



Diabetes Foot Care – Knowledge and Practice in an Urban area

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Introduction

The burden of diabetes is high and increasing globally, and in developing economies like India, mainly fueled by the increasing prevalence of overweight/obesity and unhealthy lifestyles. The estimates in 2019 showed that 77 million individuals had diabetes in India, which is expected to rise to over 134 million by 2045. Approximately 57% of these individuals remain undiagnosed. Type 2 diabetes, which accounts for majority of the cases, can lead to multiorgan complications, broadly divided into microvascular and macrovascular complications¹.

Diabetic foot ulcers are a common but serious complication of diabetes mellitus. The factors distressing the worth of diabetic foot care are knowledge and practice. Foot ulcers are the main cause of amputation and death in people suffering from diabetes mellitus and it brings physical, psychological and economical burden to patients². Diabetes related foot ulcers is a major contributor to disability. Up to 25% of people with diabetes develop a foot ulcer in their lifetime, which accounts for 85% of all lower limb amputations³. Diabetes self-management forms a significant part of diabetes management, and there is evidence

that adults with diabetes who perform self-management activities experience better health outcomes and improved quality of life⁴.

The main concepts of Diabetes Self Management behaviours that predict good health outcomes include: adherence to a dietary regime, physical activity, blood glucose monitoring, medication adherence, healthy coping skills and risk reduction behaviours such as foot care practices⁵.

This study is to assess the knowledge and practice of Diabetic foot care and its associated factors among diabetic patients of an urban area in South Chennai.

Our study was done in a diabetic center who has expertise in diabetic related subspecialties.

Keywords: Diabetes, Diabetes Foot Care, Amputation, Health care workers training

Method

A prospective questionnaire study was done in the Diabetic Center outpatients after getting consent. The questionnaire was filled by the patient themselves. For patients with language barrier the questions were translated into local language by the study investigator.

Sample Recruitment**Inclusion Criteria**

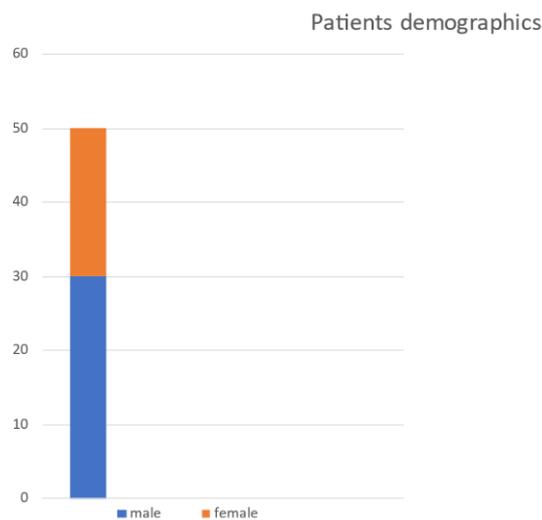
- Receiving the diagnosis of diabetes mellitus
- Age 18 years or above
- Taking anti-diabetic medications for at least 1 month prior to the study
- Having clinical records at the center
- Willing to participate in the study.

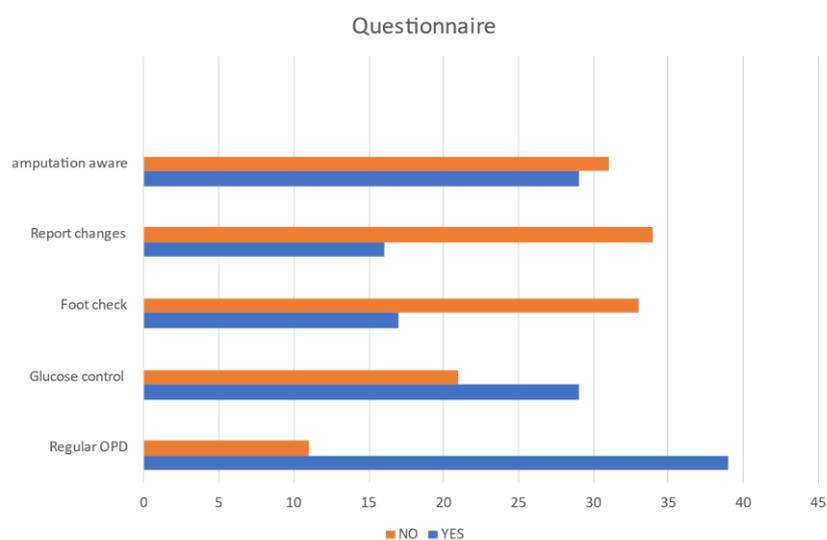
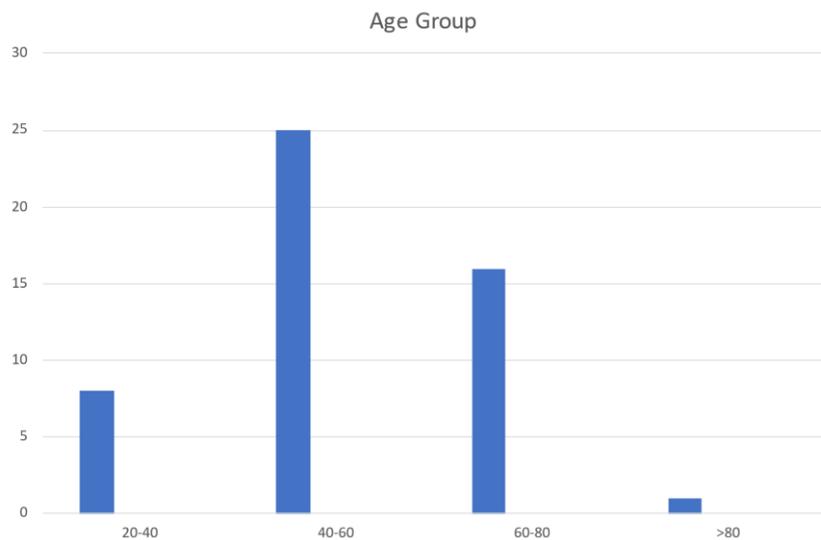
Exclusion Criteria

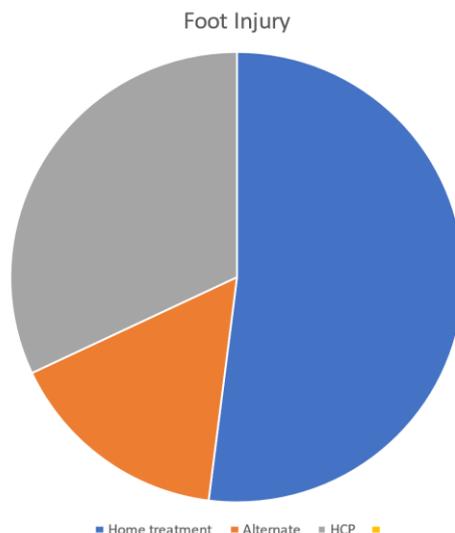
- Critically ill patients with diabetes
- Pregnant or newly diagnosed (less than 1 month)
- Receiving any other treatment or therapy
- Having major psychiatric problems

Questionnaire

- Do you attend your regular diabetic OPD appointments?
Yes / No
- Do you maintain adequate glycaemic control?
Yes / No
- Do you check your feet regularly (ulcers / color change/nails)?
Yes / No
- Do you report any changes in their feet immediately to your healthcare professional?
Yes / No
- How do you manage minor foot injury, callous and ulcers?
Home remedy / healthcare physician / Alternative therapy
- Are you aware of amputation being an inevitable consequence of having diabetes and the link between neuropathy and ulceration?
Yes / No







Discussion

We sampled a total of 50 patients who attended the Diabetic outpatients in the center. Out of 50, 30 were male patients and 20 were female. The age group varied from 20 – 84 years of age. All 50 filled the questionnaire after signing the consent.

40 – 60 years age group were the predominant group in the study followed by 60 – 80 years age group and then 20-40 years age group.

78% (39 patients) of the total group keep up the regular outpatient appointment and only 58% (29 patients) have good glycaemic control.

Nearly 66% don't regularly do the basic foot check (33 patients) and don't report any foot changes (34 patients).

68% (26 – home remedy, 8 – alternate therapy) don't seek health care professional advice for any foot injury.

62% (31 patients) don't have any awareness of amputation complicated by diabetes foot ulcers.

60-80 years age group patients are more aware of amputation than the other age group patients (70% of their peer group).

Conclusion

The reasons for diabetic foot problems are due to lack of awareness of foot care issues among

patients; limited podiatry services; delay in seeking timely medical care, delay in referring patients with serious complications for specialist opinion; lack of concept of a team approach; absence of training programs for health care professionals and finally lack of surveillance activities⁶.

It seems that foot health education for low-risk patients is not considered to be cost-effective^{7,8}. However, low-risk patients can develop foot complications relatively quickly in the absence of good glycaemic control and foot self-care practices that facilitate the prompt identification of changes in sensation⁹

To improve the diabetic foot disease outcomes implementation of sustainable training programme for health care professionals, focusing on the management of the complicated diabetic foot and educational programme that include dissemination of information to other health care professionals and patients are essential. There are guidelines published like step by step programme¹⁰ and national guidelines¹¹ which can be implemented to improve the outcomes.

These key educational elements for diabetes patients at low risk of complications are captured with the mnemonic CARE¹²:

Control: control blood glucose levels (in accordance with recommendations from your healthcare professional).

Annual: attend your annual foot screening examination with your healthcare professional.

Report: report any changes in your feet immediately to your healthcare professional.

Engage: engage in a simple daily foot care routine by washing and drying between your toes, moisturizing and checking for abnormalities.

This CARE Pathway if implemented locally with the patients and health care providers will improve the diabetic foot care outcomes.

References

1. Pratheepa.R , Mohan.V. Epidemiology of type 2 diabetes in India.Indian J Ophthalmol. 2021 Nov; 69(11): 2932–2938.
2. Zhang P., Lu J., Jing Y., Tang S., Zhu D., Bi Y. Global epidemiology of diabetic foot ulceration: a systematic review and meta-analysis. Annals of Medicine . 2017;49(2):106–116.
3. Alavi A, Sibbald RG, Mayer D, Goodman L, Botros M, Armstrong DG, et al. Diabetic foot ulcers: Part I. Pathophysiology and prevention. J Am Acad Dermatol. 2014 Jan 1;70(1):1.e1–1.e18.
4. Cochran J, Conn VS. Meta-analysis of quality of life outcomes following diabetes self-management training. Diabetes Educ. 2008 Oct;34(5):815–23.
5. Saleh F, Mumu SJ, Ara F, Begum HA, Ali L. Knowledge and self-care practices regarding diabetes among newly diagnosed type 2 diabetics in Bangladesh: a cross-sectional study. BMC Public Health. 2012 Dec 26;12(1):1112.
6. Cavanagh P, Attinger C, Abbas ZG, Bal A, Rojas N, Xu ZR. Cost of treating diabetic foot ulcers in five different countries. Diabetes Metab Res Rev. 2012;28:107–111
7. Ortegon MM, Redekop WK, Niessen LW. Cost-effectiveness of prevention and treatment of the diabetic foot: a Markov analysis. Diabetes Care. 2004;27:901–907.
8. Ragnarson Tennvall G, Apelqvist J. Prevention of diabetes-related foot ulcers and amputations: a cost-utility analysis based on Markov model simulations. Diabetologia. 2001;44:2077–2087.
9. Calle-Pascual AL, Duran A, Benedi A, Calvo MI, Charro A, Diaz JA, et al. A preventative foot care programme for people with diabetes with different stages of neuropathy. Diabetes Res Clin Pract. 2002;57:111–117.
10. Bakker K, Abbas ZG, Pendsey S. Step by Step, improving diabetic foot care in the developing world. A pilot study for India, Bangladesh, Sri Lanka and Tanzania. Pract Diab Int. 2006;23(8):1-5.
11. Ashok Das, Sharad Pendsey, Mahesh Abhyankar and Rohit Malabade Management of Diabetic Foot in an Indian Clinical Setup: An Opinion Survey. Cureus. 2020 Jun; 12(6): e8636.
12. A McInnes, W Jeffcoate et al. Foot care education in patients with diabetes at low risk of complications: a consensus statement. Diabet Med. 2011 Feb; 28(2): 162–167.