and is heavily involved in planning, designing, and implementing health policies. Likewise, it is responsible for supervising health-related activities for the public and the private sectors. At the time of this study, the primary health care services in the public sector were composed of 118 health care centers.²³ Among the health care centers, 27 are located in Muscat and 26 provide preventive and curative care for diabetic patients.²¹ The public diabetes management clinics that provide service through team-based approach in 25 health care centers in morning and afternoon clinics were included in the project.²⁰ The team-based approach service does not exist in the private sector;²¹ therefore, the private diabetes management clinics were excluded. Currently, the public sector's primary health care services comprise 260 health care centers with 34 located in Muscat.

The core team at the diabetes management clinics at public primary health care comprises a physician, a

Table 1: Characteristics of the participants.

Patient number	Age	Gender	Employment status	Education status	Duration of the disease, years
1	52	Male	Employed	University	10
2	53	Female	Housewife	Basic school	8
3	59	Female	Housewife	Basic School	8
4	31	Female	University student	University	5
5	52	Female	Housewife	Basic school	6
6	53	Female	Housewife	Basic school	12
7	35	Female	Housewife	Basic school	6

nurse, pharmacist or assistant pharmacist, dietician, and a health educator.²¹ Some centers have included additional members such as psychologists and medical orderlies (a non-medical staff who helps in organizing the service at the clinic).²⁰ The diabetes management service is provided either through a morning clinic only in some centers, or through morning and afternoon clinics in others. In the morning, the diabetic clinic is combined with the hypertensive clinic. The physician and nurse meet the patients together then refer him/her to the dietician and health educator if needed, which is done on an appointment basis. In the afternoon clinic, which is a sole diabetic clinic, the patients can meet the core team and the additional members of the team on the same day.²⁰ Four centers were selected based on the information collected from the first study of the project,²¹ and the study was conducted according to the National Diabetes Guidelines in place.²⁴ These centers included: 1) primary health care center that has a morning clinic only, with a complete core team; 2) primary health care center that has morning and afternoon clinics with the absence of few members of the core team during service provision; 3) primary health care center that has morning and afternoon clinics with the highest number of diabetic patients recorded per center and presence of additional care providers to the core team; and 4) primary health care center that has morning clinic only with a complete core team, but with the absence of pharmaceutical and technical resources related to the diabetes management team.

The patients were selected from the patients' registration list in the center for morning and afternoon diabetes management clinics.

The first author conducted semi-structured interviews with seven type 2 diabetes patients attending their regular diabetes management clinics

[Table 1]. The interviews were conducted between January and March 2016, five interviews in the morning and two in the afternoon. Patients were six adult females (five housewives and one college student) and one adult employed male.

The interview guide was designed in advance with the following questions: what is your perception towards public primary health care service provided to you as a diabetic patient; what is your perception on the tasks performed by the members of the team in general during diabetes management visits; did you experience any positive or negative encounter during the interaction with care providers; are there any tasks that could be performed differently or by different care providers; what do you think if some of the tasks performed by a doctor are transferred to a nurse; and what is your opinion to see nurse-led service within team-based approach in diabetic clinic at primary health care sector in Oman? The concept of nurse-led clinic was explained and possible positive outcomes of nurse-led clinic such as decreased crowding and the availability of the physician for complicated cases was emphasized. The interviews were conducted individually in a quiet room in Arabic or English. Audiotape was used to record the interview.

Data was transcribed first, then analyzed manually using qualitative manifest thematic analysis.²⁵ The first author read the transcriptions several times to be familiar with the complete set of data and shared the identified codes with the second author.

The analysis resulted in two main themes: 1) good current service and satisfied patients in diabetes management clinics; and 2) diverse patients' opinion towards nurse-led diabetes management clinics. The data under the second theme was then analyzed into: a) negative; b) skeptical; and c) positive opinions towards the nurse-led clinics.

RESULTS

In general, the experiences of type 2 diabetes patients towards diabetes management clinics at public primary health care centers were positive. The patients expressed their satisfaction towards public primary health care service and towards the tasks performed by the members of the team. The satisfaction was revealed in terms of health care providers' knowledge, skills, and management provided with appropriate interaction and communication between the members and the patients during diabetes management visits. The patients did not see any negative encounters or tasks that could be performed differently or by different members. In fact, some of them acknowledged the presence of the team in providing the service.

"I am happy with the service that was provided to me in today's visit and in every visit. The members of the team welcomed me as usual with professional approach and easy access." (Patient 1)

"The service is excellent. I do not have any problems with the service, the providers, or the visits. The communication with the team was smooth." (Patient 2)

"I do not have any negative points to mention from the visits." (Patient 3)

"I do not see any shortages in the service provided by the team. I am happy. The members know their tasks very well." (Patient 4)

"The service that I received today, and every day, is very good, and this is regarding all the members of the team including the nurses." (Patient 5)

"I am happy from the service provided by the members and all of them performing their task to the best." (Patient 6)

"I am satisfied from the service and from the care providers' roles." (Patient 7)

One of the patients had the chance to meet all the members of the team and expressed total satisfaction from the service. Another had a chance to experience the morning and the afternoon services with no complaints for either.

"Today I met the physician and nurse at the beginning, then I was referred to other members of the team, and I have no problems with that." (Patient 2)

"I was a patient in the morning clinic, and I was transferred to the afternoon clinic, but I am happy from both services." (Patient 6)

The opinions of diabetic patients towards nurse-led clinics at primary health care were of three types:

1) negative; 2) skeptical; and 3) positive opinions towards the nurse-led clinics.

There were some negative opinions of the nurse-led team. Patients were found to be angry and scared of the proposed change. Their reasons expressed were towards the nurses' knowledge, skills, and capabilities. The patients revealed their answers in the context of their basic cultural understanding of diabetes management clinics, in which physician is the most consulted person of the team and every patient wishes to be seen by the physician in all visits. The physician to them is the leader of the team and the one who knows everything. Although the patients clearly understood that seeing the physician could be associated with a long wait, they disclosed that they do not mind waiting since this is a normal situation in the clinic. Even if the roles have to be transferred or exchanged with nurses to solve such a challenge, this should not be done.

"You want me to be seen only by a nurse if things are stable with me, this approach is not good at all, and if this happened, I will be angry to the entire team." (Patient 1)

"The role of the nurse is to take my blood pressure, record it in the papers and refer me to the physician. The physician knows everything not the nurse." (Patient 1)

"I do not accept to be seen by a nurse, even if I have to wait for long time in the clinic, but at the end I have to see the physician." (Patient 4)

"I will be scared if I will be told that I will see a nurse in my visit, because I do not know if the nurse is qualified to see patients independently." (Patients 5)

Some patients expressed skeptical opinions towards the nurse-led clinic but a willingness to try nurse-led clinic. However, several regulations were required to accept the clinic and see it regularly as a diabetes management clinic. The patients disclosed good perceptions and showed support towards the nurses to lead the clinic. They revealed that qualification, good training, good knowledge, and experience in diabetes management must be among the pre-requirements for nurse-led clinics as this could give the patients a sense of safety and security.

"It will be nice to see a nurse running the clinic. I have no problem even to be seen by a nurse, but I have to be sure that she is properly qualified and received good training to handle diabetic patients." (Patient 3)

"I have no problem to see the nurses running the clinic provided that they have a good knowledge and experience." (Patient 7)

One of the patients added that by allowing the nurses to lead the clinic, the overcrowding would be released from the physicians.

“I noticed that some patients prefer private clinics due to the crowdedness in the public sector, but with opening nurse-led clinics, the crowdedness will decrease, and the physicians will be less pressured.” (Patient 3)

Patients with positive opinions towards the nurse-led clinic completely agreed with the concept and added that if applied in Oman, this would have good effect on the patients’ outcome. The patients showed a very good unconditional support towards the nurses. They also accepted that the nurse-led clinics could act as an improvement in diabetes management at primary health care centers.

“The nurse definitely knows what she is doing, and I experienced her service since my first visit to the center, since my diagnosis, so I would not mind if nurse-led clinics be applied.” (Patient 2)

“I am completely happy with the service provided. I have no objection for any change, if this will be done for our good management.” (Patient 6)

DISCUSSION

This pilot study was conducted as a first step for further studies related to type 2 diabetes patients and their opinions towards nurse-led clinics. The first part of the study explored type 2 diabetes patients’ perception towards the current diabetes management visits at the public primary health care centers in Muscat. The second part discussed the concept of the nurse-led clinics among seven type 2 diabetes patients and explored the patients’ preparedness for attending such clinics, if MOH considered their implementation in the future. Although the results in this study were collected from only seven patients and might be conditional, the results can still be considered important. This is because the results support previous studies conducted in the same settings in terms of easy access and good nursing practice.^{26,27} However, the results are in contrast to other studies where the patients revealed a complete dissatisfaction from the service in terms of communication skills and to the second study of the project where physicians have already explored different challenges related to the service and patients at diabetes management clinics.^{17,20}

With regard to patients’ satisfaction of the health service, the literature shows that patients’ satisfaction

can be established if patients supported to be more involved in the management, rather than changing health care providers’ behavior.²⁸ Additionally, the literature mentions that if the consulting style is changed, for instance through nurses, patients’ involvement in self-management is increased, which could lead to better satisfaction of the service. There is an association between satisfaction and outcome in diabetes, which suggests that processes of service delivery that can act to increase patient satisfaction, may contribute to improved clinical outcomes. However, further work is needed in this field to explore and reveal the complex relationship between satisfaction and clinical outcomes.²⁶ A well-designed intervention study focusing on enhancing patient participation in primary outpatient diabetes care, is yet to be explored.²⁸

In this study, the patients’ satisfaction was related to health care providers’ tasks, roles, and communication skills. This was explained with the words “the health care providers know what they are doing.” However, the patients’ participation towards self-management was not well documented and acknowledged. Therefore, nurse-led clinics were explored to improve patients’ empowerment, self-management, and team-based support.

Diabetes management, insulin refusal, and service acceptance or rejection can be very complex subjects. It can be affected by patients’ beliefs and knowledge. Moreover, negative self-perceptions, attitudinal barriers, lifestyle adaptations, and social stigma could be considered as strong associated factors.²⁹ These etiological influences, both independently or in combination, constitute patients’ acceptance or resistance to diabetes management and its consultation style leading to satisfaction or dissatisfaction of the service in general.²⁹

In this study, all patients expressed their satisfaction in the service. The majority of patients were unemployed females (housewives) with basic education hence it was very difficult to determine if they know or what they are supposed to know in relation to their disease or diabetes management clinics within team-based approach strategy compared to other patients (the university student and the employed staff). In this regard, the literature reveals that majority of diabetes myths were usually detected among uneducated females.³⁰ The females in Oman, specifically those with a basic education could be very well affected by the Omani culture

and the society. They could have very strong beliefs, myths, and blinded trust towards the health care providers and a basic understanding towards the disease and its management. However, it is difficult to explain why all the participants with basic education expressed satisfaction but had different opinions on nurse-led clinics.

The other participants with higher education also expressed their satisfaction with the service; however, their acceptance with some skepticism towards the nurse-led clinic along with one patient with basic education was noted. Patients with a university education and one patient with basic education were more conservative towards the nurse-led clinic implementation. However, it is difficult to conclude that it indicates awareness to what the clinics require, how far are the clinics from real implementation now, and if the implementations are possible or not in Oman.

On the other hand, the patient who rejected the nurse-led clinic while the other who accepted it, both had basic education, and were skeptical. It is not known why and how this could be explained. However, literature reveals that adequate functional health education poses a major support in understanding chronic diseases and its management, including diabetes, and patients' education could also play a critically unequal role in facilitating their acceptance or rejection and understanding or misconception of the service changes that are necessary for management improvement.³¹⁻³³

The patients who totally refused nurse-led clinics and those who accepted them with reservations all had concerns towards the nurses. These concerns came as worries that the nurses might not have the appropriate skills to handle the clinic or might not prioritize the values that are essential within the clinics and patients. The literature describes most of the nurses as sincere care providers and good wishers for patients and express frustration when they do not follow their advice.³⁴ However, core caring values of nursing such as counseling, relieving, healing, and relating have not been given enough priority or have been replaced with more goal-oriented values such as treating, curing, and being effective.³⁴ Additionally, the literature described the nurses in primary care as possible developers, thus it is necessary to enable them to articulate, discuss, and evaluate their profession. Likewise, it is necessary to allow them to learn how to implement medical science in clinical

practice.³⁵ The literature also provides evidence that if the nurses have the skills to discuss the severity of diabetes with the patients and have the ability to increase their engagement within the team, this could enrich relationships with patients and increase opportunity to engage themselves in patients' lives.³⁶ Therefore, training and supporting the nurses' skills in patient-centered care through self-management support for patients with type 2 diabetes will smooth the nurses' roles and consequently promote the nurse-led clinics. This could only happen within the team-based approach service where they could act independently but under supervision of the physicians.

Patients with high education and who totally refused the concept of nurse-led clinics expressed their fears in relation to the nurses' education and their skills, which they did not consider good enough for nurse-led clinic. Although the same patients mentioned satisfaction towards the current service, the patients could not provide positive responses towards the nurses' knowledge and competencies during service provision and could not promote for an optimistic future if the nurse-led clinics were implemented. On the other hand, the patients with basic education supporting nurse-led clinic could also be explained from different angles. Although their answers were positive, those patients might not have the knowledge to understand the importance of the nurse-led clinics and their answers may have been a result of a misconception of the facts. Also, they might have agreed to the concept because it was proposed to them, did not have the courage to discuss it, have no interest in it, or unaware about its impact on the service. Additionally, this might indicate that they do not have any idea on how the clinics might diverge in the diabetes management services, and how differently the outcomes could matter. The conclusion was difficult to reach, and further studies are required.

The literature shows that patients' age is an important factor in patients' disease management. Certain patients are unlikely to respond to opportunities for questioning and discussing matters provided by even the most accessible practitioners, and could be reluctant to take responsibility for self-management or to improve the service.³⁷ In this pilot study, due to the design and small sample size, it was difficult to conclude if the age of the patients played a role in their perceptions towards the nurse-

led clinics. As the patients who were in their 30s had different opinions among themselves and the patients who were in their 50s had different opinions too. Different approaches could be recommended for further studies.

This pilot study is of great importance to support the entire project with patients' opinions towards the nurse-led clinic within team-based approach management, which could be a consequent solution to a shortage of physicians. However, composition of the sample, participants' lack of understanding on the concept (knowing what is available and not if changed), and the interviewers' way of posing the questions (awareness of pre-understanding and values) were factors that provided difficulties to draw conclusions.

The registered patients in diabetes management clinic were approached and interviewed after their consultations. No gender balance was intended in this pilot study. However, gender factor could be included in further studies to explore if different perceptions among patients could be discovered.

The interviews with diabetic patients were conducted with great challenges and huge efforts from the first author. The challenges were mainly encountered with the housewives in the form of non-discussant and non-expressive participants. This could be due to their employment status, basic education, or due to the fact that the interviewer is a physician from MOH. As an option for further studies, a different interviewer (not from the ministry) could help in allowing the patients to express their views comfortably without any pressure. Interviews can also be done outside the clinic.

In case a decision is to be taken and providing a final report to the ministry on this subject, further investigations must be carried out to include patients from other centers and regions of Oman. A new design of the study could be suggested with different interview style to explore the concept of nurse-led clinics from different angles.

CONCLUSION

Patients' satisfaction towards diabetes management clinics was documented in this pilot study, which surprisingly opposed previous studies, conducted in the same settings. Nurse-led clinics within team-based approach services in diabetes management clinics generated different opinions among patients.

Therefore, further investigations towards the nurse-led clinics are needed. The investigations need a better understanding of patients' willingness or worries to the clinics, which could be further discussed in Oman's health care sector.

Disclosure

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