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Original Research Article

Self-care practice among the diabetic patients in urban area of north Karnataka: A cross sectional study

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ABSTRACT

Introduction: Diabetes is grouped into the category of disease (lifestyle diseases) where lifestyle plays an important factor. A good self care activities among the diabetes affected patients, the disease can be well controlled and managed. These are healthy eating, being physically active, monitoring of blood sugar, adherence with medications, foot care and smoking etc.
Objective: To determine the self-care practice among the diabetic patients in the urban area of North Karnataka and to assess their socio-demographic risk factors.
Materials and Methods: A cross-sectional study was conducted among the diabetic patients in urban field practice area of North Karnataka. House to house survey was conducted and data was collected by using pre-designed pre-tested semi-structured questionnaire by interview method. Data is presented in proportion and analysed using MS-Excel 2007 and SPSS v 22. Chi-square test & OR were applied & p value <0.05 was considered statistically significant.
Results: Diabetes self-care activities undertaken by the study population showed that three fourth (75.76%) of the patients were not adherent to the diet. Adequate self-care activities in form of exercise were seen in only (24.24%), foot care (25.45%), blood glucose monitoring 139 (84.24%), medication (72.73%) and (93.94%) did not smoke.
Conclusion: Self-care activities with respect to diet and exercise were poor in the population studied.

1. Introduction

Diabetes is a metabolic disorder which has become apparent as a major non-communicable disease globally and has extended well in Sub-Saharan Africa and South East Asia. Worldwide, around 463 million people are affected by Diabetes mellitus (DM) and 88 million in the SEA region. DM is expected to affect as many as 153 million people by 2045 in SEA region aged between 20-79 years. Diabetes is responsible for 1.2 million deaths in SEA region in 2019. As of March 2020, prevalence of diabetes in India among adults is 8.9%.

Diabetes is grouped into the category of disease (lifestyle diseases) where lifestyle plays an important factor. A good self care activities among the diabetes affected patients, the disease can be well controlled and managed. [1,2] The self care habits which can predict good outcome among the diabetes patients are as follows: regular blood sugar monitoring,

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healthy diet, adequate physical activity, taking medication etc.[3,4] there is a need of self- care and management among diabetes affected people as more than 95% of care related to their condition is provided along with their family members.[5,6] It is seen that more than half of the diabetes patients lack self care and ignore the preventive advice given by medical professionals which leads to complication and further disability.The complications of this disease can be retinopathy, neuropathy, nephropathy etc.

Studies in India has revealed that the preventive aspect among diabetes patients is lacking.[7,8] With the above findings, this study was conducted with the objective to determine the self-care practice among the diabetic patients in the urban area of Belgaum and also to assess their socio-demographic risk factors.

2. Materials and Methods

Among diabetic patients of urban field practice area of UHTC Kashbag, BIMS, Belagavi, South India, a cross-sectional study was conducted from January 2020 to February 2020. The sample size calculated was 165 with 12.26% adherence to diet from a study conducted by Dasappa H. et al. with 95% confidence interval and 5% absolute error.[9] There are six subcentres under UHTC i.e., Shahpur, Khasbag, Hosur, Madhva road, shastri Nagar and Tahsildar Galli. The sub centre was selected randomly. A house-to-house survey was be conducted and diabetic patients was evaluated till the sample size was reached. Data was collected by using pre-designed pre-tested semi-structured questionnaire by interview method. The questionnaire consists of socio-demographic characteristics and patient's self-care practices. The practice of self-care was measured using SDSA (Summary of Diabetes Self-care Activities) scale. Toobert and Glasgow developed this scale which is valid, reliable and is accepted. The scale has 12 questions related to preventive aspect of diabetes like adherence to medication, blood sugar monitoring, healthy diet exercise etc. Out of 12 questions, the question from 1 to 10 has number ranging from 0 to7 reflecting the particular activities performed during the past 7 days and the 11th question is related to cigarettes which requires yes/no as an answer and the number of daily cigarettes, if any. Score more than 3 was considered adequate and below was taken as inadequate self care. Before initiating the study ethical clearance was obtained from institutional ethical committee of BIMS, Belagavi. Study participants written informed consent was taken after explaining the objective of the study.

2.1. Inclusion criteria

1. Diabetes patients age > 18 years.
2. Duration of diabetes disease > 1 year.

3. Exclusion criteria

Moribund and bedridden patients, disabled, acute illness, children and age <18, pregnant women.

3.1. Statistical analysis

Data was entered in MS-Excel and analysed using MS-Excel and SPSS v 22. Results were interpreted in mean and proportion. Chi-square test and Odds Ratio was used to see the association among different attributes and p value <0.05 was considered significant. Results were represented in tables and figures.

4. Result

In this study, it was found that subject's age ranged from 41 years to 80 years and maximum participants (52.12%) were females. 82.24% belonged to Hindu religion followed by Muslim. Only 06.67% of them were illiterate and 2.42% unmarried. Majority (38.79%) of the participants belonged to Class IV socio-economic status according to Modified B G Prasad classification.(Table 1)

Table 1: Socio-demographic profile of study participants, N=165

Socio-demographic characteristics	Number of participants, N (%)
Age (years)	
41-50	22 (13.33%)
51-60	73 (44.24%)
61-70	54 (32.73%)
71-80	17 (10.30%)
Gender	
Male	79 (47.88%)
Female	86 (52.12%)
Religion	
Hindu	139 (84.24%)
Muslim	24 (14.55%)
Christian	02 (01.21%)
Education	
Illiterate	11 (06.67%)
Literate	154 (93.33%)
Marital status	
Married	137 (83.03%)
Unmarried	04 (02.42%)
Widowed	24 (14.55%)
Socio economic status	
I	14 (08.48%)
II	24 (14.55%)
III	38 (23.03%)
IV	64 (38.79%)
V	25(15.15%)

In nearly more than half (70.71%) of the participants the duration of diabetes was less than five years and maximum were on OAD (83.64%). Hypertension (55.15%) was the most common associated co morbidities among

Table 2: Clinical profile of study participants, N=165

Clinical profile	Number of participants, N (%)
Duration of diabetes	
< 5 years	117 (70.91%)
≥ 5 years	48 (29.09%)
Treatment	
Insulin	07 (04.24%)
OAD	138 (83.64%)
OAD, insulin	20 (12.12%)
Associated co morbidities	
Hypertension	91 (55.15%)
Obesity	04 (2.42%)
Hypertension and CHD	06 (3.64%)
Hypertension and obesity	07 (4.24%)
Family history of diabetes	
Father	09 (05.45%)
Mother	05 (03.03%)
Both father and mother	04 (02.42%)
None	147 (89.09%)

Table 3: Anthropometric and blood pressure characteristics of study participants, N=165

Anthropometric and blood pressure characteristics	Number of participants (%)
Mean BMI (kg/m2)	26.00 ± 4.39
Under weight	06 (03.64%)
Normal	67 (40.61%)
Over weight	62 (37.58%)
Obesity	30 (18.19%)
Mean WC (cm)	90.14 ± 10.68
Mean Waist-Hip Ratio	0.92 ± 0.10
Mean Blood Pressure(mmHg)	**SBP** 136.28 ± 18.33, **DBP** 82.02 ± 8.83

Table 4: Summary of diabetes self–care activities scale, N=165

Diabetes Self–Care Activities	Number of participants, N (%)
Diet	
0-3 days inadequate	125 (75.76%)
>3-7 days adequate	40 (24.24%)
Exercise	
0-3 days (inadequate)	125 (75.76%)
>3-7 days (adequate)	40 (24.24%)
Foot care	
0-3 days (inadequate)	123 (74.55%)
>3-7 days (adequate)	42 (25.45%)
Blood glucose	
Once in 3 months (adequate)	139 (84.24%)
Once in > 3 months (inadequate)	26 (15.76%)
Medication	
<7days (inadequate)	45 (27.27%)
7days (adequate)	120 (72.73%)
Smoking	
Present	10 (06.06%)
Absent	155 (93.94%)

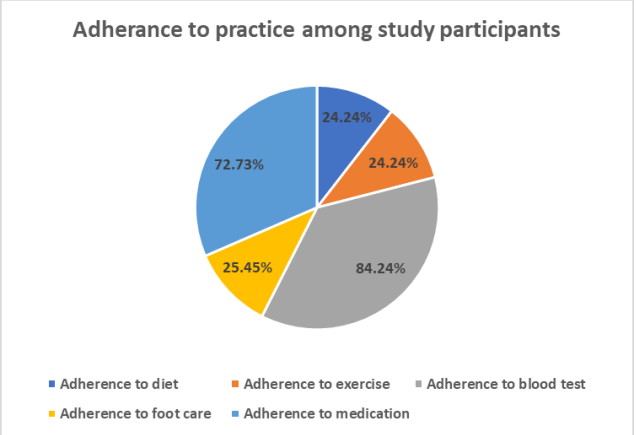

Fig. 1: Adherence to practices among study participants, N=165

these diabetic patients. Majority (89.09%) of the study population had no family history of diabetes and history of father being diabetic was most common (05.45%).(Table 2)

The mean weight of the study participants was 26.00 kg with standard deviation of 4.39kgand 37.58% were overweight. The mean waist circumference was 90.14 ± 10.68 cm and waist-hip-ratio 0.92 ± 0.10 and mean blood pressure (SBP 136.28 ± 18.33 and DBP 82.02 ± 8.83).(Table 3)

Diabetes self-care activities undertaken by the study population showed that three fourth (75.76%) were not taking care of diet.(Table 4) Adequate self-care activities in form of exercise was seen in only (24.24%), foot care (25.45%), blood glucose monitoring 139 (84.24%), medication (72.73%) and (93.94%) did not smoke.(Figure 1)

Monitoring blood sugar levels was adequate among the higher males compared to females which was statistically significant with p-value 0.006* whereas exercise was statistically significant among the females. Diet was more adequate who were having diabetes more than 5 years which was also statistically significant.(Table 5)

5. Discussion

The present study was done with the objective to estimate the prevalence of self-care practices among diabetes patients and to assess their socio-demographic risk factors in the community. In Sasi Shekhar TVD et al. study 63% did not exercise adequately which was better than our study (75.5%).[10] In the present study, blood testing and foot care adherence among the males compared to females where as in Dasappa H et al. study foot care practice was not associated with gender.[9] 70.91% had diabetes less than five years duration compared to 51% in Dinesh et study.[11] In Dinesh et al. study almost half of them (49.5%) denied of having any co morbidity compared to our study where 55.15% had hypertension.[11] History of father being diabetic

Table 5: Association of variables with adherence to practices, % (p-value)

Variables	Diet		P-value/ OR	Blood test		P-value/ OR	Exercise		P-value/ OR	Medication		P-value/ OR	Foot care		P-value/ OR
	1	2		1	2		1	2		1	2		1	2	
Sex															
Male	75%	25%	0.074	8%	92%	0.006*/ 0.27	85%	15%	0.009*/ 2.69	33%	67%	0.119	65%	35%	0.005*/ 0.35
Female	77%	23%		23%	77%		67%	33%		22%	78%		84%	16%	
Diet															
Veg	79%	21%	0.513	8%	92%	0.094	83%	17%	0.146	33%	67%	0.263	88%	12%	0.014*/ 3.11
Non- Veg	74%	26%		19%	81%		73%	27%		25%	75%		69%	31%	
Duration															
<5 years	80%	20%	0.032*/ 2.241	15%	85%	0.837	82%	18%	0.003*/ 2.995	31%	69%	0.115	79%	21%	0.060
>5years	65%	35%		17%	83%		60%	40%		19%	81%		65%	35%	

(5.45%) was more in our study whereas in Kushwaha AS et al. study history of mother being diabetic was most common (20. 3%).[12] The mean BMI was 26.00 ± 4.39 kg/m2 which was almost similar to in Kushwaha AS et al. Study 25.55 kg/m2 with standard deviation of 4.2 kg/m2.[12] Good dietary behaviour was present only in 24.24% of the study participants. This was quite different from a study done by Rajasekharan et al. in an urban area where 46% of the participants followed a diet plan regularly.[13] In our study adherence to foot care was seen in 25.45% of them only which was lower compared to Kushwaha AS et al. study (43.5%) and higher compared to Raithathaet al.(12%).[12,14]

In this study, there was good self care activity related to regular blood sugar monitoring (84.24%), adherence to drugs (72.73%). There was poor adherence to diet, exercise and foot care. Our study findings were similar to a South India study where findings of regular blood sugar monitoring was 77.79% and adherence to healthy diet was 68.73%.[3]

6. Conclusion

This community based study in urban slum area revealed that self care was poor related to exercise and diet among studied diabetic patients whereas it was good for blood sugar monitoring and drug adherence. Factors associated with good self-management behaviors include duration of diabetes, females.

7. Recommendation

In India, targeted health education is much need of an hour to improve the self-care behavior among diabetes affected people. All paramedical and medical health care professional should identify persons at risk of non-adherence and give extra attention to them to motivate self-care behaviors to prevent the complication of diabetes. Primary care settings are the areas where most of the diabetes affected avail the care services. So, taking this a better allotment of resources and education system of self-care management is to be developed and strengthen and improve the existing facility.

8. Limitation

As the study design was cross-sectional study therefore it cannot establish causality.

9. Focus of the Research

To determine the self-care practice among the diabetic patients in the urban area.

10. Findings of the Study

Self-care activities with respect to diet and exercise were poor in the population studied.

11. Meaning/Impact of the Study

Because most patients living with diabetes receive regular care in primary-care settings in India, it is imperative that resources are allocated and diabetes self-management education systems are developed specifically for primary-care practices.

12. Source of Funding

None.

13. Conflict of Interest

None.

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