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"A Cross-sectional Study Assessing Knowledge Attitude and Practice of Diabetic Patients at Tertiary Care Hospitals of Twin of Pakistan"

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Abstract

Diabetes mellitus is one of the prevalent chronic diseases that can be managed by life style modification. Disease can be controlled effectively by providing proper knowledge and awareness regarding disease. The lack of knowledge among the patients has been regarded as the major factor in disease propagation. The present study aims to assess the knowledge, attitude and practice of diabetic patients.

Objective: To assess knowledge, attitude and practice of diabetic patients at tertiary care hospitals of twin cities of Pakistan.

Methodology: Descriptive cross-sectional study was conducted in tertiary health care centers of Rawalpindi and Islamabad. Respondents were diabetic patients seeking health care from tertiary care centers. Data was collected using a structured questionnaire and analyzed by SPSS. Descriptive statistics and chi square test were applied to determine frequency and association relation between dependent and independent variables.

Results: Among 250 patients 159 were male and 91 were female. Diabetes was more prevalent among people of 40-70 years age. Most of the patients were less educated, only few of them were graduates (14.7%). Most of the patients had positive family history of Diabetes (60%). Most of the patients had inadequate knowledge about disease (54%). Only 35% patients knew normal fasting blood glucose level range.

Conclusion: Lack of knowledge and awareness about disease was common among diabetic patients which indicated loopholes in patient counseling. The study highlights the need for conducting awareness program regarding diabetes management and lifestyle modification among diabetic patients. Moreover health care providers should be trained to provide effective counseling to diabetic patients.

Keywords: Diabetes; Knowledge; Attitude; Practice; Twin cities; Pakistan

Introduction

Diabetes mellitus is a disease of metabolic dysregulation, most notably abnormal glucose metabolism, accompanied by characteristic long-term complications [1]. Diabetes is one of the most prevalent chronic diseases. As of 2013, 382 million people have been suffering from diabetes worldwide [2]. Rate of diabetes is higher in the developing countries [3]. According to a survey carried out by the Diabetic Association of Pakistan prevalence of diabetes in Pakistan is around 10% [4]. According to World Health Organization (WHO) Pakistan is currently 8th in the world ranking of diabetes. Considering rising trend of diabetes prevalence it will become 4th by the year 2025 with nearly 14.3 million diabetics [5]. Diabetes resulted in 1.5 million deaths in 2012, making it the 8th leading cause of death. More than 80% of diabetic deaths occur in low and middle-income countries [6]. The increase morbidity rate of diabetes in developing countries is most likely due to trend of urbanization and lifestyle changes, including changes in dietary habits. This has suggested an environmental (i.e., dietary) effect, but there is little understanding of the mechanism as well [7]. Patient counselling is important in adequate management of diabetes mellitus. The ultimate goal of this counselling is to provide information directed at encouraging the safe and appropriate use of drugs, thereby enhancing therapeutic outcomes [8]. Diabetes management depends not only on drug therapy but also on physical exercise, diet, and other lifestyle changes. Several studies have confirmed that the complications of diabetes can be reduced by proper control of blood glucose. Patients' understanding regarding disease improves when pharmacists provide them with useful, practical information [9-11].

Patient education is an important intervention for prevention of complications [12,13]. A study conducted in Nepal using the same procedure of KAP questionnaire it clearly indicates the need for educational interventions to improve the knowledge, attitude and practices of the diabetic patients [14].

Methodology

Study design: Descriptive cross-sectional study.

Setting: Tertiary health care centres of twin cities (Rawalpindi and Islamabad) of Pakistan.

Respondent: Diabetic patients seeking health care from tertiary health care settings.

Ethical requirements: Consent was taken from the patients. Permission was granted by the ethical committee of The University of Lahore Islamabad campus.

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Data collection tool: Structured questionnaires were administered to diabetic patients however questions were asked verbally to illiterate patients.

Tool validity: Focus group discussion and pilot testing were carried out to determine reliability of data collection tool.

Data analysis: Data was coded and analysed by SPSS (version 16). Descriptive statistics were applied to find frequency and chi square test was applied to determine the association between dependent and independent variables.

Sample technique and sample size: Five well known tertiary health care centres (public/ private) of Rawalpindi and Islamabad were visited from where patients were selected using convenient sampling technique. There were 250 diabetic patients conveniently selected who were seeking health care in outpatient department and diabetic clinics within tertiary health care hospitals during April to June, 2015.

Result and Analysis

In our study 250 diabetic patients were selected among which 63.6% (n=159) were male and rest of 36.4% (n=91) were female. Socio-demographic characteristics are shown in Table 1 and 2

Most of the patients had positive family history of diabetes (59% n=147) whereas 41% patients had no family history of disease.

Knowledge regarding diabetes was assessed by asking questions given in Table 3. Only 35% (n=87) patients knew that diabetes is characterized by higher blood glucose level than normal. Majority of patients (36% n=90) characterized diabetes by increase urination. Knowledge regarding normal blood glucose level range was also assessed. Out of 250 patients only 35% (n=88) knew the normal range of blood glucose level rest of the patients were unaware as indicated in Table 3-5.

Attitude and practice were also assessed as given in Table 4 and 5. Most of the patients didn't know whether the medicine should be continued or not. Among rest of patients most of them thought that once the blood glucose level get normalized medicine should be stopped immediately. More than half of the studied patients (53%) were not following the planned diet. Only 30% (n=74) patients were practicing exercise regularly Table 6-14.

		Socio Demographic Characteristics	
		Frequency	Percent
Gender	Male	159	63.6
	Female	91	36.4
	Total	**250**	**100.0**
Age	12-25	12	4.8
	26-45	80	32.0
	46-55	85	34.0
	56-65	66	26.4
	>65	7	2.8
	Total	**250**	**100.0**
Education	<Matric	91	36.4
	Matric	89	35.6
	High school	48	19.2
	Graduate	17	6.8
	Masters	5	2.0
	Total	**250**	**100.0**
Monthly income (Rs)	>50,000	25	10.0
	30,000-50,000	89	35.6
	15,000-30,000	116	46.4
	5,000-15,000	20	8.0
	Total	**250**	**100.0**

Table 1: Socio demographic characteristics.

		Family History	
		Frequency	Percent
Response	Yes	147	58.8
	No	102	40.8
	Don't know	1	0.4
	Total	**250**	**100.0**

Table 2: Family history.

Assessing knowledge of diabetic patients			
Diabetes is a condition in which body contains?			
		Frequency	Percent
	A high level of sugar in the blood than normal	87	34.8
	A low level of sugar in the blood than normal	28	11.2
	Don't know	135	54.0
	Total	250	100.0
Symptoms of diabetes are?			
		Frequency	Percent
	Increased frequency of urination	90	36.0
	Increased thirst and hunger	64	25.6
	Increased tiredness	53	21.2
	Slow healing of wounds	5	2.0
	Don't know	38	15.2
	Total	250	100
The important factors that help in controlling blood sugar?		Frequency	Percent
	Controlled and planned diet	45	18.0
	Regular exercise	71	28.4
	Medication	72	28.8
	Don't know	62	24.8
		250	100
The normal value of fasting blood glucose (mg/dl)		Frequency	Percent
	40-60	36	14.4
	60-110	88	35.2
	110-150	18	7.2
	150-170	4	1.6
	>180	1	.4
	Don't know	103	41.2
		250	100

Table 3: Assessing knowledge of diabetic patients.

Chi-square test was applied to determine association between variables (dependent and independent). Significant association was found between Gender and Knowledge (Table 6) Most of females didn't know normal value of blood glucose level (P=0.001) and significant association was found between Gender and Exercise habit (P=0.023), i.e., females were less likely to follow exercise practice than males (Table 7). Moreover significant association was found between Age and B.P monitoring frequency (P<0.001). Diabetic patients between 12-25 ages monitored their last B.P value most recently, i.e., 1 week ago. Patients between 46-55 ages were more likely to take medicine regularly (Table 8). Patients who were more educated had better knowledge regarding disease aetiology, normal fasting blood glucose value, potential complications moreover they had regular exercise practice and better compliance to medication (Table 9-11,14). Education status appeared to be associated with positive attitude regarding disease management (P=0.004) and compliance to planned diet (P=0.04) (Table 12 and 13).

Assessment of attitude of diabetic patients			
Upon normalizing blood glucose level			
		Frequency	Percent
	Medicine should be stopped immediately	76	30.4
	Medicine should be stopped gradually	34	13.6
	Medicine should be continued	21	8.4
	Don't know	119	47.6
		250	100
Do you think diabetes can be managed?			
		Frequency	Percent
	Yes	92	36.8
	No	93	37.2
	Don't know	65	33
		250	100
Diabetes if not treated?			
		Frequency	Percent
	Can lead to eye infection	28	11.2
	Can lead to kidney problems	76	30.4
	Can lead to foot ulcers	17	6.8
	Can lead to heart problems	17	6.8
	Don't know	112	44.8
	Total	250	100.0

Table 4: Assessment of attitude of diabetic patients.

Assessment of practice of diabetic patients			
Do you miss taking the doses of your diabetes medication?			
		Frequency	Percent
	No	93	37.2
	Occasionally	72	28.8
	Once a week	45	18.0
	Once a month	40	16.0
	Total	250	100.0
Are you following a planned diet?			
		Frequency	Percent
	Yes	117	47
	No	133	53
	Total	250	100.0
When your blood pressure was last checked?			
		Frequency	Percent
	1 week ago	106	42.4
	1 month ago	82	32.8
	2 months ago	26	10.4
	6 months ago	15	6.0
	1 year ago	21	8.4
	Total	250	100.0
Do you exercise regularly?			
		Frequency	Percent
	Yes	74	29.6
	No	176	70.4
	Total	250	100.0

Table 5: Assessment of practice of diabetic patients.

P=0.001								
		The normal value of fasting blood glucose (mg/dl)						Total
		40-60	60-110	110-150	150-170	180>	I don't know	
Gender	Male	27	63	13	3	0	53	159
	Female	9	25	5	1	1	50	91
Total		36	88	18	4	1	103	250

Table 6: Knowledge regarding normal blood glucose value among diabetic patients of different genders.

P=0.023				
		Do you exercise regularly?		Total
		Yes	no	
Gender	Male	55	104	159
	Female	19	72	91
Total		74	176	250

Table 7: Exercise practice among diabetic patients of different genders.

Discussion

Inadequate knowledge regarding disease aetiology, symptoms and normal blood glucose range (fasting) etc. indicate gaps in adequate patient counselling practice by health care providers. Similar findings were obtained in KAP studies conducted in Karachi and Peshawar cities of Pakistan in which knowledge score of diabetic patients seeking health care was poor. It highlighted the need for arranging large scale awareness programs for the general public and use media to spread the message which could change the attitude of our public in the future [15,16]. Likewise interventional study was performed in India in which diabetic patients were identified, counselling was provided to them in their local language. The improved knowledge scores clearly indicated the benefits of pharmacist-provided counselling [17]. Exercise and planned diet practice was also poor in most of the patients. Females were less likely to practice exercise than males. Only 21% (n=19) females exercised regularly. In contrast 35% (n=55) males were practicing exercise. These results were consistent with the findings of KAP study conducted in Karachi, Pakistan. Knowledge status also significantly varied among gender. Females were less aware about normal blood glucose range (fasting) than males. Only 27% females were aware about normal blood glucose level (fasting) however 40% males were aware about it. Education status of diabetic patients significantly affects their knowledge attitude and practice regarding disease management. Highly educated individuals had good knowledge about diabetes condition, positive attitude toward disease management, good compliance to diabetes treatment and better practice regarding planned diet and regular exercise habit. It highlighted the importance of education for effective disease management.

Conclusion

Lack of awareness among diabetic patients is the prime factor causing diabetic complications. Education and awareness regarding disease aetiology, risk factors, management, complications and life style modification should be provided to patients for achieving better outcome. The results also reflected the loopholes in our health care system regarding patients counselling. It highlighted the need for educational intervention such as public awareness programs regarding diabetes management. Moreover health care professionals need to be trained enough to provide counselling in effective manner.

P<0.001							
		When your blood pressure was last checked?					Total
		1 week ago	1 month ago	2 months ago	6 months ago	1 year ago	
Age	12-25	8	3	0	1	0	12
	26-45	41	30	5	2	2	80
	46-55	30	41	7	7	0	85
	56-65	27	8	12	0	19	66
	65>	0	0	2	5	0	7
Total		106	82	26	15	21	250

Table 8: Blood pressure monitoring practice among diabetic patients of different age groups.

P=0.008					
		Diabetes is a condition in which body contains?			Total
		A high level of sugar in the blood than normal	A low level of sugar in the blood than normal	I don't know	
Education	<Metric	38	3	50	91
	Metric	18	8	63	89
	High school	14	17	17	48
	Graduate	12	0	5	17
	Masters	5	0	0	5
Total		87	28	135	250

Table 9: Knowledge regarding diabetic complication among diabetic patients of different educational status.

P<0.001							
		Diabetes if not treated may leads to?					Total
		Eye disease	Kidney problems	Foot ulcers	Heart problems	I don't know	
Education	<Metric	2	32	4	1	52	91
	Metric	8	24	7	1	49	89
	High school	12	17	2	11	6	48
	Graduate	5	3	1	3	5	17
	Masters	1	0	3	1	0	5
Total		28	76	17	17	112	250

Table 10: Compliance to anti diabetic medication among diabetic patients of different educational status.

P<0.001						
		Do you miss taking the doses of your diabetic medication?				Total
		No	Occasionally	Once a week	Once a month	
Education	<Metric	9	37	36	9	91
	Metric	41	13	7	28	89
	High school	27	17	1	3	48
	Graduate	11	5	1	0	17
	masters	5	0	0	0	5
Total		93	72	45	40	250

Table 11: Attitude regarding management of diabetes among diabetic patients of different educational status.

Limitations

Impact of education and counselling practices need to be assessed by conducting interventional studies in future. Moreover as data has been collected via questionnaire hence practice couldn't be reliably assessed. In order to assess disease management practices of patients reliably, household data need to be collected in this regard. Large scale study should be conducted in order to design diabetes awareness program at national level.

P=0.004					
		Do you think diabetes can be managed?			Total
		Yes	No	Don't know	
Education	<Metric	22	44	25	91
	Metric	29	45	15	89
	High school	21	4	23	48
	Graduate	16	0	1	17
	Masters	4	0	1	5
Total		92	93	65	250

Table 12: Compliance to dietary modification among diabetic patients of different educational status.

P=0.04					
		Are you following a planned diet?			Total
		Yes	No	Seldom	
Education	<Metric	24	67	0	91
	Metric	65	24	0	89
	High school	12	34	2	48
	Graduate	10	7	0	17
	Masters	5	0	0	5
Total		116	132	2	250

Table 13: Dietary practice among diabetic patients of different educational status.

P<0.001				
		Do you exercise regularly?		Total
		Yes	No	
Education	<Metric	21	70	91
	Metric	19	70	89
	High school	20	28	48
	Graduate	9	8	17
	Masters	5	0	5
Total		74	176	250

Table 14: Exercise practice among diabetic patients of different educational status.

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