ORIGINAL RESEARCH PAPER
Volume - 13 | Issue - 01 | January - 2024 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

"CARING FOR DIABETIC FEET: KNOWLEDGE AND PRACTICE " AT TERTIARY CARE CENTRE

General Medicine

Dr Prasad Butala* Junior Resident, Department of General Medicine, SMBT IMS & RC, Dhamangaon, Igatpuri, Nashik, Maharashtra. *Corresponding Author

Dr Tushar Kolhe Junior Resident, Department of General Medicine, SMBT IMS & RC, Dhamangaon, Igatpuri, Nashik, Maharashtra.

Dr Satish Masavkar Professor, Department of General Medicine, SMBT IMS&RC, Dhamangaon, Igatpuri, Nashik, Maharashtra.

Dr Akhil Patil Associate Professor, Department of General Medicine, SMBT IMS&RC, Dhamangaon, Igatpuri, Nashik, Maharashtra.

ABSTRACT

Introduction: Diabetes mellitus, a silent and rapidly escalating global health threat, is affecting an increasing number of individuals across the world. This the study aims to investigate the knowledge and practices surrounding the care of diabetic feet and to assess the existing level of knowledge among healthcare professionals and individuals with diabetes regarding diabetic foot care.

Aim & Objective

- Investigate the knowledge and practices surrounding the care of diabetic feet.
- To assess the existing level of knowledge among healthcare professionals and individuals with diabetes regarding diabetic foot care.

Material & Method: A cross-sectional analysis at a tertiary care centre included 440 individuals aged 30+, achieving a 98.18% response rate. Following American Diabetes Association criteria, the study provided comprehensive care, excluding critically ill or pregnant individuals. Clinical and demographic data were gathered through structured datasheets, interviews, and a knowledge/practice questionnaire using a "yes/no" scale. **Results:** This comprehensive analysis of 410 patients revealed insights into diabetic foot care. The study included 185 females and 225 males, with a majority (41.46%) being over 50 years old. Knowledge demonstrated good understanding at 36.58%, and practices showed 32.92% exhibiting good adherence. While highlighting the importance of anti-diabetic treatment and daily foot washing, areas for improvement, such as water temperature checking and talcum powder usage, were identified. The balanced distribution of satisfactory levels indicates a need for targeted educational interventions, especially for those with poor knowledge and practice. **Conclusion:** Thus, the present study highlights satisfactory understanding of diabetic foot care. Areas for improvement noted, emphasizing interventions. Targeted education can enhance knowledge and practices, promoting better foot health management in diabetes.

KEYWORDS

Diabetes mellitus, diabetic foot care, knowledge, practices

INTRODUCTION

Diabetes mellitus poses a rapidly escalating global health threat, affecting 194 million individuals presently, with projections anticipating a surge to 333 million by 2025.[1] Factors such as longer life expectancy, sedentary lifestyles, and shifting dietary habits contribute to this rise. By 2025, India is expected to witness a staggering 69.9 million cases, with a significant majority undiagnosed.[2,3]

Effective diabetic foot care is vital in managing this chronic condition, demanding a meticulous approach rooted in understanding and practical application.4 Diabetic Foot Ulcers (DFUs) significantly impact the quality of life, with amputation becoming a necessity in severe cases. Strategic educational and care interventions can mitigate amputation risks.[5]

Statistics reveal a quarter of diabetics will experience a foot ulcer during their lifetime, incurring a cost exceeding that of any other chronic ulcer twofold.[6,7] Amputations, causing profound distress, underscore the critical need for timely intervention.[8] This study aims to investigate knowledge and practices surrounding diabetic foot care, assessing healthcare professionals' and individuals with diabetes' understanding to implement proactive measures. Addressing delays in serious foot issue referrals is crucial to enhancing diabetic foot complication management.

MATERIAL AND METHODS

A cross-sectional analysis was conducted at the tertiary care center, encompassing all available individuals with diabetes aged < 30 years and above within the general population.

The sample size was determined 440 considering 95% confidence interval with d = 0.05 and P = 0.80. A total of 440 out of 410 distributed questionnaires were completed and returned; the response rate was 98.18 %.

The American Diabetes Association's diagnostic criteria guided the identification and classification of patients at a comprehensive care center providing services to both outpatients and inpatients, along with routine training sessions. Participants, diagnosed with diabetes and aged 30 or older, using anti-diabetic medications for over a month, maintaining clinical records at the center, and expressing willingness to participate, were included.

Exclusions comprised critically ill diabetic patients, pregnant individuals, newly diagnosed cases (less than a month), those undergoing alternative treatments, and those with significant psychiatric problems.

Clinical and demographic data were extracted from paper-based and digital records, utilizing a structured datasheet, complemented by in-person interviews conducted by a medical student. The study employed a questionnaire assessing knowledge and practices, with 13 questions scored on a "yes/no" scale, categorizing responses as good, satisfactory, or poor based on demographic characteristics like age, gender, diabetes duration, residency, occupation, education, marital status, and body mass index.

RESULTS

Table 1 - Demographic Data

Parameters	Gender		Total (N)/%
	Female (185)	Male (225)	
< 30	25	38	63/15.36
30-40	38	48	86/20.97
41-50	42	49	91/22.19
> 50	80	90	170/41.46
Marital status			
Single	150	197	347/84.63
Married	25	21	46/11.21
Divorced	7	5	12/2.92
Widowed	3	2	5/1.21
Geographical Area			
Urban	145	199	344/83.90
Rural	40	26	66/16.09

Education			
Illiterate	110	150	260/63.41
Primary	45	40	85/20.73
Secondary	20	20	40/ 9.75
Graduate	9	10	19/4.63
Post Graduate	1	5	6/1.46
Occupation			
Student	30	50	80/19.51
Employee	42	52	94/22.92
Housewife	45	43	88/21.46
Retired	65	72	137/33.41
Other	3	8	11/2.68
Body mass index			
Normal weight	80	82	162/39.51
Overweight	90	110	200/48.78
Obese	15	33	48/11.70

Table 1 Among 410 participants, 185 females and 225 males, 15.36% are under 30, with 41.46% aged >50. Marital status: single (84.63%), married (11.21%), divorced (2.92%), widowed (1.21%). Geographical distribution: urban (83.90%), rural (16.09%). Education levels: illiterate (63.41%), primary (20.73%), secondary (9.75%), graduate (4.63%), post-graduate (1.46%). Occupations: students (19.51%), employees (22.92%), housewives (21.46%), retired (33.41%), others (2.68%). Body mass index: normal (39.51%), overweight (48.78%), obese (11.70%).

Table 2 DM-Related Data Among Study Patients

Parameters	Gender		Total (N)/%
	Female (185)	Male (225)	
Duration of diabetes (yrs.)			
< 10	80	85	165/40.23
> =10	105	140	245/59.75
Type of DM			
Type1	35	42	77/18.78
Type2	150	183	333/81.21
Family history of diabetes			
Yes	25	40	65/15.85
No	160	185	345/84.14
Diabetic foot ulcer			
Yes	36	52	88/21.46
No	149	173	322/78.53
History of amputation			
Yes	31	46	77/18.78
No	154	179	333/81.21
History of amputation			
Yes	35	40	75/18.29
No	150	185	335/81.70
Current smoker			
Yes	10	90	100/24.39
No	175	135	310/75.60
Complications			
Yes	15	25	40/9.75
No	170	200	370/90.24

Table 2 outlines key demographic details for participants, distinguishing between genders and providing counts for females (185) and males (225). Notably, individuals under 30 years old constitute 15.36% of the total sample, with 84.63% of participants being single. Urban residency prevails at 83.90%, contrasting with 16.09% in rural areas. Education levels vary, with a significant proportion being illiterate (63.41%), and occupation diversity includes students (19.51%), employees (22.92%), housewives (21.46%), retirees (33.41%), and others (2.68%). Body mass index categories reveal percentages for normal weight (39.51%), overweight (48.78%), and obese (11.70%).

Table 3. Questionnaire Assessing The Knowledge And Practice Of Foot Care In Diabetic Patients

Foot Care Measures	Knowledge N =410/%	Practice N= 410/%
Importance of taking anti-diabetic treatment to prevent complication	398/97.07	390/95.12
Daily washing of feet	395/96.34	385/93.90
Using warm water for washing/bathing	200/48.78	198/48.29
Checking the temperature of the water before using	110/26.82	80/19.51
Drying the feet after washing	390/95.12	385/93.90
Talcum powder usage for keeping interdigital spaces dry	50/12.19	48/11.70
Keeping the skin of the feet soft to prevent dryness	200/48.78	198/48.29
Daily change of socks	225/54.87	190/46.34
Trimming toe nails straight with care	190/46.34	175/42.68
Inspection of feet daily by respondents	350/85.36	310/75.60
Checking the inside of the shoes before wearing	375/91.46	360/87.80
Not walking barefoot	395/96.34	375/91.46
Warning signs for which consultation is required	360/87.80	340/82.92

Table 3 presents knowledge and practice percentages among 410 participants regarding various foot care measures. Notable findings include high awareness (97.07%) and adherence (95.12%) to the importance of anti-diabetic treatment. Daily foot washing is well-known (96.34%), with good practice observed (93.90%). While awareness of using warm water is moderate (48.78%), practice is slightly lower (48.29%). Daily foot inspection is prevalent (85.36% knowledge, 75.60% practice), but there's room for improvement in areas like checking water temperature and using talcum powder.

Table 4. Prevalence Of Knowledge And Practice

Variable	Category	N / (%)
Knowledge	Poor	91.46
	Satisfactory	48.78
	Good	36.58
Practice	Poor	75.60
	Satisfactory	49.7
	Good	32.92

Table 4 summarizes the distribution of participants' knowledge and practice levels related to foot care measures. For knowledge, 36.58% demonstrated good understanding, 48.78% had a satisfactory level, and 14.64% showed poor knowledge. Regarding practice, 32.92% exhibited good practices, 49.7% had a satisfactory level, and 17.38% displayed poor adherence to foot care measures. The findings highlight varying degrees of awareness and implementation, to enhance both knowledge and practical application of foot care among the study participants.

DISCUSSION

The data presented in the four tables collectively offer insights into the knowledge and practices related to diabetic foot care among the study participants.

The present study provides a comprehensive demographic breakdown, revealing the diverse characteristics of the participants. This diversity is essential for understanding how various factors may influence knowledge and practices in diabetic foot care.

This study also deals into participants' knowledge and practices regarding specific foot care measures. Notably, the majority of participants recognize the importance of anti-diabetic treatment and daily foot washing. However, there are areas where knowledge and practice could be improved, such as checking water temperature, using talcum powder, and daily change of socks. The discrepancies between knowledge and practice underscore potential areas for targeted education and intervention.

This study categorizes participants based on overall knowledge and practice levels. The prevalence of satisfactory levels in both knowledge (48.78%) and practice (49.7%) indicate a balanced distribution. However, the proportions with poor knowledge (14.64%) and poor practice (17.38%) suggest there is still a subset of participants who may benefit from targeted educational interventions to enhance their understanding and implementation of diabetic foot care measures.

The collective findings emphasize the need for educational programs to bridge the gaps between knowledge and practice in diabetic foot care. Strategies could focus on specific aspects where awareness and implementation are lacking, aiming to empower individuals with diabetes to effectively manage and prevent complications associated

with foot health. Additionally, considering the demographic diversity, interventions should be culturally sensitive to meet the unique needs of various subgroups within the study population.

CONCLUSION

In conclusion, the study provides a comprehensive overview of knowledge and practices related to diabetic foot care among the participants. The majority demonstrate a satisfactory understanding of essential measures, including the significance of anti-diabetic treatment and daily foot washing. However, specific areas, such as checking water temperature and using talcum powder, reveal room for improvement. The demographic diversity emphasizes the importance of customized interventions to address unique needs within the study population. Overall, the findings underscore the potential benefits of targeted educational initiatives to enhance both knowledge and practical application of diabetic foot care, contributing to better overall foot health management among individuals with diabetes.

REFERENCES

1. Desalu, O. (2011). Diabetic foot care: Self-reported knowledge and practice among patients attending three tertiary hospital in Nigeria, Ghana Medical Journal, 2011: 45(2).
2. Wild, S. Global prevalence of diabetes estimates for the year 2000 and projections for 2030, Diabetes care, 2004; 27(5): 1047-1053.
3. Prashant Mathur Indian Council of Medical Research— National Center for Disease Informatics and Research, Bengaluru, Karnataka, India,2023; 1 -10.
4. Vaitheeswaran Kulothungan, Indian Council of Medical Research—National Center for Disease Informatics and Research, Bengaluru, Karnataka, India. 2022; 22(1):527.
5. Bcheraoui C, Basulaiman M, Tuffaha M, et al. Status of the diabetes epidemic in the kingdom of Saudi Arabia, 2013. Int J Public Health. 2014;59: 1011–21.
6. Haghdoost AA, Rezazadeh-Kermani M, Sadghirad B, Baradaran HR. Prevalence of type 2 diabetes in the Islamic Republic of Iran: systematic review and meta-analysis. East Mediterr Health J. 2009; 15:591–9.
7. Solan YM, Kheir HM, Mahfouz MS, et al. Diabetic Foot Care: Knowledge and Practice. J Endocrinol Metab. 2017;6(6):172–7.
8. Haq NU, Durrani P, Nasim A, et al. Assessment of Knowledge and Practice of Diabetes Mellitus Patients Regarding Foot Care in Tertiary Care Hospital in Quetta, Pakistan. Specialty J Med Res Health Sci. 2017;2(4):35–43.