

## An Analysis of Association between Socio-Demographic Determinants and Health Status of Geriatric Population in Rural Area Siddharthnagar District (UP)

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### Abstract

**Introduction:** The aged person's quality of life is known to be threatened by several issues and factors including social factors, psychological or physical. Usually, there is a rise of several health issues with increasing age and deterioration of quality of life. It has been observed that 7.7% of the whole population in India is over 60 years and there is a serious situation to understand the health status of the geriatric population of India to determine the overall status of the population. The determination of the health status can be done by employing and effective use of several determinants including some already constructed tools or questionnaires. There is a need to evaluate the variation of several determinants with the health status of the population.

**Aims:** The study is intended to find out the variation of health determinants with that of the health status among the geriatric population.

**Materials and Methods:** This is a cross sectional study employing interviews, physical examinations, analysis of the records, etc for collection of data from geriatric population. Several tools have been used in this study to determine their quality of life including their socio-economic status and mental status and correlating with their health status.

**Results:** The study has found that the daily activities are affected with increasing age and with decreasing educational status ( $p < 0.05$ ).

**Conclusion:** The study has concluded that with increasing age, the daily activities are affected significantly ( $p < 0.05$ ) and are less affected in people with more education which is also found to be statistically significant ( $p < 0.05$ ).

**Keywords:** geriatric, quality of life, socio-demographic determinant, mental status

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## Introduction

Every component of aging impacts the physical, psychological, hormonal, and social aspects of the human body [1]. The elderly's quality of life is known to be impacted by these changes. Body morphology will change, organ function will be less capable, and interests in daily activities, attitudes, behaviors, and lifestyles will change. As people age, health issues will begin to develop. The elderly's quality of life is anticipated to be impacted by these developments [1, 2].

The world in which we live is rapidly becoming older. "Population aging" is the result of the existing global and national demographic structure changing toward a bigger share of the elderly [3]. India is an aging country as well, with 7.7% of the population being over 60 years. The drop-in death rates, along with improvements in child survival and greater life expectancy, have all contributed to the demographic trend of an increasing share of elderly people in the population [4]. By 2025, the bulk of the world's elderly people are expected to reside in developing countries. In India, there are 53 million females and 51 million males who are 60 years of age or older, according to the 2011 population census. By 2030, it is predicted to reach a total of 198 million [5].

The fact that 7% of India's population is elderly shows that the country is going through a demographic change. According to projections by the UN Population Division, by 2050, the number of elderly people will quadruple in Africa and triple in Asia, with one-sixth of the world's population living in developing nations [6].

In every nation on earth, the rate at which the population is aging is a major worry [7]. Health, the economy, and social issues are the three areas where the influence is most noticeable. An increase in economically nonproductive dependent people is being brought on by the proportion of old people rising [8]. Due to this and fast accelerating urbanization, the elderly nonproductive

population in rural areas has very little social and economic assistance. Due to social isolation, this has also increased the morbidities of both physical and mental health [9].

The rise in aging-related degenerative diseases and changing lifestyles that results from an older population has a direct impact on the demand for health services [10]. Both communicable and non-communicable diseases affect the elderly, and their already compromised senses (such as eyesight, hearing, and balance) make matters worse. The elderly is more likely to contract communicable diseases as a result of poor lifestyle choices, immune system weakening, and age-related physiologic changes [11].

An increasing prevalence of social and psychological distress is linked to chronic morbid illnesses, which typically accompany the old [9, 11]. These issues itself may contribute to the physical illness's onset, progression, and aggravation, creating a vicious cycle. Therefore, major determinants of the quality of life of the elderly include characteristics like health condition, the degree of disability, views of one's sickness, the availability of family support, social security, medical care, and psychological well-being [8-10].

Recent times have seen a shift in how public health issues are approached. The qualitative analysis will provide a clearer picture of the situation than the quantitative measurements of a problem [12]. Thus, the current statistics on the aged in India gives a new dimension for the medical, social and economic concerns that can burst if a timely action is not taken by the authorities, in this regard. The need to draw attention to the medical and mental issues that India's aging population faces is acute. Additionally, methods for achieving a general improvement must be investigated [12].

This study aims to identify the factors influencing senior citizens living in rural locations. This could be used as a baseline for the future design of services for this group of older people. In order to develop a comprehensive health care strategy that addresses all facets of preventive, primitive, curative, and rehabilitative treatments for the elderly living in this remote area of the world, this study will aid us in understanding and evaluating their health issues.

## Materials and Methods

### Study Design

This is a cross-sectional observational community-based study. The current study was conducted in rural area of Datrangwa Siddharthnagar in Uttar Pradesh. It was conducted between August 2021 to July 2022. The study has employed techniques such as interviews, physical examinations, analysis of the records, etc for analyzing the collected data and conduct the statistical analysis.

### Inclusion Criteria

The included participants were 60 years of age and above, residence of Datrangwa Siddharthnagar (Uttar Pradesh) for more than 6 months, those who satisfactorily provided information about their own's physical, mental and social status, those who cooperated to provide the demographic status and were able to communicate with us satisfactorily.

### Exclusion Criteria

The participants who were excluded are those who had chronic and severe conditions more than 20 years, people with

recent accidents, those who did not cooperate with our study procedure and did not complete the whole study process.

### Data Collection and Sampling

The study employed several tools including questionnaire, Barthel Index, Mini Nutritional Assessment, Perceived Stress Score and Uday Pareek Socio-economic status. Participants were selected randomly. The participants were told clearly about the study and the aim of the study. After the participants agreed with the study procedure and to share information, the interview was conducted with each participant. The interview questions were asked in local language and required privacy and care was preserved. Each participant was asked the interview questions privately to ensure the influence of the family members or other people. In total, 450 participants were selected, given that, the inclusion and exclusion criteria were met.

### Statistical analysis

The study conducted statistical analysis using SPSS 25 employing ANOVA for analysis. The study expressed descriptive measurements as mean value  $\pm$  standard deviation. The level of significance was considered to be  $\alpha = 0.05$ .

### Results

The study has found that almost over 80% of the study participants are with 79 years old. 65.78% of the total participants are male and the number of participants in each educational status are also similar. Most of the participants are from Middle class (34.44%) while 31.11% of the total participants are from lower middle class.

**Table 1: Demographic characteristics of the study sample**

Characteristics	Category	Findings (n)	%
Age	60-69 years	192	42.67
	70-79 years	185	41.11
	80-89 years	73	16.22
Gender	Male	296	65.78
	Female	154	34.22

Religion	Hindu	223	49.56
	Islam	152	33.78
	Christian	75	16.67
Occupation	Labourer	89	19.78
	Service	115	25.56
	Business/Self-employed	101	22.44
	Farmer/Cultivation	145	32.22
Education	Illiterate	118	26.22
	Primary	116	25.78
	Middle	96	21.33
	High School	76	16.89
	Graduate	44	9.78
	Post graduation	0	0.00
House	Hut/Small/Mud House	132	29.33
	Brick House	196	43.56
	Mixed (Mud + Brick)	122	27.11
Socio-economic status	Lower class	130	28.89
	Lower Middle class	140	31.11
	Middle class	155	34.44
	Upper Middle class	25	5.56
	Upper class	0	0.00

The study also showed the mental status of the participants according to the questionnaire by Perceived Stress Score (PSS). Table 2 shows the details of number of participants for each characteristic of PSS and their respective markings.

**Table 2: Mental Status of the participants according to PSS**

Characteristics	Not at all	Sometimes	Often	Too many times
	N	N	N	N
Frequency of depression in a week	185	115	120	30
Inability to control the things	180	155	110	5
Perception of stress	135	115	175	25
Confidence to handle problems	155	125	132	38
Perception of felling that things going your way	158	142	91	59
Perception of coping with things	88	215	115	32
Ability to control irritation	51	251	112	36
Thinking about life	126	102	110	112
Feeling of anger that things goes out of control	24	90	211	125
Feeling of difficulties that they cannot overcome	13	83	158	196

The study also evaluated the easeness or difficulty of daily activities and number of participants for each activity. Table 3 shows the detailed findings of the number of participants showing their ability to score Quality of Life (QoL) according to Barthel's Index. The scoring with respective explanation of each score is mentioned in Table 3.

**Table 3: Participants classified as per Barthel's Index**

Activity	Number of participants	%
<i>Feeding</i>		
0 (unable to eat)	169	37.56
5 (needs help from others)	210	46.67
10 (can eat independently)	71	15.78
<i>Bathing</i>		
0 (Dependent)	389	86.44
5 (Independent)	61	13.56
<i>Grooming</i>		
0 (Dependent)	357	79.33
5 (Independent)	93	20.67
<i>Dressings</i>		
0 (unable to dress)	170	37.78
5 (can dress a little)	196	43.56
10 (completely depends on others)	84	18.67
<i>Bowels</i>		
0 (Incontinence)	107	23.78
5 (occasional accident, once/week)	269	59.78
10 (Continence)	74	16.44
<i>Bladder</i>		
0 (Incontinence)	144	32.00
5 (occasional accident, once/week)	247	54.89
10 (Continence)	59	13.11
<i>Toilet usage</i>		
0 (Incontinence)	101	22.44
5 (occasional accident, once/week)	265	58.89
10 (Continence)	84	18.67
<i>Changing places (bed to chair and vice versa)</i>		
0 (immobile)	81	18.00
5 (wheelchair independent, including corners)	122	27.11
10 (walks with help of one person)	206	45.78
15 (independent)	41	9.11
<i>Movability on surface</i>		
0 (cannot move)	103	22.89
5 (can move with complete help from others)	132	29.33
10 (can move with partial help from others)	141	31.33
15 (can move independently)	74	16.44
<i>Using stairs</i>		
0 (unable)	177	39.33
5 (needs help)	204	45.33
10 (independently can climb stairs and come down)	69	15.33

The study has found the significance between several parameters by employing statistical analysis which are listed in Table 4.

**Table 4: Significance tests compared between several parameters**

Comparison between	<i>p</i> -value	Remarks
Daily activities and age	<i>p</i> <0.05	Daily activities are significantly compromised with increasing age
Daily activities and religion	<i>p</i> >0.05	Daily activities are not significantly compromised with corresponding religion
Daily activities and occupation	<i>p</i> >0.05	Daily activities are not significantly compromised with corresponding occupation
Daily activities and education	<i>p</i> <0.05	Daily activities are significantly compromised with more education
Daily activities and social-economic class	<i>p</i> >0.05	Daily activities are not significantly compromised with upgraded socio-economic class
Mental status and age	<i>p</i> <0.05	Mental status deteriorates with increasing age
Mental status and education	<i>p</i> >0.05	Daily activities are not significantly compromised with respective educational status

### Discussion

In a study, it was found that the age range of 60 to 69 years represented 63% of the study individuals. 26.5 % belonged to the 60–64 age groups, and 36.5 % were 65–69 years. In a study conducted at Ambala, Haryana, by Quadri S et al [13], 28.2% of the subjects fell into the 60–64 and 65–69 age groups. 22.2% of subjects in the category of those aged 70 to 74 had at least 75 years of age, whereas 21.4% of subjects in the category above did.

In a study conducted at Shimoga, Karnataka, by Kumar NP et al [14]. in the year 2012–13 to study the morbidity profile of elderly people, 39.6 % of males and 37.2% of females were found in the 60–70 year age group, 20.8 % and 31% of females in the 71–80 year age group, 20.8% of males and 28% of females in the 81–90 year age group, and 18.8 70 % in a study on the morbidity profile conducted by Nikumb V et al [15] in Mumbai, Maharashtra, in 2013 were in the 60 to 69-year-old age range.

The results of the current study's occupational status contradict with those of a survey conducted in Maharashtra by Patle RA [16], which found that 59.3% of men and 13.3% of women were employed compared to 29.2% of men and 81.8% of women who were unemployed. Since even

those who are not frequently actively participating in work were included in the employed category in the current study, it is likely that different criteria were used in the two studies to determine occupational status. Only 20.5% of the elderly in a research by Yerpude YN et al [17] in 2011 in Andhra Pradesh who evaluated the health issues and health seeking behavior of the elderly were still working, and 79.5 % were not.

Only 8.3 % in our study had no morbidities at all, with the average number of morbidities per person coming to 3 overall. These results are comparable to those of a study conducted in rural Tamil Nadu by Purty et al [18], where the average number was recorded as 2.77, and Swami et al., [19] who reported 3.28 among elderly Chandigarh residents. Also noted were the 662 total morbidities among the 230 elderlies, with females accounting for 58.9% of the total morbidities. This was discovered to be comparable to the Kashmir study by Parray et al., [20] in which there were 632 total morbidities and an average of 3.28 illnesses per individual.

In this study, cataract (50.4 %) and orthopedic issues were the most prevalent morbidities experienced by the elderly (50.4%). Following this were dental issues (26.5%), gastrointestinal issues (26.5%),

and respiratory conditions (31.3%). Approximately 21.3% and 17.4% of them had hypertension and diabetes, respectively. Only a very tiny percentage of elderly people (3.5%) and those with cancer had heart disease (0.4%). Similar results were observed in research carried out in Udaipur by Prakash et al., [21] where cataracts were the most prevalent illness among the elderly (44%).

Munshi et al. [22] discovered that % of the elderly in Kashmir Valley had cataracts. Musculoskeletal diseases came in second, accounting for 44.7% of cases, while gastrointestinal disorders came in third, accounting for 17.1%. Respiratory problems affected 11.4% of respondents, whereas 15.2% had genitourinary conditions. In this study, it was shown that the prevalence of morbidity increased along with age, and this relationship between age and morbidity was found to be statistically significant ( $P < 0.05$ ). Similar results were obtained in a research by Joshi et al. [23] and Medhi et al. [24] done in North India, where it has been noted that there was a considerable increase in morbidity among some of the elderly as age advanced. [25]

In order to develop geriatric clinics at all levels of healthcare, including the major referral hospitals, we conclude that geriatric care should become a fundamental component of the primary healthcare delivery system. It is necessary to use a multidisciplinary approach and build medical teams with geriatric medicine specialists, social workers, occupational therapists, physiotherapists, and psychiatrists. In order to ensure healthy aging by encouraging healthy behavior early in life for the "elderly of tomorrow" and thereby "adding healthy life to years," regular screening programs, health education, and educational activities for the general community also need to be carried out.

## Conclusion

The study has found out the percentages of total participants in each age group, gender, religion, occupation, education, size of the house, socio-economic status. The mental status of the participants was evaluated according to PSS and the findings have been presented in tabulated form, which shows mental status of most of the participants have been deteriorated to some extent, indicating possible association of mental status deterioration with increasing age which is confirmed by the statistical analysis. The study has concluded that with increasing age, the daily activities are affected significantly ( $p < 0.05$ ) and are less affected in people with more education which is also found to be statistically significant ( $p < 0.05$ ). Again, the study has concluded that, with increasing ages, the mental status of the participants has deteriorated. Thus, there is a need to increase the educational services or continuing education at governmental and non-governmental level. Also, with increasing age, several preventive and care services should be initiated for the geriatric population.

Therefore, the current study has highlighted important findings of health status of the geriatric population which have association with socio-demographic determinants. The study also suggests to carry out more studies with larger and varied population. There is also a need to carry out studies in different parts of the country with more socio-demographic determinants.

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