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RESEARCH ARTICLE

SELF-CARE PRACTICES AMONG DIABETICS OF URBAN ROHTAK, HARYANA- A CROSS-SECTIONAL STUDY

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Abstract

Introduction: Diabetes mellitus is fast gaining the status of a potential epidemic in India. Globally 463 million people are affected by the disease. As it is a chronic disease in which the patient benefits from self-management. Self-care practices refers to the individual's ability to manage the symptoms, treatment, physical and psychological consequences and life-style changes inherent in living with a chronic condition.

Aim: To study the self-care practices and factors influencing them among Urban Diabetics.

Material and Methods: A cross-sectional descriptive community-based study was conducted among diabetics in the urban field practice area looked after by department of community medicine, Pt. B.D. Sharma PGIMS, Rohtak, Haryana. Assuming the prevalence of self-care practices (exercise) to be 29% and allowable error of 15%, the sample size was 435. So, a total of 500 subjects were included.

Results: Out of 500 respondents, 44.6% were males and 55.4% females. In the domain of diet, 45% followed a healthy eating plan in last seven days of the week, 9% incorporated fruits/vegetables in the diet on all days of the week, 89% did not consume high fat food or full-fat dairy products and 38% spaced carbohydrate evenly throughout the day on all days of the week. 34% had a good practice of participation in at least 30 minutes of physical activity and 8% participated in specific exercise sessions. Regarding blood sugar testing, only 3% of study participants had a good practice of checking their blood sugar regularly. In the domain of foot care, 14% checked their feet, 6% inspected the inside of shoe, 99% washed their feet regularly and 86% dried in between their toes after washing their feet. 52% of study participants took their recommended diabetes medication regularly, 8% took their insulin injections regularly and 46% regularly took their diabetes pills.

Conclusion: The socio-demographic variables had an influencing impact on the self-care practices of the study participants. The better the self-care practices amongst the study participants, the healthier the outcome and they can lead a better life averting the complications associated with the disease.

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Introduction:-

Non-Communicable Diseases (NCDs) are chronic medical conditions that are non-infectious.[1] NCDs already disproportionately affect low and middle-income countries where nearly 80% of NCD deaths (29 million) occur.[2,3]The circumstances that speed up the soaring rates of NCDs are striking changes in urbanization,longevity alongwith increasing obesity, consumption of high fatty foodsand decreased physical activity.

[1]There are 463 million people living with diabetes worldwide in 2019 with prevalence of 9.2% and it is estimated that by 2030 prevalence of diabetes will be 10.2% with 578 million cases.[4] WHO projects that diabetes will be the 7th leading cause of death in 2030.Diabetes has become a great economic challenge as it drains between 5-25% of family income of an average Indian.[5] Recent survey indicates that diabetes now affects a staggering 11.2% of urban population and 5.2% of rural population.[6] In India there are 77 million diabetic patients with 8.9% prevalence. India, once termed as the "diabetes capital of the world" have estimation of 101.2 million diabetes patients by 2030.The diabetes death rate per one lakh population in India increased from 10 in 1990 to 23.1 in 2016. Deaths due to diabetes accounted for 3.1% of all-cause mortality in India in 2016.[7]

DM is a chronic disease in which the patient benefits from self-management.[5]Diabetes self-management refers to an individual's ability to sustain effective management of their behaviours: taking prescribed medications, following diet and exercise regimens, blood glycaemic self-monitoring and coping emotionally with the rigors of living with diabetes.[8]

Material And Methods:-

A cross-sectional descriptive community-based study was conducted among diabetics in the urban field practice area of department of community medicine, Pt. B.D. Sharma PGIMS, Rohtak, Haryana. With a prevalence of self-care practices (exercise) of 29% [(9)] and allowable error of 15%, the sample size was 435. A total of 500 subjects were included from the area randomly.

A predesigned pre-tested semi-structured questionnaire was used which includedsocio-demography of the subjects along with Summary of Diabetes Self-Care Activities (SDSCA) questionnaire. It was modified to the study context and filled by interviewing them in their vernacular language.

This questionnaire checks the frequency with which diabetics have followed the prescribed self-care practices in the last 7 days.The dietary domain covered a total of five items. Similarly, foot care covered four items. The exercise domain covered two items and adherence to medication covered two items. Self-care practices under each item were scored between 0 (none of the days in a week) to 7 (all 7 days). All items were positively scored except consumption of fat-rich items in the dietary domain, for which reverse scoring was done. In the dietary domain, appropriate self-care was ascertained if the patient had followed the self-care measures more than 75% of the time in a week. Similarly, the same definitions were followedfor foot care. The exercise domain was defined as satisfactory if the patient had followed at least 6 days of leisure-time and work-related physical activity for at least 20 min in 1 week. Adherence was measured as following prescribed medications on at least 6 days of the week. Categorical data was presented as percentages. The statistical tests were performed at 5% level of significance.

Results:-

500 study subjects were interviewed. The mean age of the study participants was 56.61 ± 12.51 years with a minimum age of 20 years and maximum age 87. Majority of the respondents belonged to Hindu religion (95%), 55.4% study subjects were females and 69.9% were in the age group of >50 years. 95.4% were married and 49% were unemployed followed by clerk/shop/owner/farmer (19.6%), unskilled (10.4%),semi-skilled (8.8%), semi-professional (6.8%) and professionals (2.2%). 55.4% were females and 44.6% were males. 69.9% were in the age group of >50 yearsand 95.4% were married.49% were unemployed followed by clerk/shop owner/farmer (19.6%), unskilled (10.4%), semi-skilled (8.8%), semi-professional (6.8%) and professionals (2.2%).

Table 1:- Distribution of diabetics following self-care practices by various domains in Urban Rohtak, Haryana. (N=500).

Diabetes self-score items	Good Practice N (%)	SDSCA (Mean score ± StandardDeviation)

Diet		
Followed healthy eating plan	225 (45)	5.2±1.4
Healthy eating plan in a week for last one month	246 (49)	5.1±1.5
≥5 servings of fruits and vegetables	47 (9)	2.8±1.9
Intake of fat-rich food and milk and milk products	445 (89)	2.4±2.2
Carbohydrate spacing	189 (38)	4.8±1.6
Physical activity		
30 mins physical activity	170 (34)	4±2.2
Specific exercise session (yoga, swimming etc)	39 (8)	1.8±2
Blood glucose testing		
Testing for blood glucose (Recommended)	16 (3)	0.9±1.5
Foot care		
Checking feet	72 (14)	1.8±2
Inspection of shoes for any sharps	32 (6)	0.7±1.4
Washing of feet	496 (99)	6.9±0.2
Drying between toes	431 (86)	6.5±1
Adherence to medication		
Taking antidiabetic medications as prescribed for at least 6 days in a week	259 (52)	4.7±2.5
Insulin injection	40 (8)	0.9±2
Diabetes pill	232 (46)	4.2±2.8

Table 1 showed that 45% followed a healthy eating plan in last seven days of the week, 49% followed an eating plan by days per week over past month, 9% incorporated fruits/vegetables in the diet on all days of the week, 89% did not consume high fat food or full-fat dairy products and 38% spaced carbohydrate evenly throughout the day on all days of the week. In the domain of exercise, 34% had a good practice of participation in at least 30 minutes of physical activity and 8% participated in specific exercise sessions. Regarding blood sugar testing, only 3% of study participants had a good practice of checking their blood sugar regularly. In the domain of foot care, 14% checked their feet, 6% inspected the inside of shoe, 99% washed their feet regularly and 86% dried in between their toes after washing their feet. 52% of study participants took their recommended diabetes medicationregularly.

Discussion:-

Self-care in diabetes has been defined as an evolutionary process of development of knowledge or awareness by learning to survive with the complex nature of the disease in a social context.45% followed a healthy eating plan on all days of the week. Moreover 49% followed an eating plan by days per week over the past one month. A study conducted byRajasekharan et al showed 45.9% study participants followed a healthy plan on all days of the week.[10]The present study revealed 9% had more than or equal to five servings of fruits and vegetables on all days of the week. Bashar and Goel S, in their study, showed that 20% of study participants included fruits in their diet regularly and 29.1% took green leafy vegetables.[11] These findings were becausethe present study was conducted in an urban slum comprising of a lesser educatedand economically not sound population compared to Chandigarh.Income, education and occupation were found to be significantly associated with the 5 domains of diet.

In relation to consumption of high fat foods and full-fat dairy products, 89% of the study participants had a good practice. Study conducted by Rajasekharan et al revealed that very few participants consumed fried food(10.7%) and high fat diet (6.2%) on all days of the week. [10]Gopichandran et al reported 86% of respondents had fats and fried foods contributing to <25% of the meal over the previous seven days. [12] Consumption of diet rich with fats, especially saturated and trans fats is a major risk factor for cardiovascular events such as stroke, atherosclerosis and myocardial infarction. The risk of the same is more among people with diabetes mellitus. Hence, importance is to be given to the dietary self-care behavioural aspects for all patients with diabetes. There was no gender difference in relation to the sub-domain of diet for spacing of carbohydrate evenly throughout the day.38% of the study participants had a good practice. Selvaraj et al showed that 37% of the study subjects spaced their frequency of meals and 66.7% reduced the serving size of cereal-based food items which was in accordance with the present study.[13]

A significant difference was seen between males (43%) and females (27%) participating in at least 30 minutes of physical activity during the last seven days ($p<0.05$). Suguna A et al, observed that males were found to be more physically active. [14]According to International Diabetes Institute, the common health goal was to achieve at least 150 minutes of physical activity every week. Males achieved the common health goal compared to females.

The present study revealed that 8% study subjects were engaged in specific exercise sessions (swimming, walking, yoga etc.) other than what they did around the house/part of their work. Similar result was seen in a study conducted by Kushwaha SA et al where 5.8% of the study population was engaged in the same.[9] This can be explained with the possible reason that people have become inactive due to urbanization, westernisation, changing lifestyle and ignorance regarding self-care.

In the present study, 3% followed the recommended blood sugar testing. Kushwaha et al showed that 86.6% of the study subjects had not checked their blood sugar regularly. [9] An American Diabetes Association survey found that 21% of adults with type 1 diabetes never checked their blood glucose. Of those with insulin-treated type 2 diabetes, 47% never monitored and among those who were not on insulin, 76% never checked.

In the domain of foot care, good practice of self-care was followed in washing of feet and drying between toes after washing (99% and 86% respectively) whereas only 14% checked their feet and 6% inspected their shoes. Kushwaha et al showed that 56.5% of the study subjects did not take care of their foot even once.[9] The American College of Foot and Ankle Surgeon's recommended that patients need to wash their feet daily and dry the feet carefully, especially between toes. The present study was a reflection of the ignorance about the self-care practices related to foot care. In relation to checking of feet, there was a significant difference between men (20%) and women (10%), which was in unison with a study conducted by Svartholm S, Nylander E. [15]The study participants had a good foot care practice but it could have been more satisfactory. Females had slightly better results than males, except for checking their feet and inspecting the inside of shoes. Study conducted by Suguna et al revealed that only 4% of subjects were aware of foot care and examined their feet at least once a week. [14] In worst case scenario, if foot care is not optimal, it can lead to amputation and loss of quality of life, physical loss and economic burden. A statistically significant association was found between age, marital status, monthly income, religion, type of family and education and the self-care practice of dying in between toes after washing of feet with p value <0.05. This might be due to the reason that those who were young (<35 years), unmarried, educated, with a good family support (as in joint family) and literacy status were more well versed with the practices related to foot care in diabetics.Except washing of feet (99%) and drying between toes after washing of feet (86%), the other foot care practices were less commonly followed. These finding in the present study was in concordance with the study conducted by Selvaraj et al.[13]

52% of study participants took their recommended diabetes medication during the past week prior to the study.One of the explanations for not complying to medication was either the ignorance or the unfelt need for medication.Asimilar study by Sasi et al revealed 61% adherence to medication.[16]Another study by Rajasekharan et al revealed 60.5% adherence to OHAs and 66.9% adherence to insulin injections on all days of the week. [10]The most likely explanation for the result was that the study participants had a good literacy status which significantly affects medication adherence.

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Conflicts of interest:-
There were no conflicts of interest.

Conclusion:-
This study showed a high level of adherence to diabetic medication and good self-care practice when it came to washing of feet and drying between toes, other domains such as leisure time-related physical activity, dietary practices, and especially checking of feet and inspection of inside of shoes need to be strengthened. The better the

self-care practices amongst the study participants, the healthier the outcome and they can lead a better life averting the complications associated with the disease.

Recommendation:-

Information about the self-care practices and the factors influencing them among diabetics is of prime importance to policy makers for identification and implementation of appropriate interventions required for achieving better disease management.

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