IOSR Journal of Pharmacy and Biological Sciences (IOSR-JPBS)
e-ISSN:2278-3008, p-ISSN:2319-7676. Volume 13, Issue 2 Ver. II (Mar. – Apr. 2018), PP 01-04
www.iosrjournals.org

Effectiveness of foot care education among people with Diabetes Mellitus in urban community, Mumbai

Mangalam Sriram[1], Dr. Prakash Doke[2]Dr. Prabha Dasila[3]
[1](PhD student, MGMIHS, India)
[2](Professor, Dept. of community medicine, BVDU Medical college,
Ex Medical Superintendent, MGMIHS, India)
[3](Principal and Director, MGMIHS,India)
Corresponding Author: Mangalam Sriram

Abstract: *Burden of Diabetes is increasing globally. In India it is affecting about 40 million people. High prevalence is attributed to a combination of genetic factors and environmental factors due to urbanization and industrialization. Untreated Diabetes can lead to many complications including foot complications. Prevalence of Diabetic foot ulcers is 3.6% in the clinical population. In about 3 – 5 % of cases ulcers lead to amputation resulting in lifelong disability and dependency. This study was done to emphasize the importance of education in care of feet among the diabetic patients. A sensitized patient will have less chances of developing foot complications. This study aimed to assess the effectiveness of structured teaching programme on foot care among people diagnosed with diabetes. The study was conducted in March 2017- April 2017. 30 people diagnosed with diabetes were included in this study. Mean score difference was seen between the pre and post intervention (t-10.20, p<0.001) knowledge status. Significant difference was seen in areas of foot inspection(47.34%) and use of foot ware(39.17%).*

The study concluded that structured teaching programme improved the overall knowledge of the people diagnosed with diabetes

Keywords: *Diabetes, diabetic foot care, education, knowledge, prevention*

Date of Submission: 05-02-2018 Date of acceptance: 19-03-2018

I. Introduction

Diabetes mellitus is a major non communicable disease affecting about 180 million people in the world in 2003, and expected to reach 330 million in 2025. The recent reports from the world health organization rates India as the country with the largest number of diabetes (40 millions) in the world. The reason for high prevalence of diabetes in India could be attributed to a combination of genetic factors and environmental factors due to urbanization and industrialization.[1] Untreated Diabetes can cause many complications. Serious long term complications include heart diseases, Kidney failure, damage to eyes and diabetic foot ulcers. Taking into consideration the high prevalence rate of diabetes in India, there are many million feet at risk. "Diabetic foot" refers to a variety of pathologic conditions that may affect the feet of the people with diabetes. The prevalence of diabetic foot ulcers in the clinical population is 3.6%. Socio cultural practices such as barefoot walking, use of improper foot wear and lack of knowledge regarding foot care contributes to increase in the prevalence of foot complications in India.[2] In a study to detect the prevalence of diabetic neuropathy in India showed that 19.1% of patients diagnosed with diabetes had neuropathy and 10.2% suffered with diabetic foot.[3] Presence of amputations among 4.8% of the diabetic population highlights the importance of diabetic foot care.In India, 40% - 72% of all lower extremity amputations are related to diabetes. Many researchers have reported that diabetic clients have poor knowledge of foot care and education programme had improved knowledge significantly. Ekore RI et al concluded in their study that awareness of foot care measures are very poor among known diabetic patients and is largely due to lack of education of patients by their health care providers.[4]It was observed in the clinics that many diabetic patients lacked knowledge on foot care and were negligent. They were not aware of the measures to prevent foot complications. Hence the need for the study was felt to educate the diabetic patients on foot care practices to reduce the foot complications.

II. Objectives

1. To assess the existing knowledge regarding foot care practices among diabetic individuals.
2. To determine the effectiveness of structured teaching programme regarding diabetic foot care practices among diabetic individuals

III. Material And Methods

Study Population: Mumbai is the second most populous metropolitan city with a population of 21.3 million as of 2016. It has an area of about 203 sq. km. It is administered by the Municipal Corporation of Greater Mumbai. The number of slum dwellers is estimated to be 9 million that is 62% of the Mumbaikers live in informal slums.The population included all the adults with Diabetes Mellitus residing in the selected community at Mumbai

Study Design: Experimental study

Study Location: The urban slums near Bane compound Health Post, under 'D' Ward, South Mumbai.

Study Duration: March 2017 to April 2017.

Sample size: 30 patients.

Subjects & selection method: A house to house survey was conducted to find out the people with Diabetes. Purposive sampling method was used to select the participants for the study. Thirty participants who were above 20 years diagnosed to have diabetes and on treatment for the same were selected for the study.

Inclusion criteria:

1. Diabetic patients (fasting blood glucose ≥ 126 mg/dL
2. Aged ≥ 20 years,

Exclusion criteria:

1. Critically ill persons
2. Those with history of or having foot complications
3. Those whom had training about diabetic foot care

Procedure methodology

Data Collection began after the approval from the institutional ethical committee. A prior permission was obtained from the Municipal corporation. Tool was developed with reference to the literature and discussion with the experts. Validity of the tool was established as per the experts opinion. The tool was pre tested by administrating to two people. A house to house survey was conducted to find out the people with Diabetes. Purposive sampling method was used to select the participants for the study. After written informed consent was obtained, the structured questionnaire was used to collect data of the participants by interview method. The structured questionnaire had two sections. Section 1 included Demographic data and medical history. Section 2 included questions related to Knowledge on foot care practices. Structured teaching programme was given for the participants in a group of 3 to 5 in a group on Foot care for Diabetics by lecture and discussion method using flash cards lasting 30 minutes. After 15 days the same questionnaire was used to assess the post teaching knowledge. The knowledge was assessed in different areas like Inspection of foot, foot hygiene, toe nail care, footware selection and foot risk assessment. . Maximum obtainable score for knowledge was 25 and minimum 0.

Statistical analysis

Frequency and percentage distribution were used to analyse demographic variables. The knowledge scores were graded as good for 18-25, Average for 9-17 and poor for 0-8 scores. 't' test was used to determine the significant difference in the level of knowledge in different areas on diabetic foot care.The level of significance was decided at 0.05 level.

IV. Result

Table no 1 Demographic profile of the respondent n = 30

Age group in years	frequency	percentage
25 - 35	5	16.66
36 - 45	9	30
46 – 55	16	53.33
Gender		
Male	19	63.33
Female	11	36.66
Education level		
Post graduate	1	3.33
Graduate	1	3.33
HSC	3	10
SSC	13	43.33
Middle school	1	3.33
Primary school	5	16.66
Illiterate	6	20
Occupation		

V.	Professional	10	33.33
	Semi professional	1	3.33
	shop owner	3	10
	skilled worker	2	6.66
	semi skilled worker	3	10
	unskilled worker	8	26.66
	unemployed	3	10
	Years having Diabetes		
	1 to 5	22	73.33
	6 to 10	6	20
	11 to 15	2	6.66

Table 1 presents frequency and percentage of the subjects according to their personal characteristics. Majority of the participants were above the age of 46 years. 63.33% of them were males. 60% of them were educated above SSC. 33.33 % were professionals and 73.33% had been diagnosed to have diabetes in last five years.

Table no 2 Over all knowledge level before and after structured teaching programme n=30

Level of knowledge	Pre test		Post test	
	f	%	f	%
Good	7	23.3	30	100
Average	18	60.0	0	0
Poor	5	16.7	0	0

Table no 3 Effectiveness of structured teaching programme on Knowledge score of participants n=30

Test Score	Mean	SD	t value	P value	Significance at 0.05 level
Pre test	14.5	5.25	10.20	0.004	significant
Post test	23.80				

The data in the above table shows that the mean post test knowledge score is higher than the mean pre test knowledge score. The computed t value showed that there is significant difference between the pre test and post test mean knowledge score ($t = 10.20$, $p<0.001$).

Table no 4 Mean knowledge score in different aspects of Diabetic foot care n=30

Aspects of knowledge	Pre test(x)		Post test (y)		Effectiveness (y-x)		't' value	P value
	Mean score	SD	Mean score	SD	Mean score	SD		
Inspection	2.23	2.56	4.60	1.02	2.37	1.54	4.73	0.000
Hygiene	3.73	4.22	5.72	1.40	1.97	2.82	2.43	0.001
Nail care	2.00	3.07	3.01	0.00	1.00	3.07	1.78	0.001
Use of footware	4.46	4.58	7.60	1.19	3.14	3.39	3.65	0.002
Complication	2.06	4.74	2.81	1.20	0.75	3.54	0.46	0.002

VI. Discussion

The study shows that 76.7% of the participants had Satisfactory or poor knowledge on foot care practices with a mean percentage score of 58%. The study by Batista and Pinzur also reported that the patients who attended the diabetic clinic were having inadequate knowledge on foot care.[6] Similar findings were reported by Mohan V et al in their study with 67% of the participants obtaining poor knowledge score <50 urging the need to educate them for foot care practices.[7]

In this study the participants pre test scores showed that only 23.3% had good knowledge on foot care practices. The knowledge improved in all the participants after the teaching programme with 100% having good knowledge. Similar observations were reported by Viswanath V et al in their study on prevalence of foot complications and practices of foot care among the diabetics across India. [8]

The effectiveness of the structured teaching programme on knowledge of the participants showed highly significant as the calculated t value ($t = 10.20$, $p<0.001$))was more than the table value. Anilvince V et al also concluded in their study that teaching diabetic patients with video demonstrations improved their knowledge regarding diabeticfoot care.[9] Based on the findings the study concludes that most of most of the participants had satisfactory knowledge of foot care which improved with foot care education.

The knowledge gain in different aspects of knowledge related to foot care practices was observed to be highly significant in each aspect. The enhancement of knowledge score was more in Inspection of foot 47.34% followed by Use of footware 39.17%, Nail care 33.34%, Hygiene 33.33%, management of complication 24.45%. The over all mean enhancement in post test was 35.52% which shows that knowledge level of the

participants increased after structured teaching programme. 48.3% improvement in the knowledge of inspection of foot, 16.7% in area of foot hygiene and 35% inspection of foot ware before use was observed following foot care education in the study by Saurabh et all.[10]

VII. Conclusion

As this study showed an improvement in knowledge on foot care practices following structured teaching programme, every health care worker should endeavour to give their diabetic patients necessary health education about foot care in order to reduce the burden of foot complication. Diabetic foot care education should be regularly reinforced at the clinic visits to be effective in the long run.

References

[1] Herman WH, Kennedy L. Underdiagnosis of peripheral neuropathy in type 2 diabetes. Diabetes care. 2005 Jun 1;28(6):1480-1.
[2] Fritschi C. Preventive care of the diabetic foot. The Nursing clinics of North America. 2001 Jun;36(2):303-20.
[3] Ashok S, Ramu M, Deepa R, Mohan V. Prevalence of neuropathy in type 2 diabetic patients attending a diabetes centre in South India. Japi. 2002 Apr 1;50:546-0.
[4] Ekore RI, Ajayi IO, Arije A, Ekore JO. Knowledge of and attitude to foot care amongst Type 2 diabetes patients attending a university-based primary care clinic in Nigeria. African journal of primary health care and family medicine. 2010 Jan 1;2(1):1-3.
[5] www.worldpopulationreview.com/world-cities/mumbai-population
[6] Batista F, Pinzur MS. Disease knowledge in patients attending a diabetic foot clinic. 2005 38-41
[7] Mohan V, Sandeep S, Deepa R, Shah B, Varghese C. Epidemiology of type 2 diabetes: Indian scenario. Indian journal of medical research. 2007 Mar 1;125(3):217.
[8] Viswanathan V, Thomas N, Tandon N, Asirvatham A, Rajasekar S. Profile of diabetic foot complications and its associated complications-a multicentric study from India. JAPI. 2005 Nov 7;53:933-6.
[9] Anilvince V, Rao PN, Sundaram NM. A Study to assess the effectiveness of foot care instruction on the knowledge among diabetic patients in a selected community. International Journal of Scientific and Research Publications. 2015 Jun.
[10] Saurabh S, Sarkar S, Selvaraj K, Kar SS, Kumar SG, Roy G. Effectiveness of foot care education among people with type 2 diabetes in rural Puducherry, India. Indian journal of endocrinology and metabolism. 2014 Jan;18(1):106.

IOSR Journal of Pharmacy and Biological Sciences (IOSR-JPBS) is UGC approved Journal with Sl. No. 5012, Journal no. 49063.

Mangalam Sriram "Effectiveness of foot care education among people with Diabetes Mellitus in urban community, Mumbai" IOSR Journal of Pharmacy and Biological Sciences (IOSR-JPBS) 13.2 (2018): 01-04.