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Original Research Article

Socio demographic correlates of quality of life of patients with diabetes mellitus

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ABSTRACT

Background: The major cause contributing to high prevalence of diabetes mellitus is rapid developmental urbanization, sedentary lifestyle, and change in dietary habits. Due to all these repressed emotions diabetics tend to miss doses over a period of time leading to increased mortality which cumulatively affect QoL.
Methods: A cross sectional study was conducted among 264 patients suffering with type 2 diabetes mellitus. The quality of life was assessed using modified WHO-QOL BREF questionnaire under 4 domains viz. physical health, psychological, social relationship and environment.
Results: Our study reported 43.2% individuals had overall poor QOL score. Overall QOLS in different domains varied significantly with age, socioeconomic status, and type of family. Gender and religion were not found to be significantly related to QOL. Psychological domain, social domain came out to be least adversely affected in terms of poor QOLS. Overall QOLS was found adversely affected among middle age and elderly individuals of higher SES with co-morbid conditions. Age, and socioeconomic status came out to be the significant correlates of poor QOL.
Conclusions: The study suggests the need of improving socio-economic conditions and better management of diabetes in order to reduce complications for improving QOL.

Keywords: Complications, Diabetes, Domain, Quality of life

INTRODUCTION

The prevalence of diabetes is alarmingly increasing all over the world with type 2 diabetes making up about 90% of the cases. Around 9.3% of the world's population constituting 463 million adults are currently diabetic.[1] Diabetes mellitus is characterized by hyperglycemia resulting from defects in insulin secretion, action, or both, is an endemic global problem.[2] The major cause contributing to high prevalence is rapid developmental urbanization, sedentary lifestyle, change in dietary habits.[3] According to a study higher prevalence of Diabetes is seen in more economically developed states.[4] The patients with diabetes suffer from a variety of lifestyle problems which in the long term cause complications like renal failure, lower limb amputation, and blindness. Ultimately, it causes nephropathy, neuropathy, retinopathy, heart problems, stroke, erectile dysfunction, and hence affects the quality of life.[5] These complications increase the financial burden enormously with unequal healthcare expenditure.[6] The quality of life is decreased in diabetic patients due to negative factors like uncertainty about future, poor confidence, multiple comorbidities. Hence, quality of life assessment is considered an important measure of outcome in long-term illness.[7] Quality of life (QoL) as per world health organization (WHO) is the perception of the individuals position in life, expectations, standards, and concerns.[8] It is a multidimensional parameter that explains an individual's own perception of his health. It covers all four domains of life i.e., physical, emotional, social, environmental.[9] Physical health, mental health, level of independence, social relationships, and

their relationship to environment are covered in QoL. Different sociodemographic variables had considerably impacted the quality of life.[10] Quality of life is of paramount importance in diabetics as poor quality of life can lead to worsening of symptoms, increased risks for complications, and aggravation of severity of diabetes. Hence it is crucial to manage quality of life issues to maintain long term health.[11] Due to diabetes, while adjusting to disease and managing personal relationships, one has also to suffer from fear of illness, frustration, loneliness, inability to express and manage leading to poor quality of life.[12] Due to all these repressed emotions, diabetics tend to miss doses over a period of time leading to increased mortality, hospitalization, health services utilization which cumulatively affect QoL.[13] This study was done in population of Chandigarh for determining quality of life and factors affecting it, in type 2 diabetes mellitus.

METHODS

Study type, location and sample size

Current study was a cross-sectional community-based study. The study was conducted in the field practice area of a North Indian medical college for a period of 1 year i.e. from September to August 2020. Taking anticipated prevalence of patients with diabetes mellitus having good/very good quality of life as 42%, 90% confidence levels and 5% absolute precision, sample size was calculated as 264.[14]

Inclusion criteria

Inclusion criteria for current study were; all patients with type 2 diabetes mellitus aged 18 years and above and all those who gave consent for participation in the study.

Exclusion criteria

Exclusion criteria for current study was; presence of any serious physical and mental illness hampering the interview process.

Procedure

A pretested semi-structured interview schedule was used for the data collection. Quality of life of patients with type 2 DM was assessed by using WHO QoL-BREF.[15] Participants were selected from health training centres by simple random sampling. Informed written consent was obtained from the patients before including them in study. The purpose of this study was explained to the participants in their vernacular language. Individuals selected for the study were interviewed to collect information on sociodemographic and lifestyle related characteristics. Anthropometric measurements were also taken. The scale has 26 items clubbed into four domains of physical health, psychological health, social relationship and environment, with an additional measure for general well-being. Each of these domains is rated on a 5-point Likert scale. As per the WHO guidelines, 25 raw scores for each domain were calculated by adding values of single items, and it was then transformed to a score ranging from 4 to 20.

Statistical analysis

The data was entered in Microsoft excel spreadsheet and analysed using SPSS version 25.0 for Windows. Mean and standard deviation were used to summarise the continuous variables and frequency and proportions were used to depict the nominal variables. Association between qualitative variables was calculated using Chi-square test and ANOVA test was applied to compare more than 2 variables with continuous data. The point of statistical significance was considered when p-value was less than 0.05.

RESULTS

A total of 264 patients with diabetes mellitus participated in the study. Among the participants 50.8% were females. Predominately, participants were in the age group of 60 to 69 years (34.1%). Maximum number of Hindus (75.8%) contributed to the total sample. 29.9% of participants were illiterate followed by 28% participants who passed high school. Majority of participants were unemployed including retired, pensioners and homemakers i.e., 74.2%. Most of the participants belonged to the upper lower class (56.8%) followed by lower middle class (23.5%). Most of the participants belonged to a joint family (51.5%). 76.13% participants had two or less than 2 children (Table 1). Mean score for domain 1 (physical health), domain 2 (psychological health), domain 3 (social relation), domain 4 (environment) was 13.60±1.5, 12.79±1.58, 13.13±2.52, 13.94±1.84 respectively. The scores of all domains of WHO QoL-BREF scale are low showing poor quality of life in general (Table 2).

Table 1: Distribution of study participants according to various sociodemographic variables (n=264).

Variable	Category	N (%)
Age (years)	30-39	05 (1.90)
	40-49	47 (17.8)
	50-59	75 (28.4)
	60-69	90 (34.1)
	70-79	34 (12.9)
	80 and above	13 (4.90)

Continued.

Variable	Category	N (%)
Gender	Male	130 (49.2)
	Female	134 (50.8)
Education	Illiterate	79 (29.9)
	Primary	22 (8.30)
	Middle school	32 (12.1)
	High school	74 (28.0)
	Intermediate/Diploma	11 (4.20)
	Graduate	43 (16.3)
	Profession or Honours	03 (1.10)
Occupation	Unemployed & Homemakers	196 (74.2)
	Elementary Occupation	08 (3.00)
	Craft & Trade workers	17 (6.40)
	Skilled agricultural workers	02 (0.80)
	Skilled workers	38 (14.4)
	Clerks	01 (0.40)
	Legislators, senior officials	02 (0.80)
Socioeconomic status	Upper	01 (0.40)
	Upper middle	15 (5.70)
	Lower middle	62 (23.5)
	Upper lower	150 (56.8)
	Lower	36 (13.6)
Number of children	<2	201 (76.13)
	3-4	50 (18.93)
	5-7	13 (4.92)

Table 2: Quality of life scores of study participants.

Domains	Mean±SD	Range
Physical	13.60±1.50	9.14-17.14
Psychological	12.79±1.58	9.33-16.67
Social	13.13±2.52	6.67-20.00
Environment	13.94±1.84	10.50-19.50

Table 3: Distribution of poor quality of scores in different domains by background characteristics of respondents.

Variable	Categories	Physical	Psychological	Social	Environment	P value
		N (%)	N (%)	N (%)	N (%)	
Age (years)	30-39	1 (20.00)	2 (40)	0 (0.0)	2 (40)	0.001
	40-49	8 (17.02)	3 (6.38)	3 (6.38)	5 (10.63)	
	50-59	14 (18.66)	4 (5.33)	3 (4.00)	15 (20)	
	60-69	29 (32.20)	7 (7.77)	23 (25.5)	34 (37.7)	
	70-79	13 (38.3)	3 (8.82)	10 (29.41)	12 (35.29)	
	80 and above	7 (53.84)	2 (15.32)	3 (23.07)	4 (30.76)	
Gender	Male	35 (26.92)	11 (8.46)	19 (14.61)	34 (26.15)	0.46
	Female	37 (27.61)	10 (7.46)	23 (17.16)	38 (28.35)	
Religion	Hindu	58 (29)	14 (7)	32 (16)	58 (29)	0.89
	Sikh	11 (20.37)	6 (11.11)	9 (16.66)	11 (20.37)	
	Muslim	3 (30)	1 (10)	1 (10)	3 (30)	
Socio-economic status	Upper	2 (13.33)		1 (6.66)	1 (6.66)	0.001
	Upper middle	12 (19.35)	1 (1.61)	5 (8.06)	11 (17.74)	
	Upper lower	46 (30.66)	17 (11.33)	28 (18.66)	44 (29.33)	
	Lower	12 (33.33)	3 (8.33)	8 (22.22)	16 (44.44)	

This Table 3 depicts that 53 (58.88%) participants belonging to the age group 60-69 years of age, 61 (45.52%) females, 88 (44%) Hindu participants, 22 (61.11%) participants belonging to lower socioeconomic status, had overall poor domain scores. Among all the domains, 72 (27.27%) participants had poor physical QoLS, followed

by 72 (27.27%) participants had poor environment QoLS, 21 (7.95%) participants had poor psychological QoLS (Table 3).

DISCUSSION

In spite of COVID-19 situation, the present study could be completed successfully coping with all adverse situations. The present study was conducted among 264 married individuals with diabetes, reportedly 43.2% of individuals having an overall poor QoL score. Overall QoLS in different domains i.e. physical, psychological, social, and environment varied significantly with age, socioeconomic status, and type of family. Psychological domain, social domain came out to be least adversely affected in terms of poor QoLS. Physical and environment domains of QoL were the most adversely affected domains among studied subjects. Overall QoLS was found adversely affected among middle aged and elderly individuals of higher SES. Age and socioeconomic status came out to be the significant correlates of poor QoL. Our study found that age showed a significant relation with the domain score. Higher the age, lower was the domain mean score. This is very much acceptable as elderly participants had lower quality of life as compared to younger participants. These findings are similar to a study conducted at Udupi taluk in Karnataka in which elderly participants (65 years and more) scored lower. Elderly participants had poorer QoL than the younger diabetes patients.[16] In our study, females outnumbered males. Our study depicted that domain score does not show significant variability with gender, which is contrast to another study which reported men had higher QoL scores compared to women and was statistically significant.[16]

74.2% participants were unemployed which included retired, pensioners, homemakers and occupation showed significance with the age ($p<0.05$). As age increases, unemployment increases because the number of retired and pensioners add up. Most participants belonged to the upper lower class followed by lower middle class.

Socioeconomic status showed significant relation with domain score and revealed that participants had better mean domain scores with increasing economic status. These findings are similar to study conducted elsewhere where participants had good mean scores with increasing economic status and showed statistically significant difference in environmental domain ($p=0.005$*).[15] Most of the participants belonged to a joint family. As far as family structure is concerned, our study showed that quality of life is better in joint families compared to nuclear families as type of family showed significant relation with domain score.

A study reported that those who reported loneliness had significantly lower QoL than those who did not.[16,17] While a famous study reported that persons residing in joint family reported lower incidence of myocardial infarction and other comorbidities which in result affect QoL.[18]

Social and environment domain scores showed statistical significance with the number of children ($p<0.05$). The present study had some limitations. Due to COVID-19 pandemic OPD‘s were closed at Government medical college and hospital, participants were selected from centres i.e. Rural health training centre and Urban health training centre. Also the present study has some limitations in terms of representativeness and is confined only to a limited population of the city.

Therefore, QoL might have also suffered due to the lockdown situation and cannot be attributed to factors studied as COVID-19 factors might be also confounding QoL factors. An extended multi-institutional, collaborative study is a need of the hour for better conclusions.

CONCLUSION

The study suggests the need of improving socio-economic conditions and better management of diabetes in order to reduce complications for improving QOL.

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