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ORIGINAL ARTICLE

Adherence to Therapeutic Regimens in Diabetic Patients in Tertiary Care Hospitals

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ABSTRACT

For optimal glycemic control, diabetes patients must stick to their medication schedule. Poor adherence is a well-known issue that has a significant influence on health outcomes and healthcare expenses. As a result, this research was carried out to determine diabetic patients' adherence to their recommended treatment regimen.

Methodology: The study design used was a descriptive cross-sectional approach held in the Medicine Department of Jinnah Medical College Peshawar and DHQ & Teaching Hospital KDA Kohat for six months duration from April 2021 September 2021. The information was gathered via an interview using a structured questionnaire from 210 respondents who attended the medical OPD. The respondents were chosen by random sampling method. Descriptive and inferential statistics were used to conduct the investigation.

Results: According to the outcomes of the research, there was strong follow-up adherence (58.1 percent). Medical treatment, diet restrictions, and exercise were all followed by 76.2 percent, 15.2 percent, and 10 percent of the population, respectively. Sexual orientation (p=0.03), educational level (p=0.001), occupational status (p=0.04), participation in diabetes counselling (p=0.001), and knowledge level (p0.001) were all shown to be linked with diet adherence. (p0.05) Exercise adherence was shown to be correlated with sex, educational level, attendance at diabetes counselling sessions, history of hospitalization, and degree of knowledge. Attending diabetes counselling was shown to be related with better medication adherence (p=0.03). Having diabetes for a long period of time, going to the doctor for follow-up visits often, and having a high level of knowledge were all linked with adherence to follow-up visits.

Conclusion: The exercise and diet compliance among diabetes patients was much lower than compliance with the other components. As a result, it is advised that efforts be concentrated on education, Glycemic control might benefit greatly from better diet and exercise adherence.

Keywords: Glycemic control, diabetic, adherence, regimen therapeutic

INTRODUCTION

Type 2 diabetes mellitus (DM) is becoming more prevalent across the world, and it is now considered to be the utmost significant public health challenges that the world is now dealing with. Globally, around 463 million people have diabetes, with the number anticipated to rise to 700 million by 2045[1-2]. In Asia, there are 110 million diabetics in 2019, with 57 percent of diabetics remaining undiagnosed and 1.2 million dying from the condition[3-4]. Pakistan is the eighth country in terms of prevalence of diabetes in adults, with 125,900 cases, accounting for 4 percent of the total[5-6]. In poor and middle-income nations, 79% of people with diabetes were found to be living with their families. Adherence to treatment is described by the WHO as "the gradation to which a person's conduct in adhering to a diet, taking medicine and/or executing modifications in lifestyle aligns with approved advice from a healthcare professional[7-8]." Only around half of people in wealthy nations stick to long-term treatment for chronic diseases. According to studies, poor treatment adherence affects between 36 and 93 percent of people. In a study of Pakistan among type 2 diabetes patients, 88.2 percent were non-adherence to diet, 13 percent were poorly adherent to diet, and 41.9 percent were non-adherence to exercise[9]. It's difficult to stick to a diabetic treatment regimen. Glycemic management is improved by increasing treatment adherence. No progress in metabolic regulation is conceivable without patient compliance, according to Kalyango, Owino, and Nambuya. Reduced adherence, according to the WHO, has a substantial influence on healthcare expenses as well as bad health outcomes[10-11]. Diabetes has grown more common in Pakistan and few research on adherence to various therapy regimens have been undertaken. Determining treatment regimen adherence and its link to chosen characteristics among diabetes patients can help create effective interventions to improve compliance, regulate blood sugar, and avoid chronic problems.

METHODOLOGY

The study design used was a descriptive cross-sectional approach held in the Medicine Department of Jinnah medical college Peshawar and DHQ & Teaching Hospital KDA Kohat for six months duration from April 2021 September 2021. The approach used was non-probability purposive sampling. This research included patients with type-II diabetes who had been on therapy for minimum three months and who visited the Medical OPD on a given day. After receiving clearance from Institutional Review Committee, data was gathered. Each responder provided informed written consent. We took into account the fact that people could join or leave the research at any time. Each form had a unique code number that kept the information private. Responders were assured that their information would not be shared. A total of 210 diabetic patients were included.

A structured questionnaire as well as an interview were used to gather data on treatment regimen adherence which included patients' dietary habits, exercise habits, medication use, and follow-up advice from their healthcare providers to control blood sugar levels. When it came to measuring Glycemic control, fasting blood sugar (FBS) was employed, with good adherence defined as a score more than 75 percent, acceptable adherence defined as a score between 50 and 75 percent, and poor adherence defined as a score less than 50 percent. According to the ADA Recommendation, 2016, it was classified as poor glycemic control (FBS= >130 mg/dl) and excellent glycemic control (FBS= ≤ 130 mg/dl).

The information was analysed using descriptive and inferential statistics, which were put into SPSS version 21.0 and utilized to analysed the data set. A statistically significant outcome was considered that had a p value less than 0.05, according to the study's definition.

RESULTS

Most of the respondents (57.1 percent) were aged 41 to 60 years old, with 61.9 percent being female. Only 30.9 percent had a secondary education, and 37.1 percent can't read or write, respectively. More than eighty percent of individuals who responded to the study lived in urban areas, and 46.7 percent had diabetes mellitus family history. The adherence of respondents to their therapy regimen in four separate areas, namely diet, exercise, medication, and follow-up, was evaluated.

Table 1: Respondents' level of adherence to therapeutic regimen

	Good	Fair	Poor
Dietary adherence	32(15.2 %)	150(71.4 %)	28(13.3%)
Exercise adherence	21 (10%)	31 (14.8%)	158 (75.2%)
Medicine adherence (n=)	160(76.2 %)	35(16.7 %)	15(7.1%)
Follow up adherence	122(58.1%)	64(30.5%)	24(11.4%)

Table 2: Relationship between dietary adherences and selected variables

Age in completed years	Good	Fair	Poor	X^2 value	p-value
≤ 40	11(28.9%)	21(55.3%)	6(15.8%)	3.8	0.44
41 – 60	25(20.8%)	82(68.3%)	13(10.8%)		
>61	30(57.7%)	18(34.6%)	4(7.7%)		
Sex					
Male	7(8.8%)	55(68.8%)	18(22.5%)	7.2	0.03
Female	30(23.1%)	59(45.4%)	41(31.5%)		
Education level					
Can't read and write	26(33.3%)	45(57.7%)	7(8.9%)	24.12	<0.001
Primary level	19(46.3%)	14(34.1%)	8(19.5%)		
Secondary level	18(26.5%)	35(51.5%)	15(22.1%)		
Higher secondary level and above	4(15.4%)	16(61.5%)	6(23.1%)		
Area of Residence					
Urban	55(32.4%)	84(49.4%)	31(18.2%)	1.7	0.42
Rural	12(30%)	17(42.5%)	11(27.5%)		
Attended diabetic counselling					
Yes	50(34.9%)	80(55.9%)	13(9.1%)	27.50	<0.001
No	22(32.8%)	32(47.8%)	13(19.4%)		
Knowledge Level					
Adequate (>75%)	30(45.5%)	20(30.3%)	16(24.2%)	54.21	<0.001
Moderate (50-75%)	40(35.7%)	54(48.2%)	18(16.1%)		
Inadequate (<50%)	4(12.5%)	18(56.3%)	10(31.3%)		

Table 3: Relationship between exercise adherences and selected variables

Age in completed years	Good	Fair	Poor	X^2 value	p-value
≤ 40	4(8.9%)	7(15.5%)	34(75.5%)	4.59	0.32
41 – 60	19(12.5%)	63(41.4%)	70(46.1%)		
>61	4(33.3%)	5(41.7%)	3(25%)		
Sex					
Male	15(21.4%)	32(45.7%)	23(32.9%)	13.78	<0.001
Female	40(28.6%)	64(45.7%)	36(25.7%)		
Education level					
Can't read and write	20(26.3%)	54(71.1%)	2(2.6%)	17.10	0.01
Primary level	53(80.3%)	8(12.1%)	5(7.5%)		
Secondary level	9(30%)	11(36.7%)	10(33.3%)		
Higher secondary level and above	5(13.2%)	18(47.3%)	15(39.5%)		
Area of Residence					
Urban	87(56.9%)	44(28.8%)	22(14.4%)	3.39	0.17
Rural	20(35.1%)	11(19.3%)	26(45.6%)		
Attended diabetic counselling					
Yes	90(58.1%)	30(19.4%)	25(16.1%)	13.60	<0.001
No	25(38.5%)	31(47.7%)	9(13.8%)		
Knowledge Level					
Adequate (>75%)	60(63.8%)	15(15.9%)	19(20.2%)	36.30	<0.001
Moderate (50-75%)	35(36.4%)	46(47.4%)	16(16.5%)		
Inadequate (<50%)	5(26.3%)	8(42.1%)	6(31.6%)		

Table 4: Relationship between adherence to therapeutic regimen and glycemic control

Variables	Good controlled (≤130mg/dl)	Poor controlled (>130mg/dl)	X^2 value	p-value
Dietary adherence	54(34.4%)	18(33.9%)	1.890	0.28
Good	72(47.8%)	26(49.2%)	7.27	0.01*
Fair	31(19.7%)	9(16.9%)	3.68	0.03*
Poor	43(33.5%)	19(23.2%)	7.25	0.01*
Exercise	61(47.6%)	29(35.4%)		
adherence	24(18.9%)	34(41.4%)		
Good	80(46.2%)	19(51.4%)		
Fair	93(53.8%)	18(48.6%)		
Poor	128(70.3%)	9(32.1%)		
Medicine	42(23.1%)	13(46.4%)		
adherence	12(6.6%)	6(21.4%)		
Good				
Fair				
Follow up				
adherence				
Good				
Fair				
Poor				

Findings revealed that over half of respondents (58.1 percent) demonstrated excellent adherence in follow-up and that 76.2 percent of respondents shown good adherence in medication. Only 15.2 percent and 10 percent, respectively, exhibited good adherence to their diet and exercise regimens (Table 1).

There was a statistically significant relationship between dietary adherence and factors such as gender, education,

employment, attendance at diabetic counselling, and understanding of diabetes (p0.05) (Table 2). Participants who attended diabetic counselling (p0.001) had considerably higher levels of exercise adherence than those who did not (p0.001). Participants who had previously been hospitalized for diabetes (p0.001) had significantly lower levels of exercise adherence than those who did not (p0.001) (Table 3).

Medication adherence was solely connected with respondents who had attended diabetes counselling (p=0.03), with 25% of respondents who had attended diabetic counselling reporting excellent adherence to their meds.

DISCUSSION

It's crucial to stick to diabetes treatment plan to keep blood sugar under control and prevent problems. More over fifty percent of the respondents (58.1%) had good follow-up adherence, and 76.2 percent had good medication adherence, according to the findings of this study. Only 15.2 percent and 10 percent of people were strict about their diets and exercise routines, respectively. Similarly, Klinovszky et al found that only 14% of patients followed a healthy diet and only 12.4 percent participated in regular physical exercise[10-12]. In --a similar, Mirahmadizadeh, Khorshidsavar, Seif, and Sharif found that only 13.6 percent of respondents adhered to medicine, 10.4 percent adhered to physical exercise, and 17.4 percent adhered to a healthy diet. According to research done by Ahmed et al., 87.5 percent of type 2 diabetics in Pakistan were non adherent to dietary recommendations and 12.5 percent were poorly adherent, with 42.1 percent of respondents indicating non-compliance with exercise[13]. In accordance with the current results, Marinoho et al found excellent adherence to medication in 94 percent of respondents, good adherence to diet in 29.2 percent of respondents, and good adherence to exercise in 22.5 percent of respondents[14]. A study conducted by Shiferaw, Bonger, and Tariku institute that 45.9 percent of defendants obeyed to physical activity, 96 percent adhered to their prescriptions, and 25 percent adhered to suggested nutrition management methods[15-17].

Parajuli et al discovered that men participants with better understanding of diabetes mellitus adhered to their diets more than female participants. In the present study, sex, participation at diabetic counselling, past admission for diabetes mellitus, & knowledge level were all shown to be substantially linked with exercise compliance ($p<0.05$)[18].

Patients were more cooperative with food advice, according to Divya and Nadig, than they were with exercise recommendations[19]. Researchers from Ganiyu et al discovered that individuals who had a family history of diabetes (65.9 percent) had higher levels of exercise adherence than those who did not. This result was in contrast to the findings of this study. Adherence to pharmaceutical, nutritional, exercise, and appointment schedules was found to be below average in Pakistan, according to the results of a study. In Pakistan, factors associated with nonadherence to physical exercise were a negative family history of diabetes, being divorced, and being from a lower socioeconomic class. Despite the fact that following dietary instructions is critical for successful therapy, changing one's way of life is the most difficult and troublesome aspect of the treatment[18-20]. Many individuals have a tendency to only follow certain medical and nutritional advice. It is critical for patients to be ready and eager to make adjustments in order to ensure that they adhere to their diets. Marinoho et al discovered that being younger in age and having had diabetes for a longer period of time were both independently linked with greater medication adherence. According to Imran and Plathottam, 61 percent of respondents were non-adherent to medicine, 19 percent were somewhat adherent, and 22 percent were adherent to therapy, all of which was in line with previous findings[21-22]. In terms of related variables, contrary to the findings of the current research, men (72 percent) and employed respondents (69 percent) were found to be more non adherent in terms of medication compliance. According to research, medication adherence is higher than adherence to a healthy lifestyle modification. This might explain why patients may find it easier to stick to their drug regimen than they do to their diet and exercise regimen[23].

In research conducted by Shrestha et al in Dharan, Nepal, it was shown that 50 percent of respondents had followed through on their promises[24]. According to Padma et al, adopting a restricted diet, engaging in regular exercise, and adhering to medication regimens were all connected with establishing glycemic control in a statistically meaningful way[25].

The research's limitations were the use of just one institution as the study location, the use of a purposive sampling strategy, and the use of self-reported verbal replies to assess adherence to the therapy regimen. This study may be valuable to hospital administrations and other diabetic clinics around the country as they establish recommendations for teaching initiatives that may be utilised to promote adherence and glycemic control in diabetic patients.

CONCLUSION

In comparison to medicine and follow-up, adherence to diet and exercise was found to be poor. Adherence to prescribed medicines and appointments was linked to successful blood sugar control. Because so many factors were linked to therapeutic adherence, healthcare professionals should focus on diabetic counselling in food and exercise adherence, taking into account sex, educational levels, diabetes duration, or diabetes knowledge level.

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