



EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE (SIM) ON THE LEVEL OF KNOWLEDGE REGARDING PREVENTION OF DIABETIC FOOT ULCER AMONG DIABETIC PATIENTS

Nursing

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ABSTRACT

Background: Diabetic foot ulcer is the most common foot injury leading to lower extremity amputation, which is preventable through proper education on foot care practice. **Objective:** To assess the effectiveness of Self Instructional Module (SIM) on knowledge regarding prevention of diabetic foot ulcer. **Material and method:** A pre experimental one group pre test post test design is used with 102 samples from Medicine, Endocrinology and Nephrology Ward of Gauhati Medical College Hospital, Guwahati using convenient sampling technique. Demographic Preforma, clinical datasheet and structured knowledge questionnaire were administered followed by distribution of Self Instructional Module (SIM) on knowledge regarding prevention of diabetic foot ulcer. The post test was conducted after a week. Data were analyzed by using the software package SPSS 20 version. **Results:** In pre test, 77 (75.5%) sample had average knowledge, whereas, in post test, 102(100%) had good knowledge regarding prevention of diabetic foot ulcer. The mean post test knowledge score (23.44) was higher than the mean pre test knowledge score (9.61). The 't' value $t_{101} = (-) 47.06$ at $df=101$ $p<0.05$ was highly significant at 0.05 level of significance. There was significant association of knowledge regarding prevention of diabetic foot ulcer with demographic variables with respect of educational status. However, there is no significant association of knowledge regarding prevention of diabetic foot ulcer with selected clinical variables. **Conclusion:** The study revealed that, Self Instructional Module (SIM) was effective in improving the knowledge regarding prevention of diabetic foot ulcer.

KEYWORDS

Effectiveness, Self Instructional Module, Diabetic patients, Diabetic foot ulcer.

INTRODUCTION

Diabetes mellitus is a chronic metabolic disorder associated with complications resulting from long term damage, dysfunction, and failure of various body organs, especially the eyes, heart, kidneys, blood vessels and nerves.¹ One of the distressing effects resulting from neuropathy and micro vascular complication is diabetic foot. As per a report, neuropathy affects 20-50% of all diabetic patients.² Foot ulcer is a major complication of diabetes mellitus with high morbidity, mortality and resource utilization. Yearly incidence is estimated to be around 2% and lifetime incidence lies between 15 to 25%. Treatment of the foot ulcer is challenging because of their multi factorial etiology, and it places a high burden on patients, health care system and society.³

OBJECTIVES

To evaluate the effectiveness of Self Instructional Module (SIM) on level of knowledge regarding prevention of diabetic foot ulcer among diabetic patients admitted in a selected hospital of Guwahati, Assam and to determine the association of knowledge with demographic variables and selected clinical variables.

MATERIALS AND METHODS

An ethical clearance has been obtained from the institutional ethical committee. The study was a pre experimental one group pre test post test design conducted at Medicine, Endocrinology and Nephrology Ward of Gauhati Medical College Hospital, Guwahati. Written permission was obtained from the Principal, Gauhati Medical College Hospital, Guwahati and HODs of the three departments to conduct the study. The participants were assured of confidentiality and anonymity of the data obtained. Written informed consent was obtained from each participant prior to data collection. Data were collected from 102 number of diabetic patients admitted in the Medicine, Endocrinology and Nephrology Ward using convenient sampling technique. Demographic preforma, clinical datasheet and structured knowledge questionnaire, containing 29 close ended multiple choice questions were administered followed by distribution of Self Instructional Module (SIM) on knowledge regarding prevention of diabetic foot ulcer. The post test was conducted after a week. Data were analyzed by using the software package SPSS 20 version. Data were collected by using interview technique within 15 minutes. Data were collected from 4th February to 2nd March 2019.

RESULTS

Frequency and percentage distribution of diabetic patients according to demographic characteristics

The findings of the study reveal that, out of 102 samples 41 (40.2%)

were in the age group of 41-60 years, 54 (52.9%) sample were female, 61 (59.8%) were from rural area, 53 (52%) had studied up to primary level and 26 (25.5%) of the sample were unemployed, 59 (57.8%) of the sample had monthly income of less than Rs 10,000, 63 (61.8%) sample belongs to nuclear family and 61 (60%) had positive history of diabetes mellitus in their family. Among the sample, 46(45.1%) were suffering from diabetes mellitus since 6-10 years, 58 (56.9%) used to manage diabetes by using more than one treatment therapies, 71 (69.6%) sample had previous knowledge on diabetic foot ulcer and the source of information for 21 (29.58%) sample was health personnel.

Knowledge regarding prevention of diabetic foot ulcer

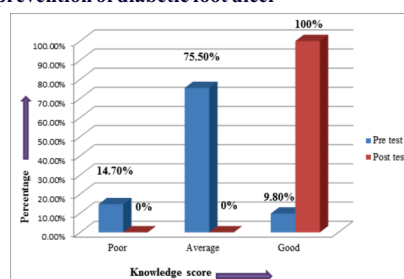
Table 1: Comparison between mean, median standard deviation and standard error of pre test and post test knowledge score on prevention of diabetic foot ulcer.

N=102

	Mean	Median	Standard deviation	Standard error
Pre test	9.61	9	2.17	0.215
Post test	23.44	24	2.11	0.209

The data presented in table 1 indicate that the mean post test knowledge score (23.44) was higher than mean pre test knowledge score (9.61). The median post test knowledge score (24) also showed higher than the median pre test knowledge score (9) and the post test score (SD=2.11) seemed to be less dispersed than the pre test score (SD=2.17). The standard error mean of pre test is 0.215 and for post test is 0.209. So it is evident that post test knowledge score were higher than the pre test knowledge score.

Fig 1: Percentage distribution of diabetic patients by knowledge score on prevention of diabetic foot ulcer



Data presented in figure 1 indicate that 15 (14.7%) of the diabetic patients had poor knowledge, 77 (75.5%) had average knowledge and 10 (9.8%) had good knowledge regarding prevention of diabetic foot ulcer in pre test whereas, in post test, 102 (100%) of the diabetic patients had good knowledge regarding prevention of diabetic foot ulcer.

Effectiveness of Self Instructional Module on knowledge regarding prevention of diabetic foot ulcer among diabetic patients

Table 2: 't' value of pre test and post test knowledge score.

N=102

Knowledge score	Mean	SD	Standard error mean	t value	df	p value
Pre test	9.61	2.17	0.215	(-)	101	.000
Post test	23.44	2.11	0.209	47.06		

Table 2 shows that the 't' value (-) 47.06 and $p < 0.05$ is highly significant at 0.05 level of significance. Hence the null hypothesis (H_{01}) was rejected and research hypothesis was accepted which shows that Self Instructional Module (SIM) on knowledge regarding prevention of diabetic foot ulcer was effective.

Association of pre test knowledge regarding prevention of diabetic foot ulcer with demographic variables

There was a significant association of knowledge regarding prevention of diabetic foot ulcer among the diabetic patients with demographic variables with respect to educational status at 0.05 level of significance. Hence the null hypothesis (H_{02}) was rejected and research hypothesis was accepted.

Association of pre test knowledge regarding prevention of diabetic foot ulcer with selected clinical variables

There was no significant association of knowledge regarding prevention of diabetic foot ulcer among diabetic patients with selected clinical variables at 0.05 level of significance. Hence the null hypothesis (H_{03}) was accepted.

DISCUSSION

OBJECTIVE 1

To assess the knowledge regarding prevention of diabetic foot ulcer among diabetic patients

The present study evaluates the knowledge regarding prevention of diabetic foot ulcer among diabetic patients and it reveals that 15 (14.7%) samples had poor knowledge, 77 (75.5%) had average knowledge and only 10 (9.8%) had good knowledge regarding prevention of diabetic foot ulcer in pre test, whereas in post test all the samples (100%) had good knowledge. The mean post test knowledge score (23.44) was higher than mean pre test knowledge score (9.61). The median post test knowledge score (24) also showed higher than pre test knowledge score (9) and post test score (SD=2.11) seemed to be less dispersed than pre test score (SD=2.17) regarding prevention of diabetic foot ulcer.

The findings are consistent with another descriptive cross sectional study conducted by Padma K., Arundathi S., and Indira S (2016) to assess the knowledge on foot care among diabetic clients attending endocrinology OPD where, it shows that with regard to foot care among 100 diabetic clients, 32% diabetic clients had inadequate knowledge, 53% had moderate knowledge and where as 15% had adequate knowledge. The mean knowledge score was 22.51 and the standard deviation was 6.32.⁴

OBJECTIVE 2

To identify the effectiveness of SIM on knowledge regarding prevention of diabetic foot ulcer among the diabetic patients

In this study, inferential analysis revealed that calculated 't' value is (-) 47.06 and $p < 0.05$ which is highly significant at 0.05 level of significance. So it is evident that there is significant improvement in post test knowledge i.e. Self Instructional Module is effective to improve the knowledge regarding prevention of diabetic foot ulcer.

This finding is supported by a true experimental study conducted by Anilvince V, Rao PNS, Sundaram NM (2015) to assess the effectiveness of foot care instruction on the knowledge among diabetic patients in a selected community, where there was significant

difference in mean knowledge score between pre intervention and post intervention. Significant difference was seen in all areas of knowledge ('t' value of 10.44 at $p < 0.05$, $df=58$).⁵

OBJECTIVE 3 and 4

To determine the association of knowledge regarding prevention of diabetic foot ulcer with demographic and selected clinical variables

The present study revealed that there was significant association of knowledge regarding prevention of diabetic foot ulcer with demographic variables with respect to educational status of the participants. The present study also revealed that there was no significant association of knowledge regarding prevention of diabetic foot ulcer with clinical variables. It was inferred that knowledge level of the participants was independent and not associated with clinical variables.

The finding is consistent with a descriptive study conducted by Usha. K and Thankachan M. (2014) to assess the knowledge regarding prevention of diabetic foot among patient with diabetic mellitus, where it shows that age, gender, occupation, income, type of family, religion, habits, duration of diabetes mellitus, type of medication had no significant association and education had significant association with the level of knowledge regarding prevention of diabetic foot among patients with diabetes mellitus.⁶

CONCLUSION

The present study was done to assess the effectiveness of Self Instructional Module on knowledge regarding prevention of diabetic foot ulcer among diabetic patients. The study reveals that the Self Instructional Module was helpful for the participants to gain adequate knowledge on prevention of diabetic foot ulcer.

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