Original Research Article

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A comparison of self-care activities and diabetes distress among type II diabetic patients in urban and rural field practice area: a cross-sectional study

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ABSTRACT

Background: Diabetes is a challenging disease that is considered to be hard to live with as it encompasses a lot of restrictive instructions. Self-care diabetes has been defined as an evolutionary process of development of knowledge or awareness by learning to survive with the complex nature of diabetes. Diabetic distress refer to an emotional state where people experience feelings such as stress, guilt or denial that arise from the living with diabetes and the burden of self-management. The emotional distress facing people with diabetes due to such life style restriction. The objectives were to evaluate self-care activities related to diabetes among type II diabetic patients using diabetes selfmanagement questionnaire and to assess and compare the diabetes distress score using diabetes distress scale among urban and rural type II diabetic patient.

Methods: A cross-sectional study was conducted in 140 urban and 70 rural study participants in field practice area of SNMC, Bagalkot. Diabetic self-care activities and diabetic distress were analyzed.

Results: Our study showed most of the study participants had poor self-care activities. Our study showed 60% of rural participants screen positive for moderate diabetic distress where as 52.1% of urban participants showed positive for high diabetic distress.

Conclusions: To combat the stress associated with diabetes, it is important to educate the patient to adapt with change in their life style following the diagnosis of diabetes.

Keywords: Diabetic distress, Self-care, Type 2 diabetes

INTRODUCTION

Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in production of insulin by the pancreas, or by the ineffectiveness of the insulin produced. Diabetes is a challenging disease that is considered to be hard to live with as it encompasses a lot of restrictive instructions.1 Self-care diabetes has been defined as an evolutionary process of development of knowledge or awareness by learning to survive with the complex nature of diabetes. The vast majority of day-today care in diabetes is handled by patients and/or families there is an important need for reliable and valid measures for self-management of diabetes.²⁻⁷ It is expected that those with the greater knowledge will have a better understanding of the disease and have a better impact on the progression of disease and complications. A Study conducted in South India found that there is a very poor self-care practices and adherence to the treatment.8 Diabetic distress refers to an emotional state where people experience feelings such as stress, guilt or denial that arise from the living with diabetes and the burden of

self-management. The emotional distress facing people with diabetes due to such life style restriction. The instructions given by the educator or the physician can seem to be complicated for a person from a non-medical background, which further compounds the emotional distress of the diagnosis and necessary life style changes.⁹

These emotional burdens and worries about diabetes, and its management, threats of complications, and unmet needs of moral support from family, friends and health care providers have been recognized as diabetes distress. ¹⁰ Studies have shown that there is diabetic distress up to 60% in Asia, and in South Indian study it was found to be 40%. ^{8,11} This indicates the unmet need for the diabetes mellitus information to diabetes mellitus patients.

Diabetic Self-Management Education and support (DSME/S) has a positive effect on other clinical, psychosocial, and behavioral aspects of diabetes. DSME/S is reported to reduce the onset and/or advancement of diabetes complications, to improve quality of life and lifestyle behaviors such as having a more healthful eating pattern and engaging in regular activity to enhance self-efficacy and physical empowerment, to increase healthy coping, and to decrease the presence of diabetes-related distress and depression. These improvements clearly reaffirm the importance and value-added benefit of DSME. 12 Hence the study is taken up with following objective to evaluate self-care activities related to diabetes among type II diabetic patients using diabetes self-management questionnaire and to assess and compare the diabetes distress score using diabetes distress scale among urban and rural type II diabetic patients.

METHODS

The study was a community based cross-sectional study. It was done from December 2018 to November 2019 among diabetic patients who were staying in rural and urban field practice area of S. Nijalingappa medical college, Bagalkot, Karnataka. Patients who aged more than twenty years with duration of diabetes for at least one year and were taking allopathic medicine for diabetes were included in the study whereas patients who were not physically fit due to significant medical/surgical conditions, pregnant and lactating women and patients who did not give consent to participate in this study were not considered in the study.

Sample size was calculated using formula 4pq/L2.Sample size obtained was 189 (189+10% possible loss)=207 which was rounded to 210. Urban and Rural prevalence was found to be 20% and 10% respectively. 13 140 type II diabetes subjects from Urban field practice area and 70 type II diabetes subjects from rural field practice area. Those patients were selected randomly from the family folders maintained in the respective health centers. The study was initiated after the due permission from

institutional ethics committee, SNMC. Data were collected by the researcher after taking informed consent by interviewing the respondents using pre-tested and predesigned Performa. At the end of the study, health education on self-care practices in diabetes was given.

Performa which included socio demographic details such as name, age, sex, educational status, occupational status, socio-economic status. Duration of diabetes and treatment history in the past were recorded. Clinical and anthropometric parameters and existence of comorbidities were also recorded.

Self-care in diabetes was assessed using diabetes self-management questionnaire. It consisted of 16 items covering five different aspects of diabetes self-management. All items are formulated as behavioral descriptions from the person's point of view. Respondents rate the extent to which each description applies to them on a four-point Likert scale (3-'applies to me very much' to 0-'does not apply to me'), referring to previous eight weeks. Item scores are transformed so that higher scores indicate more desirable self-management behavior and transformed to five scale scores with ranges from 0 to 10. The scales reflect patients' dietary control, medication adherence, blood suger glucose monitoring, physical activity and physician contact.¹⁴

Diabetic distress was assessed using Diabetic distress Scale (DDS). The DDS is a 17-item scale that captures four critical dimensions of distress: emotional burden, regimen distress, interpersonal distress and physician distress. Each question was answered according to the following 1-6 scale: 1. Not a problem 2. A slight problem 3. A moderate problem 4. A somewhat serious problem 5. A serious problem 6. A very serious problem Scoring: The three DDS categories were defined as: "little or no DD" (mean score <2.0), "moderate DD" (mean score =2.0-2.9), and "high DD" (mean score ≥3.0).¹8 If score exceeds more than 3 in any of the dimension, it is considered as a level of distress worthy of clinical attention.¹5

Recorded data were entered in MS-Excel spread sheet and were analyzed using appropriate statistical methods and represented by various tables and graph.

RESULTS

In present study comparison of socio-demographic characteristics between urban and rural study participants was done, it showed 40.7% (22) of the urban study participants were in age group between fifth and sixth decade, whereas 37.1% (26) of the rural study participants were in age group lying between sixth and seventh decade. Most of the study participants were males that is 65% (91) urban study participants and 67.1% (47) rural study participants. Majority of study population that is urban 70% (98) and rural 72.8% (52) belonged to Hindu religion (Table 1). When the duration of diabetes

was assessed it showed 68% of urban study population had duration between one and 5 years, whereas 29% of rural study population had duration between sixteen and twenty years (Figure 1).

Table 1: Distribution of study participants based on age, gender, religion and socio-economic status.

	Urban (N)	%	Rural (N)	%			
Age (years)							
30-40	2	1.4	1	1.4			
41-50	22	15.7	17	24.3			
51-60	57	40.7	19	27.2			
61-70	42	30	26	37.1			
71-80	17	12.2	7	10			
Total	140	100	70	100			
Gender							
Male	91	65	47	67.1			
Female	49	35	23	32.9			
Total	140	100	70	100			
Religion							
Hindu	98	70	51	72.9			
Muslim	33	23.6	8	11.4			
Others	9	6.4	11	15.7			
Total	140	100	70	100			
Income per month (Rs)*							
>7008 and	129	92.2	55	78.6			
above	149	94.4					
3504-7007	8	5.7	4	5.7			
2102-3503	3	2.1	11	15.7			
Total	140	100	70	100			

^{*}according to modified BG Prasad's classification.

Diabetic distress was compared between urban and rural study participants. 52.1% (73) of urban study participants had high diabetic distress, whereas 60% (42) rural study participants had moderate diabetic distress (Table 2).

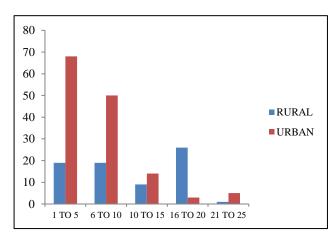


Figure 1: Distribution of study participants based on duration of diabetes.

Diabetic self-care activities were assessed and compared between urban and rural study population. 96.4% (135). Urban study population showed poor self-care activities and 80% (56) rural study population showed poor self-care activities (Table 3).

Table 2: Distribution of study participants based on diabetic distress scale.

Diabetic distress (DD)	Urban (N)	%	Rural (N)	%
Little or no DD	28	20	9	12.9
Moderate DD	38	27.1	42	60
High DD	74	52.9	19	27.1
Total	140	100	70	100

Table 3: Distribution of study participants based on diabetic self-care.

Diabetic self care score	Urban (N)	%	Rural (N)	%
0-3	135	96.4	56	80
4-7	2	1.4	5	7.1
8-10	3	2.2	9	12.9
Total	140	100	70	100

DISCUSSION

Most of the study participants both in urban and rural were in them to fifth and sixth decade of lives which is similar to study conducted by Sasekhar et al, where the mean age of diabetes was found to be 55 years. Most of them were Hindu by religion. Most of the study participants belonged to lower middle class when per capita income was analyzed.

Our study showed 60% of rural participants screen positive for moderate diabetic distress where as 52.1% of urban participants showed positive for high diabetic distress. According to study conducted by Kavya et al, showed 25% of the participants screened positive for moderate to high DRD on a DDS-17 scale. 16 According to study conducted by Sasekhar et al, diabetic distress was found to be 40% in their study participants.8 It is said urbanization influence the health outcome. This might be due to change in life style which is adopted living in urban. Urbanization has both positive and negative impacts on health. Diabetes, being a chronic condition raises economic burden. Living in urban area and dealing with diabetes might have increased burden economically. This could be probable reason for difference in diabetic distress seen in this study.

Our study showed most of the study participants had poor self-care activities. In urban it was 96.4% of study participants ranged between score 0 and 3 of self-care activities. In rural, it was 80% of study participants ranged between score 0 and 3 of self-care activities. In our study, 5.7% of urban participants and 22.8% of rural

participants did not check their blood sugar regularly. This could be due to easy availability of facilities. Urban residents have better access to health care facilities easily than in rural. In study conducted by Rajasekharan et al, showed similar results, where 23% of the study participants did not check their blood sugar regularly. 43.6% of urban participants and 42.8% of rural participants avoided physical activity even after being told by physician about the importance of physical activity. Similar results were found in study Dinesh PV et al, where only 19% adapted physical activity in their lives. 18

Limitations

As the study duration had time constraint for its completion, less sample size was taken.

CONCLUSION

Diabetes effects the psychology of patients. It does have an impact on the mental health making patient anxious and stressed. Emotional disorder might be due to various reasons such as diagnosis of diseases, non-compliance to medications or with emergence of complications.

To combat the stress associated with diabetes, it is important to educate the patient to adapt with change in their life style following the diagnosis of diabetes. The self-care in diabetes play a vital role in reducing the complications associated with it. The patients need to be emphasized on inculcating the self-care habits in their lives, which would prevent complications. Patients attitude and self-care ability through a behaviour change communication, may be useful tools for designing management strategies for certain poorly controlled patients.

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Institutional Ethics Committee

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