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Assessment of the attitude of health care professionals towards diabetes care in Mukalla, Yemen

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ABSTRACT

Diabetes mellitus is a major public health concern and considered as a condition that leads to increased morbidity and mortality worldwide. The prevalence of diabetes in Yemen has been recently increased.The aim of this study was to evaluate the attitudes of health care professionals towards diabetes (HCPs) care in Mukalla , Yemen . The cross sectional study was conducted among health care professionals in Mukalla city, Yemen. The diabetes attitudes questionnaire was administered to 73 health care professionals (Doctors , pharmacists and nurses) in Mukalla , Yemen in 2009. The data were analyzed descriptively andthe inferentialKruskal -Wallis test was also used. This study found that healthcare professionals have relatively adequate attitudes toward diabetes. Doctors have higher attitudes score toward the seriousness of diabetes than other healthcare professional groups (pharmacists and nurses), and nurses showed the lowest attitude score among healthcare professional groups. Therefore, nurses and pharmacists should receive more education programmes regarding diabetes care.

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1. INTRODUCTION

Diabetes mellitus is a major public health concern and a condition that leads to increased morbidity, mortality, health care utilization and costs [1].Complications related to diabetes have been documented, ranging from acute complications such as hypo/hyperglycaemia to chronic and serious complications such as those related to micro and macrovascular complications. These chronic and serious complications include heart attacks, blindness, kidney failure, stroke and others [2]-[10].

Yemen is currently undergoing rapid development and is not excluded from the rapid increase in the incidences of diabetes [11]. In the year 2000, the prevalence of diabetes in the whole of Yemen had increased to 6.57% [12]. Furthermore, in the year 2004, the total prevalence of type II diabetes mellitus in the urban cities of Yemen was about 4.6% (7.4% of males and 2% of females). Moreover, the prevalence of impaired glucose tolerance (IGT) and impaired fasting glucose (IFG) were found to be 2% and 2.2%, respectively [13]. Gunaid and Assabri in 2008 reported that the incidence of diabetes in Yemen had increased to 10.4% [11].

It has been reported that poor diabetic care is due to prevalent and misguided attitude of both healthcare professionals (HCPs) and diabetic patients. In contrast, patients who report high levelsof adherence to diabetes care and controlhave more positive attitudes towarddisease management [14].

Improvement in the attitude of healthcare professionalsand the patients toward their disease is essential to achieve good control of their blood glucose levels and hence prevent the development of diabetes-related complications.

2. RESEARCH METHOD

2.1. Study design

This study was conducted a cross-sectional study in august 2009 among HCPs.

2.2. Study location

This study was carried out in Ribon City Hotel, situated in the centre of Mukalla city. Mukalla is the capital of the Hadramout Governorate, the largest governorate in Yemen.

2.3. Study population

Health care professionals consisted of doctors, nurses and pharmacists from Mukalla city. The participants of the study came from various health institutions including government hospitals, private hospitals, clinics and health centres.

2.4. Sample size

The target population for this study included all doctors, pharmacists and nurses listed in Mukalla city. The Health office in Hadramout governorate estimated the total numbers to be 291doctors, 45 pharmacists and 200 nurses. Therefore, the target population for this study was 536. Based on this number, the sample size required to achieve 95% confidence level (RaosoftInc) was 226. The study selected 300 health care professionals using a stratified random selection method where the population (HCPs), was divided into subgroups (i.e. doctors nurses and pharmacists), before selection.

2.5. Instrumentation

The instrument to collect the data for this study was validated by the researchers. The diabetes attitude scale (DAS) was adapted from the Third Version (DAS-3) developed by Anderson et al. [15]. The original version of the DAS-3 has 33 items. All the items were scored on a 5-point Likert scale: strongly disagree, disagree, neutral, agree and strongly agree. For the positive questions, the score for the Likert scale were 1 (strongly disagree) to 5 (strongly agree) and for the negative questions the score were the reverse of the positive questions. The total score was calculated by dividing the sum of the score by the total number of items in the subscales.

Each of the five subscales contained five to eight items. The total number of items in the subscales was 33 questions. The subscales were as follows:

1. The need for special training.
2. Feelings related to the seriousness of type 2 diabetes.
3. The value of tight blood glucose control.
4. The psychosocial impact of diabetes.
5. Patient autonomy.

The questionnaire was then validated using 25 subjects in a pilot study. The subjects involved in the pilot study were health care providers and not involved in the final research or had no contact with the participants of the study.Finally, afterperforming the pilot test, the Cronbach's alpha validity for the questionnaire was 0.754 after the deletion of three items.

DATA COLLECTION PROCEDURE

All participants were invited using a special invitation card for cooperation with this study. All participants were briefed on the study, its objectives and the expectations of the researchers; informed verbal consent was presented by all participants.

DATA ANALYSIS

The data was keyed into the SPSS version 15 for analysis. Both descriptive and analytic statistics were used. For descriptive analysis, results were expressed as numbers, percentages and mean (± SD and 95% CI). TheKruskal-Wallis test were used to assess intergroup differences.A P-value less than 0.05 was considered statistically significant.

3. RESULTS AND ANALYSIS

3.1. Response rate

Out of 300 healthcare providers invited for cooperation with this study, only 73 of them turned up.All the 73 healthcare providers (24 %) attended and completed the questionnaire. Out of those 73, there were 19 pharmacists (26 %), 37 doctors (50.7 %) and 17 (23.3 %) nurses.

3.2. Distribution of age range of health care professionals

Table 1. shows the age of the participants. About 36.8 % of the pharmacists were aged 40 to 49, the majority of doctors (59.5%) were aged from 30 to 39 and 47.1 % of nurses were between 40 and 49.

3.3. Gender of subjects

The majority of the subjects were male (76, 7%); there were 21 females (23.3), as shown in Table 1.

Table1. Distribution of demographic data of health care professional by group n=73

Age in years	Medical doctors N (%)	Pharmacist N (%)	Nurse N (%)	Cumulative Numbers (%)
20 – 29	14 (37.8)	5 (26.3)	3 (17.6)	22 (30.1)
30 – 39	22 (59.5)	5 (26.3)	5 (29.4)	32 (43.8)
40 –49	0	7 (36.8)	8 (47.1)	15 (20.5)
50 – 59	1 (2.7)	2 (10.5)	1(5.9)	4 (5.5)
Total	37 (50.7)	19 (26.0)	17(23.3)	73 (100)
Gender				
Male	22 (59.5)	18 (94.7)	16 (94.1)	56 (76.7)
Female	15(40.5)	1 (5.3)	1(5.9)	17 (23.3)
Total	37	19	17	73

3.4. Health care professionals' attitude towards diabetes

Attitudes were divided into five subscales as explained in the methodology. The mean and standard deviation (SD) of the scores for each subscale among HCPs are given in Table 2.

Table 2.Diabetes attitudes score for health care professionals

Subscales	Mean	SD
Special training	4.2	0.47
The seriousness of diabetes	2.99	0.49
The value of tight blood glucose	3.3	0.67
The psychoscial impact of diabetes	3.5	0.49
Autonomy of diabetes for patient	3.3	0.83

Table 3 shows the mean and standard deviation (SD)of attitude subscale scores of healthcare professional groups. With regard to the first subscale on the need for special training, all healthcare professional groups (pharmacists,doctors and nurses) were in the positive score (mean=4.2±SD). There was no significant difference between healthcare professional groups ($p = 0.897$) on the first subscale. Additionally, there were no significant differences in the other four subscales of attitude in this study.

Table 3. Comparison of diabetes attitude score between health care professional groups

Items	Professionals category	Mean (±SD)	P*
Special training	Pharmacists	4.2(035)	
	Doctors	4.2 (0.52)	0.897
	Nurses	4.2 (0.51)	
Seriousness of diabetes	Pharmacists	2.9 (0.48)	
	Doctors	3.2 (0.45)	0.57
	Nurses	2.6 (0.39)	
Value of tight blood glucose	Pharmacists	3.3 (0.73)	
	Doctors	3.4 (0.65)	0.55
	Nurses	3.4 (0.62)	
Impact of diabetes	Pharmacists	3.4 (0.47)	
	Doctors	3.7 (0.42)	0.95
	Nurses	3.4 (0.51)	
Autonomy of diabetes for patient	Pharmacists	3.0 (1.1)	
	Doctors	3.4 (0.70)	0.859
	Nurses	3.3 (0.65)	

*Significant at $P < 0.05$, Kruskal-Wallis

DISCUSSION

To the best of our knowledge, this is the first study carried out to assess the attitude of healthcare professionals in Yemen.

The response rate of this study was not very good, as only 24% of the HCPs came and completed the questionnaire on diabetes. This rate of response is however comparable to most studies which showed that 20 to 30% of invitees actually turn up [16],[17].

This study recorded a mean attitude score of 4.2 ± 0.47out of a maximum of five, which implied that HCPs agreed to the need for special training. This finding is slightly lower than that of Anderson *et al.* [15] who found a mean attitude score of over 4.6. Although, this study and Anderson's utilized the same measurement (DAS-3), the latter's finding showed that their participants had a better attitude toward the need for training. This difference could be related to the different requirements in Michigan where Anderson*et al*. carried out their study. In Michigan, all HCPs involved in diabetes care are required to be certified practitioners, whereas there is no such requirement in Yemen. A more recent study carried out in Argentinaby Gagliardino*et al*. [14] also used DAS-3 to measure the attitude of HCPs and diabetes patients toward diabetes care .Although Argentina is a developing country and does not require certified practitioners, a slightly better attitude score (4.5) was recorded compared with the finding of our study. The difference could be attributed to the differences in the study subjects. Gagliardino*et al*. included all types of HCPs, including podiatrists, social workers and nutritionists as well as diabetic patients who had attended the diabetes education programme.

Evaluation of each HCPs group attitude toward the need for special training in our study found that all doctors, nurses and pharmacists have similar attitude score of 4.2 ± 047. Sharp and Lipsky [18] found slightly higher attitude score among physician in USA (4.66) compared to our finding. However, the finding on the pharmacist's attitude toward the need for special training is comparable with the study conducted in Taiwan by Chen*et al*. [19] where they found that the pharmacists' attitude score was 4.35.Subsequently, these two findings supported our argument that those practitioners from developed countries with special need for certification showed better attitude score than developing countries without certification requirements.

The attitude of the HCPs toward the level of seriousness of diabetes will influence their decisions in patient management. Practitioners will pay more attention if they believe that the patient's condition is serious. This study found that the HCPs showed a negative attitude toward the seriousness of diabetes with a mean score of 2.99±0.49. This finding showed that HCPs in Yemen do not consider diabetes as a serious disease. This could be related to the background of the HCPs. In this study, the physicians, pharmacists and nurses came from general practitioners, not specifically from a pool of diabetes care specialists. Therefore, they have encountered many other more serious illnesses that need immediate attention in their practice.

Analysis based on the HCPs groups found that physicians score was higher for attitude in this area than nurses and pharmacists although the difference was not significant. This finding is not in agreement with those who found that HCPs other than physicians scored higher on attitude towards the seriousness of diabetes [15];[18].

The value of tight blood glucose control is very important in the management of diabetes. UK Prospective Diabetes Study (1989) discovered that those patients who had a tight sugar control were found to have better outcome [20]. Therefore, the attitude of the HCPs towards blood sugar control should be improved in order to advise their patients properly. Our study found that the HCPs attitude towards the importance of blood glucose control was neutral (3.3±0.67).On analysis of HCP groups, it was found that doctors (3.8±0.65) have a better attitude than pharmacists (3.7±0.73) and nurses (3.3±0.62). This finding is attributed to the role of doctors and pharmacists in diabetic management where both professions were involved in controlling patients' drug treatment and monitoring their outcome.. This finding is similar tothatof Gagliardino *et al.* [14] but lower than those of Anderson*et al*., Sharp and Lipsky and Chen*et al*. [15];[18];[21].

The fourth subscale measured the HCPs attitude towards the psychosocial impact of diabetes on patients [15]. This is very important as it measures the concern of the HCPs about the patient's daily life. Our study found that the HCPs had a higher than neutral attitude score (3.5±0.49). This result corresponds to previous studies [14];[19], but is lower than that findings found in those of Anderson *et al*. and Sharp and Lipsky[15];[21].

The HCPs' belief in the role of patients in the management of diabetes is measured by their attitude towards the autonomy of the patients. Their positive attitude showed the HCPs' agreement with empowering patients toward the management of their problems. The result of this study for the score of subscale of the autonomy of diabetic patients (3.3±0.83)was similar to that of Chen*et a*l.[19] and Sharp and Lipsky [21] but lower than Anderson's *et al.* [15]. This result is however better than that of Gagliardino*et al*. [14] whose attitude score toward patient autonomy was only 2.79.

A continuing medical education (CME) is defined as education programs that have been designed to facilitate clinical practice for health care professionals in order to increase their knowledge and skills for helping patients to manage their disease [16].A Continuing Education (CE) programme that addresses the importance of healthcare professionals' attitude and increases their diabetes care knowledge will be translated into the improvement of the quality of care for diabetes patients [22].The present study evaluated the changes in the HCPs' attitude and found that they should receive CE programme.

LIMITATIONS

Limitation of this study is the small sample size. This problem arose because the study used a convenience sampling method and relied on the consent of HCPs. Although the majority of the HCPs (pharmacists, doctors and nurses) in Mukalla city were invited, many of them were probably too busy or were otherwise unable to leave their practice site.

4. CONCLUSION

This study concluded that healthcare professionals have relativelyadequateattitudes toward diabetes care. Doctors have higher attitude score toward the seriousness of diabetes than other healthcare professional groups (pharmacists and nurses), and nurses showed the lowest attitude among healthcare professional groups. Therefore, nurses and pharmacists should receive more education programmes regarding diabetes. Based on these results, an implementation of diabetes education programs for HCPs would be an efficienttool for improving the qualityof care.

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