

Awareness regarding Diabetes Mellitus

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ABSTRACT

The rising prevalence of diabetes mellitus (DM) and its associated complications presents a significant global health challenge. This study aimed to evaluate the awareness of DM and adherence to its management among individuals with Type 2 DM in Pakistan. Diabetes contributes substantially to morbidity and mortality, primarily through chronic complications affecting blood vessels and nerves. Globally, the prevalence of DM has doubled since 1980, with Pakistan experiencing a notable increase, particularly in urban areas. A cross-sectional design was employed, involving 130 participants. Demographic data and knowledge of DM were collected using a validated questionnaire. Descriptive statistics were utilized for data analysis. The results revealed a gender imbalance among participants, with 49 males and 78 females, targeting age group between 25-54 years. Findings from the study provide insights into the current level of awareness and adherence among individuals with Type 2 DM in Pakistan, highlighting areas for targeted interventions to improve disease management and reduce complications.

Keywords: Diabetes mellitus, Awareness, Prevalence

INTRODUCTION

The increasing prevalence of diabetes mellitus and its associated health complications poses a substantial health burden. Awareness of this condition plays a pivotal role in its prevention and control. Additionally, poor adherence to management contributes to suboptimal glycemic control, thereby escalating the risk of hazardous complications. The current study was undertaken to assess awareness regarding diabetes across various aspects among individuals with Type 2 diabetes mellitus and to evaluate treatment adherence accurately[1]. Type 1 DM results from a complete deficiency of insulin and has an autoimmune foundation. This disorder was previously known as insulin-dependent diabetes mellitus (IDDM) until the reclassification of diabetes mellitus based on etiopathology. An immune mediated destruction of b cells is the hallmark of the disorder, and hyperglycemia only ensues when 90% of b cells are lost. While Type 2 DM is the commonest form of diabetes and accounts for 90–95% of cases (American Diabetes Association, 2010a). It develops secondary to a relative insulin

deficiency but the primary defect is insulin resistance.[2]

Diabetes is a major cause of morbidity and mortality, though these outcomes are not due to the immediate effects of the disorder. They are instead related to the diseases that develop as a result of chronic diabetes mellitus. These include diseases of large blood vessels (macro-vascular disease, including coronary heart disease and peripheral arterial disease) and small blood vessels (micro-vascular disease, including retinal and renal vascular disease), as well as diseases of the nerves.[3]

Diabetes mellitus has a worldwide prevalence with an estimated 422 million people affected by it in 2014, almost doubling from 4.7% in 1980 to 8.5% in the adult population². In Pakistan, DM is becoming increasingly prevalent with 11.77% of the population having type II DM⁴. In Punjab, Sindh, Baluchistan and Khyber Pakhtunkhwa the prevalence is 12.14%, 16.2%, 13.35 and 9.2% respectively in males and 9.83%, 11.70%, 8.9% and 11.60% in females respectively. Males in urban areas are comparatively more affected.[4]

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Studies conducted in the country have shown that the majority of diabetic patients are not effectively managing their condition, with their level of understanding about the disease partly contributing to this. There is a direct correlation between the diabetic control and patient's knowledge about the disease. Studies show inadequate knowledge about DM and its complications in majority of the affected individuals.[5]

This unawareness is reflected in the inadequate control of the disease process leading to the complications of the disease. Those in the rural areas are far less knowledgeable than the urban residents. We aimed to do a survey of the people in the urban area (in order to determine their awareness regarding the diabetes, its management and its potential long-term complications. Also we targeted to know the patients' familiarity with certain myths about the disease.

METHODOLOGY

The study was conducted on a cross-sectional design to investigate individual's awareness about Type 2 Diabetes Mellitus (Type 2 DM) in a general public, targeting the people of age group of 25-54 years. This investigation spanned a period of two months.

Throughout the study, demographic details of participants and their understanding of various aspects related to diabetes were documented using a meticulously designed questionnaire. The questionnaire, structured to ensure consistency and reliability in data collection, underwent validation to affirm its capability to accurately measure the intended parameters.

Upon completion of data collection, the analysis phase employed descriptive statistics. This statistical approach facilitated the synthesis of key features within the dataset, offering a concise summary of the participants' demographic characteristics and their level of knowledge on diabetes-related topics.

The data collection employed a Non-Random Consecutive sampling technique and was completed within a two-month period, spanning from December 15, 2023, to February 15, 2024. The survey adopted a cross-sectional study design to collect interview-based data from participants. The sample size, determined using the open Epi calculator with a confidence interval of 95%, was 130 based on the current prevalence of type 2 Diabetes Mellitus in Pakistan, estimated at 26.7%.

During the data collection, 130 participants were approached.

RESULTS

A total of 130 participants were approached for the interviews who responded to the whole questionnaire. Out of 130 who responded the questionnaire, 49 were male participants while 78 females participated within the age group of 25-54 years. (Figure 1 and 2).

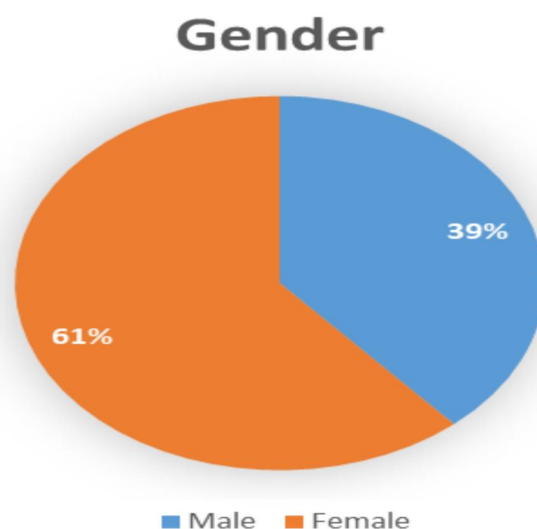


Figure 1: Gender of Participants

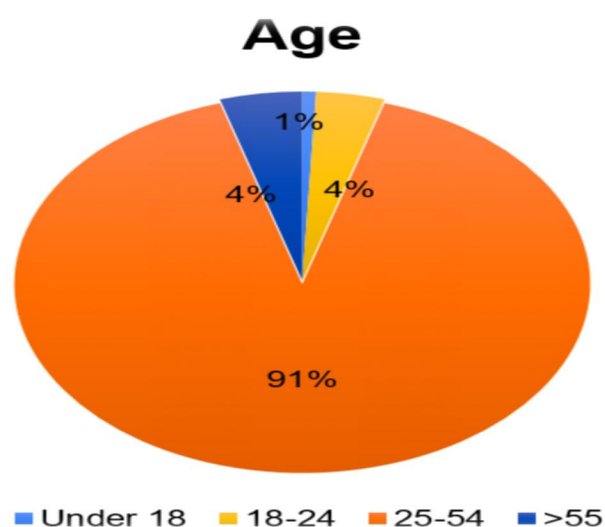


Figure 2: Age of Participants

Concerning awareness, participants were required to respond to a comprehensive questionnaire evaluating

their awareness levels regarding the disease. The assessment utilized the casual knowledge grading system employed nationwide in Pakistan. This system categorizes knowledge as follows: 5 for excellent knowledge, 4 for Good Knowledge, 3 for sufficient Knowledge, 2 and below for Poor Knowledge (Figure 3).

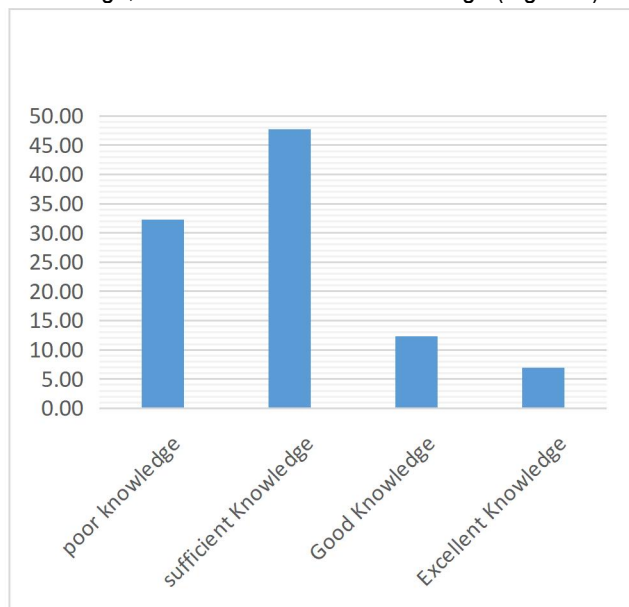


Figure 3: Awareness Level of Participants

Given that Diabetes Mellitus (DM) is a chronic condition, prolonging the duration of the illness can heighten a patient's susceptibility to developing complications associated with the disease. The duration of the disease emerges as a crucial factor influencing an individual's understanding. Nearly 74.4% of the participants lacked awareness of diabetic complications, whereas 24% have knowledge about diabetic complications (Figure 4).

Awareness regarding Complications

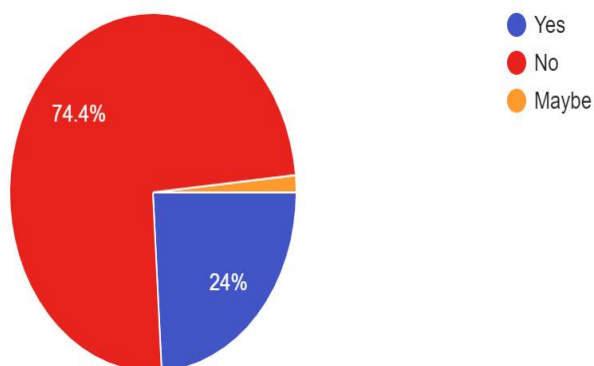


Figure 4: Statically significant decrement in awareness level regarding other complications of disease.

Participants were assessed based on their primary sources used to gather information about Diabetes

Mellitus. 87.7% of participants acquired knowledge about diabetes through their family or friends, 47.7% through healthcare professionals, 26.9% through the internet, and only 16.9% through books or pamphlets (Figure 5).

Primary sources of Information about Diabetes

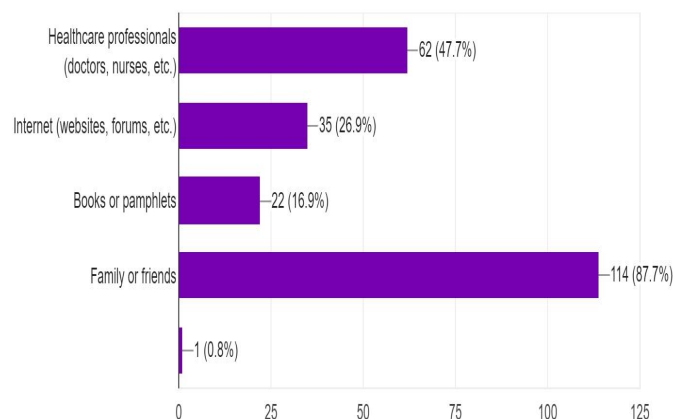


Figure 5: Statistical evaluation of primary sources of information that participants used to gather information about diabetes mellitus.

Participants were also evaluated regarding their understanding of glycemic monitoring, encompassing inquiries about whether they conducted blood glucose checks at home and their comprehension of its significance. Only 3.2% of participants monitor their glycemic index few times a week, 53.2% of participants rarely monitor their glycemic index while there are 43.7% of participants who never monitored their glycemic index (Figure 6).

Glycemic monitoring

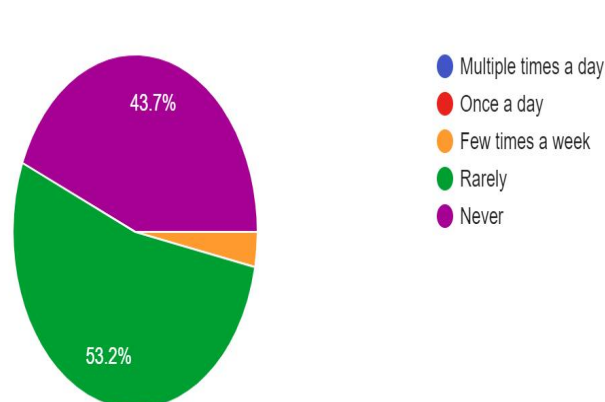


Figure 5: Awareness regarding Glycemic monitoring.

DISCUSSION

Table 1: Demographics of participants

Gender	Frequency (n)	(%)
Male	49	39
Female	78	61
Age of the participants		
Targeted age	25-54 years	
Participants suffering from Diabetes Mellitus		
Diabetes Mellitus	26	20.2
Not suffering from diabetes	76	58.9
Not sure	27	20.9
Duration Diabetes from which patient is suffering from in years		
Less than 01 Year	3	2.6
5-1 Years	15	13.7
10-5 Years	4	3.4
More than 10 Years	1	0.9
Monitor blood glucose level		
Never	5	43.7
Rarely	6	53.2
Few times a week	4	3.2
Once daily	0	0
Multiple times a day	0	0
Awareness Level of participants		
Poor Knowledge	4	32
Sufficient Knowledge	6	48
Good Knowledge	1	12
Excellent Knowledge	9	7
Awareness regarding complications associated with diabetes mellitus		
Aware	9	74
Not aware	3	24

The results showed that the awareness level of the patients in our study was not up to the mark. Majority of the participants fell below sufficient knowledge level (80%).

Multiple studies have reported that by increasing the understating of the disease, especially chronic illnesses, one can manage the disease more appropriately . Awareness regarding diabetes mellitus and its management amongst participants in general population of urban areas of Karachi.

It is extremely important to underscore that diabetes mellitus is an incurable but manageable condition. Misinterpretation of this fact may result in patients being less vigilant in adopting preventive measures against the disease and its complications. In our study, 32% of participants have poor knowledge and 48 % of participants have sufficient knowledge about diabetes mellitus, over all 80% of participant fell below sufficient knowledge level.

A study conducted in Karachi revealed that only 20.2% of individuals with diabetes had received diabetes education from their healthcare providers. The survey also indicated that patients who maintained regular contact with their physicians or had received counseling from a diabetes educator displayed a certain level of awareness. This underscores the importance of professional Diabetes Educators, yet regrettably, this approach is not fully embraced in Pakistan, particularly in the public sector.

As mentioned earlier, chronic lifelong conditions like diabetes can only be effectively managed through proper education, counseling, and the implementation of rational treatment approaches by healthcare professionals to prevent both short-term and long-term complications. This approach has the potential to alleviate financial burdens for individuals and the state, as well as reduce rates of morbidity and mortality.

National programs at the fundamental healthcare level are essential to educate patients about their disease right from the initial diagnosis. There should be accessible support for patients, providing suggestions or guidance at any stage of their illness. The American Diabetes Association (ADA) explicitly emphasizes the vital role of diabetes education in delivering quality diabetes care. Programs such as Diabetes Education and Self-Management for Ongoing and Newly Diagnosed Diabetes (DESMOND) or similar courses can be immensely beneficial in this regard.

CONCLUSIONS

A significant number of patients demonstrated inadequate or insufficient knowledge about diabetes. It is

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