

## Assessment of 'diabetes related attitudes' among healthcare professionals

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### Abstract

**Introduction:** The burden of managing diabetes mellitus in developing countries primarily lies with the healthcare professionals. Improper diabetes related practice by healthcare professionals could cause adverse outcome among their patients. Despite high prevalence of diabetes, studies assessing the attitudes of healthcare professionals towards the disease are limited.

**Aim:** The study aims to assess the attitudes of healthcare professionals towards diabetes and compare them among subgroups of healthcare professionals.

**Materials & methods:** This study adopting the questionnaire of Diabetes Attitude Scale-3 (DAS-3) which analyses attitudes of individuals across five subscales, was performed among 100 healthcare professionals (doctors and nurses) involved in clinical management of diabetes. They were sub-grouped as doctors and nurses; for comparison and analysis.

**Results:** The study demonstrated an overall positive attitude towards diabetes. The mean overall score by healthcare professionals on their attitude towards diabetes was  $3.74 \pm 0.24$ . Among subscales, 'need for special training' has the maximum score of  $4.39 \pm 0.36$  while the 'value of tight control' scored the lowest with  $3.41 \pm 0.45$ . The p-value, comparing the attitudes between doctors and nurses showed highly significant difference ( $p < 0.01$ ) on the 'seriousness of diabetes' and 'value for tight control'; with doctors scoring more than nurses. However, nurses showed higher positive attitudes towards 'patient autonomy' than doctors ( $p < 0.01$ ).

**Conclusion:** Lack of strong positive attitudes towards diabetes among healthcare professionals could adversely affect patient education and disease management. Specialized training programs and CME's focused on improving diabetes related attitudes are for all healthcare professionals would enhance the quality of care.

**Keywords:** Diabetes related attitudes; Diabetes; Healthcare professionals; DAS-3; Diabetes Attitude Scale.

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### 1. Introduction

Diabetes is a chronic illness that demands continuity of multi-layered medical care. The prevalence of diabetes across the world is increasing at an alarming rate, with numbers projected to cross 552 million by 2030.[1] About 10% of Indians between 20-79 years are estimated to have diabetes. The disease burden sets in slowly, often progressing to cardiomyopathy, vasculopathy, nephropathy, neuropathy, retinopathy and other co-morbidities. Improper attitudes of healthcare professionals may result in adverse outcomes among their patients.

Studies to identify the barriers to diabetes management among patients and clinicians suggest that the attitudes of healthcare professionals are as significant as their knowledge of the disease.[2,3] A survey from 17 nations, including India, showed about a third of healthcare professionals did not receive skilled training while attaining diabetes related skills.[4] Most data from Indian studies are patient related or on interaction of healthcare professionals with patients.[5] This study assessed the diabetes related attitudes of healthcare professionals and compared the attitudes among subgroups of healthcare professionals.

## 2. Materials and Methods

The study was done among healthcare professionals involved in clinical management of diabetes at a tertiary care hospital in Southern India. After obtaining Institutional Ethical Committee approval, 100 doctors and nurses were recruited to this study with written informed consent in a 1:1 ratio. This descriptive survey which was carried out over 3 months adopts the questionnaire of Diabetes Attitude Scale, DAS-3.[6,7]

Diabetes Attitude Scale (DAS) is a general measure of the diabetes related attitudes and the third version, DAS-3, (developed by University of Michigan Diabetes Research and Training Centre) is a relatively simple, effective and validated tool for comparison across different groups of health care professionals. The 33 statements of DAS-3 represent five discrete subscales; namely (1) need for special training; (2) seriousness of type 2 diabetes; (3) value of tight control; (4) psychosocial impact of diabetes; and (5) patient autonomy. The responses are categorized into 5 groups as strongly agree, agree, neutral, disagree and strongly disagree with the respective scores ranging from 5 to 1 for the positively coded questions and reverse for the negative ones.

Statistical data analysis included percentage, mean, standard deviation and its level of significance. For comparison of attitudes among doctors and nurses; Mann-Whitney p-value was calculated using statistical software SPSS-8. A p-value between 0.01 and 0.05 is set as statistically significant and p-value less than 0.01 was taken as highly significant.

## 3. Results

The study sample included 100 healthcare professionals with doctors and nurses in a 1:1 ratio. A score above 3 indicated positive attitude, while a value below 3 represented negative attitude. The attitudes were divided into five sub-scales and the overall scores of healthcare professionals for each sub-scale were as represented in Table 1.

**Table 1: Overall scores of healthcare professionals on diabetes related attitudes.**

Sub-scale	No. of statements	Mean±SD	Range
Need for special training	5	4.39±0.36	2 – 5
Seriousness of type 2 diabetes	7	3.64±0.51	1 – 5
Value of tight control	7	3.41±0.45	1 – 5
Psychosocial impact of diabetes	6	3.78±0.41	1 – 5
Patient autonomy	8	3.68±0.44	1 – 5
Overall score of the study	33	3.74±0.24	1 – 5

The overall and mean sub-scale scores showed a positive attitude towards diabetes. The mean overall score of healthcare professionals on their attitude toward diabetes mellitus was  $3.74 \pm 0.24$ . Among the sub-scales, the 'need

for special training' had the highest score of  $4.39 \pm 0.36$ . The lowest average score recorded was  $3.41 \pm 0.45$  in the 'value of tight control'. Others, namely 'psychosocial impact'; 'patient autonomy'; and 'seriousness of type 2 diabetes' had scores of  $3.78 \pm 0.41$ ;  $3.68 \pm 0.44$ ; and  $3.64 \pm 0.51$  respectively.

To identify the differences in the attitudes among healthcare professionals, Mann-Whitney test ( $p \leq 0.01$ : highly significant,  $0.01 \leq p \leq 0.05$ : significant) was utilized (Table 2).

**Table 2: Scores among sub-groups of healthcare professionals on diabetes related attitudes.**

Sub-scale	Sub-group	Mean±SD	P-value
Need for special training	Doctors	4.40±0.34	0.814
	Nurses	4.39±0.39	
Seriousness of type 2 diabetes	Doctors	3.91±0.45	0.000*
	Nurses	3.38±0.42	
Value of tight control	Doctors	3.55±0.44	0.004*
	Nurses	3.28±0.42	
Psychosocial impact of diabetes	Doctors	3.81±0.40	0.455
	Nurses	3.74±0.42	
Patient autonomy	Doctors	3.57±0.51	0.003*
	Nurses	3.80±0.32	
Overall for the study	Doctors	3.80±0.25	0.023*
	Nurses	3.68±0.22	

The sub-group of doctors demonstrated higher positive attitudes as compared to nurses in all sub-scales, exception with 'patient autonomy'. On comparing among the sub-groups of healthcare professionals, both doctors ( $4.40 \pm 0.34$ ) and nurses ( $4.39 \pm 0.39$ ) scored maximum on the 'need for special training'; while both doctors ( $3.55 \pm 0.44$ ) and nurses ( $3.28 \pm 0.42$ ) scored lowest on the 'value of tight control'. Significant differences were not observed on 'need for special training' and 'psychosocial impact of diabetes'.

## 4. Discussion

The attitudes and knowledge of physicians play a major role in influencing patients to adhere to their prescribed therapy and goals.[8] An assessment of the perceptions of healthcare professionals towards diabetes will serve as an indicator of the quality of the medical support they provide to patients. In this study, the assessment has been based on overall mean score for the study and mean scores on each of the five sub-scales identified in DAS-3.

Considering all the 33 statements of the study, the overall average score recorded for the study was  $3.74 \pm 0.24$ . The sub-groups of doctors and nurses scored  $3.80 \pm 0.25$  and  $3.68 \pm 0.22$  respectively. This is consistent with the mean score of 3.8 in a similar study by Bani-issa *et al* among doctors, nurses, dietitians and pharmacists.[9] Present study showed that the healthcare professionals had overall positive attitudes towards diabetes. However, they lack strong positive attitudes, which is vital for being the pillars in combating the disease.

'Need for special training' assesses the attitude regarding the necessity to have specialized training in teaching, counseling and performance-based procedures for healthcare professionals managing diabetes. Both doctors and nurses strongly express on the 'need for special training', which had the highest score. Such training would help them to understand how diabetes affects patients and to counsel patients to actively participate in achieving targets along with them. This observation is comparable to studies from UAE and Argentina showing maximum positive scores on the 'need for special training'. [9,10] Torres *et al*, observed the desire of healthcare professionals to modify their behavior in patient education and lack of training as a hurdle in achieving it. [11]

Attitude towards 'seriousness of diabetes' regardless of mode of diabetes control (namely; diet, non-insulin medications or insulin) had a score of  $3.64 \pm 0.51$ . The doctors and nurses scored  $3.91 \pm 0.45$  and  $3.38 \pm 0.42$  respectively. Additionally, p- value indicates significant difference in the attitudes among healthcare professionals towards this sub-scale. The relatively low score recorded by nurses as compared to doctors, could adversely affect the overall management of diabetes. Similar observations were made by Babelgaith *et al* with low score of 3.2 for doctors and 2.6 for nurses. [12] Odili and Oparah too had similar observations as in the present study. [13]

The sub-scale 'value of tight control' assesses the attitude about whether the prospective advantage of tight glucose control is justifiable in terms of difficulty and effort required to achieve it as well as the risks of hypoglycemia that are faced. The average score of  $3.41 \pm 0.45$  is comparable with the average value of 3.50 observed in previous studies. [9,10] Doctors score  $3.55 \pm 0.44$ , while nurses score  $3.28 \pm 0.42$ ; being the lowest score by doctors and nurses in the sub-scales. This observation is in contradiction with Anderson *et al* reporting an average score of 4.3 with nurses scoring higher than physicians. [7] Both nurses and doctors opined that hypoglycemia is a risk factor to attain tight glucose control. Though the overall positive attitude towards benefits of tight glucose control is encouraging, the relatively low score of 3.28 by nurses is an alarming observation and needs special attention.

On the attitude towards the 'psychosocial impact of diabetes', both doctors and nurses agreed that diabetes has a negative impact on the lives of patients. Average score calculated on this sub-scale was  $3.78 \pm 0.41$ , doctors and nurses scoring  $3.81 \pm 0.40$  and  $3.74 \pm 0.42$  respectively, a score which did not differ significantly. The average score reported in the present study was lower compared to  $3.85 \pm 0.49$  by Bani-issa *et al* [9], and higher than  $3.50 \pm 0.38$  by Gagliardino *et al*. [10] A study in Canada, by Hollahan *et al* showed only 39.3 % of healthcare professionals agreed on understanding the emotional issues faced by patients in providing effective diabetic care. [14] Studies have revealed

that healthcare professionals emphasized the involvement of family members of people with diabetes is vital for good diabetes care. [15]

In the sub-scale of 'patient autonomy' the attitudes of patients as the primary decision makers in diabetes care was stressed. The doctors scored the least in this, lower than nurses with average score being  $3.68 \pm 0.44$ . Though doctors responded positively with a score of  $3.57 \pm 0.51$  to 'patient autonomy', they do not seem to be able to strongly advocate for patient judgments and decisions towards treatment. The nurses' score of  $3.80 \pm 0.32$ , indicating they understood better the importance of cooperation and self-management of patients for a long lasting and effective management of the disease. This observation might have been from the constant and prolonged interaction with patients in hospital. Study by Van Zyl DG *et al* also noted that nurses scored higher than doctors on attitude towards 'patient autonomy'. [16]

In developing countries, the lack of patient education and public awareness programs makes the patient susceptible to the complications of chronic illness like diabetes. [5,17] This study is relevant in situations where healthcare professionals solely bear the responsibility of managing large number of patients with diabetes.

## 5. Conclusion

In the present study, doctors and nurses showed adequate positive attitudes towards diabetes. However, strong positive attitudes towards diabetes are lacking among healthcare professionals. This may affect all aspects in controlling the disease including patient education, general management, treatment, and prevention of complications. This study identifies doctors and nurses to have realized the need for special training to achieve quality diabetes care.

Similar studies on primary health care professionals might provide broader understanding of diabetes related attitudes among them. We recommend specialized training programs and CME's for healthcare professionals which are focused on improving diabetes related attitudes and skills.

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