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ORIGINAL ARTICLE

A Study to Assess the Quality of Life, Depression and Suicidal Behavior among Elderly Persons with Chronic Medical Illness

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ABSTRACT
The study was done mainly to assess the quality of life, depression and suicidal behavior among elderly persons with chronic medical illness elderly person with chronic Medical illness scored higher depression. Those who has diabetic were at high risk of depression than those with hypertension/OA. This has also evaluated the depression and suicidal behavior in elderly persons with chronic medical illness. The quality of life, among person with diabetes is poor and marital status influence the QOL.
Keywords: *Humans, Depression, Suicidal Ideation, Depressive Disorder, Major, Diabetes Mellitus*

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INTRODUCTION

The elderly people are mostly considered as frail, medical, social and psychological factors play a role and all these must be considered in diagnosing and treating an elderly patient. These subjects are at greater risk of physical and cognitive decline, disability and death.[1] Late life depression frequently occurs in medical illness. Medical conditions or illness strongly linked to depression are cardiac disorders, neurological conditions, cerebrovascular disease and endocrine disorders. Malignancies and other infectious disorders can also cause depression[2] Approximately 20-25% of heart disease patients experience depressive disorder, another 20-25% report depression symptoms that did not meet the criteria for severe depression. In diabetics, the incidence of depression is about 15% for severe depression and around 20% for other depressive symptoms.[3] A particularly tragic potential outcome of geriatric depression is suicide. Suicide in older adults is mostly to be linked with depression than suicide at any other age. This fact is a problem as geriatric depression may be treated effectively. Suicidal behavior of older persons differs in some of the directions observed from their past lifetimes.[4] Older people tend to make use of lethal means more instantly. And in them, relative to other categories of age, suicide activity is lethal. Compared to young people, the elderly have an improved level of purpose and plan and less likely to be speaking about suicidal thoughts compared to younger people. 55 years of age or older among adults, up to 70 percent attended a general practitioner who had suicide death within a month of death.[5] Conditions like disorder of chronic pulmonary, seizure disorder, malignancy, nephropathy, visual and hearing impairments are related with increased suicidal risk in old persons with depression. As old people number increases, their depression rate and suicidal behavior increases. Hence, this research was being undertaken.[6]

MATERIAL AND METHODS

STUDY DESIGN

The study was conducted at the outpatient departments of Medicine and Orthopaedics at Sree Balaji Medical College, Chennai. The study was conducted from Aug 2016 to Aug 2017.

SAMPLE

34 elderly persons suffering from Diabetes, 33 elderly persons suffering from Hypertension and 33 elderly persons suffering from Osteoarthritis were recruited from outpatient departments of Medicine and Orthopaedics from Sree Balaji Medical College and Hospital, Chennai.

INCLUSION CRITERIA:

1. Patients aged ≥ 60 years

2. Illness duration of minimum 2 years
3. Clinically stable for an interview

EXCLUSION CRITERIA:

1. Clinical diagnosis of delirium, dementia and other cognitive impairments
2. Past history of psychiatric illness

METHODS:

34 elderly persons suffering from Diabetes, 33 elderly persons suffering from Hypertension and 33 elderly persons suffering from Osteoarthritis were recruited from outpatient departments of Medicine and Orthopaedics and included in this study.

Using the semi structured proforma built especially for this research, socio-demographic factors of the patients were obtained.

The following scales were administered to those patients:

1. WHOQOL-BREF (WHO Quality of Life – BREF)
2. HADS (Hospital Anxiety & Depression Scale)
3. Beck's Suicide Intent Scale

WHOQOL-BREF (WHO QUALITY OF LIFE – BREF)

This is briefer version of original instrument, it is convenient for using in large clinical trials or research studies.

It covers 4 domains:

- Physical health (Item no 3,4,10,15-18)
- Psychological health (Item no 5-7,11,19,26)
- Social relationships (Item no 22)
- Environment (Item no 8,9,12-14, 23-25)
- In addition, two items on general well -being (Item no 1 and 2).

Each item scored from 1-5 except for 3,4,26 which is scored reverse. It is translated to a scale of 0 to 100.

Higher correlation of domain score (0.89) between the four domains of two scales has been established. This has established discriminate reliability, validity, test and retest and internal consistency, content validity.

HADS (HOSPITAL ANXIETY & DEPRESSION SCALE)

It was developed from a study conducted within the outpatient area of general hospital for primary services. This scale has 14 questions. This scale takes around 2-5 minutes to complete. Whoever administers this scale should ask the recipient to read some statements aloud from the questionnaire. They must complete it based on how they felt over the last fortnight. HADS has been validated to be used during a range of various languages, and conditions.

BECK'S SUICIDE INTENT SCALE

This scale was found by Aaron T. Beck and his co-workers at the Pennsylvania University for individuals who are trying to suicide, but survive. It is necessary to know the wish of a patient to die and to determine the seriousness of the suicide attempt. Some attempts of suicide are finished no intention of ending life and a few don't have any other goal.

Another factor required is method chosen for attempting death. Firearm, hanging is severe methods whereas poisoning is a smaller amount going to trigger death. However, if delayed emergency care is given it's going to end in fatality like when someone consumes pesticides. It has 15 questions. Each scaled from 0-2.

STASTISTICAL METHOD

The statistical analysis was performed in SPSS version 16.0. The distribution of qualitative factors such as education level, income status, marital status, religion, gender, work status, elderly chronic disease, co-morbidity in elderly individuals, self-harm attempts, familial history of mental illness, and form of care pursued, HADS and Beck's suicidal intent scale were offered as a percentage of frequency. The distribution of quantitative variables like as in chronic disease length, age, QOL domain 1, domain 2, domain 3 and domain 4 was specified in terms of mean with normal disease duration. Deviation and inter quartile size median, depending on data distribution. The Mann Whitney U test was used to compare QOL with chronic illness, income status, marital status, as the QOL component is non-normal. The linear relationship between chronic illness and QOL duration carried out using correlation. Using a chi square test, the associations of HADS and Beck's scale with other qualitative variables were carried out. In comparison to HADS and Beck's scale, a one-way ANOVA is used to compare chronic diseases., Statistically important P-values greater than 0.05 were considered.

RESULTS

TABLE-1: COMPARISON OF QOL WITH CHRONIC ILLNESS

Variable	Group	N	IQR	P-value
Domain 1	Diabetic	34	(44, 61.25)	0.000
	Hypertension	33	(63, 69)	
	Osteoarthritis	33	(50,63)	
Domain 2	Diabetic	34	(56, 63)	0.000
	Hypertension	33	(63, 69)	
	Osteoarthritis	33	(44, 63)	
Domain 3	Diabetic	34	(44, 56)	0.712
	Hypertension	33	(44, 56)	
	Osteoarthritis	33	(44, 56)	
Domain 4	Diabetic	34	(57.75, 73.5)	0.003
	Hypertension	33	(69, 81)	
	Osteoarthritis	33	(56, 75)	

Kruskal Wallis Test

According to this study, there is a positive correlation in Domain 1 (Physical health), Domain 2 (Psychological health) and Domain 4 (Environmental) whereas there is no correlation in Domain 3 (Social relationship) from Quality of life when compared to the chronic illness in elderly persons.

TABLE-2: CORRELATION BETWEEN QOL AND DURATION OF CHRONIC ILLNESS

Variables		Correlation coefficient	P-value
DURATION OF CHRONIC ILLNESS	Domain_1	.018	0.856
	Domain_2	.068	0.499
	Domain_3	.210*	0.036
	Domain_4	-.053	0.598

Spearman's Rank Correlation

In this study the duration of the chronic illness such as Diabetes, Hypertension and Osteoarthritis were included and was compared with the Quality of life among elderly persons and it was found that there was a positive correlation in Domain 3 (Social relationship) from the Quality of life.

TABLE3: COMPARISON OF QOL WITH INCOME STATUS

Variable	Group	N	Median	IQR	P-value
Domain 1	Pension, savings, Salaried	40	63	(56, 63)	
	Dependent on children	27	56	(44, 63)	
	Spouses income	33	56	(50,69)	0.047
Domain 2	Pension, savings, Salaried	40	63	(56, 69)	
	Dependent on children	27	56	(50, 63)	
	Spouses income	33	56	(50, 69)	0.019
Domain 3	Pension,	40	50	(44, 56)	0.437
	savings, Salaried				
	Dependent on children	27	50	(44, 56)	
	Spouses income	33	50	(44, 56)	
Domain 4	Pension, savings, Salaried	40	75	(66, 78)	
	Dependent on children	27	63	(56, 75)	
	Spouses income	33	63	(56, 75)	0.005

Kruskal Wallis Test

In the comparison of Quality of life with income status among the elderly persons, there was a positive correlation in Domain 1 (Physical health), Domain 2 (Psychological health) and Domain 4 (Environmental)

whereas there is no correlation in Domain 3 (Social relationship) from Quality of life when compared to the income status in elderly persons.

TABLE 4: COMPARISON OF QOL WITH MARITAL STATUS

Variable	Group	N	Median	IQR	P-value
Domain 1	Married	75	63	(56, 69)	0.079
	Widowed	24	56	(44, 63)	
Domain 2	Married	75	63	(56, 69)	0.177
	Widowed	24	56	(47, 69)	
Domain 3	Married	75	50	(44, 56)	0.160
	Widowed	24	50	(37.5, 50)	
Domain 4	Married	75	69	(63, 75)	0.241
	Widowed	24	69	(56, 75)	

Mann Whitney U Test

The marital status was compared with the Quality of life of elderly persons. From the study sample, in the elderly persons the quality of life had no correlation when compared to marital status.

TABLE-5: ASSOCIATION OF THE HADS WITH CHRONIC ILLNESS AMONG ELDERLY

Variable	Group	HADS			P-value
		Normal	Borderline abnormal value (borderline case)	Abnormal value (case)	
Chronic illness among elderly	Diabetes	7 (17.1%)	14 (37.8%)	13 (59.1%)	0.001
	Hypertension	22 (53.7%)	8 (21.6%)	3 (13.6%)	
	Osteoarthritis	12 (29.3%)	15 (40.5%)	6 (27.3%)	

Chi Square Test

There was a positive correlation between the chronic illness among the elderly and the HADS score values. It was found that 59.1% was in abnormal value in HADS score in persons who were suffering from diabetes for a long term. 40.5% were in borderline abnormal value which was seen in person suffering from Osteoarthritis for long term. 53.7% of the elderly with Hypertension belonged to the normal value in HADS.

TABLE-6: ASSOCIATION OF THE BECKS SUICIDE INTENT SCALE WITH CHRONIC ILLNESS AMONG ELDERLY

Variable	Group	Becks Suicide Intent Scale				P-value
		No Intent	Low	Medium	High	
Chronic illness among elderly	Diabetes	31 (32.3%)	2 (100%)	1 (50%)	0	0.286
	Hypertension	32 (33.3%)	0	1 (50%)	0	
	Osteoarthritis	33 (34.4%)	0	0	0	

Chi Square Test

There was no correlation between the severity of the intent assessed from Beck's suicide intent scale and the chronic illness among elderly persons. In this study, the severity of the intent was medium in 50% each in the elderly with diabetes and hypertension.

TABLE-7: COMPARISON OF THE DURATION OF CHRONIC ILLNESS WITH HADS

Variable	N	Mean	Std. Deviation	P-value
Normal	41	19.41	11.402	0.820
Borderline abnormal value (borderline case)	37	20.70	9.524	
Abnormal value(case)	22	19.23	9.976	

One Way ANOVA

There was no correlation between the duration of the chronic illnesses such as diabetes, hypertension and Osteoarthritis among elderly persons when compared to the HADS (Hospital anxiety and depression scale) score values.

TABLE-8: COMPARISON OF THE DURATION OF CHRONIC ILLNESS WITH BECK'S SUICIDE INTENT SCALE

Variable	N	Mean	Std. Deviation	P-value
No intent	96	19.79	10.146	0.111
Low	2	32.00	16.971	
Medium	2	10.50	7.778	

One Way ANOVA

There was no correlation between the duration of chronic illness among elderly persons and the severity of the intent assessed using the Beck's Suicide Intent scale.

TABLE-9 ASSOCIATION OF THE HADS WITH MARITAL STATUS

Variable	Group	HADS			P-value
		Normal	Borderline abnormal value (borderline case)	Abnormal value (case)	
Marital Status	Married	33 (80.5%)	31 (41.3%)	11 (14.7%)	0.022
	Widowed	8 (19.5%)	6 (16.2%)	10 (45.5%)	
	Separated	0	0	1 (4.5%)	

Chi Square Test

From this study it was found that the elderly persons with long term medical illness, their marital status had a positive correlation with the HADS; Hospital anxiety and depression scale scores. Among the elderly persons, 80.5% were married, 19.5% were widowed and 4.5% separated. Widowed persons showed higher value of Abnormal value in the HADS scale (45.5%). Borderline abnormal value was found higher among married elderly person.

TABLE-10: **ASSOCIATION OF THE HADS WITH INCOME OF THE ELDERLY PERSONS**

Variable	Group	HADS			P-value
		Normal	Borderline abnormal value (borderline case)	Abnormal value (case)	
Income	Pension, Savings, Salaried	19 (46.3%)	16 (43.2%)	5 (22.7%)	0.215
	Dependent on children	9 (22%)	8 (21.6%)	10 (45.5%)	
	Spouses income	13 (31.7%)	13 (35.1%)	7 (31.8%)	

Chi Square Test

It was found that there was a higher occurrence of abnormal value (45.5%) in HADS score among elderly persons who were dependent on their children for the money and 43.2% of the elderly persons belonged to Borderline abnormal value who were receiving their pension, or had savings or self- salaried. However, there was no correlation seen between the HADS and the income status of the elderly.

TABLE 11: ASSOCIATION OF THE BECKS SUICIDE INTENT SCALE WITH MARITAL STATUS

Variable	Group	Becks Suicide Intent Scale				P-value
		No Intent	Low	Medium	High	
Marital Status	Married	71(74%)	2 (100%)	2 (100%)	0	0.846
	Widowed	24 (25%)	0	0	0	
	Separated	1 (1%)	0	0	0	

Chi Square Test

The severity of the suicidal intent was assessed using Beck's suicide intent scale, a 15-item scale, and there was no correlation between the marital
status of the elderly persons and the severity of the intent.

TABLE 12**:** ASSOCIATION OF THE BECKS SUICIDE INTENT SCALE WITH INCOME STATUS

Variable	Group	Becks Suicide Intent Scale				P-value
		No Intent	Low	Medium	High	
Income	Pension, Savings, Salaried	37 (38.5%)	1 (50%)	2 (100%)	0	0.425
	Dependent on children	27 (28.1%)	0	0	0	
	Spouses income	32 (33.3%)	1 (50%)	0	0	

Chi Square Test

There was no correlation between income status of the elderly and the severity of the intent assessed using Beck's suicide intent scale.

DISCUSSION

The depression rates grows, the older someone gets. According to Katon W[7], lesser the standard of living for elderly people with chronic illness occurs. A bidirectional link between chronic medical problems and depression exists. Depression psychological shifts exacerbate the long term probability medical illnesses and induce depressive episodes. Patten[8], a Canadian population study, there is high risk in experiencing extreme depression relative to the ones with no disorder in individuals having chronic medical illnesses. From this analysis, the QOL in elderly with long term disease were examined using the WHO QOL BREF scale consisting of 26 items, and 4 domains were individually assessed. Contrary to condition of living of elderly without permanent disease, the chronic illness of old persons and the low standard of life of elderly are positively associated. This shows that every chronic illnesses may worsen overall status health of the persons by reducing their ability and capacity to perform, live well, productivity[9] A link among life quality and the length of long term disease is present. A study in Taiwan proposed that there was higher QOL in people with high financial status compared to persons of less financial status. It showed that socioeconomic conditions and education level of elderly persons having long term illness were significantly correlated. The same results were found during this study that the QOL of elderly people with permanent disease has been linked to the salary or financial condition of older individuals.[10] Compared to elderly adults with no medical conditions, there is relation between the legal status of elderly with potential medical disease and HADS score, as seen in previous research. Goldman identified that the health and survival rates in adulthood is expounded to legal status and widowed men are next risk. During this study, all abnormal value, are widowed elderly persons[11]. A correlation among elderly people's income and financial status with potential medical ailments like osteoarthritis, hypertension, diabetes and hospital anxiety and scale score in depressive disorder is present. A correlational statistics between elderly chronic disease and hospital anxiety and depression scale ranking, relative to the elderly littered with osteoarthritis and hypertension, depression is increased in diabetic elderly people[12]. Early onset depression is caused by depression genes, while later occurrence may be either a dementia prodrome or a biological or psychological reaction to incidents that is more common in late life.[13] Geriatric depression is heterogeneous, with first-onset age being a potential predictor of etiological variations. In geriatric depression, comorbidity is generally widespread, occurring because of molecular, psychological and social processes. Therefore, aged patients serious illness should be adequately cared for and psychiatric condition should be evaluated and properly cared for by everyone.[14]

CONCLUSION

In older adults with chronic medical conditions, depression is especially frequent. Compared to hypertension and osteoarthritis, older individuals with diabetes for a long period of time are at risk of depression. Among the elderly individuals affected by diabetes as a long- term medical condition, the QOL is poor. The QOL of aged or old aged individuals better financial or income status is better. Depression was

predominant in older people who were widowed, relative to those who were in a marital relationship. The QOL of unmarried and widowed elderly individuals is low.

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