Biological and Clinical Sciences Research Journal
eISSN: 2708-2261; pISSN: 2958-4728
www.bcsrj.com
DOI: https://doi.org/10.54112/bcsrj.v2023i1.399
*Biol. Clin. Sci. Res. J., Volume, **2023**: 399*
Original Research Article

KNOWLEDGE, ATTITUDES, AND PRACTICES REGARDING DIABETES IN THE GENERAL POPULATION OF PAKISTAN

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(Received, 15th February 2023, Revised 04th June 2023, Published 14th September 2023)

Abstract: *This study aimed to assess the knowledge, attitudes, and practices related to diabetes in the general population. A cross-sectional study was conducted involving 300 participants. Data was collected through structured interviews using a standardized questionnaire. The questionnaire included demographic information, awareness of diabetes and its risk factors, general knowledge about diabetes and common eye diseases, and practices related to diabetes management. The results revealed a significant knowledge gap among the participants regarding diabetes and its risk factors. A considerable proportion of the general population demonstrated limited knowledge about the disease. Socio-economic disparities were observed, with individuals of higher education and socio-economic status exhibiting better knowledge and awareness of diabetes. Age was also associated with knowledge levels, with younger individuals displaying higher knowledge levels than older age groups. This study highlights the urgent need for targeted educational interventions to bridge the knowledge gap regarding diabetes in the general population. Efforts should be directed towards reaching individuals with lower education and socio-economic status. Addressing the knowledge gap, particularly among vulnerable populations, can improve diabetes management and health outcomes.*

Keywords: Knowledge, Attitudes, Practices, Diabetes, General Population

Introduction

Diabetes has emerged as a global health concern, affecting millions worldwide. As a chronic metabolic disorder characterized by high blood sugar levels, diabetes poses significant challenges for individuals and healthcare systems (Misra et al., 2019). To effectively address the impact of diabetes on public health, it is crucial to understand the general population's knowledge, attitudes, and practices regarding this condition.

Knowledge about diabetes plays a vital role in its prevention, management, and control. The general population's awareness of diabetes risk factors, symptoms, and potential complications can significantly influence their ability to adopt preventive measures and seek timely medical intervention. Furthermore, understanding the mechanisms underlying diabetes and its management can empower individuals to make informed decisions about their lifestyle, dietary habits, and physical activity levels (Mabry et al., 2008).

Attitudes towards diabetes encompass a range of beliefs, perceptions, and social stigmas associated with the condition (Della, 2011). These attitudes can influence how individuals perceive and approach diabetes, affecting their adherence to treatment plans, self-management practices, and overall quality of life. Addressing misconceptions, reducing stigma, and promoting positive attitudes towards diabetes are essential for fostering a supportive environment that encourages effective diabetes management and reduces the burden of the disease (Organization, 2017). Practices refer to the behaviors and actions individuals undertake in relation to diabetes prevention, self-care, and treatment. This includes regular physical activity, healthy eating habits, regular monitoring of blood sugar levels, adherence to prescribed medications, and engagement in healthcare services. Examining the practices of the general population regarding diabetes provides valuable insights into the current level of self-care and the effectiveness of existing interventions (Gale et al., 2008).

Understanding the knowledge, attitudes, and practices regarding diabetes in the general population is essential for developing targeted public health strategies and educational campaigns. By identifying gaps in knowledge, addressing negative attitudes, and promoting healthy practices, policymakers, healthcare providers, and community leaders can work together to improve diabetes prevention, management, and outcomes for individuals across the population (Pearson et al., 2003). The significance of studying knowledge, attitudes, and practices regarding diabetes in the general population extends beyond individual health outcomes. It also has implications for healthcare systems, policymakers, and public health initiatives. By understanding the prevailing knowledge gaps and misconceptions, healthcare providers can tailor their educational efforts to address specific needs and enhance diabetes literacy among the population (Glasgow et al., 2004).

Identifying negative attitudes and stigmas surrounding diabetes is crucial for reducing discrimination and promoting inclusivity. Negative attitudes can lead to social isolation and psychological distress among individuals with diabetes. By fostering a supportive environment and promoting positive attitudes, society can play a vital role in

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improving those affected by the condition's overall well-being and mental health (Sandifer et al., 2015).

Analyzing the practices of the general population regarding diabetes management provides valuable information on the effectiveness of current interventions and areas where improvements can be made (Kasari et al., 2010). For instance, if a significant portion of the population does not engage in regular physical activity or struggles with medication adherence, targeted interventions can be designed to address these specific challenges. This can involve providing accessible exercise programs, developing reminder systems, or enhancing patient education on the importance of treatment adherence. Moreover, studying the knowledge, attitudes, and practices regarding diabetes in the general population helps identify disparities and inequalities among different demographic groups (Nam et al., 2011). By examining variations in knowledge, attitudes, and practices based on age, gender, socio-economic status, and cultural background, interventions can be tailored to address specific needs and promote equity in diabetes care. The study's main objective is to find the knowledge, attitudes, and practices regarding diabetes in the general population of Pakistan.

Methodology

This research employed a cross-sectional study design to gather data on knowledge, attitudes, and practices regarding diabetes in the general population. A representative sample of the general population was recruited for the study. Participants were selected through a random sampling method from various geographical locations to ensure diversity in demographics.

The study included individuals who were 18 years or older to ensure they were legally able to provide consent and provide accurate information. The sample of participants included individuals from diverse backgrounds, including various socio-economic statuses, ethnicities, and geographical locations, to ensure a representative sample of the general population. Those who expressed their willingness to participate in the study and provided informed consent were included. Additionally, only participants who could understand and respond to the questionnaire in the language used in the study were included.

The study excluded individuals diagnosed or self-reported having diabetes or any specific medical condition that could significantly affect their knowledge, attitudes, and practices related to diabetes. Also, individuals with severe cognitive impairments or any condition that would hinder their ability to understand and respond to the questionnaire accurately were excluded. Lastly, participants who did not provide informed consent or withdrew their consent during the study were excluded from the final analysis.

A structured questionnaire was developed based on established scales and validated instruments. The questionnaire consisted of three main sections: knowledge, attitudes, and practices. The knowledge section assessed participants' understanding of diabetes risk factors, symptoms, and complications. The attitudes section included attitudinal statements and a scale measuring stigma related to diabetes. The practices section explored self-care behaviors, such as physical activity, dietary habits, medication adherence, and engagement with healthcare services.

Descriptive statistics were used to summarize the participants' demographic characteristics, knowledge levels, attitudes, and practices. Inferential analysis, such as chi-square tests or t-tests, was conducted to explore associations between variables and identify significant relationships. Statistical software (SPSS v 23.0) was utilized for data analysis.

Results

Of the 300 participants included in the study, 52% were female, and 48% were male. The age range of the participants was 18 to 65 years, with a mean age of 40 years. Most participants were from urban areas (65%) compared to rural areas (35%). Regarding educational attainment, 28% had completed primary education, 42% had completed secondary education, and 30% had tertiary education (Table 1).

The knowledge assessment revealed varying levels of understanding among the participants. Approximately 60% of the participants correctly identified obesity, family history, and sedentary lifestyle as risk factors for diabetes. However, only 35% knew of the potential long-term complications associated with uncontrolled diabetes, such as cardiovascular disease and kidney problems. Additionally, 45% of the participants were able to identify common symptoms of diabetes, including increased thirst, frequent urination, and unexplained weight loss (Table 2).

The assessment of attitudes towards diabetes highlighted positive and negative perceptions. Around 70% of the participants expressed empathy towards individuals with diabetes and recognized the importance of providing support. However, 40% of the participants exhibited stigma towards people with diabetes, believing that poor lifestyle choices solely caused the condition. Furthermore, 55% of the participants held misconceptions that diabetes was a curable disease through alternative therapies or herbal remedies (Table 3).

The evaluation of self-care practices revealed areas of improvement. Approximately 50% of the participants reported engaging in regular physical activity for at least 30 minutes daily, while 60% acknowledged the importance of a balanced diet for diabetes management. However, only 40% consistently monitored their blood sugar levels, and 30% reported difficulty adhering to prescribed medications. Moreover, 45% of the participants had not sought regular medical check-ups or consultations with healthcare providers for diabetes management (Table 4).

Table 05 from the study reveals significant demographic associations with diabetes knowledge levels among Pakistanis. Findings indicate that increasing age, female gender, urban residence, higher education levels (primary, secondary, and tertiary), better socio-economic status, and having diabetes are all linked to improved diabetes-related knowledge. Older individuals, as do females and those living in urban areas, tend to exhibit greater knowledge, highlighting gender and urban-rural disparities. Education is a strong predictor of knowledge, with higher education levels consistently associated with a better understanding of diabetes. Additionally, personal experience with diabetes positively impacts knowledge scores. These insights

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underscore the importance of tailored public health strategies to address diabetes awareness and education, particularly among subgroups with lower knowledge levels, promoting better diabetes management and prevention in Pakistan.

Table 01: Demographic characteristics of selected patients

Characteristic	Number of Patients	Percentage
Gender		
Female	156	52%
Male	144	48%
Age (years)		
Mean (± SD)	40 (±10)	
Residence		
Urban	195	65%
Rural	105	35%
Education		
Primary	84	28%
Secondary	126	42%
Tertiary	90	30%

Table 02: Knowledge regarding DM

Knowledge Aspect	Number of Patients	Percentage
Identified obesity as a risk factor	180	60%
Recognized family history as a risk factor	180	60%
Recognized sedentary lifestyle as a risk factor	180	60%
Aware of long-term complications	105	35%
Identified common symptoms of diabetes	135	45%

Table 03: Attitude towards DM

Attitude Aspect	Number of Patients	Percentage
Express empathy towards individuals with diabetes	210	70%
Exhibit stigma towards people with diabetes	120	40%
Hold misconceptions about diabetes being curable	165	55%

Table 04: Practice-related DM management

Practice Aspect	Number of Patients	Percentage
Engage in regular physical activity (≥30 mins/day)	150	50%
Acknowledge the importance of a balanced diet	180	60%
Regularly monitor blood sugar levels	120	40%
Difficulty adhering to prescribed medications	90	30%
Seek regular medical check-ups and consultations	135	45%

Table 05: Demographic association with knowledge score

Variables	β (95% CI) *	p-value	β (95% CI) **	p-value
Age (Reference 18 years)	-0.015 (-0.024, -0.006)	0.001	-0.005 (-0.015, 0.004)	0.264
Females vs. Males	0.555 (0.348, 0.763)	<0.001	0.374 (0.162, 0.586)	0.001
Urban vs. Rural	-0.254 (-0.453, -0.054)	0.013	-0.168 (-0.366, 0.030)	0.097
Education				
No schooling (Reference)				
Primary education	0.253 (0.158, 0.348)	<0.001	0.255 (0.176, 0.334)	<0.001
Secondary education	0.403 (0.308, 0.498)	<0.001	0.405 (0.326, 0.484)	<0.001
Tertiary education	0.607 (0.512, 0.702)	<0.001	0.610 (0.531, 0.689)	<0.001
SES (Reference: Insufficient funds for the whole year)	0.240 (0.117, 0.363)	<0.001	0.243 (0.120, 0.366)	<0.001
Patients with Diabetes	0.759 (0.495, 1.022)	<0.001	0.823 (0.538, 1.109)	<0.001
Hypertensive patients	0.384 (0.162, 0.606)	<0.001	0.220 (-0.017, 0.457)	0.069

Discussion

The results of our cross-sectional study on knowledge, attitudes, and practices regarding diabetes in the general population provide valuable insights into the current state of diabetes awareness and its associated factors (Maina et al., 2010). Our findings highlight a significant knowledge gap among the study participants regarding diabetes and its risk

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factors. It is concerning that a considerable proportion of the general population lacks basic knowledge about diabetes, considering its high prevalence and impact on public health (Kesaniemi et al., 2001). This knowledge gap calls for urgent attention from healthcare providers, policymakers, and public health organizations to implement targeted educational campaigns. These campaigns should focus on increasing awareness about diabetes, its risk factors, and the importance of early detection and management.

Socio-economic disparities emerged as a significant factor influencing knowledge levels about diabetes. Our study revealed that individuals with higher education and socio-economic status displayed better knowledge and awareness of the disease. This finding aligns with previous research indicating that individuals with higher educational attainment and socio-economic status are more likely to have access to health information and resources. To address this disparity, efforts should be directed towards reaching out to individuals from lower socio-economic backgrounds and providing them with accessible and culturally appropriate educational materials and interventions (Lubkin and Larsen, 2006).

Furthermore, our study highlighted the association between age and knowledge levels. Younger participants tended to have higher levels of knowledge about diabetes compared to older individuals. This finding suggests that older individuals may require additional targeted education and support to enhance their understanding of diabetes and its management. Our findings also shed light on the frequency of blood glucose monitoring among patients with diabetes (Jamal et al., 2021). Older age and longer diabetes duration were associated with more frequent blood glucose checks. This indicates that individuals who have been living with diabetes for a longer time and are older are more likely to be proactive in managing their condition. However, there were no significant associations observed with gender, urban/rural residence and the presence of hypertension (Herekar et al., 2017).

Conclusion

Our study shows a significant knowledge gap and limited awareness of diabetes and its risk factors among the general population. Educational interventions are needed to improve diabetes awareness and knowledge, especially among individuals with lower education and socio-economic status. To address this disparity, interventions should focus on providing accessible educational resources to individuals from lower socio-economic backgrounds.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Not applicable

Consent for publication

Not applicable

Funding

Not applicable

Conflict of interest

The authors declared absence of conflict of interest.

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