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A study to assess the knowledge on foot care among diabetic clients attending endocrinology OPD, in Narayana medical college and hospital, Nellore

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Abstract

Background: Diabetes is an 'ice berg disease. Although it increases in both the prevalence and incidence of non-insulin dependent diabetes occurred globally, they have been especially dramatic in societies in newly industrialized countries and in developing countries.

Objective: To assess the level of knowledge on Foot ulcer among diabetic clients in Narayana medical college and hospital.

Materials and Methods: Descriptive cross sectional design and convenient sampling technique was followed which included 100 samples were used. Data was collected using structured questionnaire. Data analysis was done with SPSS.

Results: shows that with regard to foot care among 100 diabetic clients, 32 (32%) diabetic clients had inadequate knowledge, 53 (53%) had moderate knowledge and where as 15 (15%) had adequate knowledge.

Conclusions: In this study most of the diabetic clients had inadequate and moderate knowledge regarding Diabetic foot care and adequate knowledge of low level. There was significant association between demographic variables and the level of knowledge at $P<0.01$ level.

Keywords: diabetes, insulin, foot ulcer

1. Introduction

The term diabetes mellitus is derived from a Greek word which means to go through or a siphon and the word Mellitus is derived from a Latin word Me (honey) describes the sweet odour of the urine. Diabetes Mellitus is a silent disease and now recognized as one of the fastest growing threat to public health in almost all countries of the World. It is also called the disease of prosperities. Prevention is better than cure [1].

Diabetes is an 'ice berg disease. Although it increases in both the prevalence and incidence of non-insulin dependent diabetes occurred globally, they have been especially dramatic in societies in newly industrialized countries and in developing countries [2].

Diabetes mellitus is a group of metabolic disorder arising either due to relative or absolute deficiency of a digestive hormone called insulin or inability or resistance of body cells to use the available insulin. Risk factors are family history, obesity, impaired glucose intolerance, hypertension, history of gestational diabetes mellitus [3]. Clinical manifestations include 3 P's- polyuria, polyphasia, polydipsia, fatigue, weakness, sudden vision changes, tingling or numbness of hands and foot, dry skin. Patients with Diabetes mellitus cannot be cured, but they can control it with proper care, regular exercise, diet, and drug. Proper care, regular administration of drug can provide desired outcome, control diabetes, and prevent its complications. Undiagnosed or inadequately treated diabetes mellitus patients develop multiple complications leading to hospital admission. The complications include hyperglycemia, hypoglycemia, kidney problems, retinopathy, neuropathy, associated vasculopathies like atherosclerosis, coronary artery disease, micro vascular disorders, foot problems and ulcers.

Diabetic foot is one of the most significant complications of diabetes, and is defined as a foot affected by ulceration that is associated with neuropathy and/or peripheral arterial disease of the lower limb in a patient with diabetes. Risk factors implicated in the development of diabetic foot ulcers are diabetic neuropathy, peripheral vascular disease, cigarette smoking, poor glycemic control, previous foot ulcerations or amputations, diabetic nephropathy, and ischemia of small and large blood vessels. When ulcer starts the foot may have pain, swelling, numbness, deformity, gangrene forms. The gold standard for diabetic foot ulcer treatment includes debridement of the wound, management of any infection, revascularization procedures when indicated, and off-loading of the ulcer [4].

Foot are the body parts which are given least importance in the daily care. Foot ulcers and amputations are a major cause of morbidity, disability, as well as emotional and physical costs for people with diabetes. Early recognition and management of risk factors for ulcers and amputations can prevent or delay the onset of adverse outcomes [5]. This statement provides recommendations for people who currently have no foot ulcers and outlines the best means to identify and manage risk factors before a foot ulcer occurs or an amputation becomes imminent.

Currently the number of cases a diabetes worldwide is estimated to around 150 million. This number is predicted to be doubled by the year 2025. A prevalence rate of about 5.4% with the greatest number of cases being expected in China and India. By 2030 as much as 9% of the population would be diabetic [7]. More than 23 million people in the United States

(U.S.) are believed to have diabetes. It is estimated that by 2025, 300 million people worldwide will have diabetes and by 2030, 360 million people. Thus, by 2030, worldwide prevalence will approach 5 percent.1-4 In general, the incidence of nontraumatic lower extremity amputations (LEAs) has been reported to be at least 15 times greater in those with diabetes than with any other concomitant medical illness. It has been reported that annually, about 1 to 4 percent of those with diabetes develop a foot ulcer; 10 to 15 percent of those with diabetes will have at least one foot ulcer during their lifetime.

Around 150 Million peoples suffered from diabetes in the World, out of that above 35 million are Indians are the highest in the world, so it is called Diabetic capital of world. Every fifth person who suffer from diabetes in the world today is an Indian. By 2030 Indian will have 79.4 Million diabetic projects of WHO (World Health Organization) that's more than twice the current number over 35 million cases. No wonder India is the "Diabetic Capital of the World". Foot infection was common among Indian diabetic patients (52 %). A lesser prevalence of peripheral vascular disease (13%) among Indians was noted when compared with those in western countries (48%) smoking increases the risk by reducing blood circulation in the legs and reducing sensation in the feet. People with diabetes can develop a variety of foot complaints are the leading cause of hospitalization [9]. It is estimated that 15% of all diabetes will develop a serious foot complaints. Two hundred and fifty three people were recruited. There were 40 deaths (15.8%) 36 amputations (15.5%) and 99 recurrences (43.2%) at 18 months our main findings were that being older (hazard Ratio (HR) 1.07, 95%. In 2003, based on the National Hospital Discharge Survey, reported a rate of 8 (ages 65–74) to 11 (age 75 and greater) hospital discharges with a diagnosis of foot ulcer per 1,000 individuals with diabetes. This report was limited because it did not include outpatient care or chronic care facilities, may have counted individuals with venous leg ulcers, and may have counted individuals more than once if they were hospitalized more than once. Using the same dataset, estimated in 2005 that the rate of LEA was 5.3 to 5.6 hospital discharges per 1,000 individuals with diabetes.

33% of the diabetic people are at the risk of developing foot Ulcer.16% will definitely develop Foot Ulcer. The prevalence of amputation in Type 2 (non insulin dependant) diabetic patients is 3%. 30% of the diabetics get admitted for diabetic foot. And number of days spent by these patients in hospitals, are more than the days spent due to all other complications. The total lower limb amputations, 85% are due to Diabetic Foot. Put feet first: Prevent Amputation was the

In India, 55% of Foot Ulcers are Neuropathic (nerve involvement), 35% are Neuro ischemic & 10% are Ischemic (Blood Vessels Involvement). Every 30 seconds a Diabetic patient somewhere in the world looses lower limb as a direct result of Diabetes. One ulcerated Diabetic is 58 times more likely to re ulcerate. 5% Diabetics anticipate Foot Ulcer in one year. Papanas *et al* 2007 identified that people with diabetic foot lesions (wound) and renal diseases have increased risk of 6.5 to 10 times that of people with Diabetic Foot lesions alone Diabetic foot ulcer is the most devastating problem which affects the human life as a whole. We had observed diabetic patients with foot ulcers during our working experience. The individuals who doesn't have adequate knowledge about the foot care are more prone to get the foot ulcers and foot complications leading to amputation. We was seeing and hearing it all around us. Even one of our friends mother is also suffering with a foot ulcer. These all critical situations has given us enough interest and enthusiasm to start a research on diabetic foot ulcer, and to provide awareness among the diabetic clients.

Hence we found it necessary to perform a study to assess the knowledge regarding diabetic foot care among diabetic patients.

2. Objectives of the Study

- To assess the level of knowledge on foot care among diabetic clients.
- To determine the association between selected demographic variables with the level of knowledge among diabetic clients.

3. Research Hypothesis

- **H1.** There is no significant association between level of knowledge on foot care among diabetic patients.
- **H2.** There is no significant association between knowledge regarding diabetic foot care among diabetic patients with their selected demographic variables.

3. Materials and Methods

Sampling and data collection: Descriptive cross sectional design, used to assess the level of knowledge regarding foot care among diabetic clients in Narayana medical college hospital. Non-probability convenient sampling was used. Diabetic clients who were eligible, can understand regional language, who were available during data collection and voluntarily willing to participate in the study. Who are not willing to participate, not interested and not co-operative were excluded. Prior Permission was obtained from ethical clearance committee. Participants signed an informed consent and were told they could withdraw from the study at any time for any reason.

Description of Tool

Part I

It includes demographic variables like Age, Sex, Religion, Education, Marital Status, Occupation, Type of work, Monthly income and source of Information.

Part II

Structured questionnaire which consist of 13 questions to assess the knowledge regarding general information of Diabetes mellitus – each question has 4 options, one right answer and 3 wrong. Each right answer carries '1' mark and each wrong answer carries "0".

Part III

Structured questionnaire which consists of 24 questions to assess the knowledge regarding Diabetic foot care among Diabetic clients. Each question has 4 options, one right answer and 3 wrong. Each right answer carries "1" mark and each wrong answer carries "0".

Score Interpretation

The score was interpreted as follows:

Inadequate knowledge: <50%
Moderately adequate: 50-75%
Adequate knowledge: >75%

Data analysis

Data was analysed by using descriptive and inferential statistics. Frequency, percentage, mean, standard deviation and chi-square test were done.

Section 1: Distribution of Demographic Variables among Diabetic Clients

Table 1: Frequency and percentage distribution of demographic variables among diabetic clients (n=100)

S. No.	Demographic variables		Frequency	Percentage
1.	Age	21-30	7	7
		31-40	21	21
		41-50	31	31
		51-60	41	41
2.	Sex	Male	55	55
		Female	45	45
3.	Religion	Hindu	76	76
		Christian	18	18
		Muslim	3	3
		Others	3	3
4.	Education	Illiterate	26	26
		Primary Education	24	24
		Secondary Education	26	26
		Intermediate	7	7
		Graduate	78	78
		Post Graduate	10	10
5.	Marital Status	Single	4	4
		Married	85	85
		Widow/Widower	5	5
		Separated/Divorced	6	6
6.	Occupation	Unemployee	12	12
		Labourer	14	14
		Home maker	23	23
		Private Employee	29	29
		Government Employee	15	15
		Retired	7	7
7.	Type of work	Sedentary	36	36
		Moderate	43	43
		Heavy	21	21
8.	Monthly income in Rupees	Below 8000	58	58
		8000-15000	24	24
		15000-25000	10	10
		Above 25000	8	8
9.	Family History diabetes mellitus	Yes	71	71
		No	29	29
10.	If yes relation to the parent	Parental	30	30
		Maternal	33	39
		Grand parents	5	5
		Others	3	3
11.	When was diabetes mellitus identified	Less than 6 months	42	42
		6 months-1 year	26	26
		1-5 years	20	20
		Above 5 years	12	12
12.	Do you have awareness about diabetic foot care	Yes	77	77
		No	23	23
13.	If yes source of information	Personal experience	4	4
		TV/RADIO	9	9
		Magazines/Books	17	17
		Medical personnel	29	29
		Awareness programmes	5	5
		Friends/Relatives	13	13
		Missing	23	23

Section 2: Distribution of Level of Knowledge among Diabetic Clients Regarding Diabetes Mellitus N=100

Table 2: Frequency and Percentage Distribution

S. No.	Demographic variables		Frequency	Percentage
1.	Level of knowledge on diabetics	Inadequate	22	22
		Moderate	42	42
		Adequate	36	36

Section 3: Distribution of Level of Knowledge among Diabetic Clients Regarding Diabetic Foot Care N=100

Table 3: Frequency and Percentage Distribution

S. No.	Demographic variables		Frequency	Percentage
1.	Level of knowledge on diabetic footcare	Inadequate	32	32
		Moderate	53	53
		Adequate	15	15

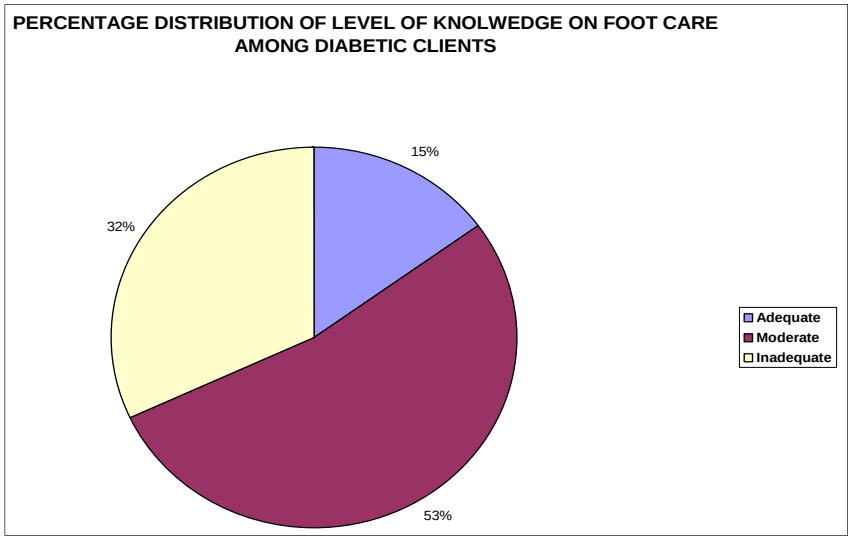

Table 4: Mean and Standard Deviation for Level of Knowledge among Diabetic Clients N=100

S. No.	Demographic variables		Frequency	Percentage
1.	Level of knowledge on diabetic foot care among diabetic clients	Mean	22.51	22.51
		Standard deviation	6.232	6.232

There is significant association between all the demographic variables like age, sex, educational status, marital status, occupation, type of work, monthly income, family history of diabetes and level of knowledge at P>0.01 level.

4. Discussion

The discussion of the present study was based on the findings obtained from the descriptive and inferential statistical analysis of collected data. It is presented in the view of the objectives of the study. The study related to level of knowledge regarding diabetic foot care, out of 100 Diabetic clients 32 (32%) diabetic clients had inadequate knowledge, 53 (53%) had moderate knowledge and where as 15 (15%) had adequate knowledge. There was significant association between demographic variables and the level of knowledge at P<0.01 level. The mean sore was 22.51 and the standard deviation was 6.32

5. Conclusion

In this study most of the diabetic clients had inadequate and moderate knowledge regarding Diabetic foot care and adequate knowledge of low level. There was significant association between demographic variables and the level of knowledge at P<0.01 level

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