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A Study To Assess The Quality Of Life Among Type2 Diabetes Mellitus Clients In Urban Area Of Tirupati.

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Abstract:

Background: Depression in elderly diabetic population is a serious public health concern all over the globe, leading to unnecessary suffering, impaired functional status, non-adherence to diet, physical exercise, excessive use of health-care resources and increased mortality. Therefore, early detection and prompt intervention remains the mainstay to reduce the burden of the disease. The study aimed to estimate the prevalence of depression among Type2 Diabetes Mellitus population and to determine the association between socio-demographic factors and depression.

Materials and Methods: 120 Type2 Diabetes Mellitus individuals were assessed. Geriatric Depression Scale was used to assess the level of depression. Data was analysed using MS Excel 2007 and SPSS version 26 for windows.

Results: The present study results suggest that most of the Type2 Diabetes Mellitus population were mild depressives (68.3%) as per GDS scale. About 19.2% were severe depressives and only 12.5% of study population were normal. Twenty-three (13 males and 10 females) were suffering from severe depression.

Conclusion: Depressive symptoms were positively associated with religion and body mass index. But there was no significant association between age, sex, type of family, caste, education, socio economic class and depression in our study.

Keywords: Depression, Type2 Diabetes Mellitus, GDS scale and sociodemographic factors.

Introduction:

Depression in elderly population is a serious public health concern all over the globe, leading to unnecessary suffering, impaired functional status, non-adherence to diet, physical exercise, excessive use of health-care resources and increased mortality. Therefore, early detection and prompt intervention remains the mainstay to reduce the burden of the disease. (1)

Geriatric depression is a mental and emotional disorders affecting elderly adults. Older adults may feel of sadness and often “blue” moods are normal. However, lasting depression is not a typical part of aging. (2)

The Global Health estimates that depression is most common among females (5.1%) than males (3.6%). Prevalence rates vary by age, peaking in older adults. The Worldwide depressives were 322 million in 2017. Nearly half of these people live in South East Asian countries (27% of whom live in China and India).(3)

Diabetes mellitus impacts 387 million people worldwide, with the number predicted to rise by 205 million by 2035, with around 75 million diabetics living in the Southeast Asian area.(4)

In India 45.7 million population are suffering with depression. Highest prevalence is seen in states of Tamilnadu, Telangana, Goa, Kerala, moderate prevalence is seen in Andhra Pradesh and lowest prevalence is seen in Odhisa.(5)

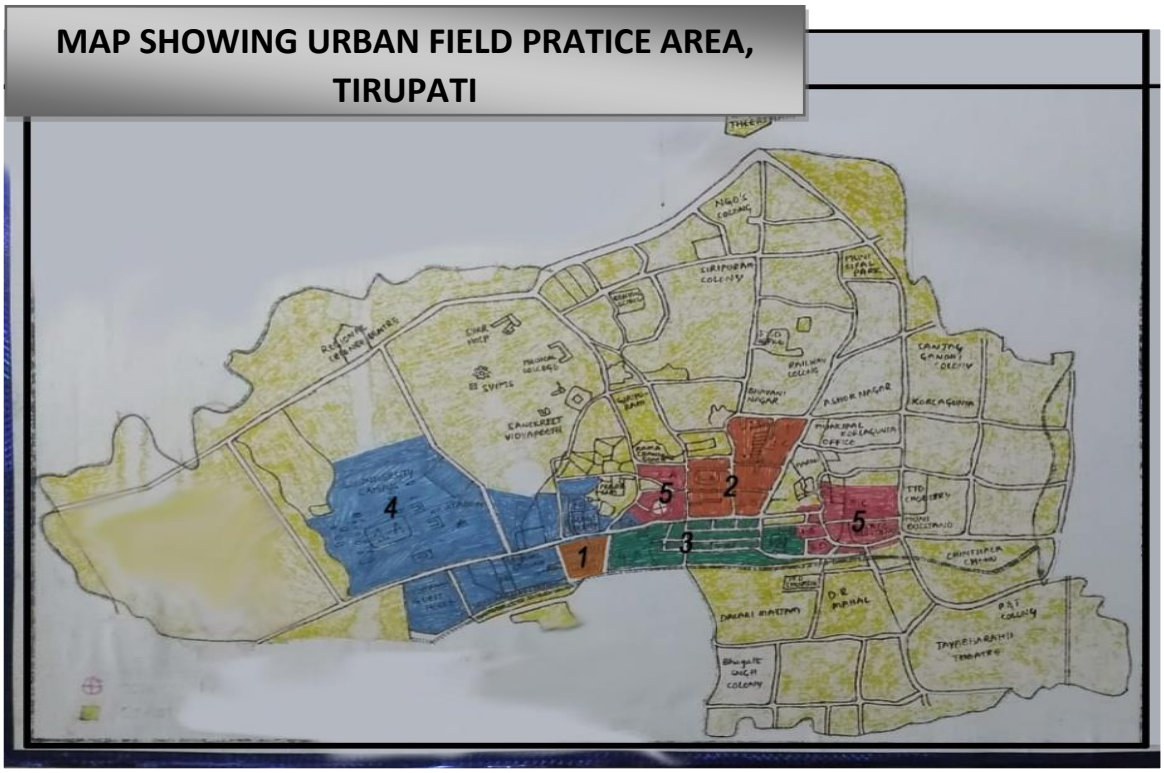
The objective of the study is to estimate the prevalence of depression among Type2 Diabetes Mellitus population and to determine the association between socio-demographic factors and depression. This study will help to encourage in the treatment of diabetes and depression as can improve the quality of life of the needed population

Materials and Methods:

A Cross-sectional study was conducted among Type2 Diabetes Mellitus belonging to different socio-economic and varying demographic groups of urban field practice area of Sri Padmavathi Medical College for Women, SVIMS, which comes under Urban Health Training Centre, Gandhi Road, Tirupati.

Study setting:

Figure No:1- Map Showing Urban Field Practice Area



Urban field practice area of SVIMS, Sri Padmavathi Medical College for Women comes under Urban Health Training Centre, Gandhi Road, Tirupati. It includes 5 wards covering population of 42,438

(10,425 families) out of which Type2 Diabetes Mellitus population constitute 3,603 (1,843 males and 1,760 females).

SAMPLING:

Sample size calculation:

Considering the prevalence of morbidity among Type2 Diabetes Mellitus to be 50%, we calculated the sample size for our study using the formula

$N = Z^2pq/L^2$:

- p= 50
- q= 50 (100-p)
- L=10% of p

i.e.,

3.84x50x50/10x10 = 96

Based on the above, sample size was determined to be 96, considering a non-response rate of 20%, the total sample size was found to be **116**, round off to **120**.

The sample of the study subjects to be drawn from each ward in urban field practice area has been calculated by the method of probability proportional to population size.

In Urban field practice area, all the households in each ward were selected by systematic random sampling method. In the final stage, all persons aged 60 years with Type2 Diabetes Mellitus & above in the selected households were included in the study.

The proportional sample for individual wards in urban area was obtained by multiplying this fraction to the Type2 Diabetes Mellitus population of the selected wards.

Thus the final sample of 120 study subjects included in the study from the 5 wards in urban field practice area is shown in the table 1 below by using Stratified random sampling with proportional allocation:

Table 1:

Name of urban ward	Population	Number of Households	Number of Type2 Diabetes Mellitus (%)	Sample size to be drawn as per PPP size
24	8139	1901	691(19.17)	23
25	8865	2214	753(20.89)	25
28	8239	2154	699(19.40)	23
29	8449	1864	718(19.92)	24
31	8746	2286	742(20.59)	25
Total	**42438**	**10425**	**3603(100.0)**	**120**

Inclusion criteria: All adults aged 60 years and above with Type 2 Diabetes Mellitus, healthy and willing to participate in the study were selected.

Exclusion criteria: All the study subjects who were bedridden and under treatment for chronic diseases and have known terminal or mental illness. All the study subjects who were not willing to participate in the study were excluded.

Data collection: The questionnaire was divided into two parts. The first part comprised of socio-demographic information which includes age, sex, type of family, religion, caste, education, socio-economic status and Body Mass Index (BMI).

The second part comprised of a scale known as Geriatric Depression Scale (GDS). The GDS is a 30-item self-report assessment used to recognize depression in the elderly. The scale was first developed by JA Yesavage and others in 1982. (6)

Ethical approval:

The study protocol was approved by the Institutional Ethical committee, in Human subjects, Narayana College of Nursing, Nellore, India was obtained (File.No:02/PhD(N)/LU/2018 dated 6th June 2018).

Data Analysis: Data was analysed using MS Excel 2007 and SPSS version 26 for windows. Appropriate statistical tests were used which included Chi-square test. Results having P <0.05 are considered as significant. The GDS questions are answered 'Yes' or 'No'. One point is given to each answer and total score is rated on a score grid. The scale sets a range of 0-9 as 'normal', 10-19 as 'mildly depressed' and 20-30 as 'severely depressed'.

Results:

A total of 120 elderly with Type2 Diabetes Mellitus were assessed using GDS 30, 15(12.5%) subjects were found to be having score 0-9 that means normal, 82 (68.3%) were mildly depressed with GDS score 10-19 and 23(19.2%) were severely depressed having a score >20. So prevalence of severe depression was found to be 19.2% [Table 2].

Table 2: Distribution of study subjects according to the level of depression(n=120)

Category	Number	Percent
Normal	15	12.5
Mild Depressives	82	68.3
Severe Depressives	23	19.2
Total	120	100

Table 3: Distribution of study subjects according to socio demographic factors.

Socio demographic variables	Number	Percentage (%)
Age (in years)		
60-69	79	65.8
70-79	31	25.8
≥80	10	8.3
Sex		
Male	62	51.7
Female	58	48.3
Type of family		
Nuclear	94	78.3
Joint	25	20.8
Extended	1	0.8
Religion		
Hindu	81	67.5
Muslim	27	22.5
Christian	12	10
Caste		

Scheduled Tribe	25	20.8
Scheduled Caste	30	25
Backward Class	36	30
Others	29	24.2
Education		
Illiterates	26	21.7
Literates	94	78.3
Socioeconomic Class		
Upper	1	0.8
Upper Middle	15	12.5
Lower Middle	47	39.2
Upper Lower	54	45
Lower	3	2.5

From **Table 3** it was observed that most of the study population were in the age group of 60-69 years (65.8%) followed by 70-79 years (25.8%) and ≥80 years (8.3%). Most of them were males (51.7%). Most of the study population belong to nuclear families (78.3%) followed by joint families (25%) and extended families (0.8%) respectively. About 67.5% of the families belong to hindu religion followed by muslims (22.5%) and christians (10%) respectively. About 30% of the families belong to backward class followed by scheduled caste (25%), others (24%) and scheduled tribe (20.8%) respectively. Most of them were literates (78.3%). Majority of families (45%) belongs to upper lower-class group followed by lower middle class (39.2%), upper middle class (12.5%), lower class (2.5%) and upper class (0.8%) respectively.

Table 4: Distribution according to sociodemographic characteristics and level of depression (n=120)

	Normal (%)	**Mild depression (%)**	**Severe depression (%)**
Age (in years)*			
60-69	6(7.6%)	59(74.7%)	14(17.7%)
70-79	8(25.8%)	16(51.6%)	7(22.6%)
≥80	1(10%)	7(70%)	2(20%)
Sex*			
Male	7(11.3%)	42(67.7%)	13(21%)
Female	8(13.8%)	40(69%)	10(17.2%)
Type of family*			
Nuclear	10(10.6%)	66(70.2%)	18(19.1%)
Joint	5(20%)	15(60%)	5(20%)
Extended	0(0%)	1(100%)	0(0%)
Religion**			
Hindu	9(11.1%)	55(67.9%)	17(21%)
Muslim	1(3.7%)	21(77.8%)	5(18.5%)
Christian	5(41.7%)	6(50%)	1(8.3%)

Caste*			
Scheduled Tribe	1(4%)	20(80%)	4(16%)
Scheduled Caste	5(16.7%)	20(66.7%)	5(16.7%)
Backward Class	5(13.9%)	27(75%)	4(11.1%)
Others	4(13.8%)	15(51.7%)	10(34.5%)
Education*			
Illiterates	1(3.8%)	20(76.9%)	5(19.2%)
Literates	14(14.9%)	62(66%)	18(19.1%)
Socioeconomic Class*			
Upper	0(0%)	1(1.2%)	0(0%)
Upper Middle	2(13.3%)	11(13.4%)	2(8.7%)
Lower Middle	6(40%)	34(41.5%)	7(30.4%)
Upper Lower	7(46.7%)	33(40.2%)	14(60.9%)
Lower	0(0%)	3(3.7%)	0(0%)
Body Mass Index**			
Under weight	3(20%)	0(0%)	0(0%)
Normal	2(13.3%)	12(14.6%)	6(26.1%)
Over weight	10(66.7%)	70(85.4%)	17(73.9%)

* Not significant ** Significant

Table 4 reveals that most of the elderly with severe depression were in the age group of 70-79, ≥80 and 60-69 years respectively. Most of the elderly with mild depression were in the age group of 60-69, ≥80 and 70-79 years respectively. Relation between age and depression is not statistically significant.

Among the study population 21% of males had severe depression compared to females (17.2%), 69% of females had mild depression compared to males (67.7%). Association between sex and depression is not statistically significant.

About 20% and 19.1% of study population having severe depression were in joint and nuclear families respectively. About 100%,70.2% and 60% of study population having mild depression were in extended, nuclear and joint families respectively. Relation between type of family and depression is not statistically significant.

About 21%, 18.5% and 8.3% of study population having severe depression belonged to the religious group of hindus, muslims and christians respectively. About 77.8%, 67.9% and 50% of study population having mild depression belonged to the religious group of muslims, hindus and christiansr espectively. Relation between religion and depression is statistically significant.

Most of the study population having severe depression belonged to the caste others, Scheduled caste, Scheduled tribe and Backward class respectively. Most of the study population having mild depression belonged to the caste scheduled tribe, backward class, scheduled class and others respectively. Relation between caste and depression is not statistically significant.

Among the study population 19.2% of illiterates had severe depression compared to literates (19.1%). About 76.9% of illiterates had mild depression compared to literates (66%). Association between education and depression is not statistically significant.

Most of the study population having severe depression were in upper lower, lower middle and upper middle class respectively. Most of the study population having mild depression were in

lower middle, upper lower, upper middle, lower and upper class respectively. Here it is not statistically significant with socio economic class and depression.

Most of the study population having severe depression were overweight and normal respectively. Most of the study population having mild depression were overweight and normal respectively. Here it is statistically significant with BMI and depression.

Discussion:

The present study was a community based cross sectional study done to assess the level of depression among elderly population using Geriatric depression scale.

In this study most of the study population were in the age group of 60-69 years. Similar findings were observed in the study done by Vu et.al (7).

Depression was more common in males as compared to females. Similar findings were observed in the both studies done by A M Radazi et al (8) and Fung ACH et.al (2018) (9).

Based on the religion, majority were Hindu, Similar finding was found in the study done by Dogra P et al (2017) (10).

Most of the study population were literates. Similar finding was observed in the study done by A M Radazi et al (8).

Elderly living in nuclear family system were more likely to suffer from depression than those living in joint family system which is not similar in the study done by Vandana A. Kakrani et al. (2015) (11).

In our study depressive symptoms were positively correlated to religion and body mass index. Similar findings identified in this study Beata Dziedzic et al. (2020) (12). But there was no significant association between age, sex, type of family, caste, education, socio economic class and depressive symptoms among study subjects.

In our study, about 19.2% of the study subjects were severe depressives, 68.3% were mild depressives and only 12.5% of study population were normal. Similar findings were observed in the study done by Vu et al. (7), which showed 10% of elderly with severe depression, 69.4% of elderly with mild depression and 20% were normal.

Community based mental health studies in India have revealed that the prevalence of depressive disorders in the elderly Indian population ranges between 13% and 25% (13).

Predominance of depressive symptoms varied from 13.5% to 36.8% in community dwelling older adults (14,15,16).

Some other studies have unveiled that the incidence of depression in community samples of elderly in India ranges from 6% to 50% (17,18)

The absence of caretaker may be the possible cause for depression. There is a necessity for greater understanding of depression among family members and community at large.

Conclusions:

It can be concluded from this study thatdepressive symptoms were positively associated with religion and body mass index. But there was no significant association between age, sex, type of family, caste, education, socio economic class and depression in our study.

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