

## ORIGINAL RESEARCH

# Evaluation of current morbidity pattern in rural geriatric population with reference to perceived illness in physical & psychological domains

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Received: 19 March, 2023

Accepted: 23 April, 2023

### ABSTRACT

**Background:** It is generally acknowledged that the WHO's comprehensive definition of health—a state of total physical, mental, and social well-being—is more appropriate when applied to older people than the more limited biomedical model of health, which focused on the pathological state and the ensuing physical and psychological condition. **Aim:** This study was carried out to carry out evaluation of current morbidity pattern in rural geriatric population with reference to perceived illness in physical & psychological domains. **Methods and materials:** There was analysis between association between living arrangement and non communicable diseases. Then there was evaluation between socioeconomic status and non-communicable diseases. Further there was analysis between association between marital status and non communicable diseases. Distribution of dependency in various age groups. Gender wise distribution of study subjects according to dependency. Analysis of addiction habits in geriatric patients. There was also analysis of living in overcrowded area and addiction habits as indicators for psychological morbidity. **Results:** The present study shows that 26.82% of the geriatric subjects were found to be living in overcrowded conditions whereas overcrowding was absent in 73.18% of the subjects. It showed that most of the geriatric individuals prefer to stay alone reflecting their unhealthy psychological status. In our study population 52.95% of individuals were found addicted to chewing tobacco whereas 47.05% were found with no addiction to tobacco. Out of which 68.77% were males and 31.55% were females. 35.68% of hypertensive & 37.69% of diabetics were living with their spouses whereas 20.34% of having CVD were living with their spouses. This difference was significant in case of Diabetics only. Hypertension was commonest in upper status (100%) diabetes was common in lower (34.21%) and CVD in lower middle socio economic status. This difference was significant in case of CVD only. Hypertension was commonest in married (33.81%) diabetes in married (74.10%) Whereas CVD in married as well (20.14%). The difference was statistically significant in case of Diabetics only. **Conclusion:** Current morbidity is higher in rural geriatric population with reference to perceived illness in physical & psychological domains and sufficient measures should be taken to resolve this issue

**Keywords:** Morbidity, Psychological, physical, geriatric population, rural population

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### INTRODUCTION

It is generally acknowledged that the WHO's comprehensive definition of health—a state of total physical, mental, and social well-being—is more appropriate when applied to older people than the more limited biomedical model of health, which

focused on the pathological state and the ensuing physical and psychological condition. When we talk about older people, the focus is on ageing, which is a generalised deterioration of function that occurs over time and results in a loss of stress adaptation as well as an elevated risk of age-related illnesses and

disabilities. Molecular, cellular, physiological, structural, temporal, social, and psychosocial characteristics all play a role in ageing.<sup>1,2</sup>

With the theme "Towards a Society for all ages," the United Nations designated 1999 as "The International Years of the Elderly Persons (TYOP)". In order to enable older people to participate actively in society without facing discrimination and to enjoy an independent and high-quality of life, WHO started a new campaign highlighting the advantages of "Active Ageing." As a result, the theme of World Health Day 1999 has been chosen as "Active Ageing Makes the Difference." Since 2000, the first of October has been recognised as International Day of Older Persons.<sup>3,4</sup>

Individual nations agreed to set their own objectives and goals within the framework of the Macau Plan of Action on Ageing for Asia and the Pacific's clear recommendations and directives. which led to the formulation of our National Policy for Older Persons (NPOP). Further guiding nations in extending the scope and nature of national policies on ageing and associated strategies to address the needs of older people were the discussions at the Second World Assembly on Ageing, held in 2002 in Madrid, Spain, which resulted in the UN member countries adopting the Madrid International Plan of Action of Ageing (MIPAA). As stated by MIPAA.<sup>5,6</sup>Older people and development, advancing health and well-being into old age, and ensuring enabling and supportive environments for older people are the three priority directions.

The WHO also observed World Health Day in 2012 under the subject "Aging and Health Good Health Adds Life to Years." Saving lives, preserving health, and removing disability and pain will be necessary to improve health in the ageing process. This can be done by combining a healthy lifestyle across the life course with an aging-friendly environment and improved disease detection and prevention through age-friendly primary healthcare.<sup>7,8</sup>

Therefore, this study was carried out to carry out evaluation of current morbidity pattern in rural geriatric population with reference to perceived illness in physical & psychological domains.

#### **METHODS AND MATERIALS**

This study was carried out among geriatric population in rural India. The sample size of this study was 440 geriatric study participants. The study was conducted to analyse current morbidity pattern in rural geriatric population with reference to perceived illness in physical & psychological domains.

#### **INCLUSION CRITERIA**

The study comprised all elderly participants living at the recruited house who were 60 years of age or older. Only one elderly person was included in cases when there were multiple geriatric subjects present, ideally the oldest.

#### **EXCLUSION CRITERIA**

Elderly people who didn't give their consent.

Selected geriatric patients are absent at the second visit.

#### **ANALYSIS**

In the chosen home, a geriatric person's verbal agreement was requested. If the subject resisted, an elderly person's house was then visited by an enlisted soldier. Additional interviewing and examination of the information at hand confirmed the subject's age. If the chosen subject wasn't there during the initial visit, the house was noted and a second visit was organised. After establishing trust and maintaining anonymity, the person was interviewed and examined, and information was gathered using a pre-made questionnaire.

There was analysis between association between living arrangement and non communicable diseases. Then there was evaluation between socioeconomic status and non-communicable diseases. Further there was analysis between association between marital status and non communicable diseases. Distribution of dependency in various age groups. Gender wise distribution of study subjects according to dependency. Analysis of addiction habits in geriatric patients. Gender wise distribution of study subjects according to BMI. Female subjects were interviewed and examined in presence of a public health nurse, female intern or lady of the house.

#### **STATISTICAL ANALYSIS**

Data was gathered, coded, and then entered into SPSS software 23.0. From this, straightforward tables and correlation charts were created and examined. Utilizing the software epi-info version 7, statistical analysis was conducted utilising inferential methods (average, mean, percentages, and chi-square test)..

#### **RESULTS**

35.68% of hypertensive & 37.69% of diabetics were living with their spouses whereas 20.34% of having CVD were living with their spouses. This difference was significant in case of Diabetics only. (table 1).Hypertension was commonest in upper status (100%) diabetes was common in lower (34.21%) and CVD in lower middle socio economic status. This difference was significant in case of CVD only. (table 2).Hypertension was commonest in married (33.81%) diabetes in married (74.10%) Whereas CVD in married as well (20.14%). The difference was statistically significant in case of Diabetics only. (table 3) Prevalence of dependency in elderly subjects were 7.05% as per Katz ADL criteria.(table 4, graph 1) Maximum number of dependents were in age group of >85 years [45.16%] followed by 75 – 84 years [35.48%].More of females [58.06%] were dependent in activities of daily living as compared to males.(table 5). Majority of elderly (57.04%) had normal BMI, 24.55% subjects were underweight while only 18.41%

of studies subjects were overweight, Male & Female weight and overweight obesity in statistically difference in distribution of underweight, normal significant.(table 6).

**Table 1: Association between living arrangement and Non communicable diseases.**

Living arrangement	Hypertensive (%)	Normotensive (%)	Total (%)	Diabetic (%)	Non-Diabetic (%)	Total	CVS (%)	CVS (%)	Total
With Spouse	71(35.68)	128(64.32)	199	75(37.69)	124 (62.31)	129	32(16.08)	167 (83.92)	199
With family	30 (25.42)	88(74.58)	118	25 (21.19)	93 (78.81)	118	24(20.34)	94 (79.66)	118
Alone	32 (26.02)	91(73.98)	123	30 (24.39)	93 (75.61)	123	25(20.32)	98 (79.67)	123
Old age Home	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>133 (30.23)</b>	<b>307 (69.77)</b>	<b>440</b>	<b>130(29.55)</b>	<b>310(70.45)</b>	<b>440</b>	<b>81(18.41)</b>	<b>359 (81.52)</b>	<b>440</b>

$X^2 = 5.129, P = 0.077$        $X^2 = 11.870, P = 0.0026$        $X^2 = 1.312, P = 0.5190$

**Table 2: Association between socioeconomic status and non-communicable diseases.**

Socioeconomic status	Hyper (%)	Normal (%)	Total (%)	Diabetic (%)	Non-Diabetic (%)	Total	CVS at (%)	CVS (%)	Total
Upper	1(100)	0(0)	01	0(0)	1(100)	01	0(100)	1(100)	01
Upper Middle	13 (25.42)	33 (71.73)	46	14 (30.43)	32 (69.56)	46	11 (23.91)	35 (76.06)	46
Lower Middle	78 (30)	182(70)	260	80 (30.76)	180 (69.23)	260	64 (24.61)	196 (75.38)	260
Upper Lower	32 (33.68)	63 (66.31)	95	23 (24.21)	72 (75.78)	95	4(4.21)	91 (95.78)	95
Lower	9 (23.68)	29 (76.31)	38	13 (34.21)	25 (65.78)	38	2(5.26)	36 (94.76)	38
<b>Total</b>	<b>133</b>	<b>307</b>	<b>440</b>	<b>130</b>	<b>310</b>	<b>440</b>	<b>81</b>	<b>359</b>	<b>440</b>

$X^2 = 3.709, P = 0.4469$        $X^2 = 2.320, P = 0.6771$        $X^2 = 24.944, P = 0.0001$

**Table 3: Association between marital status and non communicable diseases**

Marital Status	Hypertensive (%)	Normotensive (%)	Total (%)	Diabetic (%)	Non-Diabetic (%)	Total	CVS +nt (%)	CVS _nt (%)	Total
Married	94 (33.81)	184 (66.18)	278	72 (25.89)	206 (74.10)	278	56 (20.14)	22 (79.85)	278
Unmarried	-	-	-	-	-	-	-	-	-
Widow/Widower	39 (24.07)	123 (75.92)	162	58 (35.80)	104 (64.19)	162	25 (15.43)	137 (84.56)	162
Separated / Divorcee	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>133</b>	<b>307</b>	<b>440</b>	<b>130</b>	<b>310</b>	<b>440</b>	<b>81</b>	<b>359</b>	<b>440</b>

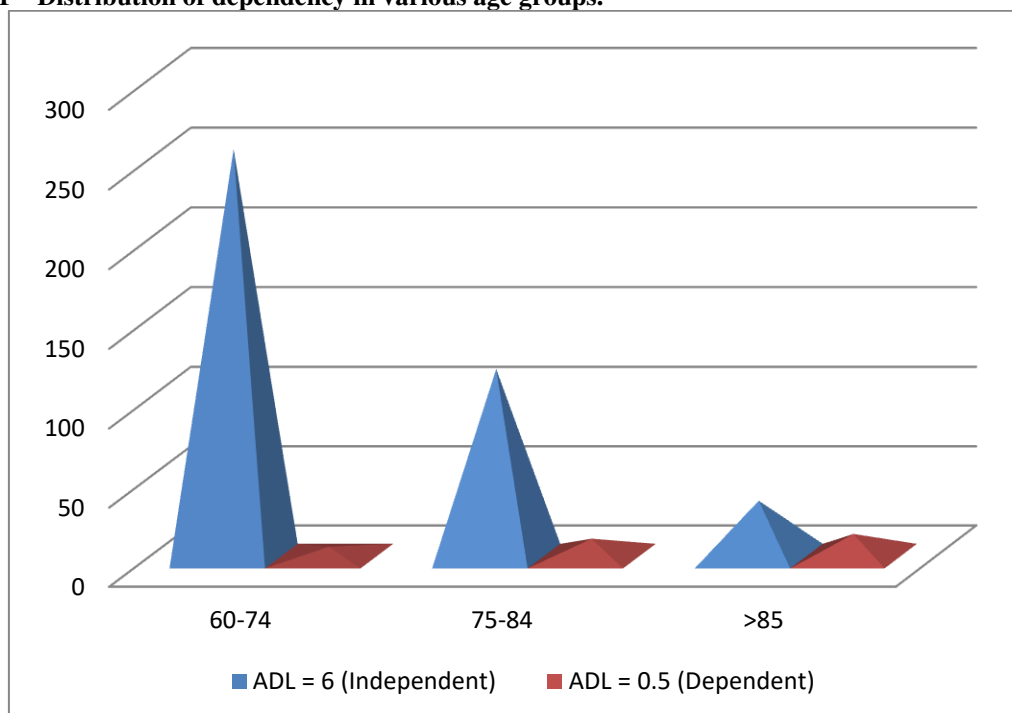
$X^2 = 4.603, P = 0.319$        $X^2 = 4.822, P = 0.0281$        $X^2 = 1.513, P = 0.2187$

**Table 4: Distribution of dependency in various age groups**

Dependency	Age group						CVS +nt (%)		CVS _nt (%)
	60-74 (N=262)		75-84 (N=129)		>85 (N=49)		Total		
	N	%	N	%	N	%			
ADL- 6 (Independent)	256	62.59	118	8.85	35	8.5	409	92.95	
ADL- 0.5 (Dependent)	06	19.35	11	35.48	14	45.16	31	7.05	

$X^2 = 44.148, df = 2, p = 0.000$

**Graph 1 – Distribution of dependency in various age groups.**



**Table 5: Gender wise distribution of study subjects according to dependency**

Dependency	Males		Females		Total	
	No.	%	No.	%	No.	%
ADL = 6 (Independent)	240	94.86	169	90.37	409	92.95
ADL = 0.5 (Dependent)	13	5.14	18	9.62	31	7.04

$X^2 = 3.306$ ,  $df = 1$ ,  $P = 0.069$

**Table 6: Gender wise distribution of study subjects according to BMI**

Body Mass Index (kg/m <sup>2</sup> )	Males No. (%)	Females No. (%)	Total No. (%)
Normal (18.50 -24.99kg/m <sup>2</sup> )	148 (58.50)	107(57.22)	251(57.04)
Underweight (<18.50kgm/m <sup>2</sup> )	70(27.67)	38(20.32)	108(24.55)
Overweight & Obese (>25.00kg/m <sup>2</sup> )	35(13.83)	42(22.46)	81(18.41)
<b>Total</b>	<b>253</b>	<b>187</b>	<b>440</b>

$X^2 = 6.967$ ,  $df = 2$ ,  $P = 0.0307$

**DISCUSSION**

Various studies done in the past, point towards understating the need and behaviors of elderly including basic demographic details, family relationships and interactions, employment and income, pensions, assets, health status, and health care utilization, allowing researchers to examine the interactions between different domains.<sup>9,10</sup> Distribution of Diabetes mellitus, hypertension and CVD among study subject according to living arrangement shows that higher levels of diabetes, hypertension and CVD was found in subjects living with their spouses. However this difference was not found to be statistically significant, Analogous findings are not available to support the above findings.

In this study the morbidity pattern as per the socioeconomic class of subjects was observed to be highest in lower middle class i.e. 50.45% for the major morbidities followed by upper lower and then lower class. In another study conducted in Puducherry visualimpairment were higher in BPL. Diabetes mellitus and hypertension found to be more in bpl families. In the same study a decreasing per capita income was seen to be significant associated with visual impairment by multivariate logistic regression ( $p=0.001$ ). Distribution of morbidity pattern of study subjects according to marital status was seen higher in married subjects (hypertension 70 – 67 % diabetes 55.38%, CVS – 69.13%). However reverse association was seen in a study conducted in rural area of Haryana by

Joshi K et al showing lower number in married geriatric subjects. In yet another study by Sharma et al significantly higher mean number of morbidity was seen in widowed geriatric subjects as compared to their married counterparts.<sup>7-12</sup>

In this study distribution of elderly subjects according to dependency showed that only 7.05% were dependent in comparison to 92.95% who were independent by Katz criteria. The same findings were also found by Srivastav M et al they found that 7.5% of elderly in rural areas had decreased activities of daily living score. 92.5% of rural elderly had score 6 in Katz ADL scoring.<sup>8-14</sup>

There was a strong association between increasing age and dependency. Maximum number of dependants were in age group of >85 years (45.16%) followed by 75 – 84 years (35.48%). Similar pattern were found in a study conducted by Sonn U. Where 83% were independent in all activities at the age of 70.<sup>9-17</sup>

Gender distribution of subjects for dependency showed that more of females (9.62%) were dependent in activities of daily living compared to males (5.14%). This is supported by Ohri P et al. Where females were significantly more dependent compared to males. This can be explained by the fact that majority of the females were housewives. However in an another study conducted by Srivastava et el, equitable dependency was seen in both the sexes.

In this study distribution of comorbidities according to physical dependency showed that of all the physically dependant elderly subjects, 41.9% were diabetics, 29.03% had CVD, 25.81% had hypertension. In a study conducted in a hilly state of Northern India 14.2% of hypertensives, 3.4% diabetes and 28.1% of subjects with coronary disease had functional impairment however this findings was not statistically significant.<sup>6-18</sup>

As seen in the study majority of the elderly majority of the elderly subjects had normal BMI (57.04%). Parallel findings were seen in a study by Tiwari et al, where 56.4% of males and 45.0% of females were in the category of normal BMI (51) 24.55% of subjects were underweight while 18.41% were overweight. However diverse findings were seen in the same study, where 26.3% in males and 46.5% females were underweight and 17% of males and 8.5% of females were obese.

In our study population 52.95% of individuals were found addicted to chewing tobacco whereas 47.05% were found with no addiction to tobacco. Out of which 68.77% were males and 31.55% were females. Strong associated of gender was seen ( $p < 0.001$ ). Studies by Jadhav et al and Ubaidulla et al showed that 37.76% and 22.88% were addicted to tobacco.<sup>7-18</sup>

In this study 37.05% of the geriatric population was found to be addicted to smoking with a gender divide of 55.33% in males and 12.30% in females. This difference was statistically significant ( $p < 0.001$ ). In a study by Ubaidulla et al 21.75% of individuals were

found to be smoking which is somewhat close to the findings in my study.<sup>11-19</sup>

The present study shows that 26.82% of the geriatric subjects were found to be living in overcrowded conditions whereas overcrowding was absent in 73.18% of the subjects. It showed that most of the geriatric individuals prefer to stay alone reflecting their unhealthy psychological status.

## CONCLUSION

Current morbidity is higher in rural geriatric population with reference to perceived illness in physical & psychological domains and sufficient measures should be taken to resolve this issue

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