



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2020; 6(10): 408-410
www.allresearchjournal.com
Received: 11-08-2020
Accepted: 13-09-2020

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Assess the knowledge and practice of foot care among patients with diabetes mellitus

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Abstract

Good knowledge and practice regarding diabetic foot care will reduce the risk of diabetic foot complications and that will decrease the chances of amputation of the limb. The present study aims to assess the knowledge and practice of foot care among patients with diabetes mellitus in koyambedu primary health centre to attending diabetic out- patient department. A descriptive study was conducted among 30 patients. Were selected by purposive non probability sampling method. Ten questions for knowledge of foot care and 15 questions for current foot care practice were included in the questionnaire and each positive answer was assigned one mark. Their knowledge and practice scores were classified as good, satisfactory and poor depending upon the score. For the knowledge and practice, if score was $\geq 76\%$, it was regarded as adequate knowledge, 51-75% was regarded as moderately adequate knowledge and less than 50% score was regarded as inadequate knowledge. The major finding of the study shows that most of them 17(56.66%) had inadequate knowledge, 11(36.67%) had moderately adequate knowledge and 2(6.67%) had adequate knowledge on knowledge and practice of foot care among patients with diabetes mellitus. On the basis of the results of the study, we can emphasize the importance and need of the education regarding the preventive measures of diabetic foot ulcer.

Keywords: Diabetes mellitus, knowledge, practice, and foot ulcer

Introduction

Diabetes mellitus is a group of metabolic disease in which a person has high blood sugar, either because the pancreas does not produce enough insulin or because cell do not respond to the insulin that is produced. The high blood sugar produced the classical symptoms of polyuria, polydipsia, and polyphagia (Metcalf 2011)^[1].

Diabetes cannot be cured but can be controlled. Client with diabetes must incorporate a complicated regimen of self-management in to their lives that is, taking medication, adherence to diet, exercise and also recognition of symptoms associated with glycosuria and hypoglycaemia. Management of all diabetes in patient should include regular assessment, careful monitoring of glycemia control and the presence of hypoglycaemia and educational training on disease management^[2].

Diabetes is managed by insulin replacement, balancing of diet and exercise to maintain the glycemic control and prevent the occurrence of complication. It is important that in order to effectively manage diabetes, education about the component of management such as glucose monitoring, insulin replacement, diet, exercise and problem solving strategies must be delivered to the patient education is necessary both at diagnosis, and also throughout the patient's lifetime to develop self-management skill and prevention of complication (Edmonton 2010). Diabetes cannot be cured but can be controlled. Client with diabetes must incorporate a complicated regimen of self-management in to their lives that is, taking medication, adherence to diet, exercise and also recognition of symptoms associated with glycosuria and hypoglycaemia. Management of all diabetes in patient should include regular assessment, careful monitoring of glycemia control and the presence of hypoglycaemia and educational training on disease management. Diabetes is managed by insulin replacement, balancing of diet and exercise to maintain the glycemic control and prevent the occurrence of complication. It is important that in order to effectively manage diabetes, education about the component of management such as glucose monitoring, insulin replacement, diet, exercise and problem solving strategies must be delivered to the patient education is necessary both at

diagnosis, and also throughout the patient's lifetime to develop self-management skill and prevention of complication (Edmonton 2010) [3-4].

On long run, diabetes leads to various complications. Diabetic foot is one of the most significant and devastating complications of diabetes, and is defined as a foot affected by ulceration that is associated with neuropathy and/or peripheral arterial disease of the lower limb in a patient with diabetes [5]. Triad of neuropathy, angiopathy and trauma will make the patients of DM more vulnerable to diabetic foot ulcer [6]. It is estimated that 15% of the patients suffering from DM will suffer from diabetic foot ulcer (DFU) in their lifetime.

In the absence of proper and aggressive treatment of DFU it may further progress to necrosis and gangrene and finally end up in limb amputation. Studies have shown that 3-10% of the patients with DFU will finally undergo limb amputation. Worldwide, 40-60% of all non-traumatic limb amputations are because of DM and it is believed that every 30 seconds a lower limb is lost somewhere in the world as a consequence of diabetes.

Diabetic foot has great burden on the health system also, as it is the commonest reason for hospitalization of diabetic patients (about 30% of admissions) and absorb some 20% of the total health-care costs of the disease more than all other diabetic complications. Especially in a developing country, like India, treating diabetic foot may account for 40 percent of health resources. Limb amputation itself is associated with many socioeconomic consequences for patients like, loss of productive hours at inpatient department, permanent loss of income, decreased social acceptance etc. Also, following primary limb amputation, contralateral limb amputation after two years will be observed in nearly 9% of the patients and mortality is 14% in India. But with practice of proper prevention and treatment guidelines, 85% of these amputations are preventable.

In India, the prevalence of diabetic foot ulcers in the clinic population is 3.6%.14 Socio-cultural practices such as barefoot walking, religious practices like walking on fire, use of improper footwear and lack of knowledge regarding foot-care attributes towards increase in the prevalence of foot complications. Studies have shown that hyperglycemia control, cessation of smoking, proper foot hygiene, daily inspection of feet for any trauma, use of proper footwear and early medical help can prevent the incidence of DFU by 50-60%.

The purpose of the study (1) to assess the knowledge and practice of foot care among diabetes mellitus. (2) To assess the demographic variables among diabetes mellitus patients. (3) To associate the demographic variables and knowledge regarding foot care among diabetes mellitus patients.

Methods and Materials

A descriptive research design was used to conduct the study in koyambedu urban primary health centre. 30 samples were selected by using purposive sampling technique. The criteria for sample selection are Diabetic clients both men and women aged 35yrs and above who are at risk for diabetic foot ulcer, Diabetic clients who can understand Tamil, Diabetic client who are willing to participate. The exclusion criteria for the sample are Client who is a known diabetic foot ulcer, clients who are not willing to participate, clients who are didn't understand Tamil. The data collection was done with prior the prior permission from the head of the health centre and ethical clearance was obtained from the institution. The purpose of the study was explained to the

samples and written informed content was obtained from them. The demographic data were collected using structured questionnaire to assess the knowledge and practice of foot care among diabetes mellitus patients. The data were analysed using descriptive and inferential statistics. The sample were described using percentage.

Result and Discussion

Section A: To assess the level of knowledge and practice of foot care among patients with diabetes mellitus.

Frequency and percentage distribution of level of knowledge and practice of foot care among patients with diabetes mellitus.

| N = 30 | | |
|--|-----|-------|
| Level of Knowledge | No. | % |
| Inadequate Knowledge ($\leq 50\%$) | 17 | 56.66 |
| Moderately Adequate Knowledge (51 – 75%) | 11 | 36.67 |
| Adequate Knowledge ($>75\%$) | 2 | 6.67 |

The major finding of the study shows most of them 17(56.66%) had inadequate knowledge, 11(36.67%) had moderately adequate knowledge and 2(6.67%) had adequate knowledge on knowledge and practice of foot care among patients with diabetes mellitus.

The present study finding is supported by Batista and pinzur (2010) conducted a study on "Disease knowledge in patients attending a diabetic foot clinic". The study results show that the diabetic patients had poor knowledge on foot care. At the end he concluded that awareness of nurses about foot problems, regular foot care, patient education, simple hygienic practices and provision of appropriate foot wear can decrease ulcer occurrence by 50%.

Another study which is also supported by Bell and smith (2009) conducted a study on "Disease foot care in rural population". The study results shoes that the diabetes patients had poor knowledge of foot care. 79.2% are not soaking feet, 35.6% were inspecting shoes.

Another study was supported by Vishvanathan. V, (2006) conducted a study on "need for foot care in diabetic patients in India". The result shows that the score on awareness of general foot care knowledge were poor.

Section B: To assess the description of the demographic variables of the diabetes mellitus patient.

The major finding of the study shows that most of the patients with diabetes mellitus 12(40%) were in the age group of 51 to 60 years. 17(56.7%) were male, 16(53.3%) were Hindus, 17(56.6%) were married, 10(33.3%) had graduation and above, 15(50%) were employed in private, 15(50%) had a monthly income of Rs. 10,000 to 15,000, 11(36.6%) had family history of diabetes mellitus from parental side, 11(36.6%) had diabetes mellitus for 6–10 years and 17(56.7%) received previous information through friends and neighbors.

Section C: The third objective was to associate the level of knowledge and practice of foot care with selected demographic variable

The finding of the study shows that the demographic variables gender, religion and educational status had shown statistically significant association with level of knowledge and practice of foot care among patients with diabetes mellitus at $p < 0.05$ level and the other demographic variables

had not shown statistically significant association with level of knowledge and practice of foot care among patients with diabetes mellitus.

Conclusion

Present study infers, overall, there prevails poor knowledge and poor practice of diabetic foot care among the patients of diabetic foot. Which can be explained as a major for the progression of diabetic foot to diabetes foot ulcer and lately it may end with amputation of the limb. It can be stressed at this point that, by giving proper education, we can improve the knowledge and practice of the patients for the care of their feet and thereby improve the prognosis of the diabetic foot. This may reduce the morbidity and loss of limb in diabetic patients and that in its turn can save our resources. Average Knowledge and poor practice were observed among the diabetic foot patients who have attended the Out Patient Department. It indicates need of giving proper knowledge to diabetes patients by education

Acknowledgement

We would like to extend our gratitude to the authors of Saveetha College of Nursing and Koyambedu Primary Health Centre.

Authors Contribution

All the authors actively participated in the work of the study, all the authors read and approved the final manuscript.

Conflict of Interest

The authors declare no conflicts of interest.

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