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A Cross Sectional Study: Depression Status among Elderly using Geriatric Depression Scale (GDS) in Urban Chennai

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Abstract

Elderly in India, older ones (above 80yrs) are growing at a fast pace and these very elderly people are usually weaker, insecure, dependent and suffer more often from age-related diseases [4]. A Cross sectional study was done using a Questionnaire along with Geriatric Depression Scale (GDS) to evaluate both physical and mental health of 410 participants above 60yrs of age using a Multi Stage Cluster Sampling technique with 137 samples each from 3 regions of Urban Chennai. Physically elderly complained with Joint pain, Leg pain, Loss of power or sensation, followed by Back pain, Constipation, Chest pain and Neck pain for the past two months. And mentally they complained about Loss of memory, appetite and Sleep. Amongst 233 males &177 females, physically 38.2 % &30.5% and 15.0% &27.7% were evaluated to be with Stage 1 &Stage 2 Hypertension. Amongst males and female, 1.3% and 6.8% were found to be with Severe Depression similarly, 3.9% and 14.1% were Moderately Depressed and 13.7% and 32.8% had Mild Depression while others were normal. Analysis of Chi-square Test for depression with other factors were sleeplessness, being widowed, monthly Income of less than Rs. 5000, Feeling Neglected, Living in Old Age Home and in Joint Family revealed a significant association ($p < 0.05$) with SPSS11.0. There is a strong association of depression amongst elderly were with External and Family influence which could make way for more studies related to development of Psycho physiological and Psycho social impacts on Geriatric health.

Keywords*: Elderly, Geriatric, Depression, GDS, Chennai.*

Background

According to WHO estimate, by 2020, a very different picture will have emerged: NCDs and injuries are expected to be responsible for over three-quarters of the disease burden in developing countries and newly-industrialized countries [7]. The total number of people of 60 years of age and over world-wide was expected to increase from 605 million in 2000 to 1.2 billion by the year 2025[1,2]. Many studies all over the world shows that ill health is one of the most important factors that causes fear in the minds of elderly [5]. The increasing life span and poor health care add to the degree of disability among the elderly and compound the problems of care giving. Rapid increase of old age people in the population raises various social, economic and health issues. Elderly population increase often lead to a need for elder care and support, simultaneously, in India where traditional family-based care is becoming less [3]. Amongst Elderly Prevalence rates indicates they suffer from organic disorder (4.7%) depressive illness (10.0%) and the neuroses (2.5%) [8].

In India, 75% of aged 60 and above reside in rural areas, 33% are below poverty line and majority of them are illiterate. Nearly 30 million elderly were found lonely and 12.5% feel that no one cares they exist in this world. According to 2011 statistics, Government of India witnessed a rise in incidence of non-communicable diseases (NCDs) and old age diseases. Malnutrition, occult hypothyroidism, renal failure, depression and sexual problems were also common in elderly [13]. Adjustment for living circumstances, health symptoms, and behaviors substantially reduced the excess risk associated with social class and area deprivation. Being in a rural area was associated with lower risk of poor morale [9].

The studies conducted worldwide amongst elderly were for commonly affected diseases and individual complaints. Studies that focuses both Physical and Mental health among elderly in India

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were fewer. Few studies have been conducted for geriatric health problems in North India; at present no studies in South India that focuses the elderly physical and mental health.

Methodology

This cross-sectional study reviews the prevalence of physical and mental health problems and the factors associated towards population aged 60 years and above in Urban Chennai. The approved the study was approved by Institutional Ethical Committee of Tamilnadu Dr. M.G.R. Medical University, Chennai during 2014. Those residing in for more than a year Chennai and old-age homes who were aged 60 years and above was included. Those who are not willing to participate were excluded.

A Sample Size of 386 was calculated using the formula for cross sectional Study. Anticipated Prevalence was taken as 50% with Confidence Interval (CI) of 95%. About 410 sample size was taken for the current study from the population, which was 10 % more than the required sample size. Multistage Cluster sampling technique was used based on the existing Chennai Corporation Health Zones [11]. Chennai Corporation is divided into three main regions by the as Chennai north, Chennai south, Chennai central; comprising of 15 zones in total of all three regions. Approximately 137 samples were selected in all three regions for this study was included.

Simple random sampling was practiced in each zone. The information regarding the geriatric population was not available for each zone in Chennai. The area from each zone was selected using Microsoft excel software by random method in computer, based on the corporation ward number and the houses were selected randomly with difference of 5 house and geriatric sample was obtained from each house. If no elderly available in a house, next home was selected.

Sampling frame

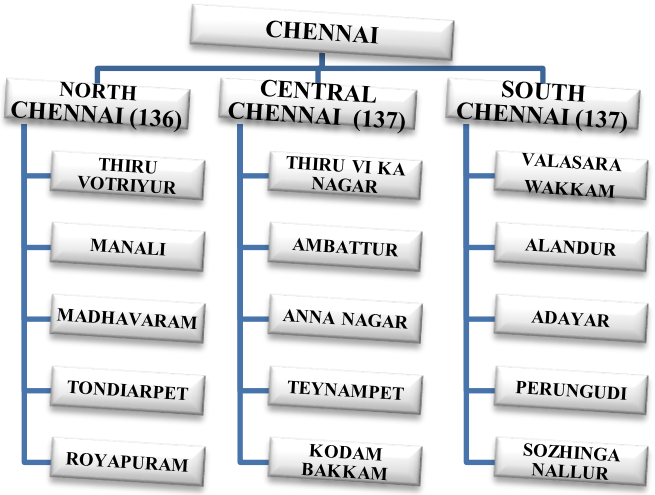

Figure 1. Shows the sampling frame

Study was conducted using a validated semi-structured questionnaire was used as a tool to get information from the Elderly. Approximately 20-30 minutes Time taken for interviewing each individual after obtaining Informed Consent from each participant. Information about their personnel details and complaints were collected. Main factors were based on, presenting complaints, factors, type of treatment adopted, educational status, life style, living environment, family type and economic status with regard to depression scale. Limitations in this study, Focus Group Discussion was not possible in this study since it was a Door to Door survey, the study participants were not able to share their problems with presence of family members and others, permission was not given in old age homes to conduct as a focus group discussion. Limitations also include the history of previous illness was collected from participant's memory and their knowledge, may be subjected to recall bias.

Results

In the study, Kolmogrov - Smirnov test was done and resulted in a non-significant value ($P > 0.05$) proving the data is normally distributed. Their Demographical and other details of 410 Elderly are

presented below. Gender distribution shows males 233(57%) and females 177(43%). Majority of the Elderly were in the age group of 62 - 72 years, 249 (60.7%) with the mean 67.57. Most of the Elderly belong to nuclear family 249 (60.7%). Among the Elderly, 30.5% and 25.8% females and males feel that they were being neglected by their loved ones. About 54.6% elderly earn more than Rs. 5000/- per month. Amongst Elderly, 69% of participants live in their Own House, 23% live in rented house and 8 % live in Old Age home.

Table 1. Demographic details

Variables	Category	Frequency (N=410)	%
Gender	Male	233	56.8
	Female	177	43.2
Age	60 – 62	76	18.5
	62 – 66	128	31.3
	66 – 72	121	29.5
	> 72	85	20.7
Religion	Hindu	358	87.4
	Christian	39	9.5
	Muslim	13	3.1
Type of Family	Nuclear	249	60.7
	Joint	121	29.5
	Broken	40	9.8
Education	Illiterate	55	13.4
	Below 5th standard	45	11
	5th std to 12th std	178	43.4
	Undergraduate	103	25.2
	Post graduate	28	6.8
	Doctorate	1	0.2
Occupation	Not working	312	76.1
	Working	98	23.9
No. of Child	No Children	23	5.6
	One	41	10
	Two	127	31
	3 or More than 3	219	53.4
Place of Living	Rented house	95	23.2
	Own house	283	69
	Old age home	32	7.8
Marital Status	Single	15	3.7
	Married	305	74.4
	Widowed	89	21.7
	Divorcee	1	0.2

Elderly were mostly suffering from 61.7% Joint pain, 56.8% Leg pain, 41.5% Loss of power or sensation, 40.2% Loss of memory, 38.8% Back pain, 36.3% Sleeplessness, 26.3% Muscle Weakness / Pain, 24.1% Loss of appetite, 21.5% Constipation, 20.2% Palpitation, 15.9% Chest pain and 13.9% Neck pain for the past two months. Auditory and Visual complaints were 22.4% cannot hear low voice range, 15.9% hearing difficulty, 2.9% Hear loss and 20.5% Vision Dullness. Among the Elderly, 32.4% have undergone Cataract surgery and 48.8% were Wearing Glasses. Elderly have been diagnosed for Hypertension (150), Diabetes Mellitus (145) and most importantly Arthritis (45). And 14 had No Complaints. Amongst 233 males and 177 females, physically 38.2 % and 30.5% and 15.0% and 27.7% were evaluated to be with Stage 1 and Stage 2 Hypertension. In which 34.9 % Elderly have Hypertension Stage 1(Table 2). About 136 were on regular treatment and 9 participants were not on regular treatment. Among Elderly, 134 were on regular treatment and 16 participants were not on regular Elderly.

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Amongst males and female, 1.3% and 6.8% were found to be with Severe Depression similarly, 3.9% and 14.1% were Moderately Depressed and 13.7% and 32.8% had Mild Depression while others were normal. Analysis of Chi-square Test for depression with other factors were sleeplessness, being widowed, monthly Income of less than Rs. 5000, Feeling Neglected, Living in Old Age Home and in Joint Family revealed a significant association ($p < 0.05$).

Table 2. Blood pressure status among elderly

Variables	Male (233)	%	Female (177)	%	Total (410)	%
Hypotension	4	1.7	6	3.4	10	2.4
Normal Blood Pressure	50	21.5	23	13.0	73	17.8
Pre-Hypertension	55	23.6	45	25.4	100	24.4
Hypertension Stage 1	89	38.2	54	30.5	143	34.9
Hypertension Stage 2	35	15.0	49	27.7	84	20.5

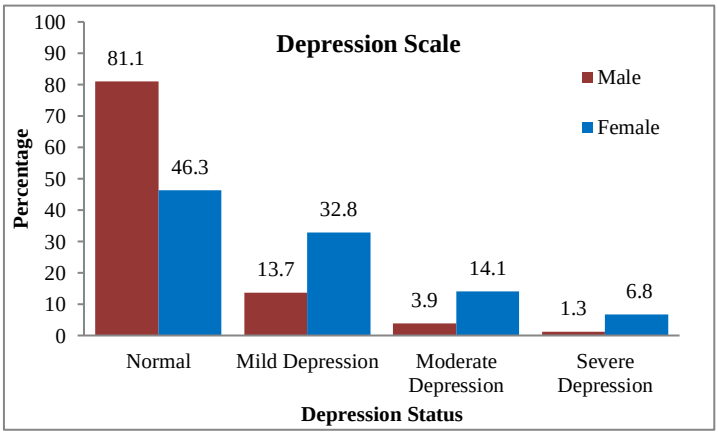

Figure 2. Depression status among elderly

Using Geriatric Depression Scale the depression status among Elderly, 1.3 % Males and 6.8 % Females had Severe Depression, 3.9 % males and 14.1 % females had Moderate Depression and 13.7 % males and 32.8 % females had Mild Depression. 81.1 % of male Elderly did not have depression. Among Elderly 33.7 % have no disturbances, 22.2 % have short sleep, 9 % were angered easily and 6.3 % had Dreams. Elderly participants cry easily (37.6 %) and about 34.1 %have forgetfulness to do their works. Association of possible risk factors was analyzed for Pearson Chi Square Tests and Fisher exact tests; the information is in the table below, towards associated factors as exposure and Health Status as its outcome. Significant association for Depression an important factor among mental health among Elderly, with other factors were found for Feeling neglected, old age home, Financial status, marital status and Type of family.

Table 3. Factors associated for depression

Factors	$\chi 2$	Fisher's Exact p value
Have no Child	1.550	* 0.213
Financially Depending on Child	1.671	0.210
Nuclear Family	0.533	0.522
Single	1.132	0.282
Appetite Loss	12.042	0.001
Sleeplessness	13.741	0.001
Widowed	20.353	0.000
Monthly Income < Rs. 5000	11.160	0.001
Feel Neglected	34.847	0.000
Living in Old Age Home	30.291	0.000
Joint Family	10.287	0.001

($p < 0.05$= significant association)

Conclusion

Amongst Elderly, they had high prevalence of hypertension and non-communicable diseases like diabetes, arthritis, Coronary artery Diseases and stroke. Most of them were under the treatment of Hypertension, Diabetes Mellitus, Arthritis and Coronary Artery Diseases. Though the Depression rate was less there is a strong association amongst External and Family influence which could make way for more studies related to development of Psycho physiological and Psycho social impacts on Geriatric health.

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