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RESEARCH ARTICLE

A STUDY TO ASSESS THE LEVEL OF COPING STRATEGIES AMONG THE PATIENTS WITH CHRONIC DIABETES MELLITUS ADMITTED IN SELECTED HOSPITALS

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Abstract

Introduction: Diabetes specific-distress is defined as emotional distress associated with the ongoing worries, burdens and concerns that occur when managing a demanding chronic disease like diabetes over time.

Methodology: Quantitative Research Approach and Descriptive Research Design were adopted for this study. Totally 200 Chronic Diabetes Mellitus Patients who were attending Medical and Surgical OPD and Inpatients department in selected hospital were selected as sample. Purposive Sampling technique was used to select the samples for this study.

Results: In level of coping158 (79%) of them were belongs to strengthening of coping, 42(21%) of them were belongs to weakening of coping. There is significant difference between the levels of coping strategies with gender in demographic variables. There is significant difference between levels of coping with alternative medicine of clinical variables. There is a significant difference between levels of coping with nature of work of psychosocial variables.

Conclusion: The Health care providers should focus on the psychosocial factors in the treatment regime of the diabetic patient. The mental health practitioners provide interventions for both the patient with diabetes and their families. Health care providers' involvement and family members support will helps to improve the coping ability of the patient with diabetes mellitus.

Introduction:-

Diabetes Mellitus is an important public health problem, being one of the four priority non-communicable diseases being targeted for follow-up by world leaders. The number of cases and the prevalence of diabetes have continued to increase over the last few decades (WHO Global Report, 2016). Utilising coping strategies to reduce and manage the intensity of negative and distressing emotions caused by diabetes is essential.[1]

Diabetes is a complex disease to manage. Comorbid complications and conditions such as hypoglycaemia, hyperglycaemia, neuropathy, nephropathy, and retinopathy are also common in people with diabetes. Hence, there is need for people with diabetes to find optimal ways to manage the condition.[2][3]

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A stressor's effect on a person is based on that person's feeling of threat, vulnerability, and ability to cope than the stressful event itself.[4] How one manages the stressor can be adaptive or maladaptive. Coping is maladaptive when an individual applies techniques that are not adequate or appropriate to the situation or stressor that requires one to manage.[5] Greater engagement in maladaptive coping is associated with anxiety, depressive symptoms and poorer quality of life.[6][7]

Diabetes Mellitus sufferers who have psychological disorders, especially anxiety and depression, increase the lack of management and treatment results compared to those without psychological disorders.[8]

Need for the study:
Stress is a major public health problem in India. It affects large numbers of adolescents middle aged groups both men and women residing in urban, rural areas and slums. At the individual and family level, stress leads to poor quality of life, causing huge social and economic impact.[9]

It is described that the coping mechanism is an important factor for diabetics. The Research findings also provide potential benefits in emphasizing cognitive and behavioral strategies to improve the well-being of individuals with diabetes.[10]

The researcher felt the need of conducting the present study with justification to retreat to the information even if it is gained through various means from Medias and the formal planned educational intervention program, which will be given in the clinical area while attending the hospital will have definite impact on the mental health and wellbeing. Hence this present study was conducted to identify the level of coping strategies among Diabetic patients with specific objectives.

Statement Of The Problem
"A Study to assess the level of coping strategies among the Patients with Chronic Diabetes Mellitus admitted in selected hospitals".

Objectives:-
1. To assess the level of coping strategies among the patients with chronic diabetes mellitus.
2. To associate the level of coping strategies among the patients with chronic diabetes mellitus with their selected demographic variables.

Research Methodology:-
Quantitative Research Approach and Descriptive Research Design were adopted for this study. The study setting was Sri ManakulaVinayagar Medical College and Hospital at Puducherry. The Patients attending Medical and Surgical OPD and Inpatients department in SMVMCH, who fulfill the inclusion criteria selected as sample for the study. The sample size was 200 Chronic Diabetes Mellitus Patients. Purposive Sampling technique was used to select the samples for this study.

Sample Selection Criteria
Inclusion criteria
Diabetic Mellitus Patients,
1. Patients who have diabetic mellitus more than 5 years
2. Both male and female diabetic mellitus patients
3. Who are all available during the time of data collection

Exclusion criteria:
1. Patient with psychiatric illness.
2. All Juvenile diabetes mellitus.
3. Patient who are critically ill

Description of Tool
The tool used for this study is a standardized tool; the tool consists of 2 sections namely,

Section A:
Variables, It consists of 3 sub divisions such as,
Demographic Variables, clinical variables and psycho social variables.
Section B:
Coping Assessment Scale

In this study was standard questionnaire used to assess the coping level of the patient. Coping Scale consist of 40 items, 5 point likert scale and Total score 200, it is Classified as Problem oriented coping method (15 items) and Affective (emotion) oriented coping method (25 items). The scoring was interpreted as score of >100 as coping strength and <100 as coping weakness.

Protection of Human Rights
Approval and ethical clearance from the dissertation committee of the institution prior to conducting pilot study and main study was obtained by the researcher. Formal permission was obtained from concerned authorities of selected industry. Oral and written consent was obtained from samples after explanation regarding the objectives and nature of study and confidentially was maintained throughout the study.

Data Collection Procedure
The formal permission obtained from the concerned authorities. The samples were selected by using purposive sampling technique. The researcher introduced himself and explains about the purposes of the study to the patients. Each day 3 to 10 samples were selected and the researcher obtained the consent from samples. After that the researcher assessed the samples with demographic variables, clinical variables and psychosocial variables. The researcher was selected 200 samples in between the 6 weeks of study duration. At last the researcher evaluated the coping ability among the patients with chronic diabetic mellitus. The researcher were administered the self-instructional module in order to promote the awareness regarding improve the coping abilities level by the researcher own interest.

Plan for Data Analysis
The collected data will be organized by,
1. Descriptive statistics
Frequency, percentage, distribution, mean, standard deviation and mean percentage were used to assess the coping strategies among the patients with chronic diabetes mellitus.
2. Inferential statistics
a. Chi – square test was used to find out the association of coping strategies among the patients with chronic diabetes mellitus with the variables.

The Organization Of Analyzed Data
The data was organized, tabulated and analyzed according to the objectives. Data analysis begins with description that applies to the study in which the data are numerical with some concepts. Descriptive statistics allows the researcher to organize the data and to examine the quantum of information and inferential statistics is used to determine the relationship and causality. Data collected were organized under the following sections.

Section A:
Mean Standard deviation and Mean Percentage of level of coping strategies among patients with chronic diabetes mellitus.

Section B:
Frequency and percentage wise distribution of level of coping strategies among patients with chronic diabetes mellitus.

Section C:
Association between level of coping strategies with their selected demographic
Variable

Section D:
Association between level of coping strategies with their selected clinical variable

Section E:
Association between level of coping strategies with selected psychosocial variable.

Table 1:- Mean and standard deviation of coping strategies among patients withchronic diabetes mellitus.(N =200).

Coping strategies	MaxScore	Range	Score		
			Mean	SD	Mean %
Overall	200	145-75	114.64	16.18	57

Table 1: The table findings shows that Mean, SD and Mean% of the level of copingstrategies among patients with diabetes mellitus reveals that, around 60% (57%) of themhad coping strategies among Diabetes Mellitus which was Mean score of 114.64±16.18.

Itcanbeinterpretedthat,aboveinthisstudyaveragelevelofcopingstrategies was found among Diabetes Mellitus patients.

Table 2:- Frequencyandpercentagewisedistributionoflevelofcopingstrategies among patients with chronic diabetes mellitus.

Level of coping	Score	
	f	%
Strength	**158**	**79**
Weakness	**42**	**21**
Total	**200**	**100**

Table 2:-The frequency and percentage distribution oflevel of coping strategies amongpatients with chronic diabetic mellitus reveals that, the higher percentage of them 158(79%) were in strength level of coping. The lower percentage 42(21%) of themwere belongs to weakness of coping level.

Table 3:- Association between level of coping with their selected demographicvariable(N=200).

Demographic variables	Weakness		Strength			
	f	%	f	%	$\chi 2$	p-value
1.Age (in years):						
a)20-24 years	0	0	1	.0.5	0.77	0.857
b)25-30 years	1	0.5	4	2	(df=3)	NS
c)31-35 years	3	1.5	7	3.5		
d)Above 35 years	38	19	146	73		
2.Gender:						
a)Male	16	8	91	45.5	5.07	0.024*
b)Female	26	13	67	33.5	(df=1)	S
a)**3.Religion:**						
b)Hindu	39	19.5	135	67.5	4.46	0.108
c)Muslim	0	0	15	7.5	(df=2)	NS
d)Christian	3	1.5	8	4		
e)Others	0	0	0	0		
4.Educational status :						
a)Primary school	16	8	50	25		
b)Secondaryschool	16	8	45	22.5	4.218	0.239
c)Graduate	1	0.5	13	6.5	(df=3)	NS
d)Illiterate	9	4.5	50	25		
5.Place of living:						
a)Urban	24	12	75	37.5	1.24	0.265
b)Rural	18	9	83	41.5	(df=1)	NS
6.Occupation:						
a)Unemployee	41	20.5	147	73.5	1.23	0.267
b)Employee	1	0.5	11	5.50	(df=1)	NS

7. Marital status:						
a)Married	41	20.5	155	77.5	0.03	0.843
b)Unmarried	1	0.5	3	1.5	(df=1)	NS
8.Income :						
a)5001-7000	21	10.5	85	42.5	5.05	0.080
b)7001-10000	8	4	47	23.5	(df=2)	NS
c)Above 10001	13	6.5	26	13		

*-P<0.05 , significantand**-P<0.01 &***-P<0.001 , Highly significant

Table 3:- The table findings shows that association between level of coping strategies and demographic variables such as, gender **(χ2=5.07, p=0.024*)** was significantly found association with copingstrategies. In gender most of them were males had coping strategies.

In gender, Male patients are 16 of them have coping weakness and 91 of themhad coping strength.In Female, 26 patients have coping weakness and 67 patients hadcoping strength.

Table 4:- Association between level of coping with their selected clinical variable(N= 200).

Demographic variables	**Weakness**		**Strength**			
	f	**%**	**F**	**%**	**χ2**	**p-value**
1.Type of diabetes mellitus :						
a)Insulin dependent DM	15	7.5	79	39.5	3.13	0.211
b)Non insulin dependent DM	27	13.5	78	39	(df=2)	NS
c)Post gestational DM	0	0	1	0.5		
2.Duration of diabetes Mellitus:						
a)Below 5 years	0	0	1	0.5	1.01	0.603
b)5 to 10 years	38	19	134	67	(df=2)	NS
c)More than 10 years	4	2	23	11.5		
3.Treatment regimen :						
a)Oral glycemic	27	13.5	76	38	3.63	0.163
With Insulin Without insulin	15 0	7.5 0	81 1	40.5 0.5	(df=2)	NS
4.Level of glucose control:						
Low Normal High	1 0 41	0.5 0 20.5	4 1 153	2 0.5 76.5	0.27 (df=2)	0.873 NS
5.Presence of complication:						
Yes No	42 0	21 0	147 11	73.5 5.5	3.09 (df=1)	0.079 NS
6.Type of complication :						
a)Nil	0	0	4	2		
Neuropathy Retinopathy Cardiopathy	10 8 14 5	5 4 7 2.5	22 42 65 19	11 21 32.5 9.50	8.35 (df=6)	0.213 NS
e)Nephropathy	4	2	5	2.5		
f) Foot ulcer	1	0.5	1	0.5		
g)Surgical condition	0	0	0	0		
h)Gynecological condition	0	0	0	0		
7.Alternative medicine:						
a)Sidha	2	1	18	9		
b)Ayurvedha	1	0.5	0	0	9.53	0.049*
c)Homeopathy	0	0	2	1	(df=4)	S
d)Unani	2	1	1	0.5		

e)None	37	18.5	137	68.5		

*-P<0.05 ,significantand**-P<0.01 &***-P<0.001 , Highly significant

Table 4:- The table results show that association between levels of coping strategies with clinical variables. Alternativemedicine(**χ2=9.53,p=0.049*)**wassignificantlyfoundassociationwith the coping strategies. In alternative medicine most of them were not taking thealternative medicine.

In sidha treatment two patient were coping weakness, 18 patients were copingstrength, onepatientwhoisincopingweaknesspracticeAyurvedhamedicine,twopatientwhohadcopingstrengthpracticeHomeopathy medicine,twopatientshadcopingweaknessandonepatientincopingstrengthinunanitreatmentand37patientsincopingweakness and 137 patient in coping strength were belongs to no practice of alternativemedicine at the same time they practice allopathic medicine and treatment. Even thoughvarious alternative medicine practice exists, most of the patient practice in allopathicmedicine having high confident about the glucose control.

Table 5:- Association between level of coping with their selected psychosocialvariable(N=200).

Demographic variables	**Weakness**		**Strength**			
	f	**%**	**F**	**%**	**χ2**	**p-value**
1.Type of diet :						
a)Vegetarian	1	0.5	12	6	2.65	0.266
b)Non vegetarian	2	1	15	7.5	(df=2)	NS
c)Mixed	39	21	131	65.5		
2.Socio economic status:						
a)Low	41	20.5	140	70	3.15	0.207
b)Middle	1	0.5	17	8.5	(df=2)	NS
c)High	0	0	1	0.5		
3.Nature of work :						
a)Active worker	42	21	143	71.5	4.31	0.038*
b)Sedentary worker	0	0	15	7.5	(df=1)	S
4.Type of worker:						
a)Heavy worker	40	20	146	73	0.409	0.522
b)Office worker	2	1	12	6	(df=1)	NS
5.Hours of work :						
a)6-8 hrs	16	8	48	24	1.13	0.568
b)9-12 hrs	26	13	109	54.5	(df=2)	NS
c)More than 12 hrs	0	0	1	0.5		
6.Duration of sleep:						
a)2-4 hrs	37	18.50	136	68	0.115	0.734
b)5-7 hrs	5	2.5	22	11	(df=1)	NS
c)8-10 hrs	0	0	0	0		
7.Family history of diabetes						
a)Yes	8	4	54	27	3.56	0.06
b)No	34	17	104	52	(df=1)	NS
8.Follow up visit:						
a)Regular	30	15	115	57.5	0.03	0.861
b)Irregular	12	6	43	21.5	(df=1)	NS
9.Type of family;						
a)Nuclear	28	14	105	52.5	0.0007	0.979
b)Joint	14	7	53	26.5	(df=1)	NS
10. Practice of relaxation:						
a)Yes	7	3.5	21	10.5	0.314	0.575
b)No	35	17.5	137	68.5	(df=1)	NS
11.Social support:						
a)Adequate	0	0	4	2	1.09	0.298
b)Inadequate	42	21	154	77	(df=1)	NS

12.Bad habits:						
a)Alcohol	14	7	67	33.5	4.88	0.180
b)Smoking	2	1	17	8.5	(df=3)	NS
c)Tobacco	2	1	2	1		
d)None	24	12	72	36		

*-P<0.05, significantand**-P<0.01 &***-P<0.001, Highly significant

Table 5: The table findings shows that the association between level of coping strategies and psychosocial variablesreveals that, in nature of work (**χ2=4.31, p=0.038*)** was significantly found associationwith coping strategies. In nature of work most of them were in active workers.

In nature of work, 143 patients belongs to coping strength and 42 patients werecoping weakness belongs to active worker, 15 patients who are all in coping strengthwere sedentary worker.

Discussion:-

In level of coping , 158 (79%) of them were belongs to strengthening of coping, 42(21%) of them were belongs to weakening of coping, In that, all of them belongs to above 35years, most of them were females and Hindu religion, studied up to primary and secondary school education. Most of them belongs to urban area and mostly unemployed. Most of them were married and their income was 5001 – 7000. More of them were non insulin diabetes mellitus and they were more than 5 – 10 years and they have high glucose control. They followed mixed diet and were active workers; most of them were worked more then 9 – 12 hours and slept for 2-4 hours/day. Most of them belong to nuclear family and they get inadequate social support.

In coping strategies, the overall score of coping strategies among patients' withChronic diabetic mellitus, the mean value was 114.64, standard deviation was 16.18 and the mean percentage was 57.

In coping strategies, there is significant difference between the levels of copingStrategies with gender in demographic variables. In gender, Male patients are 16 of them have copingweakness and 91 of them had coping strength. In Female, 26 patients have copingweakness and 67 patients had coping strength.

There is significant difference between levels of coping with alternative medicine of clinical variables. In sidha treatment two patient were coping weakness, 18patients were coping strength, one patient who is in coping weakness practice Ayurvedhamedicine, two patient who had coping strength practice Homeopathy medicine, twopatients had coping weakness and one patient in coping strength in unani treatment and37 patients in coping weakness and 137 patient in coping strength were belongs to nopractice of alternative medicine at the same time they practice allopathic medicine and treatment. Even though various alternative medicine practice exists, most of the patientpractice in allopathic medicine having high confident about the glucose control.

There is a significant difference between levels of coping with nature of work ofpsychosocial variables.

In nature of work, 143 patients belongs to coping strengthand 42 patients were coping weakness belongs to active worker, 15 patients who are all incoping strength were sedentary worker.The results found that adaptive coping strategies such as religion, acceptance, instrumental support and active coping are the most frequently used coping strategies among Zambian individuals with diabetes. Mixed results were found on the use of coping strategies and how they are associated with diabetes-specific distress, depression and diabetes self-care.[1]

Behavioral coping strategies are overt physical activities aimed at removing or averting the stressor. In contrast, emotional strategies aim to reduce and manage the intensity of the negative and distressing emotions caused by a stressful situation rather than solving the problematic situation itself.[11]

The diabetes mellitus patients had severe stress about diabetes, effects and its management. Effective teaching learning activities and intensive management of Diabetes Mellitus may have immense effect on positive mental health and wellbeing of the Diabetic patients'.[12]

The study results says that teaching coping and problem-solving skills may improve quality of life and diabetes management.[13]

Conclusion:-

The diabetes patients coping level should be strengthened to adopt their treatment regimen and life style changes. Health care providers should focus on the psychosocial factors in the treatment regime of the patient. The mental health practitioners provide interventions for both the patient with diabetes and their families. Health care providers' involvement and family members support will helps to improve the coping ability of the patient with diabetes mellitus. Care providers simultaneously care for psychological well-being and medical outcomes, their patients' outcomes will also get better.

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The author has declared that there was no funding (Self).

Data Accessibility

The datasets are available from the corresponding author on reasonable request.

Ethical Issues

Formal permission obtained from the institution. The objectives of the study were explained to the samples and informed consent obtained from them. They were also assured about the confidentiality of the data.

Conflict of Interests

None.

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