AMDHS ADVANCES IN MEDICAL, DENTAL AND HEALTH SCIENCES

e-ISSN: 2581-8538

ORIGINAL ARTICLE OPEN ACCESS

Effectiveness of Structured Teaching Programme on Prevention of Depression and Coping Strategies among Diabetic clients

Janaki Dhami*

Bir Bospital Nursing Campus Mahabaudha, Kathmandu, NEPAL.

Received: 02 January 2020;

Accepted: 21 March 2020

***Correspondence to:**

Ms. Janaki Dhami

Lecturer, Bir Hospital Nursing Campus Gaushala, Kathmandu, NEPAL.

Email: janaki.dhami37@gmail.com

Published by : OZZIE PUBLISHERS

Abstract

Knowledge regarding Prevention of Depression and Coping Strategies among Diabetic Clients. The study was carried out to determine the Effectiveness of Structured Teaching Programme on Prevention of Depression and Coping Strategies among Diabetic Clients. Quasi-experimental one group pretest and post-test research design was adopted for the study. The structured interview schedule was developed to collect the data among 60 diabetic clients were selected by simple random sampling technique. Post-test was conducted after 7 days. The data obtained was analyzed by using descriptive and inferential statistics. The findings revealed that the pre-test score of the diabetic clients knowledge on prevention of depression and coping strategies that majority 50 (83.3%) had moderately adequate knowledge and 10 (16.7%) had adequate knowledge. The post-test scores of knowledge shows that there is a high mean score for post test score when compared to pretest score. About 50(83.3%) of diabetic clients had adequate knowledge and 51 (83.3 %) had moderately inadequate knowledge. There was a significant difference between pre and post-test knowledge scores of diabetic clients on prevention of depression and coping strategies at 5% level't'=11.50 (p<0.05). Thus the structured teaching programme regarding prevention of depression and coping strategies was found to be very effective. Chi square was used to find the association of pre-test with the demographic variables. It was found that the demographic variable of age of diabetic clients showed the significant association at 0.05 levels, thus the research hypothesis stated H_2. "There will be significant association of pre-test knowledge score on prevention of depression and coping strategies among diabetic clients with their selected demographical variables", is accepted. The diabetic clients had responded well after administering structured teaching in post-test. There was a significant difference between post -test knowledge scores and pre-test knowledge scores of diabetic clients. Structured teaching programme on knowledge of prevention of depression and coping strategies was found effective.

Key words: Structured teaching programme, Diabetic clients, Prevention of depression and coping strategies, Knowledge.

INTRODUCTION

"*Depression is like a bruise that goes away. A bruise in your mind. You just got to be careful not to touch it where it hurts. It's always there, though.*"

Jeffrey Eugenie's

Diabetes mellitus is a chronic systemic disease characterized by either a deficiency of insulin or a decreased ability of the body to use insulin. Diabetes mellitus is sometimes referred to as "high sugars" by both clients and health care providers. The notion of associating sugar with diabetes is appropriate because the passage of large amounts of sugar-laden urine is characteristic of poorly controlled diabetes. However, high levels of blood glucose are only one component of the pathological process and clinical manifestations associated with serious complication, but people with diabetes can take preventive measures to reduce the like hood of such occurrences.[1]

Type 2 diabetes (formerly called non-insulin-dependent or adult-onset) results from the body's ineffective use of insulin. Type 2 diabetes comprises 90% of people with diabetes around the world and is largely the result of excess body weight and physical inactivity. Symptoms may be similar to those of Type 1 diabetes, but are often less marked. As a result, the disease may be diagnosed several years after onset, once complications have already arisen.[2]

Reports from the International Diabetes Federation (IDF) indicate that the prevalence of diabetes mellitus has reached epidemic levels globally. Estimates for 2010 indicate that 285 million adults have diabetes in the seven regions of the IDF. These numbers represent an increase of

ACCESS THIS ARTICLE ONLINE

WWW.AMDHS.ORG

DOI : 10.5530/amdhs.2020.1.2

39 million from 2007 and an expected continued increase to 439 million in 2030. Given prevalence figures approaching 290 million, the worldwide human, economic and social costs of diabetes are staggering. The IDF estimates that 23 million years of life are lost to disability and reduced quality of life as a result of complications associated with diabetes. The costs associated with diabetes are difficult to accurately capture but some estimates suggest that USD 232 billion were spent worldwide in 2007 to treat and prevent diabetes and this number is expected to climb to a minimum of over USD300 billion in 2025. In the United States alone, the total cost of diabetes was reportedly USD132 billion in 2002 while estimates from smaller and more economically disadvantaged countries such as Tanzania are USD 2.5 billion.[3]

Depression is another condition with high prevalence worldwide. Approximately 340 people worldwide suffer from depression at any given time including 18 million in the United States. According to the World Health Organization (WHO), depression is responsible for the greatest proportion of burden associated with non-fatal health outcomes and account for approximately 12% of total years lived with disability. In 2000, it was estimated that depressive disorders were higher in women (4930 per 100,000) than men (3199 per 100,000) and that, globally, depressive disorders were the fourth leading cause of disease burden in women and seventh leading cause in men. The global prevalence of diabetes is continuously rising. It is estimated that almost 285 million persons are currently suffering from diabetes worldwide and the number is expected to rise to 438 million by the year 2030; more than 70% of these individuals reside in developing countries. The literature reports that patients with diabetes are almost twice as likely to suffer from depression and anxiety as the general population. Recently, a biologic mechanism has been suggested that associates both depression and diabetes with deregulated and overactive hypothalamic-pituitary-adrenal axis activity. Depression as a chronic psychological stress is associated.[4]

Effectiveness of Structured Teaching Programme on Prevention of Depression and Coping Strategies among Diabetic clients

Objectives

1. To assess the existing knowledge regarding prevention of depression and coping strategies among diabetic clients.
2. To find out the post-test level of knowledge regarding prevention of depression and coping strategies among diabetic clients with following structured teaching programme.
3. To compare the pre and post-test knowledge scores regarding prevention of depression and coping strategies among diabetic clients.
4. To associate the post teaching knowledge scores on diabetic with their selected demographic variables.

METHODS

The investigator selected the Quasi-experimental one group pretest and posttest design for the study. This design was adopted to evaluate the effectiveness of Structured Teaching Programmeon prevention of depression and coping strategies among diabetic clients. The samples size was 60 diabetic clients and the sampling technique was Probability sampling in which simple random sampling technique. The researcher attempted the Structured Teaching Programme on Knowledge regarding prevention of depression and coping strategies. The data obtained was planned to be analyzed based on the objectives and hypothesis of the study using the descriptive and inferential statistics. Frequency and percentage were used to analyze the demographic variables. Mean and standard deviation were used to analyze the knowledge regarding prevention of depression and coping strategies among diabetic clients. Paired '*t*' test were used to assess the significant difference between the pre-test and post-test knowledge scores of diabetic clients regarding prevention of depression and coping strategies.

Research methodology is a way to systematically solve the research problem. It consists of various steps that are generally adopted by a researcher in studying the problem along with the logic behind them. The methodology of research indicates the general pattern of organizing the procedure for gathering valid and reliable data for the purpose of the study.[5]

***Research design*:** The research design used in this study was quasi experimental one group pretest-post-test, design.

***Setting of the study*:** Setting is the physical location and condition in which data collection takes place. The study was conducted in Diabetic Clinic, Kathmandu.

***Population of the study*:** Population refers to a total category of persons or objects that meets the criteria for study established by the researcher, any set of persons, objects or measurements having an observable characteristics in common. In the present study, the population refers to all the type II diabetic clients, in the age group of 32-60 years attending Diabetic Clinic, Kathmandu.

***Sample size*:** Sample is the subset of population. In this study a Diabetic clients who fulfilled the inclusion criteria were considered as sample and sample size was 60.

***Sampling technique*:** Sampling technique is an important step in the research process. It is the process of selecting representative units or subsets of a population of the study in a research. Type II diabetic clients in the age group 32-60 years who were attending Diabetic clinic, Kathmandu were taken as target population. Probability sampling in which simple random sampling technique was used to select the sample. The clients were selected under inclusion criteria, asked to gather in OPD and data was collected by using self-administered questionnaire.

***Sample collection*:** The sampling was selected in a predetermined set of criteria

***Inclusion Criteria*:** Diabetic clients diagnosed as type II diabetes, newly diagnosed and 3 years of chronicity and Both male and female.

***Exclusion Criteria*:** The study excludes and Diabetic clients associated with any other systemic diseases.

RESULTS

Section 1: Demographic information.

The data given in Table 1 depicts the frequency and percentage distribution of demographic variables of diabetic clients regarding prevention of depression and coping strategies.

Age wise distribution shows that the maximum numbers subjects 33(55%) of them were in the age group of 51–60 years and where as 27(45%) of them were in the age group of 41-50 years. In related to Gender wise distribution the maximum numbers diabetic clients 37(61.7%) were male and 23(38.3%) of them were females. With regard to Qualification of the

Table 1: Frequency and percentage distribution of Diabetic client according to age in group, gender, qualification, religion, marital status, occupation, income of the family *n*= 60.

Sl. No.	Demographic variables	Categories	No. (60)	%
1	Age in years	30-40	-	-
		41-50	27	45.0
		51-60	33	55.0
		Others	-	-
2	Gender	Male	37	61.7
		Female	23	38.3
3	Qualification	Primary education	12	20.0
		Secondary education	19	31.7
		P.U.C	22	36.7
		Graduate	7	11.7
4	Religion	Hindu	23	38.3
		Muslim	17	28.3
		Christian	20	33.3
		Others	-	-
5	Marital status	Married	60	100
		Single	-	-
		Widow	-	-
		Divorce	-	-
6	Occupation	Unemployed	13	21.7
		Self employed	16	26.7
		Pvt. Employed	22	36.7
		Govt. Employed	9	15.0
7	Family income	Below 5000	9	15.0
		5000-10000	22	36.7
		10001-15000	18	30.0
		Above 15000	-	-

Table 2: Frequency and percentage distribution of Diabetic client according to type of family, area of residence, history of diabetes in the family, duration of diabetes, habits, symptoms and mode of relaxation.

Sl. no.	Demographic variables	Categories	No. (60)	%
8	Type of family	Nuclear family	36	60.0
		Joint family	24	40.0
		Extended family	-	-
9	Area of residence	Rural	60	100
		Urban	-	-
10	History of diabetes in the family	Yes	60	100.0
		No	-	-
11	Duration of diabetes	<1 year	20	33.3
		1-2 years	25	41.7
		2-3 years	15	25.0
12	Habits	Drinking	8	13.3
		Smoking	20	33.3
		Tobacco chewing	3	5.0
		No habits	29	48.3
13	Do you have the following symptoms	Low self esteem	11	18.3
		Feeling lonely	23	38.3
		No interest taking others	17	28.3
		Poor intake of food	-	-
		Not able to carry out regular activities	9	15.0
		None of the above	-	-
14	Mode of relaxation	Meditation	17	28.3
		Yoga	23	38.3
		Music therapy	11	18.3
		Pet therapy	9	15.0

samples maximum numbers 22 (36%) were P.U.C, 19 (31%) secondary education, 12 (20%) Primary education and 7 (11.7%) were graduate. In concerned to religion, maximum number subjects 23(38%) of belonged to Hindu religion, 20 (33%) of the subject belonged to Christian, 17 (28%) of the subject belonged to Muslim and none of the subject belonged to other religion group. Regard marital status, maximum number of subjects 60 (100%) were married.

In relation to occupation 22 (36%) were private employed, 16 (26%) were self-employed, 13(21.7%) were unemployed and 9 (15%) were government employed. Regarding family income majority i.e. 22 (36.7%) subject had the family income of Rs 5000–10000/ month, 18 (30%) had family income of Rs 10001-15000/month and 9 (15%) had family income of below 500.

The above Table 2 depicts the Frequency and percentage distribution of demographic variables of diabetic clients attending selected diabetic clinic. With regard to type of family, maximum number of subjects 36(60%) were nuclear, 24(40%) were joint and no subjects are having extended type of family. With regard to area of residence maximum subjects 60 (100%) were rural. In relation to history of the diabetic family maximum 60 (100%) were yes. In relation to duration of diabetes maximum 25 (41%) were 1-2 year, 20 (33.3%) were < 1 years and 1 5(25%) were 2-3 years. With regard to habits maximum 29 (48%) were no habits, 20 (33.3) were smoking, 8 (13.3) were drinking and 3(5%) were tobacco chewing. In relation to following symptoms 23 (38.3%) having feeling lonely, 17 (28.3) having no interest in taking others, 11 (18.3%) having low self-esteem. With regard to mode of relaxation maximum 23 (38.3%) were doing yoga, 17 (28.3%) were doing meditation, 11 (18.3%) were doing music therapy and 9 (15%) were doing pet therapy.

Section 2: Assessment of pre-test and post-test level of knowledge regarding prevention of depression and coping strategies among diabetic clients.

The above Table 3 depicts that in the pre-test, majority of the subjects 50 (83.3%) had moderate adequate knowledge and 10 (16.7%) of them had adequate knowledge regarding prevention of depression and coping strategies.

Above Table 4 represents the Mean, Mean percentage score and Standard Deviation of various aspects of knowledge regarding prevention of depression and coping strategies among diabetic clients. The study shows that the Mean score of subjects was 8.35 with Standard Deviation 1.13 and Mean score percentage of 69.6 for knowledge on general information

Table 3: Distribution of diabetic clients according to the level of knowledge regarding prevention of depression and coping strategies before STP.

Sl. No.	Pre-test level of knowledge	No.	%
1	Inadequate knowledge (<50%)	-	-
2	Moderately adequate knowledge (50-75%)	50	83.3
3	Adequate knowledge (>75%)	10	16.7
4	Total	60	100

Table 4: Mean, SD and range of knowledge regarding prevention of depression and coping strategies among diabetics before STP.

Sl. No.	Pre-test knowledge	Max. Score	Range	Mean	SD	Mean%
1	General information	12	6-10	8.35	1.13	69.6
2	Prevention of depression	12	6-10	8.18	1.04	68.8
3	Coping strategies	4	2-4	2.7	0.72	67.5
4	Over all	28	16-23	19.30	1.99	68.9

Table 5: Distribution of diabetic clients according to the level of knowledge regarding prevention of depression and coping strategies after STP.

Sl. no.	Post-test level of knowledge	N	%
1	Inadequate knowledge (<50%)	-	-
2	Moderately adequate knowledge (50-75%)	10	16.7
3	Adequate knowledge (>75%)	50	83.3
4	Total	60	100

regarding diabetes. The Mean score of subject was 8.18 with Standard Deviation 1.04 and Mean score percentage 68.8 for knowledge regarding prevention of depression. The Mean score of subject was 2.7 with Standard Deviation 0.72 and Mean score percentage of 67.5for knowledge regarding coping strategies of diabetic clients. The overall Mean and Standard Deviation of subjects was 19.30 and Standard Deviation 1.99, respectively and the Mean score percentage of subjects for overall knowledge was 68.9.

The above Table 5 depicts that in the post test, majority of the diabetic clients 50(83.3%) of them had adequate knowledge and remaining 10(16.7%) of them had moderately adequate knowledge level and none of them had inadequate knowledge.

The above Tables 6 represents the mean, standard deviation and mean percentage on aspects of knowledge of diabetic clients regarding prevention of depression and coping strategies in post-test. The study shows that the Mean score of subject was 9.75 with Standard Deviation 0.85 and Mean score percentage of 81.2 for knowledge on general information regarding diabetes. The Mean score of subject was 9.77 with Standard Deviation 0.78 and Mean score percentage 81.4 for knowledge regarding prevention of depression. The Mean score of subject was 3.12 with Standard Deviation 0.60 and Mean score percentage of 78 for knowledge regarding coping strategies of diabetic clients. The overall Mean and Standard Deviation of subjects was 22.63.and Standard Deviation 1.30, respectively and the Mean score percentage of subjects for overall knowledge was 80.8, This indicates

Table 6: Mean, SD and range of knowledge regarding prevention of depression and coping strategies among diabetics after STP.

Sl.No.	Post-test knowledge	Max. Score	Range	Mean	SD	Mean%
1	General information	12	8-11	9.75	0.85	81.2
2	Prevention of depression	12	8-11	9.77	0.78	81.4
3	Coping strategies	4	2-4	3.12	0.60	78.0
4	Over all	28	20-25	22.63	1.30	80.8

Table 7: Distribution of diabetic clients according to knowledge regarding prevention of depression and coping strategies before and after STP.

Sl. No.	Level of knowledge	Before STP		After STP	
		No.	%	No.	%
1	Inadequate knowledge (<50%)	-	-	-	-
2	Moderately adequate knowledge (50-75%)	50	83.3	10	16.7
3	Adequate knowledge (>75%)	10	16.7	50	83.3
4	Total	60	100	60	100

that there is a significant increase in the knowledge level of diabetic clients on prevention of depression and coping strategies after structured teaching programme.

SECTION 3: Effectiveness of structured teaching programme on prevention of depression and coping strategies among diabetic clients.

The above Table 7 represents that in the pre-test, majority of the subjects 50(83.3%) had moderate adequate knowledge and 10(16.7 %) of them had adequate knowledge. In the post test majority of them 50(83.3%) had adequate knowledge level, 10(16.7%) had moderately adequate knowledge and none of them had inadequate knowledge.

The above Table 8 shows that the mean, standard deviation and mean percentage on aspects of knowledge of diabetic clients regarding prevention of depression and coping strategies before and after STP.

The pre-test shows that the highest mean score of subjects is 8.35 with mean score percentage of 69.6 on knowledge general information of diabetic mellitus. The lowest mean score of subjects is 2.7 with mean score percentage of 67.5 for knowledge about coping strategies of diabetes. The overall mean of subjects is 19.30 with the mean percentage score of subjects for overall knowledge is 68.9. The post-test shows that the highest mean score of subjects is 9.77 with mean score percentage of 81.4 in knowledge on prevention of depression of diabetes. The lowest mean score of subjects is 3.12 with mean score percentage of 78 for knowledge about coping strategies of diabetes. The overall mean of subjects is 22.63 with the mean percentage score of subjects for overall knowledge is 80.8% This indicates that there is a significant increase in the knowledge level of the diabetic clients on prevention of depression and coping strategies after structured teaching programme. This indicates that there is a gain in mean score percentage of 9.77, the highest mean score of subjects in knowledge on prevention of depression of diabetes mellitus .and there is a gain in mean

Table 8: Mean, Standard Deviation and range of knowledge regarding prevention of depression and coping strategies before and after STP.

Sl. no	Knowledge	Pre test				Post test			
		Range	Mean	SD	Mean %	Range	Mean	SD	Mean %
1	General information	6-10	8.35	1.13	69.6	8-11	9.75	0.85	81.2
2	Prevention of depression	6-10	8.18	1.04	68.8	8-11	9.77	0.78	81.4
3	Coping Strategies	2-4	2.7	0.72	67.5	2-4	3.12	0.60	78.0
4	Over all	16-23	19.30	1.99	68.9	20-25	22.63	1.30	80.8

Table 9: Statistical significance of pre and post-test knowledge regarding prevention of depression and coping strategies among diabetic clients.

Sl. no.	Knowledge	Max score	Mean difference	SD of difference	Mean difference %	t-value	*p*-value
1	General information	12	1.40	1.41	11.6	7.65*	*p*<.0.05
2	Prevention of depression	12	1.58	1.36	13.1	8.95*	*p*<.0.05
3	Coping strategies	4	0.35	0.95	8.75	2.84*	*p*<.0.05
4	Over all	28	3.33	2.24	11.8	11.50*	*p*<.0.05

Note: *- Significant at 5% level (ie., *p*<0.05)

score percentage of 81.4, the lowest mean score of subjects in knowledge regarding coping strategies of diabetes mellitus. The overall gain in mean score percentage is 80.8.

The above Table 9 describes the outcomes of mean difference, Standard Deviation of difference percentage of mean difference, or pre and post test scores in overall aspects and also the different aspects of knowledge. Along with that the paired t-test values for significance of pre and post test scores were also being included. On an overall aspect of knowledge, the percentage % of mean difference i.e. gain in mean score between pre and post test score was 11.8% with a mean difference of 3.33. It is also being included for the 3 aspects of knowledge, in which the enhancement in knowledge regarding general information of diabetic mellitus was 11.6% with a mean difference of 1.40, followed by prevention of depression 13.1% with a mean difference of 1.58 and coping strategies 8.75% with a mean difference 0.35.

SECTION-4: Association between knowledge regarding prevention of depression and coping strategies and demographic variables of diabetic clients.

Table 10 envisages the outcome of chi square analysis being carried out to bring out the association between the post test knowledge of diabetic clients with their demographic variables. The categories such as age, gender, qualification, religion, marital status, occupation, family income, were accounted for determining the association with knowledge. Out of which age (chi square value=3.94, 2df) was significant at 5% level and rest of the demographic characteristics were not significant with the knowledge. Hence the research hypothesis stated H_2, There is a significant association between pre-test knowledge score of client with diabetes regarding prevention of depression and coping strategies with their selected demographical variables, is accepted.

Table 11 envisages the outcome of chi square analysis being carried out to bring out the association between the post-test knowledge of diabetic clients with their demographic variables. The categories such as type of family, area of residence, history of diabetes in the family, duration of diabetes, habits, symptoms and mode of relaxation were accounted for determining the association with knowledge. Table 11 doesn't have significant with the knowledge.

DISCUSSION

The characteristics of the demographic variables described in terms of their frequency and percentage distribution which pasteurizes that 33 (55.0%) of them were belongs to 51-60 years of age group, gender wise distribution 37(61.7%) diabetic clients are male, qualification wise 22 (36%) belong to P.U.C, according to religion 2 3(38%) of diabetic clients belong to Hindu, all are married 60(100%), 23(36%) were private employed, 2, 2(36.7%) had the family income between Rs. 5000-10000/ and month, 36(60%) belongs to nuclear family, all 60 (100%) resided in rural area, all of them had history of the diabetic family, 25(41%) were duration diabetic of 1-2year, 29(48%) are no habit, 23(38%) were feeling lonely and 23(38.35%) were mode of relaxation was yoga.

The first objective was to assess the existing knowledge regarding prevention of depression and coping strategies among diabetic clients.

In the present study in the pre-test, majority 50 (83.3%) of diabetic clients had moderately adequate knowledge and 10 (16.7%) of them had adequate knowledge. The mean and standard deviation of knowledge variables of

Table 10: Association between pre-test knowledge regarding prevention of depression and coping strategies with demographic variables such as age, gender, qualification, religion, marital status, occupation and family income. *n*=60

Sl. no	Demographic variables	Categories	Sample (60)		Knowledge				χ^2- value	*p*-value
					≤median		>median			
			No.	%			No.	%		
	Age in years	30-40	-	-	-	-	-	-	3.94, df□1, **S**	*P*<0.05
		41-50	27	45.0	11	34.4	16	57.1		
		51-60	33	55.0	21	65.6	12	42.9		
		Others	-	-	-	-	-	-		
	Gender	Male	37	61.7	22	68.8	15	53.6	1.45, df□1, NS	*P*>0.05
		Female	23	38.3	10	31.3	13	46.4		
3.	Qualification	Primary education	12	20.0	5	15.6	7	25.0	0.99, df□3, NS	*p*>0.05
		Secondary education	19	31.7	10	31.3	9	32.1		
		P.U.C	22	36.7	13	40.6	9	32.1		
		Graduate	7	11.7	4	12.6	3	10.7		
4.	Religion	Hindu	23	38.3	12	37.5	11	39.3	0.308, df□2, NS	*p*>0.05
		Muslim	17	28.3	10	31.3	7	25.0		
		Christian	20	33.3	10	31.3	10	35.7		
		Others	-	-	-	-	-	-		
5.	Marital status	Married	60	100	32	100	28	100	Not applicable	
		Single	-	-	-	-	-	--		
		Widow	-	-	-	-	-	-		
		Divorce	-	-	-	-	-	-		
6.	Occupation	Unemployed	13	21.7	6	18.8	7	25.0	3.09, df□3, NS	*P*>0.05
		Self employed	16	26.7	7	21.9	9	32.1		
		Pvt. Employed	22	36.7	15	46.9	7	25.0		
		Govt. employed	9	15.0	4	12.5	5	17.9		
7.	Family income	Below 5000	9	15.0	5	15.6	4	14.3	0.341, df□2, NS	*p*>0.05
		5000-10000	22	36.7	12	37.5	10	35.7		
		10001-15000	18	30.0	10	31.3	8	28.6		
		Above 15000	-	-	-	-	-	-		

diabetic clients showed that the overall knowledge of diabetic clients was 19.30 with Standard Deviation 1.99. The highest mean score of subjects is 8.35 with Standard Deviation 1.13 in knowledge regarding general information about diabetes mellitus. The lowest mean score of subjects is 2.7 with Standard Deviation 0.72 in coping strategies regarding diabetes mellitus. This decrease in overall knowledge indicates that diabetic client's need more information regarding prevention of depression and coping strategies.

The study findings are supported by a study a systematic review was conducted to examine which depression screening instruments are currently being used in diabetes research. Result shows that data are presented for the 234 published studies that were examined. The Beck Depression Inventory and the Centre for Epidemiologic Studies Depression. Scales were the most popular screening tools (used in 24% and 21% of studies). Information on the cultural applicability of screening tools was mostly unavailable and, where reported, included only details of the language translation process. A small number of studies reported reliability data, most of which showed moderate-good sensitivity and specificity but a high rate of false positives. . Further research is required in order to determine the suitability of screening tools for use in clinical practice and to address the increasing problem of co-morbid diabetes and depression.[6]

The second objective was to find out the post-test level of knowledge regarding prevention of depression and coping strategies among diabetic clients with following

In the present study in the post- test, majority 50 (83.3%) of diabetic clients had adequate knowledge and 10(16.7%) of them had moderately adequate knowledge. The mean and standard deviation of knowledge variables of diabetic clients showed that the overall knowledge of diabetic clients was 22.63 with Standard Deviation 1.30. The highest mean score of subjects is 9.77 with Standard Deviation 0.78 in knowledge regarding prevention of depression about diabetes mellitus. The lowest mean score of subjects is 3.12 with Standard Deviation 0.60 in coping strategies regarding diabetes mellitus. This indicates that there is a significant increase in the knowledge regarding prevention of depression and coping strategies among diabetic clients.

The above finding was supported A randomized controlled trial to assess the effects of the motivational interviewing intervention. 250 of type 2 diabetes people were selected randomly. A result shows that a total of 250 type 2 diabetic participants were randomized. The retention rate in the intervention group was 83% (*n*=104). The motivational interview did improve participants significantly in self-management, self-efficacy, quality

Table 11: Association between pre-test knowledge regarding Prevention of depression and coping strategies with demographic variables such as type of family, area of residence, history of diabetes in family, duration of diabetes, habits, symptoms and mode of relaxation

Sl. no	Demographic variables	Categories	Sample (60)		Knowledge				χ^2- value	*p*-value
					≤median		>median			
			No.	%			No.	%		
8.	Type of family	Nuclear family	36	60.0	21	65.6	15	53.6	0.904, df□1, NS	*P*>0.05
		Joint family	24	40.0	11	34.4	13	46.4		
		Extended family	-	-	-	-	-	-		
9.	Area of residence	Rural	60	100					Not applicable	
		Urban	-	-						
10.	History of diabetes in the family	Yes	60	100.0					Not applicable	
		No	-	-						
11.	Duration of diabetes	<1 year	20	33.3	11	34.4	9	32.1	0.040, df□2, NS	*p*>0.05
		1-2 years	25	41.7	13	40.6	12	42.9		
		2-3 years	15	25.0	8	25.0	7	25.0		
12.	Habits	Drinking	8	13.3	2	6.3	6	21.4	3.14, df□3, NS	*p*>0.05
		Smoking	20	33.3	11	34.4	9	32.1		
		Tobacco chewing	3	5.0	2	6.3	1	3.6		
		No habits	29	48.3	17	53.1	12	42.9		
13.	Do you have the following symptoms	Low self esteem	11	18.3	3	9.4	8	28.6	5.72, df□3, NS	*p*>0.05
		Feeling lonely	23	38.3	16	50.0	7	25.0		
		No interest taking others	17	28.3	9	28.1	8	28.6		
		Poor intake of food	-	-	-	-	-	-		
		Not able to carry out regular activities	9	15.0	4	12.5	5	17.9		
		None of the above	-	-	-	-	-	-		
14.	Mode of relaxation	Meditation	17	28.3	11	34.4	6	21.4	2.34, df□3, NS	*p*>0.05
		Yoga	23	38.3	12	37.5	11	39.3		
		Music therapy	11	18.3	6	18.8	5	17.9		
		Pet therapy	9	15.0	3	9.4	6	21.4		

of life and HbA1c among diabetes people with appropriate baseline value (<121.24, <174.57, <107.18 and >7.62, respectively) but not in depression, anxiety and stress (F=0.13, *p*=0.72) compared to the control group at 3 months follow-up. The findings provided important evidence concerning the positive effect of motivational interventions in self-management. This research provided evidence for future clinical practices in diabetes care.[7]

The third objective was to compare the pre and post-test knowledge scores regarding prevention of depression and coping strategies among diabetic clients.

To compare between knowledge scores of diabetic clients paired '*t*' test was used, t = 11.50 which was statistically significant at 0.05 level. It evidence that there was an interrelationship between pre and post-test knowledge scores. Hence it shows that Hypothesis H_1- "There will be significant difference between pre and post-test knowledge score regarding prevention of depression and coping strategies among diabetic clients**"** is accepted.

The above finding was supported the study is conducted in depressive symptoms and quality of life in adolescents with type 2. A total of 704 youth with type 2 diabetes < 2 years' duration, aged 10-17 years and BMI>_85th percentile completed depressive symptoms and quality of life measures. A result shows that 14.8% reported clinically significant depressive symptoms and older girls had significantly higher rates than older boys. Rates of significant depressive symptoms were similar to those of healthy adolescents and lower than those of teens with type 2 diabetes.[8]

The fourth objective was to associate the post teaching knowledge scores on diabetic with their selected demographic variables.

The Chi-Square analysis was carried out to determine the association of knowledge with the selected demographic variables of diabetic clients and it is found to be associated with variables such as age in years of the diabetic clients and the other variables were not statistically significant. The result of the Chi-Square analysis presented is indicated that there is significant association of knowledge with selected demographic variables. Knowledge is having association with the selected demographic variables such as age in years at 0.05 levels. Hence there is a significant association of knowledge with the selected demographic variables, hence Hypothesis H_2."There will be significant association of pre-test knowledge score on prevention of depression and coping strategies among diabetic clients with their selected demographical variables" is accepted.

The above findings were supported with diabetes self-management education interview. 234 Type-2 Diabetic patients, depression are correlated with

diabetes-specific emotional distress and observational studies have suggested that diabetes distress may have a greater impact on diabetes outcomes than depression itself. To examine the relative effects of change in depressive symptoms and change in diabetes distress on change in glycemic control, in (T2DM) patients and measured glycemic control (HbA_{1c}), depressive symptoms and diabetes distress at baseline and 6 months. In multiple linear regression, change in depressive symptoms was not associated with change in HbA1c (P=0.23). Change in diabetes distress was significantly associated with change in HbA_{1c} (P<0.01), such that a 10-point decrease in diabetes distress was associated with a 0.25% reduction in HbA1c. Change in diabetes distress and not change in depressive symptoms, was associated with both short- and long-term change in glycemic control for patients with poorly controlled T2DM.[9]

CONCLUSION

The present study assessed the effectiveness of structured teaching programme on prevention of depression and coping strategies regarding diabetes mellitus. The findings of the study revealed that there was a marked increase in overall knowledge level scores (22.63) of post-test than the pre-test (19.30). The overall improvement in the mean scores was 3.33 with the paired '*t*' value 11.50 which was significant at p< 0.05. The result shows that majority 50(83.3%) having adequate knowledge regarding prevention of depression and coping strategies.

Recommendations

- A similar study can be done on a larger sample to validate and generalize the findings.
- A similar study can be conducted and evaluated using alternative teaching strategies like interactive learning sessions, self-instructional module, etc.
- A comparative study can be conducted between the urban and rural clients in the diabetic clinic to assess their knowledge regarding prevention of depression and coping strategies.

ACKNOWLEDGEMENT

The author would like to acknowledge Prof. Dr. Sharmila and Channabasppa for their help and support.

CONFLICT OF INTEREST

The author declare none.

ABBREVIATIONS

IDF: International Dibetes Federation; **BDI:** Beck Depression Inventory; **ISA:** Insulin Self-Administration; **NHANES:** National Health and Nutrition Examination Survey; **DCQ:** Diabetes Costs Questionnaire; **DPP:** Diabetes Prevention Program; **T2DM:** Type 2 Diabetes Mellitus; **HLD:** High Density Lipoprotein; **ADL:** Activities Daily Living; **SPSS:** Statistical Package for Social Science.

REFERENCES

1. American Diabetes Association. Clinical Practice Recommendations 2005. Diabetes Care. 2005;28(suppl 1):s1-2. https://doi.org/10.2337/diacare.28.suppl_1.S1
2. American Diabetes Association. Diagnosis and Classification of Diabetes Mellitus. Diabetes Care. 2010;33(S1):S62-9.
3. King H, Aubert RE, Herman WH. Global burden of diabetes, 1995-2025: Prevalence, numerical estimates and projections. Diabetes Care. 1998;21(9):1414-31.
4. International Diabetes Federation, Diabetes Atlas. 4th ed. Brussels. 2009.
5. Gask L, Macdonald W, Bower P. What is the relationship between diabetes and depression? A qualitative meta-synthesis of patient experience of co-morbidity. Chronic Illn. 2011;7(3):239-52.
6. Roy T, Lloyd CE, Pouwer F, Holt RI, Sartorius N. Screening tools used for measuring depression among people with Type 1 and 2 diabetes. Diabetes Med. 2012;29(2):164-75.
7. Chen SM, Creedy D, Lin HS, Wollin J. Effects of motivational interviewing intervention on self- management, psychological and glycemic outcomes in type 2 diabetes: A randomized controlled trial. Int J Nurs Stud. 2012;49(6):637-44.
8. McDade-Montez EA, Watson D. Examing the potential influence of diabetes on depression and anxiety symptoms via multiple sample confirmatory factor analysis. Ann Behave Med. 2011;42(3):341-51.
9. Zagaring SE, Allen NA, Garb JL, Welch G. Improvement in glycemic control following a diabetes education intervention is associated with changes in diabetes distress but not change in depressive symptoms. Behav Med. 2012;35(3):299-304.

Cite this article as: Dhami J. Effectiveness of Structured Teaching Programme on Prevention of Depression and Coping Strategies among Diabetic clients. Adv. Med. Dental Health Sci. 2020;3(1):7-14.