The Bioscan AN INTERNATIONAL QUARTERLY JOURNAL OF LIFE SCIENCES 19(2): S2: 171-178, 2024 www.thebioscan.com

EFFECTIVENESS OF DIABETIC FOOT ULCER SELF- CARE FLYER ON KNOWLEDGE AND ATTITUDE AMONG PATIENT WITH DIABETIC FOOT ULCER

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DOI: https://doi.org/10.63001/tbs.2024.v19.i02.S2.pp171-178

KEYWORDS
diabetes mellitus, foot ulcer, knowledge, attitude and self-care flyer.

Received on:
16-07-2024

Accepted on:
24-10-2024

ABSTRACT

Diabetes mellitus is a significant public health challenge in the 21st century, with diabetic foot ulcers (DFUs) being one of its most severe complications. DFUs are characterized by ulceration due to neuropathy and/or peripheral arterial disease in diabetic patients. This study aimed to evaluate the effectiveness of a diabetic foot ulcer self-care flyer on the knowledge and attitudes of patients with DFUs. ***Method:*** An experimental one-group pre-test post-test design was employed with 70 patients at Panimalar Medical College Hospital and Research Institute. Tools for assessing knowledge and attitudes were developed by the researcher and validated by experts. Participants completed a pre-test, followed by education via the self-care flyer. A follow-up post-test was conducted one week later. ***Results:*** The post-test scores showed a statistically significant increase in knowledge and attitudes ($p < 0.05$). Knowledge was significantly associated with age, sex, and educational status ($p < 0.05$), while attitude was linked to age and sex ($p < 0.001$). ***Conclusion:*** Education using the diabetic foot ulcer self-care flyer effectively enhanced knowledge and attitudes among patients, highlighting its potential as a valuable tool for increasing awareness of diabetic foot care.

INTRODUCTION

Diabetes mellitus is a significant global health issue, with over 1 million amputations occurring annually. An estimated 15% of the 13 million individuals diagnosed with diabetes will experience foot ulcers, leading to a lifelong risk of amputation. Following an initial amputation, 30-50% may require further procedures within five years. Approximately 56% of diabetic foot ulcers become infected, with 20% resulting in lower extremity amputations. Timely prevention and healing of these ulcers are crucial to prevent amputations. Nursing care must address the chronic complications of diabetes, focusing on assessing risks associated with impaired circulation, sensation, increased infection, and delayed healing. Recognizing these factors allows for tailored care to prevent complications. This study aims to provide insights into the effectiveness of educational interventions, particularly self-care flyers, in enhancing knowledge and attitudes among diabetic foot ulcer patients, ultimately optimizing treatment outcomes and improving quality of life.

Ethical approval:

Ethical approval for this study was granted by the Institutional Human Ethics Committee of Panimalar Medical College Hospital & research Institute PMCHRI/IHEC/MS/2023/101. Before the commencement of the study, all participants were thoroughly briefed about the research objectives, procedures, and potential risks involved. Written consent was obtained from each participant before their participation.

Objectives of the study:

1. To assess the knowledge and attitude before and after providing the Self- care flyer on diabetic foot ulcer among patient subjected with diabetic foot ulcer.
2. To find out the association knowledge and attitude and selected background variables of patient with subjected to diabetic foot ulcer.
3. To assess the effects of patient education on foot ulcer in patient with diabetic foot ulcer.

Hypotheses:

1. There will be a significant difference in the mean knowledge scores of patients with diabetic foot ulcer

before and after exposure to the diabetic foot ulcer self-care flyer.

2. There will be a significant difference in the mean attitude scores of patients with diabetic foot ulcer before and after exposure to the diabetic foot ulcer self-care flyer.

Materials and methods:

Experimental research design with one group pre test post test was conducted among 70 patients with diabetic foot ulcer how visited the Panimalar Medical College Hospital And Research Institute in the inpatient and outpatient in the department of medical and surgical unit. The tools were devolved by the researcher for knowledge and attitude and it was evaluated by the experts. The pretest was done knowledge and attitude was assessed, the education was given to the population with help of the diabetic foot ulcer self-care flyer and they were followed up after 1 week and the post test was conducted and assessed the knowledge and attitude level. Analysis was done by using descriptive and inferential statistics.

Results & Discussion

The present study was aimed to assess the effectiveness of diabetic foot ulcer self- care flyer on knowledge and attitude among patient with diabetic foot ulcer. The findings of the study have proved that there was a significant improvement in the level of knowledge, attitude and practice among patient with diabetic foot ulcer after the administration of self – care flyer. The findings of the present study have been discussed based on the objectives and presented below.

Table 1: Frequency, percentage distribution of background variables among the adult with diabetic foot ulcer in the group.

n= 70

Demographic variables	Frequency (N)	Percentage (%)
Age		
18-25	3	4
26-35	12	17
36-50	37	53
51-65	18	26
Sex		
Male	46	66
Female	24	34
Occupation		
Daily wages	38	54
Business	7	10
Professional	4	6
Homemaker	21	30
Educational status		
Illiterate	2	3
Primary	23	33
Higher secondary	27	38
Graduate	18	26
Monthly income		
<10,000	39	56
10,000 to 20,000	18	26
>20,000	13	18
Marital status		
Single	4	6
Married	55	78

Widow /divorcee	11	16
Type of the family		
Joint	14	20
Nuclear	56	80
Place of residence		
Urban	57	81
Rural	13	19

Table 1 depicts the frequency, percentage distribution of demographic variables among the adult with diabetic foot ulcer in the group. With regards of the age majority of the diabetic foot ulcer patient 37(53%) belong to the age group of 36-50 in the group. Regarding the gender male population was high 46 (66%) and the occupation like daily wages was majority 38 (54%) in the group. With regards of educational status majority of them was higher secondary 27 (38%), the monthly income was <10,000 for the majority of population 39 (56%) in the group. Regarding the marital status 55 (78%) were married, Nuclear family population was high 56 (80%) and residence urban population were high 57(81%) in the group.

Table 3: Distribution of Clinical Variables among the Adult with diabetic foot ulcer in the group

n= 70

Clinical Variables	Frequency (N)		Percentage (%)
Blood glucose checking			
Daily	12		17
Weekly	18		26
Monthly once	40		57
Types of diabetes			
Type I	23		33
Type II	31		44
Don't know	16		23
Duration of diabetes			
Since birth	0		0
<6 months	11		16
> 6 months	31		44
>5 years	28		40
Number of visits to the clinic			
4-5 times	43		61
5-10 times	14		20
11-15 times	13		19
Greater than 15 times	0		0
Smoking status			
Daily smokers	8		11
Past smokers	16		23

Never	46		66
Type of medication			
Tablets	21		30
Insulin	37		53
Both	12		17
Alcohol consumption			
Daily	7		10
Weekly	9		13
Monthly	16		23
Never	38		54

Table 3 depicts the frequency, percentage distribution of clinical variables among the adult with diabetic foot ulcer in the group. Regarding the blood sugar checking monthly once checking was high 40 (57%) and the type II diabetes mellitus population was high 31 (44%). With regards of duration of diabetes mellitus > 6 months were high 31(44%), clinical visit was 4-6 times were majority population 43(61%). The smoking status the majority were had never smoking 46 (66%), insulin dependent population was high 37 (53%) and alcohol consumption in the population never was high 38 (54%).

Table 3: Distribution of knowledge among the Adult with in diabetic foot ulcer the Group

(n=70)

Knowledge	Frequency (N)	Percentage (%)	
Inadequate	34	49	
Moderate	31	45	
Adequate	4	6	

Table 4 depicts the frequency, percentage distribution of knowledge majority of them had inadequate knowledge 34(49%) and moderate knowledge 31(45%) in the group.

Table 5: Distribution of attitude among the Adult with diabetic foot ulcer in the Group

(n=70)

Attitude	Frequency (N)	Percentage (%)
Poor	51	73
Good	10	14
Excellent	9	13

Table 5 depicts the frequency, percentage distribution of attitude majority of them had poor attitude 51 (73%) in the group.

Table 6: Effectiveness of diabetic foot ulcer self-care flyer on knowledge and attitude among the adult with diabetic foot ulcer in the group

n= 70

Variables	Pretest		Posttest		Mean difference	Paired t-test p value
	M	SD	M	SD		
Knowledge	1.58	0.62	2.28	0.58	-0.7	9.08 0.001(S)
Attitude	1.4	0.70	2.22	0.56	-0.82	15.42 0.001(S)

Table 6 depicts the effectiveness of the of diabetic foot ulcer self-Care Flyer on knowledge and attitude. The mean score of knowledge in the pretest was 1.58 and SD of 0.62 and in the post test the mean score was 2.28 and SD 0.58 with the mean difference of -0.7 as the mean value increases it shows after the education the knowledge is improved in the

group. Regarding the attitude the pretests mean score is 1.4 and SD 0.70 and the post test mean score was 2.22 and SD 0.56 with the mean difference of -0.82 as the mean score increases it shows that attitude level is enhanced after the education of diabetic foot ulcer self-Care Flyer in the group.

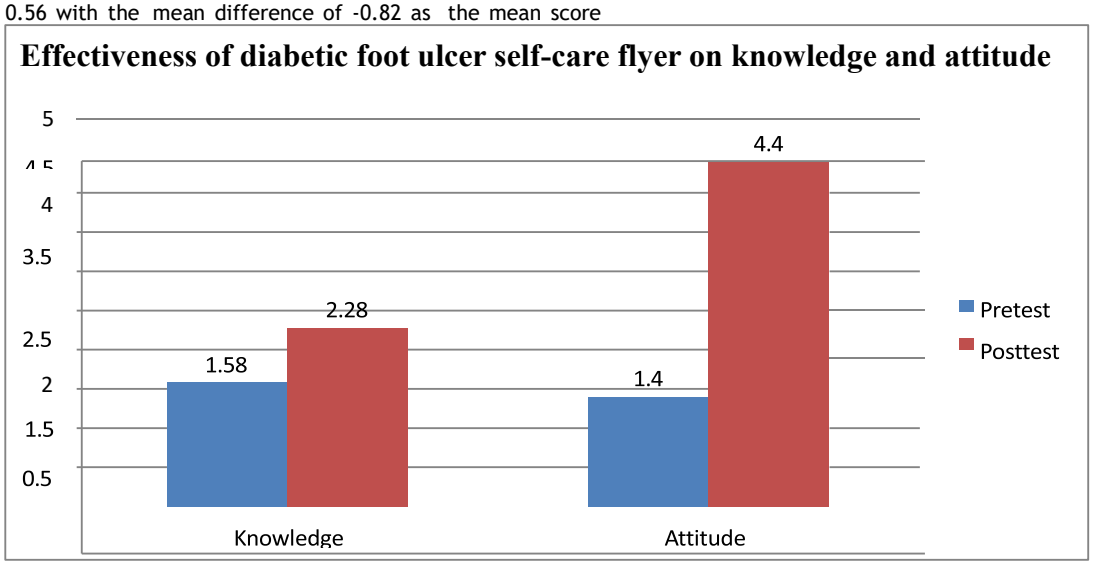

Table 7: Association between knowledge and background variable among the adult with diabetic foot ulcer during the posttest in the group.

(N=70)

Demographic variables	Posttest Level of knowledge score						N	Chi square test
	Inadequate		Moderate		Adequate			
	N	%	n	%	n	%		
Age								
18-25	0	0.0%	0	0.0%	5	100.0%	5	χ^2=10.05 p =0.03* (S)
26-35	0	0.0%	1	5.3%	16	89.5%	17	
36-50	0	0.0%	4	17.4%	27	78.3%	31	
51-65	0	0.0%	4	40.0%	13	50.0%	17	
Sex								χ^2 = 4.09 p=0.04* (S)
Male	0	0.0%	3	11.1%	34	88.9%	37	
Female	0	0.0%	11	33.3%	22	66.7%	33	
Occupation								
Daily wages	0	0.0%	5	22.7%	19	77.3%	24	χ^2=3.18 p=0.36 (NS)
Business	0	0.0%	3	25.0%	14	75.0%	17	
Professional	0	0.0%	3	50.0%	3	50.0%	6	
Homemaker	0	0.0%	6	15.0%	17	85.0%	23	
Educational status								
Illiterate	0	0.0%	12	100.0%	6	66.2%	18	χ^2=14.02 p=0.01** (S)
Primary	0	0.0%	5	33.3%	10	66.7%	15	
Higher secondary	0	0.0%	4	23.5%	19	76.5%	22	
Graduate	0	0.0%	1	10.0%	14	90.0%	15	

Monthly income								
<10,000	0	0.0%	5	33.3%	23	66.7%	28	χ^2=1.31 p=0.18 (NS)
10,000 to 20,000	0	0.0%	6	21.5%	17	73.5%	23	
>20,000	0	0.0%	4	23.1%	15	76.9%	19	
Marital status								
Single	0	0.0%	0	0.0%	3	100.0%	3	χ^2=2.41 p=0.29 (NS)
Married	0	0.0%	24	26.4%	39	73.6%	53	
Widow /divorcee	0	0.0%	0	0.0%	4	100.0%	4	
Type of the family								
Joint	0	0.0%	7	31.6%	23	68.4%	30	χ^2=1.72 p=0.42 (NS)
Nuclear	0	0.0%	1	10.0%	39	90.0%	40	
Place of residence								
Urban	0	0.0%	10	26.1%	27	73.9%	37	χ^2=2.33 p=0.31 (NS)
Rural	0	0.0%	1	7.7%	32	92.3%	33	

Table 7 shows that the association of knowledge with the background variables, knowledge is associated with the age, sex and education status which was statistically significant at p<0.05.

Table 8: Association between attitude and background variable among the adult with diabetic foot ulcer during the posttest in the group

(n=70)

Demographic variables	**Posttest Level of Attitude score**						**N**	**Chi square test**
	Poor		**Moderate**		**Good**			
	N	**%**	**n**	**%**	**n**	**%**		
Age								χ^2=11.12 p=0.05* (S)
18-25	0	0.0%	0	0.0%	8	100.0%	8	
26-35	0	0.0%	4	5.3%	18	94.7%	22	
36-50	0	0.0%	6	17.4%	19	82.6%	25	
51-65	0	0.0%	8	40.0%	7	60.0%	15	
Sex								χ^2=3.91 p=0.05*(S)
Male	0	0.0%	11	7.4%	25	92.6%	36	
Female	0	0.0%	10	27.3%	24	72.7%	34	
Occupation								χ^2=5.62 p =0.13 (NS)
Daily wages	0	0.0%	5	13.6%	15	86.4%	20	
Business	0	0.0%	3	25.0%	13	75.0%	16	
Professional	0	0.0%	8	50.0%	6	50.0%	14	
Homemaker	0	0.0%	2	10.0%	18	90.0%	20	
Educational status								χ^2=5.69 p=0.22 (NS)
Illiterate	0	0.0%	0	0.0%	9	100.0%	9	
Primary	0	0.0%	5	33.3%	18	66.7%	23	
Higher secondary	0	0.0%	2	11.8%	17	88.2%	19	
Graduate	0	0.0%	7	30.0%	12	70.0%	19	
Monthly income								χ^2=7.98

<10,000	0	0.0%	4	50.0%	4	50.0%	8	p=1.15 (NS)
10,000 to 20,000	0	0.0%	5	18.5%	22	81.5%	27	
>20,000	0	0.0%	2	14.3%	12	85.7%	14	
Marital status								
Single	0	0.0%	0	0.0%	13	100.0%	13	χ^2=1.77 p=0.49 (NS)
Married	0	0.0%	11	20.8%	42	79.2%	53	
Widow /divorcee	0	0.0%	0	0.0%	4	100.0%	4	
Type of the family								
Joint	0	0.0%	6	19.4%	15	80.6%	21	χ^2=3.07 p=0.21 (NS)
Nuclear	0	0.0%	25	26.3%	24	73.7%	49	
Place of residence								
Urban	0	0.0%	7	29.2%	17	70.8%	24	χ^2=4.81 p=0.09 (NS)
Rural	0	0.0%	4	17.4%	19	82.6%	23	

Table 8 shows that the association of attitude with the background variables, attitude was associated with the age and sex which was statistically significant at p<0.001.

This study revealed significant differences in mean knowledge and attitude scores of patients with diabetic foot ulcers before and after exposure to a self-care flyer. Initially, 49% had inadequate knowledge and 73% had poor attitudes. Post-intervention, knowledge scores improved from a mean of 1.58 (SD 0.62) to 2.28 (SD 0.58), while attitude scores increased from 1.4 (SD 0.70) to 2.22 (SD 0.56). Studies by Alavi, A., & Sibbald, R. G. (2023)[1], Chaudhary, M., & Bansal, R. (2023)[4], Yadav, A., & Verma, M. (2020)[19] highlight the need for enhanced education on diabetic foot care to reduce complications, supporting the study's hypotheses.

CONCLUSION

Conclusion:

The present study assessed the effectiveness of a self-care flyer for diabetic foot ulcers. The findings indicated that educational materials significantly enhance patient outcomes by improving knowledge and attitudes among affected individuals. This intervention effectively raises awareness and understanding of diabetic foot care, empowering patients to better manage their condition. By fostering positive attitudes and increasing knowledge, the self-care flyer plays a crucial role in reducing the incidence and complications of diabetic foot ulcers. Ultimately, targeted education promotes self-management and prevents further complications, highlighting the importance of educational interventions in improving care for patients with diabetic foot ulcers.

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