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A study to assess the effectiveness of structured teaching programme on knowledge and practice regarding self-administration of insulin injection among diabetic clients in a selected primary health centre Bangalore

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Abstract
Rural and urban Diabetic patients don't get adequate knowledge, guidance and supervision of self-administration of insulin injection. So Diabetic patients in rural and urban areas doesn't know how to take insulin injection by self, when they inject, and even if they are taking their insulin injection they will use primary health centre nursing staff, community health nurse or else and some time if they are using pen type syringe also they will not use self-administration of insulin.
Methods: This was a structured teaching programme on knowledge and practice the study was carried out in Kenguri rural community at Bangalore. 60 diabetic clients were selected by purposive sampling technique; structured interview schedule was used to collect the data, the pre-test structured teaching programme conducted by administering knowledge and practice questionnaire on self-administration of insulin injection, and the 7th day post test was conducted by using the structured teaching programme.
Result: The total of 60 participants enrolled with 30 in each group. There was improvement in knowledge and practice after the structured teaching programme and is statistically significant. The overall mean knowledge and practice score present in the pre-test is 38% and 39.2%. And in the post-test 72.67% and 78.67% so there is enhancement of knowledge and practice score found to be 25.33% and 39.47%. The mean knowledge and practice score during pre-test is 11.4 and 5.88. And in post-test 21.8 and 11.8. The overall mean knowledge and practice score present of pre-test found to be 38% and 39.2% and the post mean knowledge and practice score was 72.67% and 78.67% it shows the enhancement of knowledge and practice after structured teaching programme.

Keywords: Self-administration of insulin injection, diabetic clients, structure teaching programme

Introduction

Background of the study

Rural and urban Diabetic patients don't get adequate knowledge, guidance and supervision of self-administration of insulin injection. So Diabetic patients in rural and urban areas doesn't know how to take insulin injection by self, when they inject, and even if they are taking their insulin injection they will use primary health centre nursing staff, community health nurse or else and some time if they are using pen type syringe also they will not use self-administration of insulin.

So structured teaching programme is given to Diabetic patients regarding self-administration of Insulin injection technique, in order to improve knowledge and practice.

Objectives

- To assess the existing knowledge and practice regarding self-administration of insulin injection among diabetic clients.
- To evaluate the effectiveness of structured teaching programme regarding self-administration of insulin injection among diabetic clients.
- To find out the relationship between knowledge and practice regarding self-administration of insulin injection among diabetic clients.
- To find out the association between knowledge and practice score with selected demographic valuables

Hypotheses

- **H_1** - There will be a significant difference between pretest and posttest knowledge score of diabetic clients regarding self-administration of insulin injection after administration of STP.
- **H_2** - There will be a significant difference between pre and posttest practice score of diabeticclients regarding self-administration of insulin injection after administration of STP.
- **H_3**- There will be a significant relationship between pretest and posttest knowledge and practice score on self-administration of insulin injection among diabetic clients.
- **H_4** - There will be a significant association between knowledge and practice score on self-administration of insulin with selected demographic variables.

Methods: One group pre-test and post design was used to assess the effectiveness of structured teaching programme on self-administration of insulin injection among diabetic clients selected urban and rural community. In view the nature of the problem accomplishes the objectives of the study. Structured teaching programme was prepared and structured knowledge and practice questionnaire was used to assess the effectiveness of structured teaching programme. The study was carried out in Kengeri rural community at Bangalore. 60 diabetic clients were selected by purposive sampling technique; structured interview schedule was used to collect the data, the pre-test structured teaching programme conducted by administering knowledge and practice questionnaire on self-administration of insulin injection, and the 7th day post test was conducted by using the structured teaching programme.

Major findings of the study were

Frequency and percentage and X^2 of knowledge score with selected demographic variables

Mean, mean%, standard deviation, and R-value of pre-test knowledge and practice regarding self-administration of insulin injection among diabetic clients.

Table 1: Frequency and percentage and X^2 of knowledge score with selected demographic variables

Sl. No	Demographic Variables	Level of knowledge						Chi square
		Inadequate (<50%)		Moderate (50-75%)		Adequate (>75%)		
		n	%	n	%	n	%	
1	Age (in years)							
	a. 41-45	17	100	0	0	0	0	2.1
	b. 46-50	15	88.24	2	11.76	0	0	df 3
	c. 51-55	15	93.75	1	6.25	0	0	N.S
	d. 56-60	9	90	1	10	0	0	
2	Gender							
	a. Male	31	96.88	1	3.13	0	0	1.38
	b. Female	25	89.29	3	10.71	0	0	df 1 N.S
3	Educational Status							
	a. Illiterate	31	100	0	0	0	0	
	b. Primary	11	91.67	1	8.33	0	0	7.33
	c. Secondary	8	88.89	1	11.11	0	0	df 4
	d. Higher secondary	5	83.33	1	16.67	0	0	N.S
	e. Collegiate	1	50	1	50	0	0	
4	Occupation							
	a. House wife	19	95	1	5	0	0	18.71*
	b. Agriculture	20	95.24	1	4.76	0	0	df 3
	c. Coolie	16	100	0	0.00	0	0	S
	d. Business	1	33.33	2	66.67	0	0	
5	Monthly Income							
	a. < 2000	21	100	0	0	0	0	8.46*
	b. 2001 -4000	19	95	1	5	0	0	df 3
	c. 4001- 5000	12	92.31	1	7.69	0	0	S
	d. >5000	4	66.67	2	33.33	0	0	
6	Religion							
	a. Hindu	19	90.48	2	9.52	0	0	0.57
	b. Muslim	24	96	1	4	0	0	df 2
	c. Christian	13	92.86	1	7.14	0	0	N.S
7	History of Diabetes							
	a. Yes	28	90.32	3	9.68	0	0	0.94
	b. No	28	96.55	1	3.45	0	0	df 1 N.S
8	Duration of Illness							
	a. Up to 5 years	15	100	0	0	0	0	10.21*
	b. 6-10 years	16	94.12	1	5.88	0	0	df 3
	c. 11-15 years	22	95.65	1	4.35	0	0	S
	d. >15 years	3	60	2	40	0	0	
9	Duration of Treatment							
	a. Up to 5 years	23	100	0	0	0	0	3.82
	b. 6-10 years	22	95.65	1	4.35	0	0	df 4
	c. 11-15 years	11	91.67	1	8.33	0	0	N.S
	d. >15 years	10	83.33	2	16.67	0	0	

10	Injection by self							
	a. By self	5	83.33	1	16.67	0	0	1.07
	b. Family members	17	94.44	1	5.56	0	0	df 2
	c. Hospital staff	34	94.44	2	5.56	0	0	N.S
11	Urine test							
	a. Stick method	25	92.59	2	7.41	0	0	0.4
	b. Solution method	31	93.94	2	6.06	0	0	df 1 N.S
12	Type of Syringe							
	a. 1cc syringe	33	97.06	1	2.94	0	0	1.75
	b. 2cc syringe	23	88.46	3	11.54	0	0	df 1 N.S
13	Site of Injection							
	a. Anterior thigh	31	91.18	3	8.82	0	0	0.59
	b. Around umbilicus	25	96.15	1	3.85	0	0	df 1 N.S
14	Time of injection							
	a. Once	2	66.67	1	33.33	0	0	3.98
	b. Twice	29	96.67	1	3.33	0	0	Df 2
	c. Thrice	25	92.59	2	7.41	0	0	N.S

There was significant knowledge association found between such as occupation (χ^2 18.71), monthly income (χ^2 8.46), Duration of illness (χ^2 10.21) at $p<0.05$ level. For these demographic variables H_4 is accepted. There was no significant relationship found between the variables such as age of diabetic clients (χ^2 2.1), Gender (χ^2 1.38), Educational status (χ^2 7.33), Religion (χ^2 0.57), History of diabetes (χ^2 0.94), Duration of treatment (χ^2 3.82), Injection by self (χ^2 1.07), Urine test (χ^2 0.4), Type of syringe (χ^2 1.75), Site of injection (χ^2 0.59), Time of injection (χ^2 3.98), For this demographic variable H_4 was rejected.

Frequency and percentage and X^2 of practice score with selected demographic variables

Table 2: Frequency and percentage and X^2 of practice score with selected demographic variables

N=60

SL. No	Demographic Variables	Level of knowledge						Chi square
		Inadequate (<50%)		Moderate (50-75%)		Adequate (>75%)		
		n	%	n	%	n	%	
1	Age (in years)							
	a. 41-45	17	100	0	0	0	0	2.61
	b. 46-50	17	100	0	0.00	0	0	df 3
	c. 51-55	15	93.75	1	6.25	0	0	N.S
	d. 56-60	9	90	1	10	0	0	
2	Gender							
	a. Male	32	100.00	0	0.00	0	0	2.29
	b. Female	26	92.86	2	7.14	0	0	df 1 N.S
3	Educational Status							
	a. Illiterate	31	100	0	0	0	0	
	b. Primary	12	100	0	0.00	0	0	8.2
	c. Secondary	9	100.00	0	0.00	0	0	df 4
	d. Higher secondary	5	83.33	1	16.67	0	0	S
	e. Collegiate	1	50	1	50	0	0	
4	Occupation							
	a. House wife	20	100	0	0	0	0	21.42
	b. Agriculture	21	100.00	0	0.00	0	0	df 3
	c. Coolie	16	100	0	0.00	0	0	S
	d. Business	1	33.33	2	66.67	0	0	
5	Monthly Income							
	a. < 2000	21	100	0	0	0	0	10.7
	b. 2001 -4000	20	100	0	0	0	0	df 3
	c. 4001- 5000	13	100.00	0	0.00	0	0	S
	d. >5000	4	66.67	2	33.33	0	0	
6	Religion							
	a. Hindu	20	95.24	1	4.76	0	0	1.91
	b. Muslim	25	100	0	0	0	0	df 2
	c. Christian	13	92.86	1	7.14	0	0	N.S
7	History of Diabetes							
	a. Yes	29	93.55	2	6.45	0	0	2.07
	b. No	29	100.00	0	0.00	0	0	df 1 N.S
8	Duration of Illness							
	a. Up to 5 years	15	100	0	0	0	0	12.8
	b. 6-10 years	17	100.00	0	0.00	0	0	df 3
	c. 11-15 years	23	100.00	0	0.00	0	0	S
	d. >15 years	3	60	2	40	0	0	

9	Duration of Treatment							
	a. Up to 5 years	23	100	0	0	0	0	3.39
	b. 6-10 years	23	100.00	0	0.00	0	0	df 4
	c. 11-15 years	11	91.67	1	8.33	0	0	N.S
	d. >15 years	11	91.67	1	8.33	0	0	
10	Injection by self							
	a. By self	6	100.00	0	0.00	0	0	1.33
	b. Family members	17	94.44	1	5.56	0	0	df 2
	c. Hospital staff	35	97.22	1	2.78	0	0	N.S
11	Urine test							
	a. Stick method	25	92.59	2	7.41	0	0	2.3
	b. Solution method	33	100.00	0	0.00	0	0	df 1 N.S
12	Type of Syringe							
	a. 1cc syringe	33	97.06	1	2.94	0	0	0.78
	b. 2cc syringe	25	96.15	1	3.85	0	0	df 1 N.S
13	Site of Injection							
	a. Anterior thigh	33	97.06	1	2.94	0	0	0.38
	b. Around umbilicus	25	96.15	1	3.85	0	0	df 1 N.S
14	Time of injection							
	a. Once	3	100.00	0	0.00	0	0	2.14
	b. Twice	28	93.33	2	6.67	0	0	df 2
	c. Thrice	27	100.00	0	0.00	0	0	N.S

Such as Educational status (χ^2 8.2), Occupation (χ^2 21.42), Monthly income (χ^2 10.7), Duration illness (χ^2 12.8), at P<0.05 level. For this, demographic variablesH_4 is accepted. There was no significant relationship found between the variables such as age of diabetic clients (χ^2 2.61), Gender (χ^2 2.29), Religion (χ^2 1.91), History of diabetes (χ^2 2.07), Duration of treatment (χ^2 3.39), Injection by self (χ^2 1.33), Urine test (χ^2 2.3), Type of syringe (χ^2 0.78), Site of injection (χ^2 0.38), Time of injection (χ^2 2.14), For this demographic variable H_4 was rejected. The finding of the present study revealed that the knowledge and practice regarding self-administration of insulin injection. The overall mean, knowledge and practice score present in the pre-test is 38% and 39.2%, which is slightly less. This shows there is lack of knowledge and practice among rural diabetic clients regarding self-administration of insulin injection.

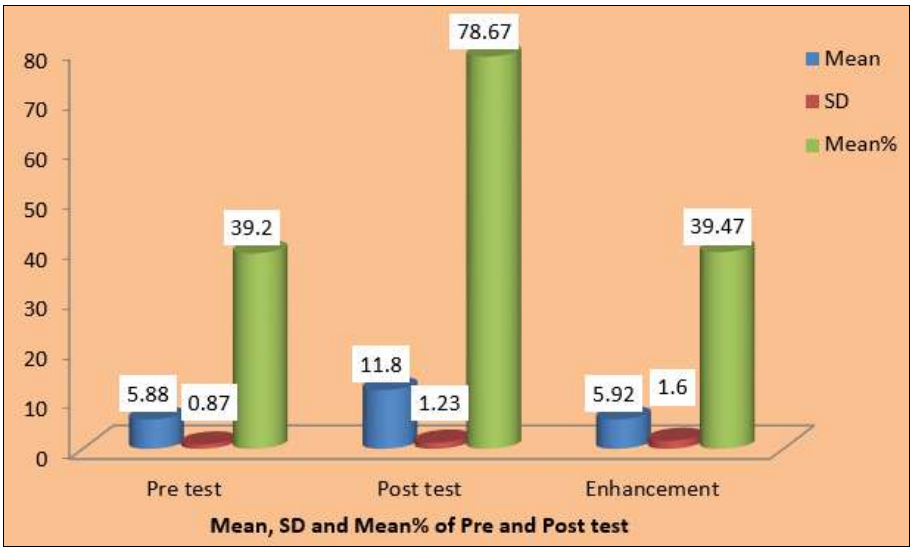

Fig 1: Mean, mean%, standard deviation, and R-value of post-test knowledge and practice.

The present study confirms that there was improvement in knowledge and practice after the structured teaching programme and is statistically significant. The overall mean knowledge and practice score present in the pretest is 38% and 39.2%. And in the posttest 72.67% and 78.67% so there is enhancement of knowledge and practice score found to be 25.33% and 39.47%. The mean knowledge and practice score during pretest is 11.4 and 5.88. And in posttest 21.8 and 11.8.The overall mean knowledge and practice score present of pretest found to be 38% and 39.2% and the post mean knowledge and practice score was 72.67% and 78.67% it shows the enhancement of knowledge and practice after structured teaching programme.

Hence, research hypothesis H1 is accepted since there is significant changes found between pretest and posttest knowledge score after structured teaching programme regarding self-administration of insulin injection among diabetic clients at 5% level and research hypothesis, H2 is since there are significant changes found between pretest and posttest practice score after structured teaching programme regarding self-administration of insulin injection among diabetic clients at 5% level.

There was significant relationship between knowledge and practice regarding self-administration of insulin injection. The overall mean knowledge and practice score present in the pre-test is 38% and 39.2%. And in the post-test 72.67% and 78.67%. Correlation coefficient between knowledge and practice on pre-test and post-test was 0.18 and 0.56, so it is positively correlated hence H3 is accepted

Analysis shows demographic variables in the study like respondent's occupation, monthly income, duration of illness in the knowledge level found significant since H4 is accepted. But in the respondents knowledge score age, gender, educational status, religion, history of diabetes, duration of treatment, injection by self, urine test, type of syringe, site of injection, time of injection in the knowledge score level found non-significant. So H_4 is rejected, and H04 is accepted.

The respondent's educational status, occupation, monthly income, duration of illness with practice score of respondents found significant. Hence H4 is accepted. Whereas age, gender, religion, history of diabetes, duration of treatment, injection by self, urine test, type of syringe, site of injection, time of injection with practice score is found to be none significant $H0_4$ is accepted.

Conclusion

Further effectiveness of structured teaching programme was tested by inferential statistics using paired test. A significant difference was found between pre-test and post-test knowledge scores of diabetic clients including increase in knowledge after structured teaching programme. Hence research hypothesis H_1 accepted.

References

1. Park K. Text book of preventive and social Medicine; 20th edition Bhanot Jabalpur, Basarsidas. 2009, 341, 389, 561.
2. World Health Organisation. Health situation in the South-East Asia Region 2009-2013, New Delhi, 2010.
3. Marta sotomayor, PhD, Armanda Dominguez, Ms Frances Pawlike, BBA Prevention of Diabetes Mellitus; prevention of chronic disease, 2007, 0086.
4. Wild S, Roglic G, Green A, Sicree R, King H. Global prevalence of diabetes. Estimates for the year 2000 and projections for 2030, Diabetes care. 2004;27:1047-53.
5. American Diabetes association. Insulin administration Diabetes Care. 2004-06;27:106-9.
6. Robertson KE, Glazer B, Campbellk. The latest developments in insulin injection device. Diabetes Edu. 2000;26(1):135-52.
7. Tani GS. A self-learning unit for patients with diabetes, journal of American diabetic association, 1991, 58.
8. Kumud Kale, *et al*. Comparative study of insulin levels is type 2 Obse diabetic patients, Bombay hospital journal original research www.bhj.Org/jornal/apiril/2005/htm/origianl.
9. Amstrong DG, Sangaloang MB, Juley. Evaluation of awareness of diabetes mellitus and Sociated factors; Jammed Assoc. 2005 Mar-Apr;95(2):103-7.
10. Nelam Makol. Demystifying diabetes Health action, 2004-05.
11. Morbach S, Lutale JK, Viswanathan V, Molleberth J Ochs HR. Rajashekar Regional differences in risk factors and clinical presentation of diabetic foot lesions. Diabetes Med. 2004 Jan;21(1):91-5.
12. Robert BW. Public health and preventive Medicine. London; prentice hall international INC, 1998.