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"A Study To Evaluate The Effectiveness Of Structured Teaching Programme On The Complication And Prevention Of Diabetic Foot Among Degree Teachers Working At Selected Degree Colleges Of Sringeri, Chikkamagaluru, Karnataka."

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ABSTRACT

Background

Diabetes Mellitus is one of most commonly accepted disease in Indian society affecting one in four adults. Diabetes is a group of diseases that results increase in the level of sugar in the blood. Diabetes is an international medical problem and people with; diabetes often has multiple healthcare needs requiring assessment and various holistic interventions[1]. Diabetes not only disrupts the physical and physiological health but also devastates mental well-being and quality of life of the sufferer. Adhering to WHO definition of health, a person can be considered healthy not merely in the absence of disease. A person with diabetes can be healthy with appropriate management and keeping the blood sugar levels with normal range[1].Diabetes Mellitus is a condition with chronically increased blood sugar level as result of inability of pancreas in maintaining blood sugar level. Pancreas is the organ that releases hormone insulin, which helps in lowering blood sugar level. In certain condition the immune system attacks and destroys cells in the pancreas, where insulin is made such a condition is called autoimmune disorder. Type-1 DM is a result of autoimmune disease.[2]

Aim: The study aimed to evaluate the effectiveness of structured teaching Programme on prevention and complications of diabetic foot among degree teachers.

Methodology: Pre- experimental one group pre-test posted without control group design was used for the present study, conducted in selected degree colleges Sringeri.50 teachers were selected as participants by convenient sampling technique. The data was collected by structured questionnaire. Paired t test was used to determine the effectiveness of intervention.

Result: The post-test mean knowledge score was 27.58 ±2.23 which was significantly higher, compared to the pre-test mean knowledge score 15.8 ±3.19.The calculated "t" value 40.10 was much higher than table "t" value (1.96) hence the hypothesis $\mathbf{H_1}$ stating there will be significant difference in the pre-test knowledge and post-test knowledge scores is accepted at 0.05 level of significance. $p<0.05$.

Conclusion: The present study concluded that knowledge of degree teachers regarding complication andprevention ofdiabetic foot was poor and the STP was effective in improving the knowledge.

Keywords: Diabetic foot , Complication, Effectiveness, Structure teaching program, Prevention, Teachers.

Introduction:

According to IDF Diabetes Atlas ninth edition–Diabetes is one among the fastest growing health challenges of 21st century with the number of adults living with diabetes having more than tripled over past 20 years.[3]If you have diabetes, having too much glucose in your blood for a long time can cause some serious complications, including foot problems. Diabetes can cause two problems that can affect your feet. Diabetic neuropathy- Uncontrolled diabetes can damage your nerves. If you have damaged nerves in your legs and feet, you might not feel heat, cold, or pain there. This lack of feeling is called "sensory diabetic neuropathy." If you do not feel a cut or sore on your foot because of neuropathy, the cut could get worse and become infected. The muscles of your foot may not work properly because nerves to the muscles are damaged. This could cause your foot to not align properly and create too much pressure on one part of your foot.[4]Peripheral vascular disease. Diabetes also affects the flow of blood. Without good blood flow, it takes longer for a sore or cut to heal. Poor blood flow in the arms and legs is called "peripheral vascular disease." If you have an infection that will not heal because of poor blood flow, you are at risk for developing ulcers or gangrene (the death of tissue due to a lack of blood).[4]

Managing diabetes and keeping your blood sugar within a healthy range doesn't only protect against heart attacks and stroke, it can also keep your feet healthy. Diabetes is a condition where the body doesn't produce enough insulin or use insulin properly, causing sugar levels in the blood to rise above normal. Uncontrolled high blood sugar can reduce blood flow in your feet, leading to serious complications. Paying attention to your foot health—which includes recognizing early signs of problems—and maintaining a healthy blood sugar lowers the risk for complications.[5]

Methodology:

Research approach: Experimental, evaluative research approach

Research Design: A Pre-Experimental one group pre-test post-test without control group design.

Pre-experimental one group pre-test post-test without control group design

Group	Pre-test	Intervention	Post-test
I	O_1	X	O_2

Variables:

Dependent Variable: The teacher's knowledge regarding complication and prevention of diabetic foot

Independent Variable: The structured teaching programme on knowledge regarding complication and prevention of diabetic foot among degree teachers.

Socio-demographic Variables: Age, gender, educational status, marital status, employment status, occupation, monthly income, smoking status, site of diabetic ulcer, type of diabetes

Setting of study: The study was conducted in Government. first grade college Menase, Bharathi Nagar, Sringeri and JCBM college in Sringeri.

Population:

Target population: The target population of the present study is the degree teachers aged between 31-60 years in Sringeri.

Accessible population: The accessible population of the present study is the teachers aged between 31-60 years working in GOVT. first grade college and JCBM college Sringeri.

Sampling technique: In the present study researcher has used the Non-probability convenient sampling technique to select the degree colleges and degree teachers in Sringeri **Sample:** Sample of present study is the degree teachers working in GOVT. first degree college and JCBM college in Sringeri.

Sample size: The sample size for present study comprises is 50 teachers working in degree colleges.

Sample selection criteria:

Inclusion Criteria: The present study includes the teachers working in degree colleges**who are**

- Available at the time of data collection
- Willing to participate in the study
- Able to understand Kannada

Exclusion criteria: The present study excludes the hotel workers who are

- Sick at the time of data collection
- Not able to cooperate throughout the period of study
- Physically handicap that would interfere with the process of data collection

Description of Tool:

- The instrument consisted of 2 Sections with multiple choice questions
- Section A Consists of 11 Demographic characteristics of sample
- Section B consists of 32 MCQs to assess the knowledge of degree teachers on knowledge regarding complication and prevention of diabetic foot

Results: Results of the present study is categorised into 5 sections as follows

Section I: Frequency and percentage distribution of degree teachers according to their socio-demographic Characteristics.

Section II: Assessment of knowledge regarding complication and prevention of diabetic foot.

Section III: Effectiveness of STP on knowledge regarding complication and prevention of diabetic foot among degree teachers

Section IV: Significant difference between the pre-test and post-test knowledge scores of degree teachers.

Section-V: Association between the post-test knowledge scores of the teachers regarding complications and prevention of diabetic foot and selected socio-demographic variables.

Section I:Frequency and percentage distribution of degree teachers according to their socio-demographic Characteristics. **N= 50**

SI. No	Demographic Variables	Category	Frequency	Percentage
1	**Age in years**	31-39 years	29	58%
		40-49 years	18	36%
		50-59 years	03	06%
		More than 60 years	00	00%
2	**Gender**	Male	22	44%
		Female	28	56%
3	**Marital status**	Single	10	20%
		Married	24	48%
		Widowed	11	22%
		Divorced	05	10%
4	**Educational status**	UG	42	84%
		PG	08	16%
		PhD / MPhil	00	00%
5	**Employment status**	Employed	26	52%
		Unemployed	12	24%
		Retired	12	24%
6	**Occupation**	Teacher	26	52%
		HOD	20	40%
		Principal	04	08%
7	**Monthly income**	10000- 190000	10	20%
		20000-29000	24	48%
		30000-39000	11	22%
		>40000	05	10%
8	**Smoking status**	Current	10	20%
		Ex- smoker	10	20%
		Never	30	60%
9	**Site of diabetic ulcer**	Eye	04	08%
		Nail	08	16%
		Mouth	16	32%
		Foot	22	44%
10	**Type of Diabetes**	Type- 1	21	42%
		Type-2	29	58%

Age-wise allocation of teachers of diabetic ulcer revealed that a greater part of teachers(58%) were belonging to 31-39 years of age, majority of teachers(56%) were females, 48% were belonging to married, 84% teachers have completed their UG education, 52% teachers were employed, 52% were belongs to category of teaching, 48% of teacher's monthly income was 20000-29000, 60% teachers were not having smoking habit, 44% teachers were having site of diabetic ulcer in foot, 58% teachers were having type-2 diabetes**(section-1)**.

Section II: Assessment of knowledge regarding complication and prevention of diabetic foot.

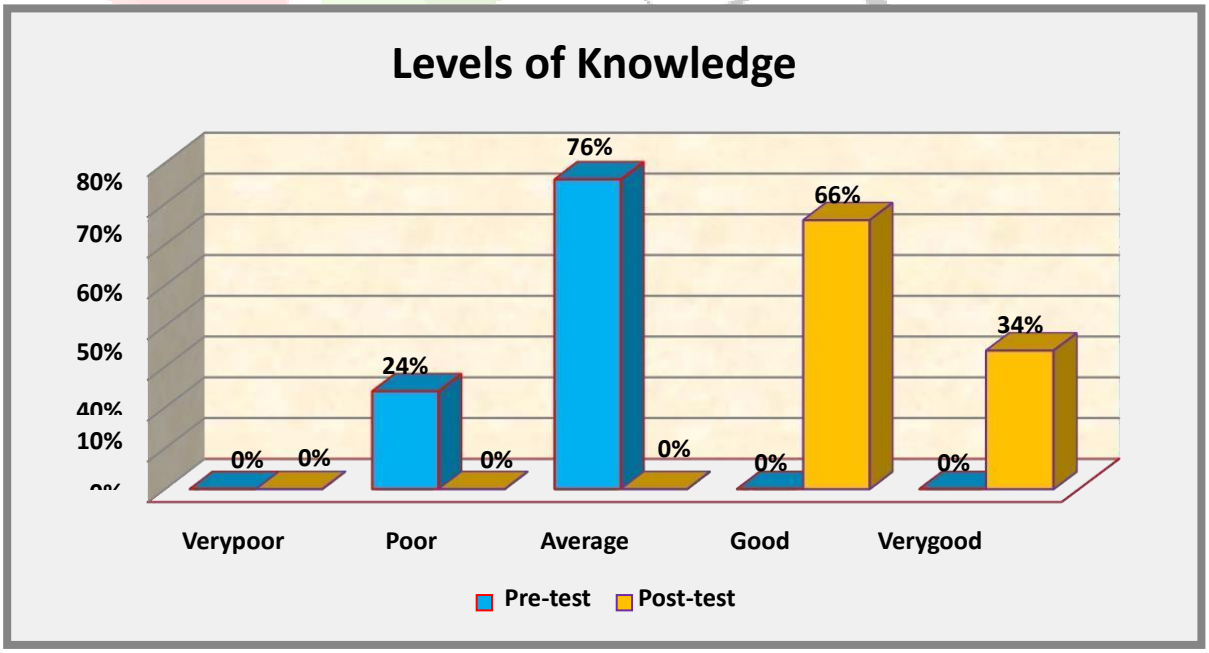
Level of knowledge	Range of score	Frequency	Percentage
Very poor	00-05	00	00
Poor	06-12	12	24
Average	13-20	38	76
Good	21-26	00	00
Very good	27-32	00	00
Total		**50**	**100**

A higher percentage of teacher had a average knowledge regarding complication and prevention of diabetic foot(76%), some teachers had poor knowledge(24%) and there were no teachers had very good, good and very good knowledge**(section-2).**

Section III: **Effectiveness of STP on knowledge regarding complication and prevention of diabetic foot among degree teachers.**

Level of knowledge	Range of score	Pre-test		Post-test	
		Frequency	%	Frequency	%
Very poor	00-05	00	00	00	00
Poor	06-12	12	24	00	00
Average	13-20	38	76	00	00
Good	21-26	00	00	33	66
Very good	27-32	00	00	17	34
Total		50	100	50	100

Analysis related to pre-test assessment of the level of knowledge teachers reveals that majority (76%) of the teachers had average knowledge, 24% of them had poor knowledge and no any teachers had very poor, good and very good knowledge regarding complications and preventions of diabetic ulcers. Where as in post-test majority (66%) of the teachers had good knowledge, 34% of them had very good knowledge and no teachers had average, poor, and very poor knowledge regarding complications and preventions of diabetic foot **(section-3**).



Section IV: Significant difference between the pre-test and post-test knowledge scores of degree teachers

Test	Table "t" value	Mean	Std. error	Mean Diff	Sd Diff	Paired "t" value
Pre-Test(X_1)	1.96	15.88	0.57	11.7	2.06	40.10
Post-Test(X_2)		27.58				

The table shows a paired t-test comparing pre-test and post-test scores. The mean increased from 15.88 to 27.58, with a mean difference of 11.7 and standard deviation of 2.06. The calculated t-value (40.10**)** is much higher than the table value (1.96)**,** indicating a significant improvement in post-test scores after the intervention (**section-4).**

Section-V: Association between the post-test knowledge scores of the teachers regarding complications and prevention of diabetic foot and selected socio-demographic variables.N=50

Sl. No	Socio-Demographic varies	Df	Chi-square value/Fisher value	Table value	'P' Value	Significance of Association
1.	Age	1	1.1162	3.84	0.290	NS
2.	Educational Status	1	0.6994(F)	3.84	P<0.05	NS
3.	Gender	1	2.2247	3.84	0.135	NS
4.	Marital status	1	0.0526(F)	3.84	P<0.05	NS
5.	Employment status	1	0.9354	3.84	0.333	NS
6.	Occupation	1	3.5656	3.84	0.058	NS
7.	Monthly income	1	0.8064	3.84	0.369	NS
8.	Smoking status	1	0.2548	3.84	0.195	NS
9.	Site of diabetic ulcer	1	0.0526(F)	3.84	P<0.05	NS
10.	Type of diabetes	1	2.5485	3.84	0.152	NS

Df–Degree of freedom α=0.05*Significant F-Fisher value NS–Not significant

The chi-square analysis explored the association between socio-demographic variables and study outcomes. Results revealed no significant association between variables such as age, educational status, gender, marital status, employment status, occupation, monthly income, smoking status, site of diabetic ulcer, and type of diabetes**,** as all calculated chi-square or Fisher values were below the table value of 3.84andp-values were greater than 0.05**.** Hence, none of the socio-demographic factors had a statistically significant relationship with the variables studied**.** There was a significant association between Knowledge of degree teachers regarding complication and prevention of diabetic foot and their socio-demographic variables like age, gender, educational status and type of diabetes.

Discussion

The findings of the present study revealed that, teachers had less type-1 diabetes(42%) likely than type-2 diabetes(58%). The findings of the present study were consistent with the study conducted by Indian population with type 2 diabetes has a high burden (76.6%) of poor glycaemic control. The study concluded that there is need for early implementation of optimum diabetes pharmacotherapy to maintain recommended glycaemic control, thereby reducing burden of micro vascular complications.[6]

Outpatient department of Shree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu. The data was collected using a pre-tested, semi structured questionnaire. The result of the study shows that among 201 patients with diabetes included in the study, 69.0% had one or more of the complications of diabetes. Factors significantly associated with high rate of complications were the female gender ($p<0.001$)[7]Quasi-experimental study was conducted to assess the effectiveness of structured teaching program on prevention of micro vascular and macro vascular complications among patients with diabetes mellitus at KC General Hospital, Bangalore, evaluative approach was adopted for in this study, the sample size consists of 50 DM patients, 25 in control group and 25 in experimental group. Purposive sampling technique was used to select the respondents.

A structured knowledge questionnaire (SKQ) was administered to assess knowledge, the results of major findings indicate that the DM patients had inadequate knowledge regarding micro vascular and macro vascular complications and its prevention. STP was found to be a very effective method of providing information regarding prevention of micro vascular and macro vascular complications. There was a significant difference between the pre-test and post-test knowledge score on prevention of micro and macro vascular complications of DM among experimental and control group with a student 't' value of 26.52 which was significant at 5% level. There was significant association between the findings and demographic variables such as age group, type of family, family income and duration of illness. The study concluded that the STP on prevention of micro and macro vascular complications of diabetes mellitus was an effective method for providing moderate to adequate knowledge and help DM patients to enhance their knowledge to prevent vascular complications.[8]

Conclusion: By above facts and ideas researcher has concluded that there is a need to educate the degree teachers regarding complication and prevention of diabetic foot. It also concluded that the STP is effective tool in enhancing the knowledge of degree teachers.

Recommendations: Based on the findings, the following recommendations are proposed for future research.

- A similar study can be replicated on large scale for the purpose of generalization.
- A similar study can be conducted in National level to bring new programs to uplift the knowledge of degree teachers.
- A comparative study can be conducted on knowledge regarding complication and prevention of diabetic foot among Urban and Rural teachers.

Permission: A formal permission was obtained by institutional ethical committee and from college principal. Informed consent was obtained from participants.

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