INFLUENCE OF SOCIO-DEMOGRAPHIC FACTORS ON KNOWLEDGE AND PRACTICE OF PROPER DIABETIC FOOT CARE

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ABSTRACT

OBJECTIVE: to identify the socio-demographic factors and their association with health care awareness and practices of foot care among diabetic patients visiting the diabetic clinics of Jinnah postgraduate medical center (JPMC) and Civil Hospital, Karachi.

METHODOLOGY: This observational descriptive study was conducted at diabetic clinics of JPMC and civil hospital Karachi, from June to October, 2012 on a nonprobability convenience sample of 786 diabetics. The mean of the knowledge and practice scores of the individuals, categorized in respective age groups, gender and socioeconomic status, based on monthly income and education, were analyzed.

RESULT: Out of 786 diabetic patients, 356(45.3%) were females and 430(54.7%) were males; 395 (50.3%) had no primary education while 480 (61.1%) patients had low monthly income. There were 466 (59.3%) patients who were unaware of the fact that smoking causes poor circulation of the feet and 357 (45.4%) patients were unaware about the temperature of water they should use to wash their feet in. Two hundred & forty two (30.8%) patients did not use warm water to wash their feet and 632 (80.4%) did not receive any health educational counseling about the type of footwear they should purchase and wear. However, 688 (87.5%) washed and 510 (64.9%) inspected their feet regularly. Poor education and low socio economic status were significantly associated with the lower awareness and practice scores.

CONCLUSION: Majority of the diabetics were not following the proper guidelines recommended by diabetic foot care counsels, especially those who were lacking education and of a low socioeconomic status.

KEY WORDS: Diabetes Mellitus, diabetic foot, Foot care, Knowledge, Practice.

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INTRODUCTION

Diabetes Mellitus (DM) and its associated complications are a major public health problem of considerable magnitude. Because of the huge premature morbidity and mortality associated with diabetes, prevention of complications is a key issue.[1] DM is a group of metabolic disorders characterized by chronic hyperglycemia; it is a common and potentially disabling chronic disease.[2] It is associated with abnormalities in carbohydrate, fat and protein metabolism, and results in chronic complications, including microvascular, macrovascular and neuropathic disorders.[1,3]

The condition is presently afflicting 200 million people worldwide and estimated to rapidly increase to 333 million people by 2025 as a consequence of longer life expectancy, sedentary lifestyle and changing dietary patterns.[1] According to the International Diabetes Federation (IDF), Pakistan had 6.5 million people of age group 20-79 years with diabetes in 2012. By 2030, this number is expected to reach 11.5 million. Another 7.1 million people were suffering from impaired glucose tolerance in 2011. This makes the diabetic population of 20-79 years age group in Pakistan, to stand in the tenth position in the world in 2012 and around 84,336 deaths were attributed to diabetes in the same year.[2] Therefore, the proper foot care practice is one of the avoidable measures that the diabetic patients should adopt in order to avoid future risks of getting neuropathic constellation of diseases like calluses, ulcerations, infections and ischemia which may ultimately lead to the lower extremity amputations.

Diabetic foot disease has been recognized in recent years as an important and very costly complication of diabetes. One

in every four patients with diabetes will be confronted with a foot ulcer during their lifetime.[3,4] The cessation of smoking,[5] wearing of loose and covered foot wears[6,7] and inspection and washing the foot regularly are some of the measures that must be adopted for avoiding complicated foot problems.

As Pakistan is one of the developing countries, the low socio-economic status of people, poor approach towards the attainment of sound education especially for females have added the threat of involving the diabetic patients with miserable foot complications which reduces their quality of life.[8] The 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 by their doctors and from other feasible educational sources and therefore remain unaware of the adverse consequences of neglect.[9] Demographic and social factors are expected to be related with it. This study was conducted to identify the socio-demographic factors and their association with health care awareness and practices of foot care among diabetic patients visiting the diabetic clinics of Jinnah postgraduate medical center (JPMC) Karachi and Civil Hospital, Karachi.

METHODOLOGY

This study was conducted from June to October 2012 at two major tertiary care hospitals of Karachi namely Jinnah Postgraduate Medical Centre & Civil Hospital Karachi. After all ethical consideration, data was collected by a nonprobability convenience sampling technique with a sample size of 786 subjects. A structured questionnaire adapted the recommendations of the American Diabetic Association guidelines for diabetes foot care[10] was used as a tool for data analysis.

SPSS statistical software version 16.0 was utilized for data entry and analysis. Frequency and descriptive statistics were used to examine the general characteristics of the respondents. The mean of the scores for each demographic and social factors like age, gender, education and socio-economic status were compared using Student t- Test and a P value of <0.05 was considered statistically significant.

TABLE 1: PARAMETERS OF KNOWLEDGE AND PRACTICE OF PROPER DIABETIC FOOT CARE

Parameters of awareness and practice		Frequency (n=786)	%age
Elastized socks aggravate pressure symptoms	Aware	291	37.02
	Unaware	495	62.98
Smoking causes poor circulation of the feet	Aware	320	40.7
	Unaware	466	59.3
What temperature they should wash their feet in	Aware	429	54.6
	Unaware	357	45.4
Examination of feet by doctors on every visit	Yes	346	44.02
	No	440	55.98
Wash their feet regularly	Yes	688	87.5
	No	98	12.5
Use warm water to wash their feet	Yes	544	69.2
	No	242	30.8
Inspect their feet regularly	Yes	510	64.9
	No	276	35.1
Received health educational counseling about the type of footwear they should purchase and wear	Yes	154	19.6
	No	632	80.4

RESULTS

In this study, out of 786 diabetic patients, 356 (45.3 %) were females and 430 (54.7%) were males. Five hundred and thirty seven (68.3%) were above the age of 50 years. Three hundred & ninety five (50.3%) had no formal or primary education, while three hundred and ninety one (49.7%) had a secondary or graduate level of education.

The mean awareness score was 6.83. The range of the awareness score obtained in this study was 1-10 out of maximum possible score of 10. Four hundred and ninety five (37.02%) were unaware that elastized socks aggravate pressure symptoms. There were 466 (59.3%) diabetic patients who were unaware that smoking causes poor circulation of the feet. Similarly 357 (45.4%) were unaware that at what temperature they should wash their feet in (table 1).

The Mean practice score came out to be 5.60.The range of current practice score obtained was 1-10, out of maximum possible score of 10. About 30.8% washed their feet with warm water and 80.4% do not receive advice before buying their footwear. However, 87.5% wash their feet regularly and 64.9% inspect their feet regularly (table 1).

In order to determine the influence of demographic and social factors on Awareness and practice, the categorical variables were dichotomized and used to compare the mean of the scores. The poor education attainment with a p value of less than 0.0001 and low socio economic status with a p value of less than 0.001 were significantly associated

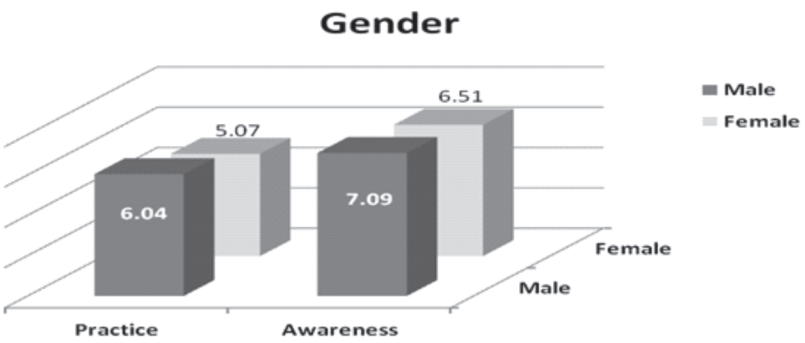

Figure 1: Influence of gender on mean scores of knowledge and practice

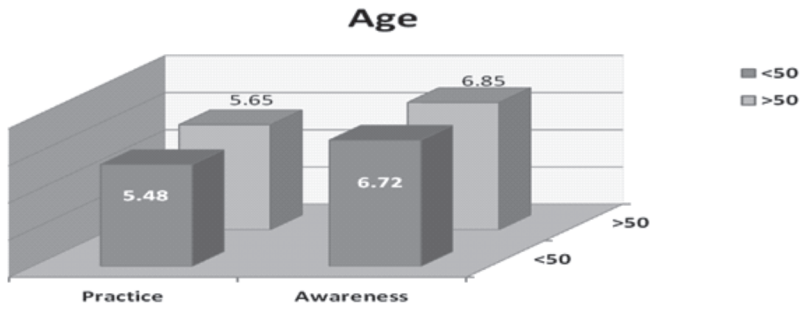

Figure 2: Influence of age (in years) on mean score of knowledge and practice of diabetic foot care

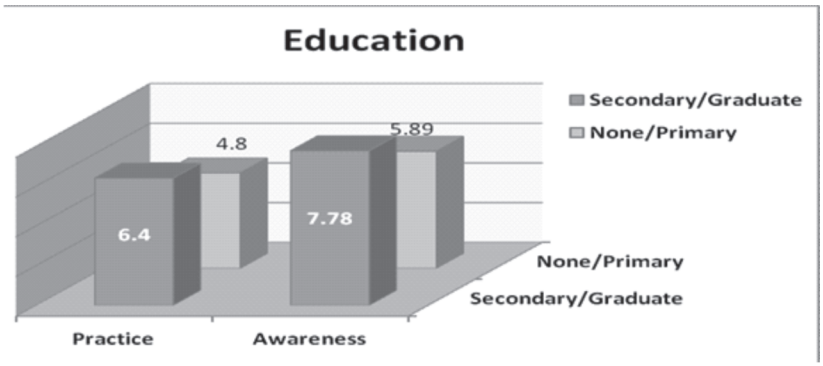

Figure 3: Influence of education on mean scores of knowledge and practice

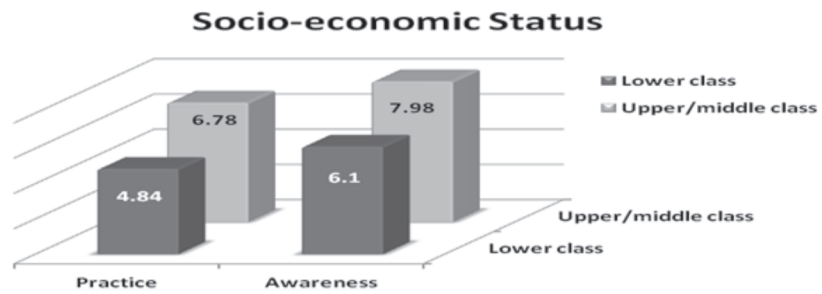

Figure 4: Influence of socio economic status on mean scores of knowledge and practice

with the lower awareness and practice scores in this study and, therefore, rejects the null hypothesis. Figures 1-5 are showing influence of gender, age, education, socioeconomic status and physical examination on mean score of knowledge and practice of diabetic foot care.

DISCUSSION

The result of this study showed that a greater proportion of diabetic patients have a sound awareness about diabetic foot care and majority of patients were washing their feet multiple times a day, an important reason for this practice was performing Wodhu (ablution) five times a day, certain studies also acknowledge the importance of Wodhu in foot care.[11] However, there was significant lack of awareness found in this study about the potential risks of cigarette smoking and 59.5% patients were unaware that smoking can cause poor circulation affecting their feet.

Many studies have been conducted showing poor foot care knowledge and practices among patients with diabetes. A study done in Iran showed that 60% patients with diabetes failed to inspect their feet, and 62% used to walk bare feet.[12] A similar study done in Nigeria showed that 59.1% of the people do not inspect their feet regularly and 38.1% had the habit of remaining bare –footed.[13] However, in this study, the results showed that 64.9% of the patients inspected their feet regularly and 49.7% had the habit of remaining bare-footed which is a dangerous approach, as severe diabetic neuropathy can increase plantar pressure and the bare- footed habit make the Diabetic patient prone towards developing foot ulcers.[14]

Diabetic foot disease has been recognized in recent years as an important and very costly complication of diabetes. Treatment of diabetic foot ulcers is long and intensive and the associated costs are high. Therefore, the need for specialist consultation when warning signs like bleeding or redness occurs between toes and to take advice before buying foot wears are extremely important,[15] however, it was found that only 19.6%

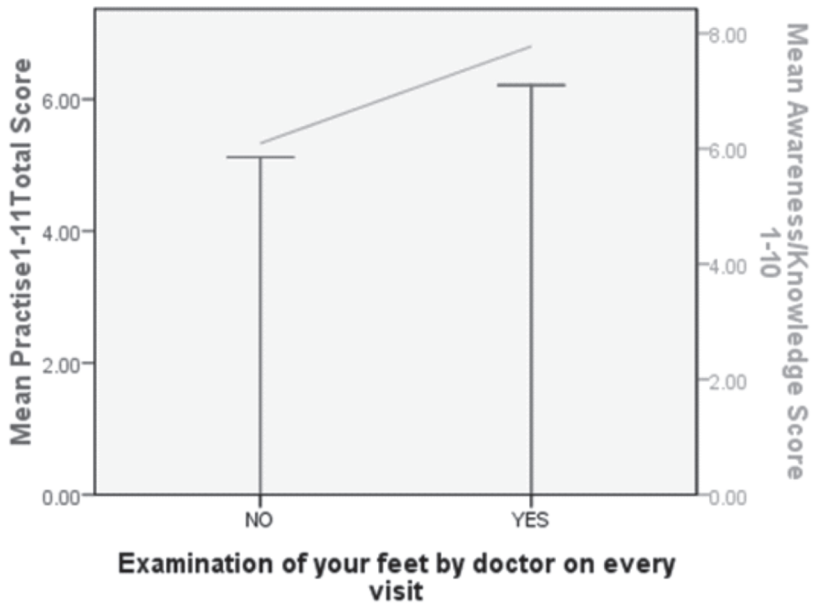

Figure 5:Influence of Physician Examination on Mean Practice and Awareness Score

of the diabetic patients received advice before buying their foot wears.

As Periodic examination of foot by the doctor is important to avoid foot complications,[16] 55.6% inquired that their doctor does not examine their feet on every visit. In this study 65% of the Diabetic Patients were unfamiliar that tight elastic socks may cause pressure to their extremities and ultimately aggravate the neuropathy symptoms. In the (Figure 5), the high knowledge and Practice scores are also associated with the examination of the feet by the doctors on every visit of the patient. The deficiency in the knowledge and practice may be due to poor communication between the doctors and the patients and also lack of counseling by the doctors and nurses as a result of busy clinic schedule. Thus, patient education on the prevention of foot ulceration is crucial and should be incorporated into the routine care of patients with diabetes both in the hospital and in the community. Time must be allotted to communication, information and education during clinic sessions.[17]

In this study it has also been found that the patients having poor education and low socio economic status had lower awareness and practice of foot care while gender and age differences were not significantly associated with the awareness of foot care. A study conducted in India concluded that low scores were common with poor formal education, thus confirming relationship between education and knowledge.[18]

Similarly a Pakistani study on diabetics reported that the level of awareness was generally low amongst the general population and there is a need for strategies to create awareness regarding diabetes.[19]

CONCLUSION

This study identified the need to focus on risk factors like the poor literacy rates and low socioeconomic factors which are associated with the ever increasing complications of diabetic foot. Majority of the diabetics were not following the proper guidelines recommended by Diabetic Foot Care Counsels, especially those who were poor in education and socio economic status, therefore proper health care counseling and health care programs should be incorporated in diabetic clinics both at the local level and nationally through mass media campaigns.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

SAA: Conception and design, acquisition of data, drafting the manuscript, final approval of the version to be published

GU: acquisition and analysis of data, critical revision, final approval of the version to be published

MAA: critical revision, final approval of the version to be published

SHA, RK, FR & SA: acquisition of data, final approval of the version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST

Author declares no conflict of interest

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