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Effectiveness of Education on the Diabetes distress of patients with type 2 diabetes.

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I. Introduction

Diabetes Mellitus is an endocrine disorder and the prevalence in India has increased in the past decade. 77 million people are diagnosed with diabetes and the number is estimated to be 134.2 million by the year 2045. [1-2] World Health Organization defines diabetes as a chronic metabolic disease which has elevated blood sugar and cause serious damage to the major organs.[3]

A study conducted on 76 patients assessed the knowledge, attitude and glucose control. It was found that 43% had poor glucose control because of unhealthy dietary habits whereas 67% had poor knowledge about glucose control.[4]There is a need for education intervention to bring about glycemic control in patients with diabetes. A multicentre study conducted in India by ICMR-INDIAB in it's phase II highlighted some important findings on awareness and knowledge about diabetes.The study was conducted in urban and rural population which revealed that 43.2% of the overall population had heard about the term diabetes. On the awareness about diabetes aspect the urban population were had better understanding about diabetes as compared to rural population. Moreover, it also stated that women displayed less knowledge in comparison of the males.[5]

India is making a transition as a developing country and as a matter of fact it is also leading to growth associated with non-communicable disease and diabetes is one of them. To deal with diabetes one has to have knowledge and lifestyle modification to achieve the glycemic control and education is the only means.

In the "standards of medical care 2017", the American diabetes association (ADA) has highlighted on mainly modification of lifestyle to improve the outcomes and overall health status. In addition, it also stressed upon Psychosocial care of people with diabetes.[6] A study on 40 women revealed that diabetes had a psychosocial impact on their daily living. The common emotion experienced was anger and frustration towards self, family members as well the care providers.[7] constant worrying leads to diabetes distress dietary adherence, glucose monitoring, anxiousness or scared feeling led to struggle and pain.[8]

In the southern population of India, diabetes related distress was highly prevalent. Majority were females 71.8% and 32.8 % had BMI more than 25 kg/m2. 27.9% experienced diabetes distress. 5.7 % experienced high distress whereas 22.2% experienced moderate distress. There was significant association of the distress with A1C, insulin, and duration of illness.[9]

A cross sectional study in Uganda found that prevalence of depression was 34.8%, poor quality of life and mostly in psychological domain.[10]

II. RESEARCH DESIGN AND METHODS.

Design:-

A quantitative approach was adopted and Quasi-Experimental one group pretest posttest design was used.

Participants and setting:

People with type 2 diabetes were selected from a outpatient department of a hospital with the use of non-probability convenience sampling. Inclusion criteria comprised the following diagnosed with type 2 diabetes and able to speak and understand Marathi. Participants who had impaired vision, impaired hearing or any associated complications like diabetic ketoacidosis, depression or any psychiatric illness were excluded. The sample size selected for the study was derived on the basis of prevalence of diabetes in Pune. [11]The total sample size estimated was 44. For the study 58 study participants were included keeping in mind the attrition rate. As there were dropouts, finally analysis of 56 patients was done at the end of the study.

To assess the diabetes distress a standardised Diabetes distress scale DDS-17 developed by William Polonsky was used. It is a 6 point Likert scale with 17 items. The scale has 4 subscales i.e emotional distress,

physician related distress, regimen related distress and interpersonal related distress.[12] The mean score of < 2.0(little or no distress), 2-2.9 (moderate distress) and more than 3 (high distress)

An educational intervention was implemented after assessing the diabetes distress. The educational intervention included a teaching plan which was prepared on the basis of review of literature, textbook content, suggestion of experts and discussion with people with diabetes. Diabetes. The teaching included points like meaning, signs and symptoms, investigations, medication, diet, foot care, goal setting, prevention of complications, exercise. The sessions were conducted for two weeks.

Consent was obtained and confidentiality was maintained throughout the study. The institutional Ethics approval was obtained from MGMIHS. The tool was validated by the tool validating committee. The reliability of the DDS-17 scale was done with Crohn Bach's Alpha and it was .89 which stated that the tool was significant and reliable.

III. Result

The majority of the participants belonged to the age group of 51-60 yrs and their mean age was 52.36. The prevalence of diabetes was more in male (73.22%) as compared to those of females. Majority of the participants belonged to primary and postgraduate education status(21.43%).The participants were skilled workers and professionals and belonged to upper middle class (44.6%) as per Socioeconomic scale. 71.4% have been suffering with diabetes for more than 5 years and receiving biguanides(35.7%) as medication. Before the intervention 40 people experienced distress which was further analysed according to subscales. The overall mean distress was 2.04 which indicated moderate distress but after education intervention it reduced to 1.32 which indicated mild distress. The table no1 below shows the distress experienced in different areas. Before and after the intervention.

Diabetes distress subscale	Before the intervention **(n=40)**		After the intervention **(n=40)**	
	Freq	%	Freq	%
Emotional burden	10	17.86	3	5.6
Physician related distress	8	14.29	0	0
Regimen related distress	15	26.79	0	0
Interpersonal distress	7	12.5	0	0

Table no 1: Subscale wise distress experienced by patient before and after the intervention.

As it is seen more distress was seen in the area of emotional burden and regimen related before the intervention which reduced post intervention.

The table no 2 explains about the most distressing statements which explained about fears and concern. It also revealed their lack of testing blood sugar levels frequently and the feeling of overwhelmed. The statements were ranked on the basis of mean score

Rank No	Statements	Mean
1	Feeling that I am not testing my blood sugars regularly	2.36
2	Feeling that I am not sticking closely enough to a good meal plan	2.14
3	Feeling that diabetes is taking up too much of my mental and physical energy everyday	2.08
4	Feeling angry, scared and or depressed when I think about living with diabetes	2.01
5	Feeling overwhelmed by the demands of living with diabetes	1.90

An association was found between diabetes distress with selected demographic variables i.e age and occupation as their 'p' value was 0.04 and 0.044 which is below p values.

IV. Discussion.

The patients experienced moderate distress mostly in the area of emotional, regimen related and interpersonal related which are in consistent with findings of a study conducted among African American who experienced moderate distress and in the areas esp emotional and regimen related.[13]

In southern part of India patients with type 2 diabetes experienced moderate to high level of distress esp in the area of emotional burden.[14]

V. CONCLUSION

Our findings suggests that people with type 2 diabetes require care in the area of mental health. And education can help in improving psychosocial care and preventing distress among people with type 2 diabetes in India. Early assessment and timely intervention can help the people to cope and manage their diabetes with healthy lifestyle modification.

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