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EVALUATE THE KNOWLEDGE OF DIABETIC PATIENTS ABOUT DIABETIC CARE AND DIABETIC FOOT PROBLEMS

Original Research

Shakeel Ahmed[1]*, Heena Jilani[2], Sumaira Jabeen[3], Moazzam Ali Shah[4], Hina Naz[5], Tariq Ali Adnan[6], Fareeda Islam[7], Naila Zaheer[8]

[1]MBBS, MD (Diabetes), MACP (USA), CRCP (DUHS), PGD Diabetes (BMU), Consultant Diabetologist and Endocrinologist, Executive Director, College of Family Medicine Pakistan.

[2]MBBS, M.Phil Scholar (Pathology), Ziauddin University, Karachi, Pakistan.

[3]MBBS, Diploma in Diabetes and Endocrinology, MCPS, (Family Medicine Trainee), College of Family Medicine Pakistan.

[4]MBBS, PGD Diabetes, Pakistan.

[5]MBBS, PGD Diabetes, Medical Officer, Ministry of Health, Kingdom of Saudi Arabia.

[6]MBBS, DIP DIAB, MPH, MCPS (HCMS), Ph.D. Scholar, Associate Professor, Community Health Sciences, KMDC, Pakistan.

[7]Professor & Head, Department of Pharmacology, Karachi Medical and Dental College (KMDC) / KMU, Pakistan.

[8]MBBS, FCPS, Head, Department of Pathology, Karachi Medical and Dental College (KMDC) / KMU, Pakistan.

Corresponding Author: Shakeel Ahmed, MBBS, MD (Diabetes), MACP (USA), CRCP (DUHS), PGD Diabetes (BMU), Consultant Diabetologist and Endocrinologist, Executive Director, College of Family Medicine Pakistan. Shakeel.ahmed.dr@gmail.com

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ABSTRACT

Background: Diabetic foot complications are a primary cause of mortality in developing countries, where the prevalence of Diabetes Mellitus (DM) is expected to rise significantly in the coming years. This study aims to evaluate the knowledge and practices regarding diabetes and diabetic foot care among patients visiting tertiary care clinics.

Objective: To assess the level of awareness and the quality of foot care practices among diabetic patients in a tertiary healthcare setting and to identify any correlations with health outcomes.

Methods: A cross-sectional study was conducted over four months at several tertiary care clinics and hospitals in Karachi. Medical officers administered pre-tested questionnaires to 240 diabetic patients to collect data on their knowledge and practices related to diabetic foot care.

Results: The study found that 83.1% of patients demonstrated good knowledge of diabetes management and foot care, while 87.2% reported good practice in managing their diabetic foot care needs. Additionally, 77.2% of the participants had a family history of diabetes. Analysis showed a positive correlation between patients' education levels, income per capita, and their foot care habits, indicating that higher socioeconomic status is associated with better diabetes management and foot care practices.

Conclusion: Despite the high levels of good practice reported, a majority of the patients lacked adequate knowledge about diabetes and its associated foot care, which could lead to severe complications. This highlights the need for improved educational interventions at the community and clinic levels to enhance patient knowledge and reduce the risk of diabetic foot complications.

Keywords: Diabetes, Diabetic Foot, Education, Foot Care, Foot Ulcer, Practice, Socioeconomic Factors.

INTRODUCTION

Diabetes Mellitus (DM) foot complications significantly contribute to mortality in developing countries, where the prevalence of diabetes is projected to rise in the coming decades. Despite the critical nature of these complications, awareness and resource allocation remain insufficient(1, 2). This study seeks to evaluate the knowledge and practices of foot care among diabetic patients at tertiary care hospitals in Pakistan, aiming to illuminate this underaddressed issue and gauge the extent of informed awareness about diabetic foot care(3, 4).

The necessity for this study is underscored by the alarming statistics that at the time of diagnosis, over 10% of individuals with type 2 diabetes already present one or two risk factors for foot ulceration, carrying a lifetime risk of 15%(5, 6). Moreover, while diabetic foot ulcers can be averted through effective foot care services, a substantial gap in knowledge and practice persists. For instance, a study at Dr. Yusuf Dadoo District Hospital in Johannesburg revealed that over 75% of patients lacked foot care knowledge, and a mere 32.5% had received a foot examination from a healthcare professional(4). Similarly, research in Nigeria showed that only 30.1% of diabetic patients had a good understanding of foot care, and an even smaller percentage demonstrated good practice in managing their foot health. These findings highlight a prevalent lack of awareness, compounded by barriers such as economic constraints and inadequate patient-physician communication, which hinder effective diabetic foot care(7, 8).

This study aims to determine the level of knowledge regarding foot care among diabetic patients and to document their reported practices of foot self-care. By identifying and addressing the barriers that prevent effective management of foot health, the study seeks to mitigate the risk of amputations among diabetic populations(9). This objective is grounded in the rationale that enhancing patient knowledge and care practices can significantly reduce the incidence of severe foot complications and improve quality of life for diabetic individuals(10, 11).

METHODS

The research was conducted as a cross-sectional study over a period of six months, focusing on diabetic patients visiting tertiary care clinics within a medical center in Karachi. The objective was to evaluate the knowledge and practices concerning diabetic foot care among this target population. To determine the sample size, the Open EPI (External Presentation Interface) open source calculator version 3.01 was utilized, factoring in a population size of 100,000 with a 50% anticipated frequency. Consequently, a sample of 125 participants was established, ensuring a 95% confidence interval and a 5% margin of error(12, 13). Participants were included in the study if they had been diagnosed with diabetes for more than six months. Those affiliated with any political party or media were excluded to maintain the neutrality of the study. The data collection process involved randomly selecting patients from public diabetic clinics across Karachi. Each participant was administered a self-designed questionnaire, available both in hard and soft copies, to assess their knowledge and practices regarding foot care(14, 15).

The responses were meticulously entered and analyzed using Microsoft Excel 2013. Descriptive statistics portrayed the demographic details of the participants, while the frequency and percentages of their responses were calculated to evaluate their understanding and implementation of foot care practices. Ethical considerations were rigorously observed; informed consent was obtained from all participants, providing them with detailed information about the study. Participants were assured of their right to withdraw from the study at any time without penalty, and their personal information was kept confidential by the investigators.

RESULTS

The study encompassed a total of 240 diabetic patients who responded to the questionnaire. Analysis of the responses revealed that a significant proportion of participants had engaged in some form of self-monitoring blood glucose (SMBG) guidelines, although only a minority regularly checked their HbA1c levels, suggesting a potential area for increased patient education and monitoring. Specifically, the responses indicated that while a substantial number of participants understood the necessity of routine foot care, consistent application of these practices varied. Regarding the prevalence of diabetic complications among the respondents, 65.6% reported

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experiencing complications related to diabetes, highlighting the high incidence of health issues in this population. Converse ly, 34.4% of the participants indicated no such complications, reflecting a varying degree of disease management effectiveness acro ss the sample.

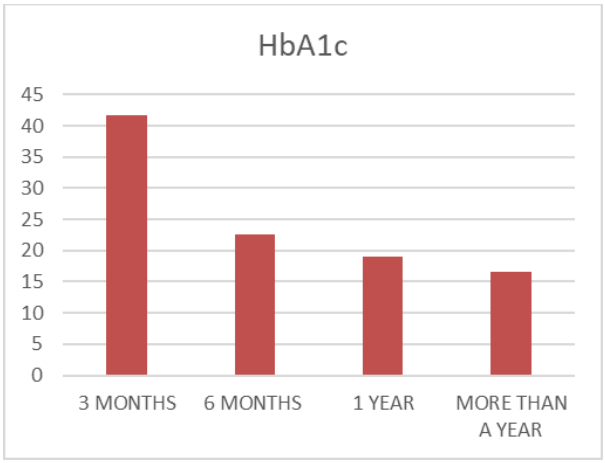


Figure 1 Indicates the number of people who checked hbA1c

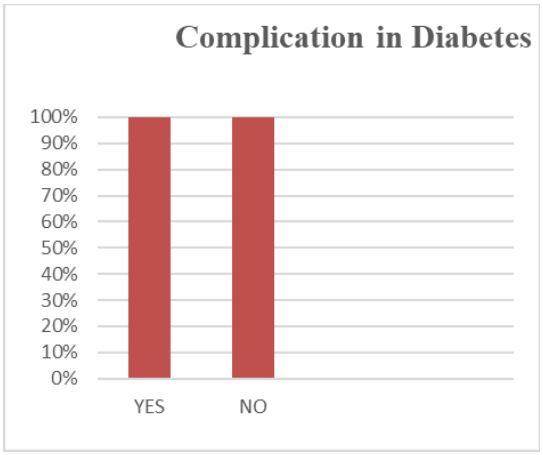


Figure 2 Explains people having or not having complication in Diabetes

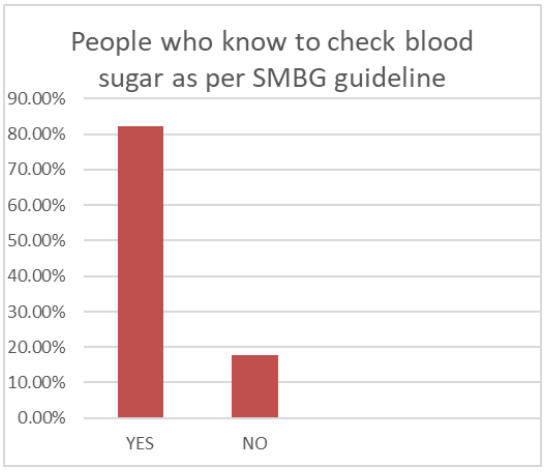
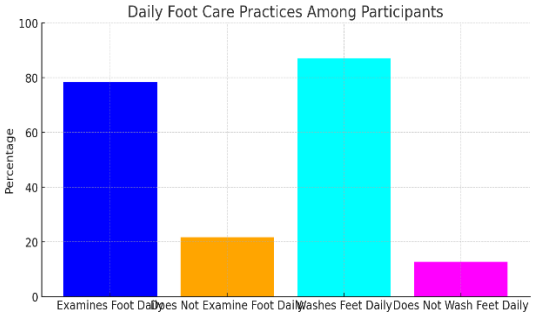
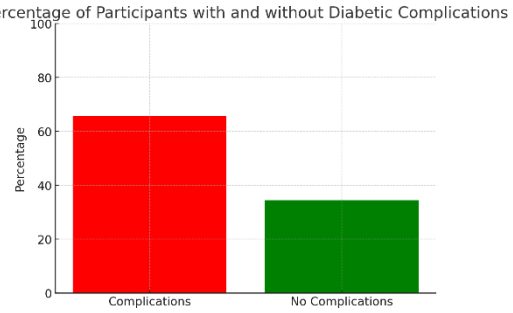


Figure 3 Tells the statics of SMBG guideline

Foot care practices among the participants showed more promising results. A significant majority, 78.3%, reported examining t heir feet daily, which is crucial for preventing severe foot-related complications. Additionally, 87.2% of the respondents adhered to the recommended practice of washing their feet daily, demonstrating good personal hygiene habits which are essential in diabetes management to prevent infections. The data collectively suggests a mixed level of knowledge and adherence to recommended diabetic care practices. While most participants showed good daily foot care habits, the less frequent monitoring of HbA1c levels poin ts to a gap in ongoing diabetes management that could be addressed through targeted educational programs. The results indicate the necessity for enhanced educational outreach and services to support better management of diabetes and its associated risks.





DISCUSSION

This study highlights significant gaps in the knowledge and practices of diabetic foot care among patients, aligning with glo bal findings that underscore the widespread deficiencies in this area. A notable proportion of diabetic patients exhibited a lack o fawareness regarding critical aspects of foot care, such as the effects of smoking on circulation, the importance of specialist consultations for symptoms like redness or bleeding, and the regular inspection of both footwear and feet (16, 17). These findings are consistent with those reported in previous research conducted worldwide. The study further revealed that lower educational levels and socioeconomic status were strongly associated with diminished foot care knowledge, corroborating evidence from similar studies in India, Iran, and Pakistan. Edu cated patients tended to have better knowledge, likely due to their ability to access and comprehend educational materials and leve rage information technology to gather disease-related information. This suggests that educational interventions could significantly mitigate the risks of foot complications, such as ulcerations and amputations, among high-risk diabetic individuals(18, 19).

Contrarily, no significant correlations were found between gender or age and the level of knowledge about foot care. However, cultural and social dynamics in certain regions might impede women and older adults from accessing educational resources, potentia lly contributing to disparities in knowledge levels. Despite these findings, the study demonstrated a worrying trend in practice: only a small fraction of patients (10.2%) adhered to good foot care practices, and nearly half (49.4%) were poorly compliant, which is concerning given the severe implications of diabetic foot complications. The linkage between insufficient knowledge and poor foot care practices was evident, with a large percentage of those with inadequate practices also displaying limited foot care knowledge. Many par ticipants neglected crucial practices such as inspecting the insides of their footwear or obtaining properly fitting shoes, highlighting critical areas for improvement in patient education and behavior modification (20, 21).

The results of this study serve as a crucial wake-up call for healthcare providers, underscoring the need for patient and physician-friendly educational programs that can enhance and sustain good foot care practices. However, the study's limitations includ e its restricted geographic coverage, which did not encompass all areas in Karachi, potentially affecting the generalizability of the findings. These insights call for targeted educational strategies and interventions designed to bridge the knowledge gap a nd improve foot care practices among diabetic patients, aiming to reduce the incidence of preventable complications and improve overall patient outcomes (22, 23).

CONCLUSION

The study conclusively demonstrates that diabetic patients who possess adequate knowledge and diligently practice diabetic foot care tend to exhibit better health outcomes compared to those who neglect these essential care practices. This underscores the cri tical importance of enhancing educational programs and support mechanisms to improve awareness and proa ctive management of diabetes and its associated risks. Ensuring that patients are well-informed and engaged in their own care is fundamental to mitigating the prevalence of diabetic foot complications and fostering overall well-being in this vulnerable population.

AUTHOR CONTRIBUTIONS

Author	Contribution
Shakeel Ahmed*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Heena Jilani	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Sumaira Jabeen	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Moazzam Ali Shah	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Hina Naz	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Tariq Ali Adnan	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published
Fareeda Islam	Contributed to study concept and Data collection Has given Final Approval of the version to be published
Naila Zaheer	Writing - Review & Editing, Assistance with Data Curation

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