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Effectiveness of individual teaching programme on knowledge and skill regarding podiatric care among diabetic clients

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Abstract
Aim: To find out the effectiveness of individual teaching programme on knowledge and skill regarding podiatric care among diabetic clients.
Settings and design: setting of the study is selected village of Horti PHC.
Methods and material: By using Non probability purposive sampling technique considered that 50 Diabetic clients are samples.
Statistical analysis used: As a descriptive statistics mean, median, standard deviation was used and as an inferential statistics to find the significant difference between pre-test and post-test knowledge and skill of podiatric care t test was used and unpaired t test was used to compare the difference knowledge and skill regarding the podiatric care.
Results: The study results shows that 78% of clients are having Average knowledge regarding podiatric care in pre-test and in post-test 50% of clients having good knowledge among podiatric care. In pre-test of skill group 43% having average skill among podiatric care where as in post-test 56% clients having good skill among podiatric care. The calculated t value shows that there is a significant difference between pre-test and post-test effect of knowledge on podiatric care (t49=33.8, df49= 2.011) and pre-test and post-test effect of skill on podiatric care is (t49=24.37, df49=2.011).
Conclusions: The finding of the study supports the effectiveness of individual teaching programme is increasing the knowledge and skill regarding podiatric care among Diabetic clients.

Keywords: Individual teaching. knowledge and skill, podiatric care, diabetic clients

1. Introduction

Diabetes mellitus is commonly called as Diabetes, it is a metabolic disorders characterized by elevated levels of glucose in blood, resulting from defects in insulin secretion [1]. Diabetes has one of the world biggest health problem [2]. since from long back in the 15 century the word mellitus is derived from the Latin word "Honey", when it was noted may people suffering from sugar in the blood and urine [3]. Now Diabetes mellitus is the 4th leading cause of death in most developing and developed countries. Currently 25million Indians are suffering from DM [4]. if Diabetes clients are undiagnosed or untreated properly, it develop multiple chronic complication leading to irreversible disability and death [5].
In that foot complication is the most common cause of hospitalization in the person with diabetes. Development of foot ulcer is multiple factorial process [4]. The Diabetic foot covers the spectrum of neurological arteries and infectious foot problems that occurs as consequences of Diabetes [6]. If Diabetic foot ulcer not treated properly it is changes disability or amputation of effected part of leg. So foot assessment and care instructions are most important for person who is having high risk of foot infection.[7]That purpose education is required for to improve knowledge and skill regarding podiatric care among Diabetic clients.

2. Materials and Methods
Problem Statement
"Effectiveness of Individual teaching programme on Knowledge and Skill regarding Podiatric care among Diabetic clients residing at selected village of Horti PHC."

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Objectives of the Study
1. To assess the pretest knowledge on podiatric care among diabetic clients.
2. To determine the pretest skill on podiatric care among diabetic clients.
3. To evaluate the effectiveness of individual teaching programme on Podiatric care among Diabetic clients.
4. To find out the association between pretest knowledge and skill with selected demographical variables.

Hypotheses
The following hypotheses will be tested at 0.05 levels of significances
H₁: There will be significant difference between pretest and post-test knowledge regarding podiatric care among diabetic clients.
H₂: There will be significant difference between pretest and posttest skill regarding podiatric care among diabetic clients.
H₃: There will be significant association between the pretest knowledge and skill score with selected demographic variable on podiatric care among diabetic clients.

Operational definition
- **Effectiveness:** It refers to the extent to which the individual teaching programme on podiatric care has achieved the desired effect in improving the knowledge and skill among diabetic clients.
- **Knowledge:** In this study knowledge refers to the understanding and awareness of the podiatric care among diabetic clients.
- **Skill:** In this study skill refers to an ability that has been acquired by training.
- **Individual teaching programme:** It refers to the systematically development of information designed to teach the diabetic clients regarding podiatric care.
- **Podiatric care:** Special care given to the foot of diabetic client to prevent foot ulcer.
- **Diabetic clients:** In this study diabetes client refers the person who is diagnosed with Diabetic mellitus.
- **Village:** in this study refers to the area selected for the purpose of research study.

Assumptions
- Diabetic clients may have inadequate knowledge regarding podiatric care.
- Diabetic clients may have less practice regarding podiatric care.
- Individual teaching program may promote the knowledge and practice among diabetic clients on podiatric care.

Population: Population for the study comprises of 50 diabetic clients of selected village at Horti PHC.
Sample: Sample for the study would consist of 50 Diabetic clients.

Sampling technique: Diabetic clients will be selected using purposive sampling technique.

Criteria for selection of samples.
Inclusion criteria:
- Diabetic clients who can read and write Kannada or English.
- Diabetic clients who are willing to participate.
- Diabetic clients who are present during study.

Exclusion criteria
- Diabetic clients who are less than 30years age.
- Diabetic clients who are not presenting during the time of study.
- People those who are not living in selected village.
- Non diabetic cases.
- People with foot ulcer.

Method of data collection
Data collection is the gathering of information needed to address a research problem.
1. A prior formal permission was obtained from the medical officer of PHC.
2. Information consent was obtained from the subjects after explaining the purpose of the study.
3. Sample were selected by using purposive sampling technique.
4. Pretest was done to assess the existing knowledge and skill of Podiatric care among Diabetic clients with the help of individual teaching program.
5. On the same day ITP was given to Podiatric care among Diabetic clients residing at selected village of Horti PHC for 45 minutes duration.
6. On the 8th day post-test was taken.

Tools used for the study
The tool used for data collection was a structured knowledge questionnaires among Diabetic clients. It consists of 3 sections.

Section A: Demographical variables: This part deals with demographic characteristics of Podiatric care among Diabetes clients. Age, Gender, Marital status. Educational qualification, Occupation and Economical status, sources of information regarding podiatric care, History of illness in the family regarding diabetes, Habits, Duration of suffering from Diabetes mellitus and treatment receiving.

Section B: Structured knowledge questionnaires on Podiatric care: This section includes 30 items on Knowledge of Podiatric care among Diabetes clients.
- Introduction, definition, types
- Causes, signs, symptoms of Diabetes mellitus
- Normal value of Blood sugar
- Diagnosis & complication of Diabetic mellitus
- Definition of Diabetic neuropathy.
- Signs and symptoms, complication of Diabetic neuropathy
- Definition of foot ulcer, causes, early identification.
- Definition of Podiatric care, uses
- Management & prevention of Podiatric problem

Scoring procedure
- The scoring key is prepared for section A by coding the socio demographic variables. For section B scoring '1' and '0' was awarded to correct and wrong responses. Thus the maximum score is 30.
- To interpret the level of knowledge the scores subjected as follows
- Poor   0-7
- Average   08-14
- Good   15-22
- Excellent   23-30

Section C: Skill observational checklist for Podiatric care: The observation checklist consisting of 10 items. Each options having the '**YES'** or **'NO'**

Scoring procedure
Total scoring is divided as:
Poor   0-3
Average   04-7
Good   08-10

3. Results
In order to find a meaningful outcome to the research questions, the collected data must be processed, analyzed in some orderly coherent fashion, so that patterns and relationship can be discussed.

Analysis is the categorizing, ordering, manipulating and summarizing of data collected to obtain answers to research's question. The interpretation of tabulated data can bring light to the real meaning and effectiveness of the findings.

In this study evaluative research approach was adopted to assess the knowledge and skill on Podiatric care among Diabetic clients. Data collected from 50 Diabetic clients were tabulated, analyzed and interpreted by using descriptive and inferential statistics based on the formulated objectives of the study.

Demographic Variables of Respondents

Table 5.1: Frequency and percentage distribution according to their age, gender, marital status, education qualification, occupation, family income, information regarding podiatric care, history of illness, habits, years of suffering from Diabetes mellitus, treatment receiving for Diabetes mellitus.

| S. No	Demographic variables	Diabetic clients	
		Frequency	Percentage (%)
5.1.1	**Age in year**		
	30-40	14	28.0
	40-50	17	34.0
	50-60	14	28.0
	Above 60 year	05	10.0
5.1.2	**Gender**		
	Male	30	60
	Female	20	40
5.1.3	**Marital status**		
	Married	50	100
	Unmarried	00	00
	Divorce	00	00
5.1.4	**Education qualification**		
	Non formal education	00	00
	Primary education	10	20
	High school education	12	24
	P.U.C. education	13	26
	Graduation	8	16
	Post-graduation	7	14
5.1.5	**Occupation**		
	Government employment	18	36
	Self-employment	14	28
	Private employment	12	24
	Unemployment	6	12
5.1.6	**Family income in rupees per month**		
	Less than 5000	10	20
	5000-10000	16	32
	Above 10000	24	48
5.1.7	**Information regarding Podiatric care**		
	Yes	5	10
	No	45	90
5.1.8	**History of illness in the family regarding Diabetes**		
	Yes	33	66
	No	17	34
5.1.9	**Habits**		
	Drinking	10	20
	Smoking	06	12
	Tobacco chewing	08	16
	All of above	11	22
	No habits	15	30
5.1.10	**Years of suffering from Diabetes mellitus**		
	Less than 5 years	16	32
	5-10 years	14	28
	10-15 years	12	24
	More than 15 years	08	16
5.1.11	**Treatment receiving for Diabetes**		
	Medication	42	84
	Insulin	06	12
	Homeopathy	00	00
	Ayurveda	02	04
	Any other	00	00
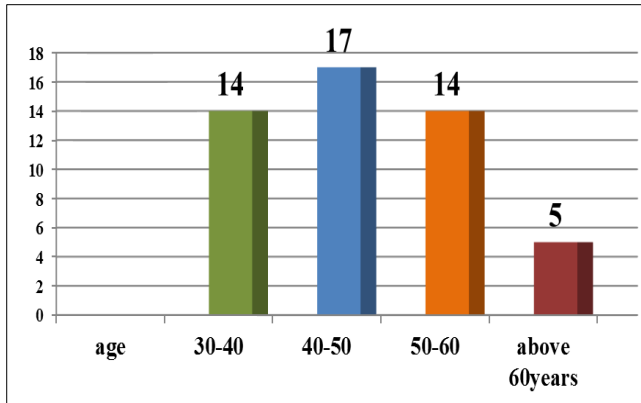
Fig 5.1.1: Distribution of respondents according to age

The above table reveals that out of 50, 14 (28%) of the respondents were between the age group 30-40 years, 17 (34%) of them were between the age group of 40-50 years, 14 (28%) of them were between the age group 50-60 years and only 5 (10%) of them were between the age group above 60 years.
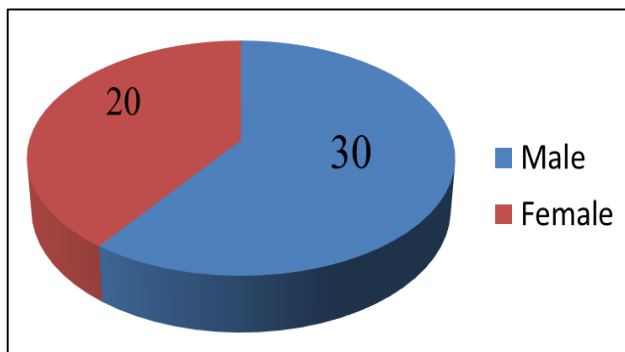

Fig 5.1.2: Distribution of respondents according to gender.

The above figure shows that, 30(80%) of the respondents were male and remaining 20(40%) of the respondents were female.
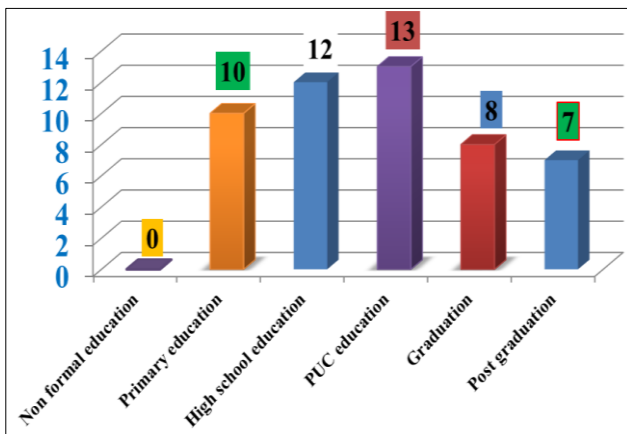

Fig 5.1.3: Distribution of respondents according to education qualification.

The above figure shows the distribution of respondents according to their educational qualification in which there is no one belongs to non-formal education, 10 (20%) are primary education, 12 (24%) high school education, 13 (26%) PUC education, 8 (16%) graduate education and 7 (14%) Post graduated peoples are undergone for research study.
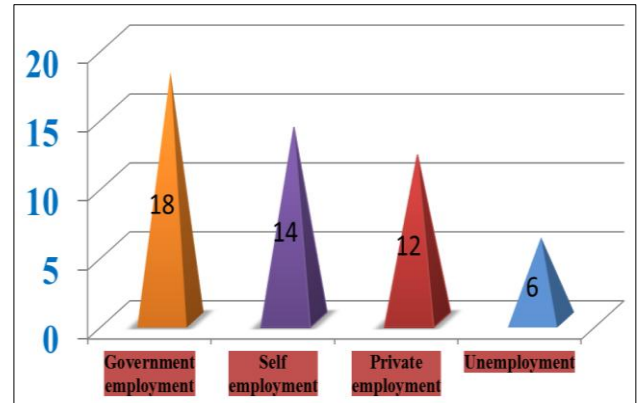

Fig 5.1.4: Distribution of respondents according to occupation.

The above figure shows that 18 (36%) of people are government employment, 14 (28%) of people are self-employment, 12 (24%) of people are private employment and remaining 6 (12%) of people are unemployed.
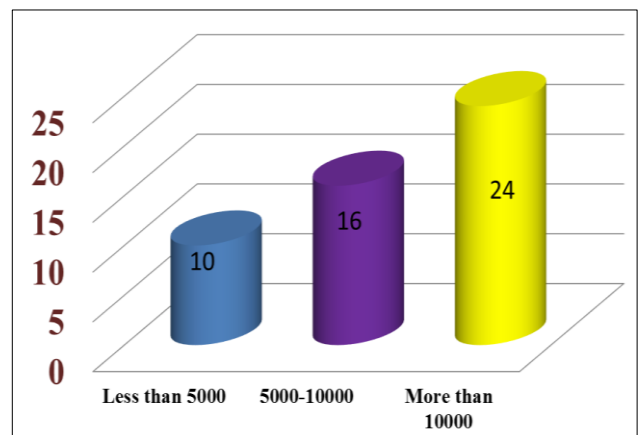
Fig 5.1.5: Distribution of respondents according to family income per month.

The above figure shows that the distribution of respondents according to monthly income in which 10(20%) are having less than 5000 rupees, 16(32%) are having 5000-10000 rupees. remaining 24(48%) people are having more than 10000 rupees.

Fig 5.1.6: Distribution of respondents according any information regarding Podiatric care.

The above figure shows that 5(10%) of people are having information about Podiatric care, remaining 45(90%) of people are not having any information regarding Podiatric care.

Fig 5.1.10: Distribution of respondents according years of suffering from Diabetes mellitus.
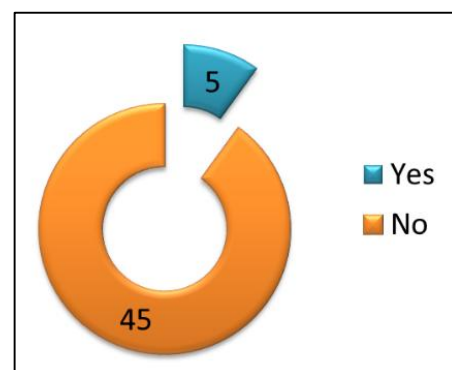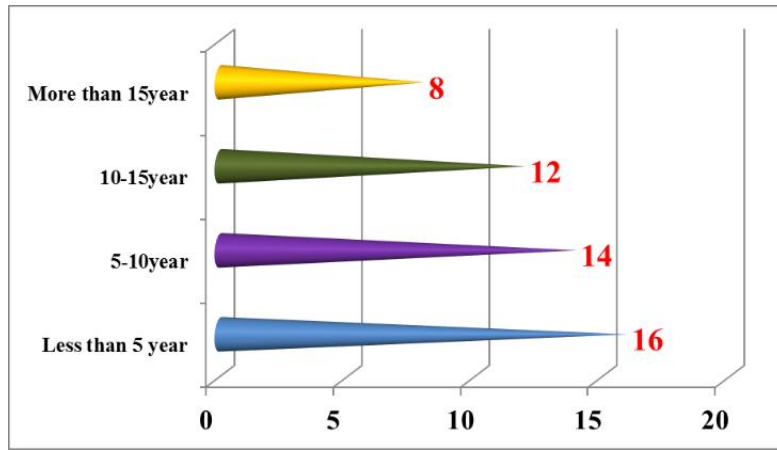
The above figure shows that 16(32%) of people suffering from Diabetes mellitus less than 5years, 14(28%) of people suffering from Diabetes mellitus between 5-10years, 12(24%) of people suffering from Diabetes mellitus between 10-15 years, remaining 8(16%) of people suffering from Diabetes mellitus more than 15years,

Assessment of knowledge of respondents

Table 5.2: Assessment of knowledge on Podiatric care among Diabetic clients.

		No. of Respondents				
		Pretest	Percentage	Posttest	Percentage	Total
Level of knowledge	**Poor**	03	06	00	00	**03**
	Average	39	78	02	04	41
	Good	08	16	25	50	33
	Excellent	00	00	23	46	23
	Total	50	100	50	100	100

The above table revels that knowledge score in pretest is 06% had poor, 78% had average, 16% had good and post-test score 04% had average, 50% had good, 46% had excellent.
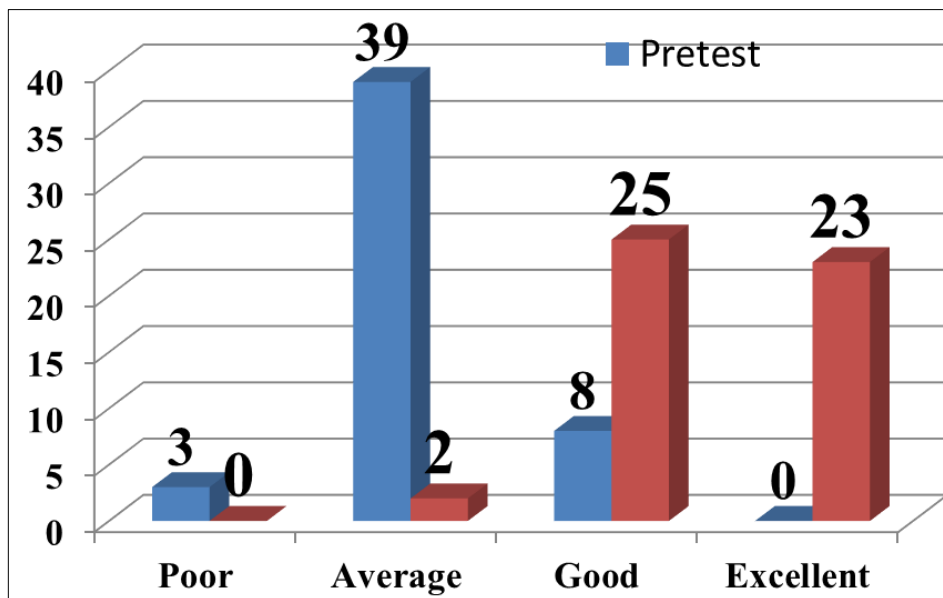
Fig 5.2: Distribution of Podiatric care among Diabetic clients according to knowledge level.

Assessment of skill of respondents

Table 5.3: Assessment of Skill on Podiatric care among Diabetic clients.

		No. of Respondents				
		Pretest	Percentage	Post-test	Percentage	Total
Level of skill	Poor	25	50	00	00	25
	Average	22	44	22	44	44
	Good	03	06	28	56	31
	Total	50	100	50	100	100

The above table revels that skill score pretest is 50% had poor, 44% had average, 06% had good and post-test score 44% had average, 56% had good.
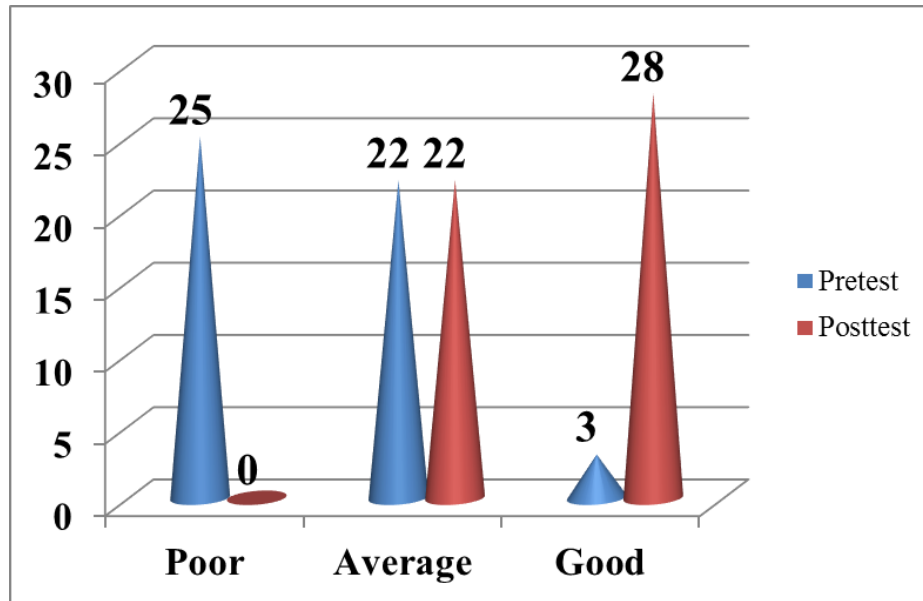

Fig 5. 3: Distribution of Podiatric care among Diabetic clients according to skill

Table 5.4: Association of demographical variables with knowledge.

Demographical variables	Category	Knowledge		X^2	T value	DF	Re-mark
		≤ Median	>Median				
Age in year	30-40	6	8	1.20	5.99	2	NS
	40-50	7	10				
	50-60	8	6				
	Above 60 year	3	2				
Gender	Male	18	12	0.12	3.84	1	NS
	Female	11	9				
Marital status	Married	25	25	0.01	3.84	1	NS
	Unmarried	0	0				
	Divorce	0	0				
Education qualification	Non formal	0	0	0.76	7.82	3	NS
	Primary	6	4				
	High school	7	5				
	PUC	5	8				
	Graduation	4	4				
	Post-graduation	5	2				
Occupation	Government employed	10	8	1.08	5.99	2	NS
	Self employed	6	8				
	Private employed	7	5				
	un employed	4	2				
Family income in rupees per Month	Less than 5000	5	5	0.97	5.99	2	NS
	5000-10000	10	6				
	Above 10000	16	8				
Any information regarding Podiatric care	Yes	3	2	0.08	3.84	1	NS
	No	25	20				
History of illness in the family	Yes	12	16	1.19	3.84	1	NS
	No	6	11				
Habits	Drinking	6	4	0.12	9.49	4	NS
	Smoking	4	2				
	Tobacco chewing	5	3				
	All of above	6	5				
	No habits	10	5				
Years of suffering from Diabetes mellitus	<5years	9	7	0.015	5.99	2	NS
	5-10years	8	6				
	10-15years	6	6				
	>15years	5	3				
Treatment receiving for diabetes mellitus	Medication	22	20	0.019	3.84	1	NS
	Insulin	4	2				
	Homeopathy	0	0				
	Ayurveda	1	1				
	Any others	0	0				

Table 5.5: Association of demographical variables with skill.

Demographical Variables	Category	Knowledge		X^2	T value	DF	Remarks
		≤ Median	>Median				
Age in year	30-40	9	5	4.00	5.99	2	NS
	40-50	5	12				
	50-60	6	8				
	Above 60 year	4	1				
Gender	Male	22	8	0.01	3.84	1	NS
	Female	19	8				
Marital status	Married	35	15	0.0	3.84	1	NS
	Unmarried	0	0				
	Divorce	0	0				
Education qualification	Non formal	0	0	4.97	9.49	4	NS
	Primary	7	3				
	High school	8	4				
	PUC	7	6				
	Graduation	6	2				
	Post-graduation	2	5				
Occupation	Government employed	12	6	4.89	7.82	3	NS
	Self employed	7	7				
	Private employed	4	8				
	un employed	2	4				
Family income in rupees per month	Less than 5000	3	7	1.90	5.99	2	NS
	5000-10000	8	8				
	Above 10000	13	11				
Any information regarding Podiatric care	Yes	2	3	0.27	3.84	1	NS
	No	20	25				
History of illness in the family	Yes	20	13	0.12	3.84	1	NS
	No	10	17				
Habits	Drinking	7	3	3.80	9.49	4	NS
	Smoking	3	3				
	Tobacco chewing	3	5				
	All of above	8	3				
	No habits	10	5				
Years of suffering from Diabetes mellitus	<5years	9	7	5.00	7.382	3	NS
	5-10years	5	9				
	10-15years	8	4				
	>15years	2	6				
Treatment receiving for diabetes mellitus	Medication	26	16	3.74	5.99	2	NS
	Insulin	1	5				
	Homeopathy	0	0				
	Ayurveda	1	1				
	Any others	0	0				

Section 4

Table 5.6: comparison of level of knowledge before and after individual teaching program

Test	N	Mean	S.D	S.E	t-value	Significant
Pretest	50	11.64	3.08	0.43	t-value < 33.8	Significant
Posttest	50	21.82	3.58	0.50		

$t_{49} = 2.011$ S = Significant

The above table revels that mean post-test score of Podiatric care among Diabetic clients is more than the mean pretest score which is highly significant as t-value < 33.8. so the individual teaching program is effective in enhance the knowledge of Podiatric care among Diabetic clients.

Table 5.7: Comparison of level of skill before and after individual teaching program

t-test	N	Mean	S.D	S.E	t-value	Significant
Pretest	50	3.84	2.13	0.30	t-value< 24.37	Significant
Posttest	50	7.74	1.1	0.15		

$t_{49} = 2.011$ S = Significant

t-value = 24.37 indicating difference in skill score is highly significant. The most post-test skill score of Podiatric care among Diabetic clients is more than the mean pretest skill score. So the Individual teaching program is effective in changing skills in Podiatric care among Diabetic clients.

Discussion

- The cross sectional study was conducted on knowledge and practice regarding foot care among Diabetic clients at selected area of Lahore. The total 150 Diabetic clients were selected as samples and they concluded that literacy has significant association with the knowledge and practice related to foot care in diabetic clients.

- In present study that there was no significant association between the prestest knowledge and skill score with selected demographical variables and the mean difference has shown that the individual teaching programme was effective on Podiatric care among diabetic clients.

Conclusion

The main aim of the study is conducted on the assessment of knowledge and skill on Podiatric care among Diabetic clients. Among 50 Diabetic clients are selected as samples. The interpret the level of knowledge score in 4 levels like, poor (0-7), Average (08-17),Good (15-22), Excellent (23-30) and also interpret the level skill observation checklist score in 3 levels like, poor(0-3), Average (04-07).Good (08-10). When the pretest and posttest score was collected to do the statistical analysis, the result has shown that the Individual teaching programme was effective on Diabetic clients to improve the knowledge and skill regarding the podiatric care.

Recommendations

Based on the study findings, the following recommendations were made for further study.

* A similar study can be conducted among the general population.
* Comparative study may be conducted to find out the similarities and differences in knowledge and skills between urban and rural areas.
* Experimental study can be conducted with structured learning programme on knowledge and skill.
* Mass and individual teaching programme in regional languages to enlighten the Diabetic clients can be organized at all the level of health facilities.
* At community level, during house visits, informational booklet on Podiatric care among Diabetic clients may be more useful in educating Diabetic clients, there by encourage them to educate other members of the community.

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