

Assess the Effectiveness of Health Talk on the Knowledge regarding Foot Care among Diabetic Mellitus Patients

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Abstract: *Diabetes is a disease that occurs when a person's body doesn't make enough insulin or can't use insulin properly. People who have diabetes often have trouble with their feet. Part of the problem is that the loss of feeling in one's feet makes it hard for him to tell if he has a blister or sore. If little sores aren't taken care of, they can get worse and turn into ulcers (serious, deep sores). If these ulcers become infected, one may have to go to the hospital or, in very serious cases, have a foot amputated. This study was based on descriptive evaluative approach. The method used for this study was Quasi experimental one group pretest post test research design. 60 samples were selected with non-probability convenient sampling technique. Sample selection was based on inclusive and exclusive criteria. The tools used for this study was questionnaires with including selected Demographic variables, which was prepared on the basis of review of literature, various information & informal discussion with the patients. While data collection process followed the ethical consideration such as written permission was obtained from rural hospital authority and informed written consent obtained from Diabetes mellitus patients. Based on the objectives and the hypothesis the data were analyzed by using various statistical tests. Analysis of data showed that there is significant difference between pre test and post test knowledge. The calculated 't' values are much higher than the tabulated values. Hence it is statistically interpreted that the Health Talk on the knowledge regarding foot care and their prevention among diabetic mellitus patients was effective.*

Keywords: Foot Ulcer, Diabetes mellitus, insuline, hyperglycemia, Dietary patterns

1. Introduction

“Prevention is better than care.”

An old English Proverb

Health is considered as a basic human right. As basic human needs are essential for survival, people strive to meet them. Person whose needs are met may be considered to be healthy, and a person with one or more unmet needs is at increased risk of illness or health alteration in one or more of the human dimensions. Health is the general condition of a person in all aspects. It is also a level of functional and metabolic efficiency of an organism. WHO, in 1948 defined health was as being “a state of complete physical, mental and social well being and not merely the absence of disease or infirmity”¹

Diabetes is a disease that occurs when a person's body doesn't make enough insulin or can't use insulin properly. When a person has diabetes, the sugar builds up in blood instead of moving into the cells. Too much sugar in the blood can lead to serious health problems, including heart disease and damage to the nerves and kidneys.²

People who have diabetes often have trouble with their feet. Part of the problem is that the loss of feeling in one's feet makes it hard for him to tell if he has a blister or sore. If little sores aren't taken care of, they can get worse and turn into ulcers (serious, deep sores). If these ulcers become infected, one may have to go to the hospital or, in very serious cases, have a foot amputated.³

The type 2 diabetes is increasing global health problem with a current world prevalence of about 5%. The international diabetes Federation estimates that by 2025 the prevalence of diabetes will have doubled in most developed countries and

tripled in developing countries. Foot ulcers in diabetes if not early and properly managed can be disastrous. Foot ulcers will occur in around 15% of diabetes: up to 3 % will have amputation. Common complication of diabetes in foot is peripheral neuropathy, affecting > 30 % of diabetic population. Peripheral neuropathy in foot leads to dry skin and loss of the protective sensation of pressure and pain together with reduced joint immobility. It also increases the risk of ulceration induced by unperceived minor injury from shoe & other trauma. The presence of micro vascular disease, decrease immunity and infection increases the probability of foot ulcers leading to disastrous effect like lower limb amputation. Different studies have shown up to 70 % of amputations in lower limb are due to diabetic foot ulcers. The disastrous effect like amputation can be prevented as majority of diabetic foot problems is neuropathic and infective and not vascular in origin like in western countries. Therefore prevention and early effective management is cost effective and can save limb and life.⁴

2. Literature Survey

A research paper brought out by India's industry chamber Association, titled Epidemic of New Millennium Diabetes, reveals that the number of diabetes patients has increased to 25 million from 19 million in 1995. Urban diabetic patients are estimated to account for nearly 10% to 11% of the total 25 million patients in India. According to Assocham, the prevalence of diabetes is 16.6% in Hyderabad, followed by Chennai with 13.5%, Bangalore with 12.4%, Delhi with 11.6%, and Mumbai with 9.3%. By 2025, the number of diabetes patients is expected to increase by 41% in developed countries to 72 million from the present level of 51 million.⁵

Diabetes is a chronic disease that affects up to 6% of the population (higher in the older age groups). Insulin is a

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hormone that helps the body deal with sugar (glucose) in the diet. When diabetes is present, either the body produces less or no insulin (Type 1) or the body tissues are resistant to the effects of diabetes (Type 2). This results in higher levels of glucose in the blood, which can damage a whole range of body tissues and organs.⁶

Diabetes mellitus, also called diabetes, is a metabolic disorder characterized by high blood sugar levels. The condition results from a defect in the body's ability to produce or utilize insulin. Insulin is a hormone secreted by the pancreas that is necessary to convert glucose into a form that can be used by cells for growth and energy. Diabetes causes abnormally high glucose levels (hyperglycemia), circulatory problems, and nerve damage.⁷

Diabetes Mellitus primarily affects the Islets of Langerhans of the pancreas, where glucagon (from the alpha cells) and insulin (from the beta cells) are produced. Glucagon raises the blood glucose level, while insulin lowers it. In Type 1 DM (Insulin Dependent), the loss of function of the beta cells leads to an absolute insulin deficiency. In Type 2 DM (Non-insulin Dependent), the impaired production and secretion of insulin by the beta cells is concomitant with the impaired ability of the tissues to utilize insulin (termed insulin resistance). The resulting accumulation of glucose in the blood is further elevated by the greater synthesis of glucose in the liver, which releases it to the general circulation.⁸

If one have diabetes, he may have an increased risk for developing foot ulcers, or sores. Foot ulcers are the most common reason for hospital stays for people with diabetes. It may take weeks or even several months for your foot ulcers to heal. Diabetic ulcers are often painless.⁹

Diabetes causes blood sugar levels to be higher than normal. Over time, high blood sugar levels can damage the blood vessels and nerves in body. Damage to nerves means that one may have burning pain or lose feeling in a part of body (this is called diabetic neuropathy). Damage to the blood vessels that some areas of body (usually the feet) may not be getting a good supply of blood. This leads to unawareness about the wound on the foot and leads to the foot related complications.¹⁰

Diabetes mellitus (DM) represents several diseases in which high blood glucose levels over time can damage the nerves, kidneys, eyes, and blood vessels. Diabetes can also decrease the body's ability to fight infection. When diabetes is not well controlled, damage to the organs and impairment of the immune system is likely. Foot problems commonly develop in people with diabetes and can quickly become serious. With damage to the nervous system, a person with diabetes may not be able to feel his or her feet properly. Normal sweat secretion and oil production that lubricates the skin of the foot is impaired. These factors together can lead to abnormal pressure on the skin, bones, and joints of the foot during walking and can lead to breakdown of the skin of the foot. Sores may develop.¹¹

3. Problem Definition

A study to assess effectiveness of Health Talk on the knowledge regarding foot care among diabetic mellitus patients admitted in selected rural hospitals of Vidharbha region.

Objectives of Study

- 1) To assess the existing knowledge regarding foot care among diabetic patients.
- 2) To determine the effectiveness of health talk on knowledge regarding diabetic foot care.
- 3) To associate the knowledge scores of diabetic patients with their selected demographic variables.

4. Material and Methods

A single group pre test and post test (quasi-experimental) design was chosen for the study. In the present study a pre test was administered by means of structured questionnaire depicted as P1 and then Health talk was given depicted as X, a post test was conducted using the same structured questionnaire depicted P2. The study design is depicted as –

Pre Test	Planned health teaching	Post Test
P1	X	P2

A descriptive Evaluative approach was found to be more appropriate to assess the effectiveness of health talk regarding knowledge and prevention of foot ulcer. The proposed study was undertaken in at selected outpatients department in selected rural hospital of Vidharbha region. The population and samples were Diabetes mellitus patients who were fulfilling the inclusion and exclusion criteria and the sample consisted of sixty patient of Diabetes mellitus. The sampling technique used in this study was non-probability convenient sampling. Tools used for data collection include two section namely demographic variable and structured knowledge questionnaires.

5. Results

A structured questionnaire is used for data collection. The analysis was done with the help of descriptive and inferential statistics.

SN	Data analysis	Method	Remark
1.	Descriptive statistics	Mean, standard deviation, percentage.	Health teaching regarding diabetic foot care.
2.	Inferential statistics	Paired “t” test	Effectiveness of health talk
		Unpaired “t” test and one way ANOVA	Associate demographic variables with level of knowledge.

The data was analyzed and is presented in the following sections:-

Section I: Distribution of samples in relation to demographic data.

This section deals with percentagewise distribution of samples according to their demographic variables. A convenient sample of 60 subjects were drawn from the study

population, who were diabetic patients and admitted in rural hospitals in Vidharbha region. The data obtained to describe the sample characteristics including age, gender, and educational status, type of family, residence and known case of diabetes since.

Section II: Assessment of knowledge of patients regarding diabetic foot care among diabetic patients. This section deals with the assessment of knowledge regarding diabetic foot care among diabetic patients admitted in rural hospitals of Vidharbha region. The level of knowledge is divided under following headings poor, average, good, very good and excellent.

Section III: Evaluate the effectiveness of health talk on diabetic foot care.

This section deals with evaluation of effectiveness of health talk on Knowledge regarding foot care among diabetic patients in rural hospital of Vidharbha Region. The hypothesis was tested statistically with areawise distribution of pretest and posttest mean and standard deviation and mean score percentage. The levels of knowledge during the pretest and post test were compared to prove the effectiveness of Health talk. Significance of difference at 5% level of significance was tested with paired 't' test and tabulated 't' value was compared with the calculated 't' value. Also the calculated 'p' value was compared with acceptable 'p' value i.e.0.05.

Knowledge area	Mean knowledge score	SD	Mean % score	t-value	p-value
Pre Test	12.16	3.05	48.66	26.22	0.000 S,p < 0.05
Post Test	23.50	1.67	94.00		

The calculated 't' values was much higher than the tabulated value at 5% level of significance which is statistically acceptable level of significance. In addition the calculated 'p' value for all the areas of knowledge regarding diabetic foot care was 0.000 which is ideal for any population. Hence it is statistically interpreted that the health talk on diabetic foot care was effective. Thus the H_1 is accepted.

Section IV: Association of knowledge score with demographic variables. This section deals with the association of posttest knowledge scores with selected demographic variables of the study participants. One way ANOVA and unpaired 't' test were used for within group comparisons categorically. Variables having more than two categories, one way ANOVA was used and for variables having two categories unpaired 't' test was used.

6. Discussion

The finding of the study was discussed with reference to the objectives and with the findings of the other studies in this section. The present study was undertaken to assess the effectiveness of health talk regarding prevention of foot ulcer among the Diabetic mellitus patients in selected rural hospital of Vidharbha region. Diabetic foot ulcer is a result of microvascular and neuropathic complications in diabetics. Studies such as the United Kingdom Prospective Diabetes Study have shown that proper control of blood glucose

through diet, exercise and medications prevents the development of microvascular complications. Furthermore, the practice of diabetic foot care including daily foot examination and use of appropriate footwear is considered important in its early detection and prevention of complications. People with poor knowledge and practice regarding diabetic foot care are known to have a higher incidence of diabetic foot ulcers. On the other hand, simple health education measures can improve both the knowledge and practice regarding diabetic foot care. Adoption of foot care practice after education has also been shown to reduce foot problems such as corns and callosities and promote healing of foot ulcers. However, there is a dearth of studies in India, which assess the effect of health education on diabetic foot care practice of patients, especially in primary care setting. Thus, the objective of our study was to assess the risk factors for poor diabetic foot care and to determine the effectiveness of health education in improving diabetic foot care practice in a rural outpatient setting.

7. Conclusion

The health talk on diabetic foot care significantly brought out improvement in the knowledge of Diabetic mellitus patients regarding foot care. Analysis of data showed that there was significant difference between pre tests and post test knowledge score and effectiveness of health talk regarding prevention of foot ulcer among type II Diabetes mellitus patients attending outpatients department in selected rural hospital of Vidharbha region and there is no significant association between demographic variables.

8. Future Scope

The findings of this study have implications for nursing practice, nursing education, nursing administration and nursing research.

Nursing Services

When professional liability is recognized, it defines the parameters of the profession and the standard of professional conduct. Nurses should therefore enhance their professional knowledge. The role of nurses has expanded rapidly within past ten years to include expertise specialization, autonomy and accountability. The patient is considered the consumer of nursing and health care. The planned teaching can be used for imparting knowledge regarding diabetic foot care to health team members. It can be used as a guide and can serve as reinforcement to the health education given by the teachers to the nurses. Planned teaching would serve as a ready reference material for the health team members. The information is particularly useful for nurses caring for this patient population. Nurses often provide bedside support and education to family members and patients with diabetes. Knowledge about correlations between diabetic foot and potential patient outcomes would aid nurses in their understanding and explanation of possible outcomes. This study will help the nurses for coordinating health care services to health care professionals. It will also help the nurses to keep update knowledge regarding diabetic foot care.

Nursing Education

Health care personnel should be given an opportunity to update their knowledge periodically. The educators need to remember that more emphasis is to be given for applying diabetic foot care. Educators will help students, colleagues, and junior staff to be trained in providing diabetic foot care. In the nursing curriculum now a day much emphasis is given on comprehensive care. So the study will help the teachers to educate the student and the staff nurses for increasing the knowledge about diabetic foot care. The planned teaching could help educator to use it as a tool for teaching.

Nursing Administration

Findings of the study can be used by the Nursing Administrators in creating policies and plans for providing education to the staff nurses and diabetic patients. It would help the nursing administrators to be planned and organized and in giving continuing education to nurses and to others for applying and updating the knowledge of diabetic foot care.

Nursing Research

The findings of the study have added to the existing body of the knowledge in the diabetic patients. Other researchers may utilize the suggestions and recommendations for conducting further study. The tool and technique used has added to the body of knowledge and can be used for further references.

Personal Experience

The entire study gave an enriching experience to the investigator. It helped him to develop his skill in critical thinking and analysis and realize the importance of effective communication with respondent.

The entire study was varied and a rich learning experience, which enabled the investigator to develop his skill in dealing with different personalities. The concept clarity about research as a whole was increased. At every stage the investigator received guidance and support from his guide. This boosted confidence to go ahead and carry out the planned activities resulted in presenting this study. The co-operation from study samples was remarkable. The research was a great learning opportunity for the investigator.

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