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Research Article

**STUDY TO DETERMINE THE KAP OF DIABETIC
PATIENTS IN TAKING CARE OF THEIR FOOT AND ITS
IMPACT ON FOOT HEALTH****Khansa Khalil¹, Jawairia Siddique², Arham Izhar³**
^{1,2,3} Rawalpindi Medical University**Article Received:** November 2019 **Accepted:** December 2019 **Published:** January 2020**Abstract:**

Background: Pakistan is one of those countries where Diabetes Mellitus is prevailing widely. One of the major health problems among diabetics is Ulceration of foot. Our study was aimed at assessing the knowledge, attitude and practices (KAP) of diabetics regarding foot care.

Objectives: To determine the frequency of diabetics taking care of their foot and its impact on foot health.

Study Design: Cross sectional study.

Study Duration and Setting: The study was conducted in Diabetes Management Center, Benazir Bhutto Shaheed hospital, Rawalpindi for the duration of one year from November, 2018 to October, 2019.

Methodology: In this study 90 patients who were known cases of diabetes mellitus were interviewed after taking verbal consent using self-administered, pre-tested questionnaire. All participants were selected randomly. Data was analyzed using SPSS 21.

Results: The mean age of respondents was 57 years. About 86.6% respondents had good knowledge and 12.1% had poor knowledge about foot care. Most of respondents had good practices for foot care. Sex, education and income per capita had shown significant statistical association with knowledge and practices regarding foot care.

Conclusion: Foot care knowledge and practice was significantly high among our study population. Many diabetics have basic knowledge regarding the diabetic foot ulcers. Media based education especially TV ads are the most effective means of educating diabetics regarding such risks and hazards.

Keywords: Diabetes, Foot ulcer, Knowledge, Practice.

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INTRODUCTION:

Diabetes mellitus, a metabolic disorder characterized by elevated blood glucose, is a serious and growing problem. More than 23 million people in the United States are believed to have diabetes. It is estimated that by 2025, 300 million people worldwide will have diabetes and by 2030, 360 million people.[1] Prevalence rates of DM vary considerably amongst different populations and ethnic groups surveyed.[2] South Asia in particular is considered one of the areas of highest increase in projected numbers.[3]

Pakistan is a South-Asian country with a population of approximately 150 million. Diabetes prevalence in Pakistan is high: 12% of people above 25 years of age suffer from diabetes.[4] Complications of diabetic patients involve retinopathy in 43%, nephropathy 20%, and neuropathy 40%. The importance of foot care cannot be denied in diabetic patients. Ulceration of the foot is one of the major health problems for people with diabetes mellitus. It is estimated to affect 15% to 25% of people with diabetes at some time in their lives.[5]

Diabetes is associated with high rates of hospitalization, blindness, renal failure and non-traumatic amputation.[6] In cases where lower extremity amputation is required, health care is even more expensive.[7] Foot ulcers are susceptible to infection and polymicrobial infection may spread rapidly causing overwhelming tissue destruction. This process is the main reason for major amputation in neuropathic feet. Potential strategies to minimize the sequel of foot complications include: early recognition of the 'at risk' foot; prompt use of preventative measures; and rapid and intensive treatment of foot complications in multidisciplinary foot care services. The patient plays a crucial role in the prevention of diabetic foot disease and therefore education regarding foot care is important. Patients are more likely to comply with a treatment regimen when they have enough knowledge about their medical condition. Foot care knowledge and behavior of patients seems positively influenced by patient education in the short term.[8]

In Pakistan, majority of patients with diabetes do not pay proper attention to their feet. An important reason of this attitude is that patients are not provided with foot care education and therefore remain unaware of the adverse consequences of neglect.[9] Preventive strategies will decrease the burden of foot problems in the patients suffering from diabetes. If patient have adequate knowledge, they will be able to practice in order to prevent diabetic foot ulcer.[10]

METHODOLOGY:

This study was conducted at Benazir Bhutto Shaheed hospital, Rawalpindi for the duration of one year from November, 2018 to October, 2019. All male and female diabetic patients of age 40-70 years who have diabetes for >2years. People with active foot ulcers, disability, skin ulcers and amputations etc., were not included.

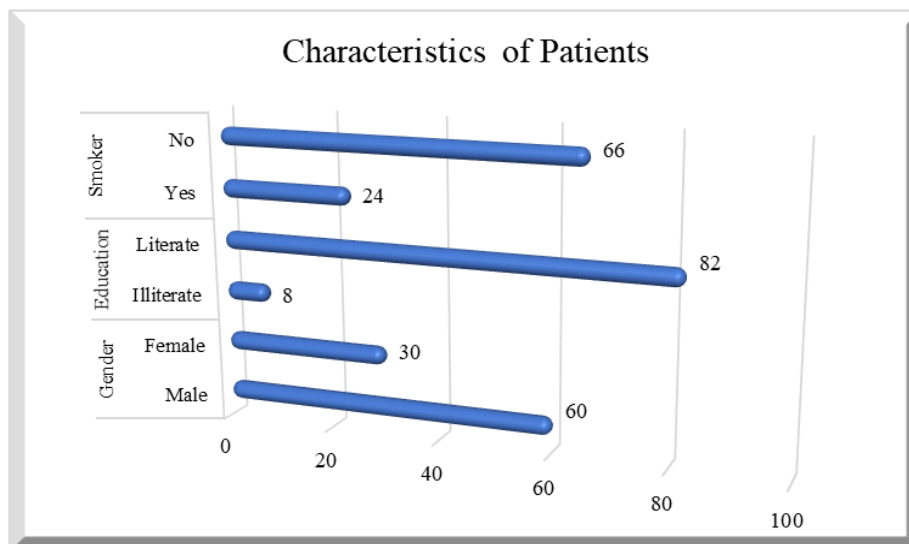
For result compilation, sample size was calculated using EPI INFO Software version 1.1. Expected frequency of diabetic foot in Pakistan was 12% and worst expected frequency was 5%. At confidence level of 95% with population size of 10000, sample size came out to be 82 which was rounded to 90 for study. Sampling technique was Convenience Sampling. For data collection Structured Questionnaires were used to interview the chosen subjects and data was subsequently analyzed. Before induction in the study, informed consent was obtained. Demographics details (name, age, gender, education, income, area of residence, employment status) and medical history of diabetes was also obtained. Then patients were asked for knowledge, attitude and practice of foot care. SPSS Version 21 software was used for purpose of tabulation, calculation and statistical analysis of the data.

RESULTS:

Mean age of diabetics was 57.92 ± 12.34 years. About 4.4% had age ≤ 40 yr, 54.4% had age 41-60 years. There were 66.7% males and 33.3% females. About 8.9% were illiterate while 91.1% were literate. In the whole sample, 26.7% smokers Table 1.

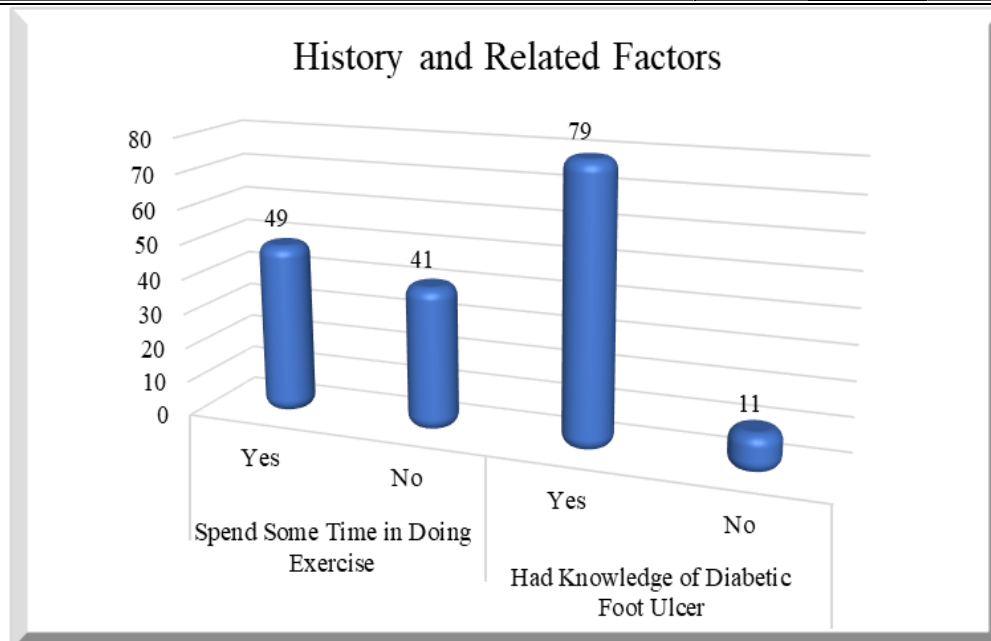
Table No 01: Characteristics of Patients

Characteristics	Qty	%age	
Age	≤ 40	4	4.4%
	41-60	49	54.4%
	61-70	24	26.7%
	>70	13	14.4%
Gender	Male	60	66.7%
	Female	30	33.3%
Education	Illiterate	8	8.9%
	Literate	82	91.1%
Income	<30,000	32	35.6%
	≥30,000	58	64.4%
Employment	Employed	43	47.8%
	Unemployed	30	33.3%
	Housewife	17	18.9%
Residence	Lahore	52	57.8%
	Other cities	38	42.2%
Smoker	Yes	24	26.7%
	No	66	73.3%



Regarding diabetes, 54.4% diabetics spend some time in doing exercise while 87.8% had knowledge of diabetic foot ulcer Table 2.

History and Related Factors	Qty	%age
Spend Some Time in Doing Exercise	Yes	49 54.4%
	No	41 45.6%
Had Knowledge of Diabetic Foot Ulcer	Yes	79 87.8%
	No	11 12.2%



We studied common practices of diabetics one by one and what we got is as follow; Diabetics who spend time in doing exercise were 53.8%. Most of subjects maintain themselves only by walking. This may be due to the conditions like, lack of exercise place and no habit of exercise. Diabetics who can reach and inspect the bottom of feet were 94.4% and diabetics who felt dullness of sensation in feet were only 7.8%. Diabetics who examined their feet for any type of ulceration were 68.9%. Diabetics who washed their feet everyday were 86.7% and dry well toes and in between were 57.8%. Moderate practice level had many reasons; such as most of the subjects stated that their feet had no problems, so there was no need to inspect foot daily. Diabetics who used moisturizing creams and mild soaps were 45.6%. Diabetics who check water temperature before using it on feet or putting into it were 87.8%. Diabetics who ever walked barefooted were 10% Table 3.

Table No 03: Knowledge, Attitude and Practice Regarding Foot Ulcer

KAP Regarding Foot Ulcer		Qty	%age
Ever Had a Foot Ulcer	Yes	10	11.1
	No	80	89.9
Received Information Regarding Foot Care	Yes	74	82.2
	No	16	17.8
Information Source	Doctors	55	61.1
	Media	18	20.0
	Other	2	2.2
Knowledge of Gangrene	Yes	49	54.4
	No	41	45.6
Can Reach and See the Bottom of Feet	Yes	85	94.4
	No	5	5.6
Feel Dullness of Sensation in Their Feet	Yes	7	7.8
	No	83	92.2
Examine Their Feet for Any Type of Ulceration	Yes	62	68.9
	No	28	31.1
Wash Their Feet Everyday	Yes	78	86.7
	No	12	13.3
Dry Well Toes And In Between	Yes	52	57.8
	No	38	42.2
Use Moisturizing Creams on Their Feet	Yes	41	45.6
	No	49	54.4
Water Temperature Before Putting Their Feet In	Yes	79	87.8
	No	11	12.2
Ever Walked Bare Feet	Yes	9	10.0
	No	81	90.0
Inspect Their Shoes for Foreign Objects or Torn Lining	Yes	75	83.3
	No	15	16.7
Use Antiseptics, Medications or Heating Pads	Yes	28	31.1
	No	62	68.9
Cut Their Nails Straight	Yes	67	74.4
	No	23	25.6
Trim Nails with The Help Of:	Family Member	15	16.7
	Baber	65	83.3
Type of Shoes Wear	Broad	1	1.1
	High Heel	2	2.2
	Sandal	37	41.1
	Leather Shoes	11	12.2
	Soft Heel	39	43.3
Type of Socks Wear	Cotton	40	44.4
	Wool	34	37.8
	Elastic	2	2.2
	Knee High	3	3.3

DISCUSSION:

Regarding knowledge, only 88% respondents had good information about foot care and formal education had a role in better knowledge about foot care and 12% do not know anything. Subjects' knowledge regarding prevention of foot ulcer is based on four sub dimensions also at high level.[11]

The expectation raised from diabetic health facilities which provided 'diabetic guide book' that may influence the patients to gain high level of knowledge. In addition, mass media such as television, newspaper alert the people to gain knowledge to prevent complications of diabetes. This finding was supported by the previous study

diabetic guide book that consisting of patients' diabetic information including medical test report for guidance. Subjects stated that they always visit health center to avoid danger. Previous study explained that general knowledge is provision of patients' general information and education that can reduce foot problems. Subjects had high knowledge as the questions were basic foot care and personal hygiene related.

The main source of information was doctors contributing about 61.1%, media 20% and colleagues 2.2%. About 54.4% had basic knowledge of gangrene. So, study also shows that role of physicians is very important in improving the knowledge and practices regarding foot care. In a study from Italy, more than 50% of the patients reported that they did not have their feet examined by their physician and 28% referred that they had not received foot education. Thus, patients' knowledge and practices are strongly related to physician's attitudes. In USA, a prospective, randomized, single center; two group designs were used to test the effectiveness of an educational intervention to improve patient's foot care knowledge, self-efficacy, and self-care practices.[12] This educational intervention improved patient's knowledge, confidence and reported foot care behaviors. Thus incorporating such interventions into routine home care services may enhance the quality of care and decrease the incidence of lower-extremity complications. Similarly a study was conducted in UK to assess the knowledge and practices of foot care in people with diabetes.[13] The patients at high risk of ulceration were compared with those at low risk. The mean knowledge score was 6.5 ± 2.1 out of possible 11. There was a positive correlation between the score and having received advice on foot care.[9]

In a study conducted in India, which concluded that low scores were common with poor formal education, thus confirming relationship between education and knowledge.[14] Role of formal education is further confirmed by a study from Italy where the presence of foot complications was correlated with insulin treatment, cigarette smoking and low levels of school education.[15] School education has also shown positive relationship with good practices.

So as per overall knowledge assessment knowledge was at high level and shown significant association with education, income per capita and sex but still there is need for awareness through medical personnel, public health institutions and by mass media such newspapers and magazines etc. in order to reduce the incidence of diabetic foot.

Findings of this study revealed that total practice was at moderate level. General practice about diabetes was at moderate level as most of the subjects revealed that they had no medical equipment's in their home; such as weight machine for measuring body weight, blood sugar, or urine sugar measuring materials. These subjects used their symptoms strip equipment for measuring discomfort to assess during their visit to the physician at health center for checkup. Previous study also supported that most of the subjects gained higher marks on factual knowledge on diabetes but lost marks on the application of knowledge to their real-life practice.[16] Overall practice assessment is of moderate level. In order to change their habits, health care providers need to influence them for better practice. The study findings were supported by KAP model which suggested that the right information (knowledge) will influence attitudes, and thus change the behavior.[17]

CONCLUSION:

Foot care knowledge was significantly high and practice was of moderate level among our study population. Knowledge has shown significant association with sex, income per capita and education. Medical personnel and media-based education especially TV ads are the most effective means of educating diabetics regarding such risks and hazards. Adopting comprehensive risk-modifying strategies, patient-centered foot care practice education and motivation, emotional support and improving their self-image, changing their health beliefs, and improving the quality of care in public health facilities would reduce the morbidity and mortality rate due to diabetic foot complications.

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