Community

An Observational Study among Type 2 Diabetes Patients using PAID Questionnaire

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Original Research Article

Abstract: Treatment compliance and self-care are the most important aspects for diabetic patients to prevent or delay the complications. To assess awareness regarding some of the important aspects of diabetes care using Problem Areas in Diabetes (PAID) questionnaire. This cross-sectional observational study was carried out in tertiary care teaching institute in Pune city of Maharashtra state, India. Known cases of type 2 diabetes seeking treatment from the institute were included in the study by purposive sampling technique. A pre-tested questionnaire was used to obtain socio-demographic details and awareness regarding certain important aspects of diabetes care. Problem Areas in Diabetes (PAID) scale, a simple, one page questionnaire was also used to study some of the important aspects. Descriptive statistics were used to calculate percentages, means and standard deviation of demographic and clinical variables. Differences between genders were measured using t-test for continuous variables. Total 25 diabetic subjects were included in the study. The diabetic subjects were distributed in four quartiles of age with mean of 58.16 ± 9.66 years. Most of the study population were male 22(88%) and 3(12%) were female. 52% believed that insulin is the last treatment and should be avoided, whereas 7% were not agreed to that. Around 40% participants did not agreed to that if strict diet control is practiced; insulin can be avoided whereas 24% were also not sure. Fifty six percent participants said that diet control is needed after taking tablets and 32% said diet control is not needed after taking tablets. More participants (72%) were found aware regarding regular exercise is needed with tablets. PAID mean score was 17.86 ± 8.75. It was observed that PAID mean scores were dependent on the literacy status, duration of the diabetes. Diabetic patients lack awareness on many important aspects of diabetic care. It is important to take efforts to improve awareness by health care providers.
Keywords: Diabetes Mellitus, Type 2, Patient, Awareness, PAID Questionnaire.

INTRODUCTION

Diabetes mellitus is a combination of heterogeneous disorders commonly presenting with episodes of hyperglycemia and glucose intolerance, as a result of lack of insulin, defective insulin action, or both [1]. Diabetes Mellitus is one of the most devastating chronic diseases and affects virtually each and every organ of the human body. The prevalence of Diabetes worldwide is projected to rise from 2.8% in 2000 to 4.4% in 2030. India has the largest number of diabetic patients making it a capital for Diabetes. The rising prevalence has mainly been attributed to the rapid urbanization and economic development [2].

Diabetes and its complications affect the society's economic status and have a great impact on individuals, families, healthcare systems and countries. Due to many concomitant problems in diabetes, a broader approach is needed not only for glycemic control but also for all problems in the treatment of the patient. Therefore, it is important to explore individual problem areas of patients, too. Exploration of problem areas among the diabetic patients and of the affecting factors will help increase the quality of life and will provide a nursing care of quality targeting at the problems[3].

The number of people with diabetes has risen from 108 million in 1980 to 422 million in 2014. WHO

projects that diabetes will be seventh leading cause of death in 2030. Healthy diet, regular physical activity, maintaining a normal body weight and avoiding tobacco use are ways to prevent or delay the onset of type 2 diabetes. Diabetes can be treated and its consequences avoided or delayed with diet, physical activity, medication and regular screening and treatment for complications [4].

One of the biggest challenges for health care providers today is addressing the continued needs and demands of individuals with chronic illnesses like diabetes. The importance of regular follow-up of diabetic patients with the health care provider is of great significance in averting any long term complications [5].

This study was carried with aim of assessing awareness regarding certain important aspect of diabetes care among known patients of type 2 diabetes mellitus.

MATERIALS AND METHODS

This cross-sectional observational study was carried out in tertiary care teaching institute in Pune city of Maharashtra state, India.

Known cases of diabetes seeking treatment from the institute were included in the study by purposive sampling technique.

A pre-tested questionnaire was used to obtain socio-demographic details and awareness regarding certain important aspects of diabetes care.

Problem Areas in Diabetes (PAID) scale, a simple, one page questionnaire was also used to study some of the important aspects (6)

STATISTICAL ANALYSIS

Statistical analysis was performed using MINITAB 13 (Statistical software). Descriptive statistics were used to calculate percentages, means and standard deviation of demographic and clinical variables. Differences between genders were measured using t-test for continuous variables.

Ethical considerations

The study was conducted according to the Declaration of Helsinki; the protocol was reviewed and approved by the institutional ethics committee. Written informed consent was obtained from the study subjects.

RESULTS

Total 25 diabetic subjects were included in the study. Study subjects between 37 – 75 age groups belonging to various occupational fields were surveyed. Socio-demographic characteristics of the study subjects are shown in Table 1.

As per Table -1, the diabetic subjects were distributed in four quartiles of age with mean of 58.16 ± 9.66 years. Of the study samples (n = 25), most of the study population were male 22(88%) and 3(12%) were female. Most of them completed education upto the middle school to high school level (76%). About 96% of the study subjects were married. Out of 25 patients 14 (56%) patients were of duration of more than 5 years had diabetes, whereas 11 (44%) has duration of diabetes less than 5 years.

Table-1: Socio-demographic Variables of the study subjects

Characteristics	n	Frequency (%)
Gender		
Female	3	12
Male	22	88
Age		
$\leq$ 45 years	2	8
46 - 55 years	8	32
56 - 65 years	9	36
$\geq$ 66 years	6	24
Marital Status		
Married	24	96
Widowed	1	4
Educational Status		
Primary school	5	20
High school	14	56
Graduation	2	8
Illiterate	4	16
Disease Duration		
1 - 3 years	9	36
4 - 6 years	4	16
7 - 9 years	3	12
$\geq$ 10 years	9	36

Table-2: Awareness regarding important aspects of diabetes

Response	No	May be	Yes
Questions	Frequency (%)	Frequency (%)	Frequency (%)
1. Insulin is last treatment and should be avoided	7(28%)	5(20%)	13(52%)
2. If strict diet control is practiced, insulin can be avoided	10(40%)	6(24%)	9(36%)
3. No diet control is needed after taking tablets	14(56%)	3(12%)	8(32%)
4. No exercise required if tablets are taken	18(72%)	4(16%)	3(12%)
5. If one spouse has diabetes the other can get it	14(56%)	4(16%)	7(28%)

As per Table 2: Few questions had been asked to the study participants regarding knowledge of diabetes. Of those more than half i.e 52% believed that insulin is the last treatment and should be avoided whereas 7% were not agreed to that. Around 40% participants did not agreed to that if strict diet control is practiced; insulin can be avoided whereas 24% were also not sure. Fifty six percent participants said that diet control is needed after taking tablets and 32% said diet control is not needed after taking tablets. More participants (72%) were found aware regarding regular exercise is needed with tablets. Twenty eight percent participants were said that if one spouse has diabetes the other can get it whereas 56% were not agreed to that.

When mean PAID scores of the patients were examined, it was seen that mean score was 17.86 ± 8.75 (Table-3).

Table-3: PAID scores

	n	Minimum	Maximum	Mean ± SD
PAID	25	6	34.50	17.86 ± 8.75

Table-4: Comparison of PAID scores of the patients in terms of descriptive characteristics (n = 25)

Characteristics	n	Mean ± SD
Gender		
Female	3	14 ± 5.27
Male	22	18.39 ± 9.08
Age		
≤ 45 years	2	14.25 ± 11.66
46 - 55 years	8	22.81 ± 5.62
56 - 65 years	9	16.66 ± 10.56
≥66 years	6	14.25 ± 7.39
Educational Status		
Primary school	5	18.8 ± 9.01
High school	14	18.85 ± 9.51
Graduation	2	12.75 ± 9.54
Illiterate	4	15.75 ± 7.19
Disease Duration		
1 - 3 years	9	15.61 ± 8.18
4 - 6 years	4	20.62 ± 7.18
7 - 9 years	4	21.5 ± 12.03
≥10 years	8	17.66 ± 9.62

Table 2 demonstrated comparison of the mean scores that the patients obtained from PAID in terms of their descriptive characteristics. As the result of the study, when mean PAID scores of the patients were analyzed in relation with gender it was found out that mean PAID scores of the male patients were 18.39 ± 9.08 whereas mean PAID scores of the female patients were 14 ± 5.27 and no statistically significant difference existed between male patients and female patients (p > 0.05). Mean PAID scores of the patients aged between

46 and 55 were higher (22.81 ± 5.62) as compared with patients of other age groups. Mean age of the participant patients was 58.16 ± 9.66.

When mean PAID scores of the patients were examined in terms of educational status, it was noted that mean PAID scores of the patients were same who had primary school degree (18.8 ± 9.01) and high school degree (18.85 ± 9.51) which was higher than those who were illiterate. The lowest mean PAID score was noted for the patients who were graduated.

Mean PAID scores of the patients who were diabetic patient for 7 - 9 years (21.5 ± 12.03) were higher than the patients who had diabetes for different time periods. The lowest mean PAID score was noted for the patients who were diabetic patient for 1 - 3 years (15.61 ± 8.18).

DISCUSSION

Diabetes Mellitus is a major public- health problem worldwide. Its prevalence is rising in many parts of the developing world, and India is no exception to this. Economic aspects of diabetes and diabetes care currently attract considerable attention as the world diabetes epidemic takes hold and the healthcare activities of countries come under pressure to accomplish more within constrained resources [1].

The present study consists of 25 diabetic subjects between 37–75 age groups belonging to several occupational fields. Mean age of the participant patients was 58.16 ± 9.66. Similar age group was also studied by Başkan, S.A. *et al.*[3]. In his study mean age of participant patient was 56.71 ± 10.06. In the current study when mean PAID scores of the patients were analyzed in relation with gender it was found out that mean PAID scores of the male patients were higher than mean PAID scores of the female patients and no statistically significant difference existed between male patients and female patients ($p > 0.05$). This is exactly comparable to the study by Başkan, S.A. *et al.*[3]. But in the study reported by Faber-Wildeboer A.T [7] mean PAID score were statistically different.

In Başkan, S.A. *et al.*[3] study he found that mean PAID scores of the patients who had primary school degree were higher that those who had high school degree and higher school degree and who were illiterate. In the present study mean PAID scores of the patients were same who had primary school degree and high school degree, which was higher than those who were illiterate. The lowest mean PAID score was noted for the patients who were graduated.

The total mean PAID score was lower in the current study than other study [3], which might be due to the older age of the study participants. But compare to the other study [7] mean PAID score of the current study is similar more or less in number.

CONCLUSION

Diabetic patients lack awareness on many important aspects of diabetic care. To prevent diabetes related morbidity and mortality, there is an immense need of dedicated self-care behaviors in multiple domains, including food choices, physical activity, proper medications, intake and blood glucose monitoring from the patients. It is important to take efforts to improve awareness by health care providers.

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