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Effect of Structured Teaching Programme on Knowledge and Practice Regarding Foot Care among Chronic Diabetic Patients

Sruthy Vinod

Mahatma Gandhi University, Kerala, India

Abstract: ***A study on "Effect of structured teaching programme on knowledge and practice regarding foot care among chronic diabetic patients of Kottayam district" was conducted by the researcher. The main objective of the study was to assess the effect of structured teaching programme on knowledge and practice regarding foot care among chronic diabetic patients. Imogene King's goal attainment theory provided the theoretical basis for the present study. The study was conducted at Athirampuzha Panchayat, Kottayam. A total of 50 diabetic patients who have diabetes mellitus for more than 5yrs were recruited using simple random sampling technique. The research design selected was quasi-experimental with one group pre test post test. On the first day, pre-test was done with the help of knowledge questionnaire and practice checklist and structured teaching programme was given on the same day. The duration of the session was one hour. After 7 days, post test was conducted using the same questionnaire and practice checklist to evaluate the effectiveness of the structured teaching programme. The knowledge level was assessed under 5 domains- general awareness, signs and symptoms, diabetic control and life style changes, footwear selection and protection of feet. Practice regarding foot care was assessed with the help of reported practice and observation check list of foot care. The result of the study showed that there was significant difference in knowledge and practice after the structured teaching program (p <0.05). Also the knowledge and practice had association with religion, financial category and family history. But there was no correlation between knowledge and practice regarding foot care among chronic diabetes mellitus. (r= 0.120, p= 0.408). However, Structured Teaching Programme was found to be effective in increasing the knowledge level and practice level of chronic diabetic patients regarding foot care.***

Keywords: Knowledge, Practice, Structured teaching programme, Foot care, Chronic Diabetic patients

1. Introduction

Diabetes is one of the most challenging health problems in the 21st century [1,2]. Diabetes is one of non-communicable diseases that have allocated a large proportion of cost, time and human resources of health systems. Due to changes in lifestyle and industrial process, incidence of diabetes and its complications have been increased. Diabetic foot considered as a common complication of diabetes [3].

According to international diabetes federation's data 2013 India ranked 2nd with 65.1 million people with diabetes which is just behind china and greater than the United State. The number of Indians with diabetes are expected rise to 109 million by 2035[4]. Kerala is the diabetes capital of India with a prevalence of diabetes as high as 20%. In Kerala only 40% of people with diabetes had adequate control of blood sugar.

In people with diabetes, foot ulcers occur as a consequence of the interaction of risk factors: the diabetic foot does not ulcerate spontaneously. In order to develop initiatives to prevent ulceration and, thus prevent costly and distressing amputations, it is important to understand how and why these ulcers occur [5]

The most important factors related to the development of these ulcers are peripheral neuropathy, foot deformities, minor foot trauma, infection and peripheral vascular disease. Nerve damage (neuropathy) is common in diabetes, affecting 20%- 50% of people with the condition. Neuropathy may give rise to painful symptoms in a person's legs, which are typically worse at night, or may be completely painless – the person's feet may feel numb.

More than one million people with diabetes lose a leg every year as a consequence of their condition. This means that every thirty seconds a lower limb is lost to diabetes somewhere in the world. The majority of these amputations are preceded by a foot ulcer.

The spectrum of foot lesions varies in different regions of the world due to differences in socio-economic conditions, standards of foot care and quality of footwear. In developed countries, one in every six people with diabetes will have an ulcer during their lifetime. In developing countries, foot problems related to diabetes are thought to be even more common [6]

The economic and psychological impact of limb loss is immense. In many cases, people can no longer provide for themselves or their families, they become dependent on the care and support of others and often cannot maintain the same level of social contact [6].

It should be noted that, care and treatment of diabetic foot is expensive all around the world. In developed countries, more than 5% of diabetics have foot ulcers and 20% of total health care resources spent on care of the diabetic foot in these countries. In other words, the cost of treating a diabetic foot ulcer is 7000–10000 US $, and when the complicated and need to amputation, this cost will be increased by 65,000 US $. Whereas, in developing countries not only diabetic foot and its complications are more common, but also even sometimes up to 40% of health care resources are unique to this disease. The burden of this disease is high. It should be

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considered that the burden of diabetic foot related neuropathy was two folds than the burden of diabetic retinopathy or nephropathy currently [3,7]

It is possible to reduce amputation rates by between 49% and 85% through a care strategy that combines: prevention; the multi-disciplinary treatment of foot ulcers; appropriate organization; close monitoring, and the education of people with diabetes and healthcare professionals regarding prevention of diabetic foot. Healthcare decision-makers have a key role to play in removing the barriers to implementation that still exist in many countries.[8]

Nurses are health care providers who actively involved in prevention and early detection of diabetes and its complications. The nurses' role could be in health care, health, community education, health systems management, patient care and improving the quality of life [3,8]

Educating the patients on diabetes self management was known to be the corner stone for preventing diabetes and its complications. During my clinical and community posting I observed that people with diabetes have a very poor knowledge about high risk diabetic feet. By educating people with diabetes diabetic foot can be prevented. Studies regarding prevention of diabetic foot which includes different domains are also very few.

2. Objectives of the study

• Determine the effect of structured teaching program on knowledge regardingfoot care among chronic diabetic patients
• Assess the effect of structured teaching programme on practice regarding footcare among chronic diabetic patients
• Find out the association between knowledge regarding foot care and selecteddemographic variables.
• Identify the association between practice regarding foot care and selecteddemographic variables.
• Analyze the correlation between knowledge and practice regarding foot care.

3. Methods / Approach

A quasi-experimental study was conducted on January 2014, using structured knowledge questionnaire, practice checklist and structured teaching programme which was administered to 50 chronic diabetic patients at Athirampuzha panchayat, Kottayam district, Kerala State, India Simple random sampling method for selecting the sample On the first day, pre-test was done with the help of structured knowledge questionnaire and practice checklist. structured knowledge questionnaire include questions related to foot care, which are categorized under five domains namely general awareness, signs and symptoms, diabetes control and habit change, footwear selection and feet protection. Practice checklist is divided into two parts reported practice and steps of foot care.

Structured teaching programme was given on the same day. The duration of the session was one hour. After 7 days starting from the structured teaching programme, post test was conducted using the same questionnaire and practice checklist to evaluate the effectiveness of the structured teaching programme.

The data was analyzed by using statistical package for social sciences (SPSS) version 17 statistical package. Test of significance between proportions was assessed using Wilcoxon signed rank test, Chi square test and Karl, Pearson's correlation coefficient, and a p value of 0.05 or less. Ethical approval was insured.

4. Results

50 chronic diabetic patients were included in the study. There age ranged from 50 to 65 years. 56%(28/50) of the samples were males and 44% (22/50) were females. 34 (68%) of chronic diabetic patients were belonged to Hindu religion and 16 (32%) were Christians. 38 (76%) of the participants were married 8 (16%) of them were widow/widower and 4 (8%) of them were separated/divorced. 44% (22/50) were educated up to high school, 36% (18/50) upto pre degree and 20% (10/50) were educated upto degree or more. 30% (15/50) were coolie workers, 26% (13/50) were doing business, 24% (12/50) were house wifes, 12% (6/50)were working in government sector and 8% (4/50) were working in private sector.

33 (62%) of chronic diabetic patients belonged to Above Poverty Line category and 17 (34%) were in Below Poverty Line category. 50% (16/28) of male chronic diabetic patients were smokers for more than 10 yrs and were using alcohol for more than 10 yrs. Among the samples 38% (19/50) had diabetes mellitus for 5-10 years, 36% (18/50) for 10-15 years and 26% (13/50) had diabetes for more than 15 years. 40% (20/50) of the chronic diabetic patients' siblings had diabetes mellitus, 30% (15/50) patients's parents had diabetes mellitus, 18% (9/50) of patients had no family history of diabetes mellitus and 12% (6/50) sample's grand parents had diabetes mellitus.

Figure 1 shows that 26 (52%) participants had only average knowledge and 24 (48%) had only sub average knowledge level regarding foot care before giving STP.Figure 2 shows that 40 (80%) participants had only sub average practice level regarding foot care before STP and 10 (20%) had average practice level regarding foot care before STP. Figure 3 shows that among the samples 39 (78%) gained good knowledge level and 11 (22%) gained average knowledge level regarding foot care after STP. Figure 4 shows that 35 (70%) participants gained good practice level and 15 (30%) gained average level of practice after STP.

Figure 5 shows that level of knowledge regarding general awareness domain was 25% before STP and increased to 79.67% after giving STP, knowledge regarding signs and symptoms domain was 37% before STP and increased to 79.67% after STP, knowledge about diabetic control and life style changes domain was 47.33% before STP and 77.67% after STP , knowledge regarding foot wear selection was 20.33% and it became 89.33% after STP, and knowledge about protection of feet was 32.66% and increased to 87.67%. There was significant difference in the knowledge and practice levels (IZI value=6.160 , p-value = 0.000) of

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chronic diabetic patients after the structured teaching programme.

Table 1 shows that there was significant association between knowledge and selected demographic variables like religion, financial category and family history which was highly significant at 5% level of significance and demographic variables such as education status, occupation and duration of diabetes mellitus were found to have no association with knowledge level regarding foot care. It also shows that there was significant association between practice and selected demographic variables like religion, financial category and family history which highly significant at 5% level of significance and demographic variables such as educational status, occupation and duration of diabetes mellitus had no association with practice level regarding foot care. Table 3 shows that there was no significant correlation between knowledge and practice regarding foot care among chronic diabetes mellitus at 5% level of significance.

5. Discussion

The present study intended to assess the effect of structured teaching program on knowledge and practice regarding foot care among chronic diabetic patients in Kottayam district, Kerala State, India. The main aim of the study was to assess the effect of structured teaching programme on knowledge and practice regarding foot care among chronic diabetic patient. The main study was conducted at selected diabetic patients of Athirampuzha Panchayat of Kottayam, Kerala State, India.

The data was collected using structured questionnaire and practice checklist prepared by the investigator. The data thus collected were analyzed using appropriate statistical tests with the help of Statistical Package for Social Science (SPSS). Frequency and percentage distribution were used to describe demographic characteristics and classification of level of knowledge and practice. Wilcoxon signed rank test was used to assess the effect of structured teaching programme on knowledge and practice regarding foot care among chronic diabetic patient. Association between knowledge and practice with selected demographic variables assessed by Chi square test. Relationship between knowledge and practice regarding foot care byKarl Pearson's correlation coefficient. The result of this study revealed that the structured teaching programme has improved the knowledge and practice regarding foot care among chronic diabetic patients.

The present study was conducted on 50 diabetic patients who have diabetes mellitus for more than 5 years. Knowledge regarding foot care was assessed under five domains- general awareness, signs and symptoms, diabetic control and life style
changes, footwear selection and protection of feet. Practice regarding foot care was assessed with the help of self reported practice and practice check list. Structured teaching programme was given in the form of a one-day instruction programme consisting of one to one teaching using flip chart, flash cards and demonstration using household objects, consisting of one hour duration regarding foot care for chronic diabetic patients. After seven days post test knowledge and practice were assessed.

In this study before giving structured teaching programme knowledge level of majority (52%) chronic diabetic patients had only average level of knowledge and rest of them had only sub average level knowledge. The foot care practice of all the chronic diabetic patients in the present study was low. Majority (80%) of the samples had only sub average knowledge level before STP and rest of them had average level of knowledge.

In this present study after giving structured teaching programme out of 50 patients 78% developed good level of knowledge and 22% developed average level. Thus the knowledge level increased after structured teaching programme. The practice level was increased to good (70%) and average (30%) level. So the STP was effective in increasing the foot care practice level. In this study knowledge and and practice regarding foot care had association with selected demographic variables like religion, financial category and family history (p-value <0.05%). In the present study there was no correlation between knowledge and practice regarding foot care among chronic diabetic patients.

6. Conclusion

Structured teaching program is an effective and systematic way of providing self-management and behavior change strategies for those at risk of foot ulcer as a complication of diabetes. The present study revealed that Structured Teaching Programme improved the knowledge and practice regarding foot care among chronic diabetic diabetes. The study also depicted that there is no significant correlation between knowledge and practice regarding foot care among chronic diabetes mellitus.

7. Future Scope

- A similar study can be conducted to compare the effect of various teaching programme with different duration
- A comparative study of use of foot wears to reduce risk of diabetic foot ulcer.
- The study serves as a scientific basis for future nursing professionals to conduct more extensive study on the same.
- This can be used as a reference material for the research scholars, especially beginners.
- Health behavior researches have to be incorporated in to further nursing studies.
- The study can be used to understand the methodology of research for future researchers
- The findings of the study can be used for scientific evidence to identify the risk for diabetic foot.
- The recommendations of the study help to do further study by new researchers in different aspects.
- The study can be replicated on a large sample size.
- A descriptive study can be done for prediction of risk for diabetic foot.
- Each domain can be separately diagnosed by proper tool by the researcher.

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- A comparative study can be done to assess the knowledge and practice in two separate communities.
- Multilevel strategies can be used other than educational strategy.

8. Limitations

- The sample size was only 50.
- The study was confined to a single panchayath in Kottayam district.
- The study duration was less.
- Long term foot practice was not assessed

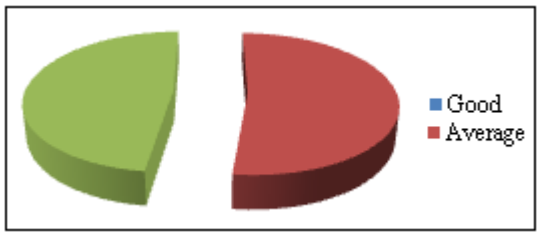


Figure 1: Knowledge level of foot care before giving structured teaching program

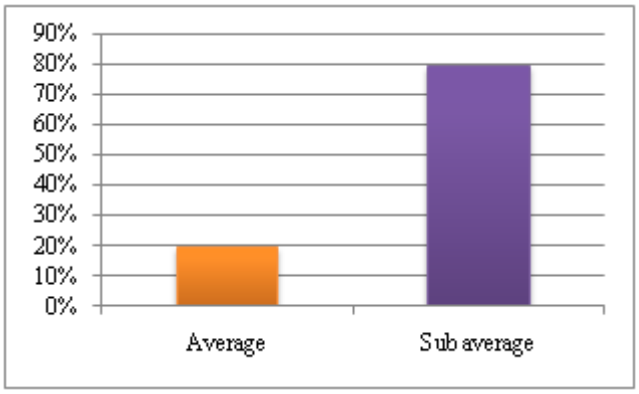


Figure 2: Practice level of foot care before giving structured teaching program

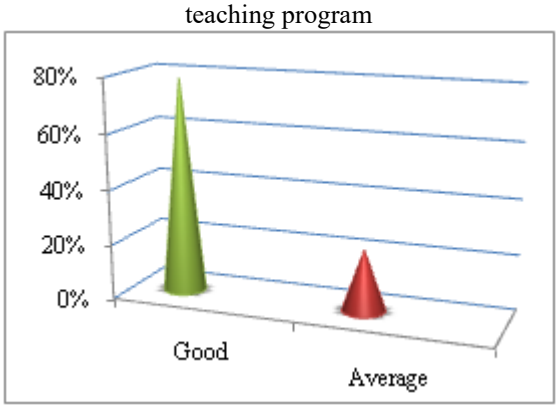


Figure 3: Knowledge level of foot care after structured teaching program

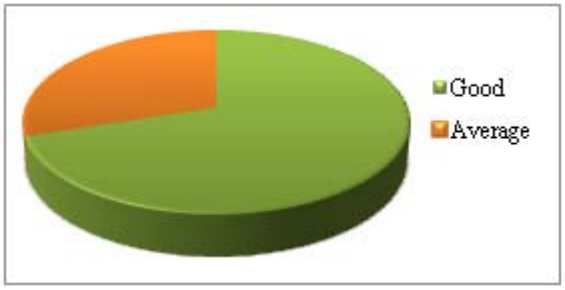


Figure 4: Practice level of foot care after structured teaching program

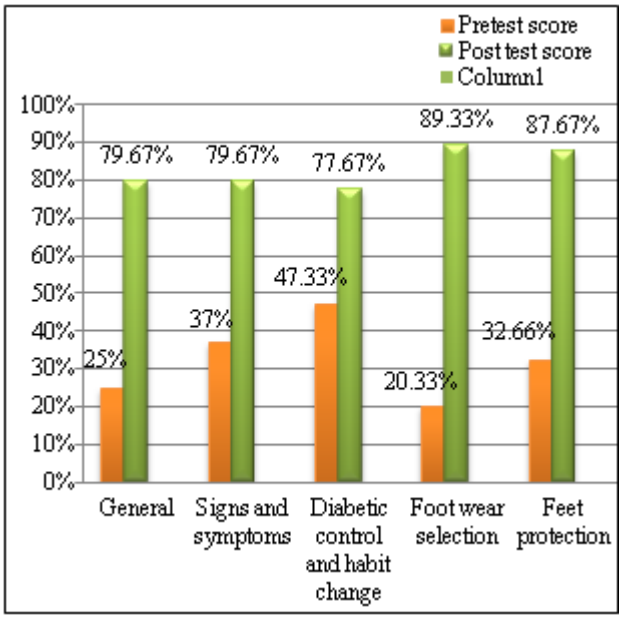


Figure 5: Combined Percentage distribution of knowledge domains before and after STP

Table 1: Association between knowledge and practice regarding foot care and selected demographic variables

Selected demographic variables	*Knowledge level and practice level*	
	Chi square value	*p-value*
Religion	6.480	0.011
Financial Category	5.120	0.024
Family History	9.360	0.025
Education status,	4.480	0.106
Occupation	9.000	0.061
Duration of diabetes mellitus	1.240	0.538

Table 2: Relationship between knowledge and practice regarding foot care among chronic diabetic patients

Variables	*Karl Pearson's correlation coefficient*	*p-value*
Knowledge	0.120	0.408
Practice		

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Author Profile



MS. Sruthy Vinod did MSc.Nurse Medical Surgical (Cardio Vascular and Thoracic) Nursing. She is Teaching Faculty **in** Pushpagiri College of Nursing, Pushpagiri Medical Society, Thiruvalla, Kerala, India. Her Educational Qualification **includes** BSc. Nursing, (2010), Institute of Nursing Education, School of Medical Education, Mahatma Gandhi University, Kerala, India and MSc.Nursing, (2014) from Institute of Nursing Education, School of Medical Education, Mahatma Gandhi University, Kerala, India

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