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Relationship between the Public's Knowledge and their History of Diabetes Mellitus

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Abstract

General Background: Diabetes mellitus is one of the most significant non-communicable diseases worldwide and continues to pose substantial health, social, and economic challenges. **Specific Background:** Public knowledge regarding diabetes is essential for disease prevention, early detection, and effective management, particularly in regions experiencing increasing diabetes prevalence. **Knowledge Gap:** Despite the growing burden of diabetes mellitus, limited evidence is available regarding the relationship between public knowledge and individuals' diabetes history in Basrah, Iraq. **Aims:** This study aimed to assess the relationship between the public's knowledge and their history of diabetes mellitus. **Results:** A cross-sectional study was conducted among 600 participants using a self-reported questionnaire. In addition, 62.4% of individuals with a positive family history had good knowledge of diabetes mellitus compared with 46.6% of those with a negative family history, with a highly significant association. Significant relationships were also identified between diabetes status, family history, and diabetes knowledge level. **Novelty:** The study provides evidence linking both personal diabetes status and family history with variations in diabetes knowledge among the public in Basrah. **Implications:** These findings highlight the importance of targeted health education programs aimed at improving diabetes awareness among individuals without diabetes and those lacking a family history of the disease.

Keywords: Diabetes Mellitus, Public Knowledge, Family History, Health Education, Cross-Sectional Study

Key Findings Highlights

Individuals diagnosed with the disease demonstrated higher awareness levels than those without the condition.

Participants reporting affected relatives showed greater understanding of disease-related information.

Significant associations were identified between participant characteristics and awareness categories.

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Introduction

One of the most prevalent non-communicable diseases, diabetes mellitus (DM), is at the forefront of global public health concerns due to its epidemic scale. [1]. To avoid long-term problems, this chronic, potentially fatal illness requires medicine, food, and lifestyle changes [2]. For these reasons, diabetes is a significant public health issue. Due to its difficulties, seriousness, expense, and loss of productivity, the disease is not just a burden for the person but also has a significant societal impact on society. The prevalence of diabetes mellitus, primarily type 2, has rapidly increased throughout the Eastern Mediterranean Region. Currently, it ranks as the region's fourth most common cause of mortality. Out of 290 million adults, an estimated 22 million have diabetes. High prevalence rates ranging from 7% to 25% in the adult population have been found in studies carried out in various groups within the region. Furthermore, type 2 diabetes mellitus is currently being reported to develop at a younger age in several nations. The potential burden of therapy and problems is extended to an even younger age group and for a longer duration of an individual's life span due to this pattern of a younger age of beginning [3].

Since 1990, the number of Americans with diabetes has grown far more quickly than the population as a whole; in 2005, it was estimated to reach 20.8 million. In 2002, the estimated total cost of diabetes in the US was \$132 billion, of which \$92 billion came from direct medical expenses and the other \$40 billion came from indirect expenditures due to disability and early death [4].

Reports of diagnosed cases alone cannot be used to estimate the overall number of people with diabetes mellitus. Approximately 50% of people with diabetes are said to be ignorant that they have the condition, and many people in developed nations do not receive a diagnosis. The percentage of undiagnosed cases has declined, according to more recent data, but it still accounts for at least 25% to 33% of all people with diabetes mellitus [5]. Recent estimates indicate that 171 million people globally had diabetes in 2000. This figure is anticipated to increase to 366 million by 2030, mostly due to a 60% increase in emerging nations [6].

Between 2000 and 2025, the number of people with diabetes will rise by around one-third in developed nations, while it will more than double in developing nations. The rise in diabetes incidence is correlated with changes in lifestyle and urbanization. Over 75% of people with diabetes worldwide will reside in developing nations by 2025 [7]. Over 32 million people in India have diabetes, and by 2030, that figure is expected to rise to 79.4 million, according to 2004 World Health Organization research. After Indonesia, India comes in second on the list [8].

Among Eastern Mediterranean nations have among the highest rates of diabetes prevalence worldwide. The population of the Eastern Mediterranean Region, which stretches from Pakistan in the east to Morocco in the west, is a patchwork of various ethnic groups [9]. About half of the nations in the Eastern Mediterranean Region as a whole have reported incidence rates. The incidence of type 1 diabetes in children under the age of 15 is reported to be 8–10 per 100,000 people annually in Egypt, Kuwait, Lebanon, Oman, and Qatar, while it is barely 1 per 100,000 in Pakistan [10, 11].

Most Eastern Mediterranean countries have seen social and economic transformations throughout the last thirty years. These include rising life expectancy, declining infant mortality, and increasing urbanization [12].

Type 2 diabetes has sharply increased in several of the region's nations due to sedentary lifestyles, the obesity epidemic, and longer life expectancies [13]. The socioeconomic conditions in many nations have caused people to relocate to metropolitan regions in search of work, where they are less likely to maintain healthy lifestyles, and traditional hobbies and eating habits that have sustained people for generations are quickly disappearing [14]. Adults in the region have a 14.5% prevalence of diabetes [15]; However, current research on various demographic groups has shown that the United Arab Emirates has diabetes prevalence rates as high as 20% [16], 16% in Qatar, and 11% even in Pakistan, which is far less wealthy [17].

Methods

This study is a cross-sectional study that was conducted at Basrah city to assess the relationship between the public's knowledge and their history of diabetes mellitus. This study was conducted on a population of 600 by using a self-reported questionnaire. This sample was selected by using non-probability (purposive) sampling over the period from 2nd October 2025 to 12th May 2026.

The data were collected by using a self-reported questionnaire over a period extending from 10th October 2025 to 12th April 2026. A comprehensive literature review served as the foundation for the structured questionnaire, which included the following elements: a) Sociodemographic information, including age, sex, marital status, and level of education b- Diabetes status: whether the participant has a history of diabetes mellitus or not. c- Duration of diabetes mellitus: for how long the patient had diabetes mellitus in years. e- Family history: it included history of diabetes mellitus among parents, brothers, sisters, sons and daughters. It was considered as positive if one or more of them had a history of diabetes mellitus. f- Knowledge-related questions: questions covered knowledge regarding definition, risk factors, complications, prevention, control, and management.

Definitions and measurements of selected variables include Monthly family income: Defined as <250000 ID for low income, 250000–500000 ID for intermediate income, and >500000 ID for high income. Diabetes status: Classified as non-diabetics and diabetics. Family history of diabetes mellitus: Classified as: negative family history and positive family history.

Results

Level of diabetes knowledge according to diabetes status

Table 1 shows that of diabetic patients, only 3.1% had poor diabetic knowledge, in comparison to 11% of non-diabetics; the association was significant. While 40.2% of diabetic patients, compared to 33.8% of non-diabetic patients, have acceptable knowledge. However, 56.7% of diabetic patients, compared to 55.2% of non-diabetic patients, have good knowledge.

Table 1: The level of Diabetes Knowledge according to diabetes status

History of Diabetes Mellitus	Level of Knowledge							
	Poor		Acceptable		Good		Total	
	No.	%	No.	%	No.	%	No.	%
Diabetic	4	3.1	51	40.2	72	56.7	127	100
Non-diabetic	52	11	160	33.8	261	55.2	473	100
Total	56	9.3	211	35.2	333	55.5	600	100

$X^2= 7.783, df=2, p < 0.05$

Level of diabetes knowledge according to family history of diabetes

Table 2 shows that 62.4% of subjects with a positive family history had a good knowledge of diabetes mellitus in comparison to 46.6% of those who had a negative family history of diabetes mellitus, with a highly significant association.

Table 2: The Level of diabetes knowledge according to family history of diabetes

Family History of Diabetes Mellitus	Level of Knowledge							
	Poor		Acceptable		Good		Total	
	No.	%	No.	%	No.	%	No.	%
Positive Family History	22	6.5	105	31.1	211	62.4	338	100
Negative Family History	34	13	106	40.5	122	46.6	262	100
Total	56	9.3	211	35.2	333	55.5	600	100

$X^2= 17.009, df=2, p < 0.001$

Discussion

Level of diabetes knowledge according to diabetes status

The present study demonstrated that diabetics had a higher knowledge level than the participants without diabetes. This finding implies that people with diabetes may gain knowledge over the course of their illness. These patients have likely learned from their own experiences as well as from their interactions with their own doctors or other healthcare providers, who may be involved in educating their patients about diabetes. This finding is in agreement with the findings of a cross-sectional study conducted in Izmir, Turkey, which showed that the diabetes mellitus-negative group had a significantly lower mean score than the diabetes mellitus-positive group. [18].

The results of the study conducted in Gadap town, Pakistan, demonstrated that non-diabetics had substantial gaps in their understanding of diabetes indications and symptoms, complications, a healthy diet, and exercise [19].

A study conducted on a population of Chennai, India, revealed that diabetes patients' knowledge levels were not significantly higher than those of non-diabetic subjects. The explanation was that most patients had not received diabetic education from their doctors. This could be caused by several things, including improper methods of disseminating knowledge and—above all—time constraints brought on by the large patient loads and the absence of suitably qualified support personnel, such as educators. [20].

Level of diabetes knowledge according to the family history of diabetes

According to the study's findings, having a family history of diabetes is linked to greater awareness of the condition; those who have a positive family history of the condition may feel more vulnerable, which may pique their curiosity. This result was consistent with the survey results from Oman [20].

Conclusion

Significant associations were found between certain characteristics, such as family history, diabetes status, and the level of diabetes knowledge. There is a need for more studies with a longer time period and in different Iraqi regions.

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