ORIGINAL ARTICLE

# Social Support and Its Association With Physical Health Among Elderly In District Ghaziabad

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## ABSTRACT

**Background:** India's ageing population is increasing rapidly, leading to more elderly individuals at risk of physical disability and dependence. Social support is essential for maintaining their physical health and functional independence, particularly in rural areas. **Objective:** To assess level of social support and its association with physical health among elderly in district Ghaziabad. **Methods:** A community-based cross-sectional study was conducted among 630 elderly individuals aged ≥60 years residing in rural areas of district Ghaziabad. Participants were selected using multistage random sampling, and data were collected through house-to-house visits using a pre-tested semi-structured questionnaire. Perceived social support was assessed using MSPSS, and physical health was evaluated using the Barthel Index for activities of daily living. Data were analysed using appropriate statistical tests, including chi-square test and Spearman's rank correlation. **Results:** Most participants were aged 60–69 years (42.1%) and male (73.8%). Moderate social support was seen in 65.2% (high: 17.9%, low: 16.8%). The mean Barthel Index was 75.19 ± 29.69, with 42.9% moderately dependent and 25.2% independent. A significant association was found between social support and physical health ($\chi^2 = 147.82$, $p < 0.001$), with a strong positive correlation ($\rho = 0.605$).

**Conclusion**: Higher social support is associated with better physical health and greater independence among the elderly.

## KEYWORDS

Aged; Social support; Activities of daily living; Physical functional performance; Disability evaluation; Rural population

## INTRODUCTION

The elderly population is rising rapidly, with many older adults living alone due to migration, leading to loneliness and lack of care, especially in rural areas.(1) The elderly population (≥60 years) is expected to rise by 326% and those ≥80 years by 700% between 2000 and 2050. In India, many elderly—especially in rural areas—face financial difficulties and are unable to save for old age. (2) With ageing, ADL decline, leading to poorer quality of life and increased healthcare and financial burden. Hence, ADL assessment is important, and the Barthel Index is recommended for routine use in older adults. (3).Disability can be assessed using the Barthel Index, and social support helps individuals stay connected, valued, and supported. (5).Social support is essential for maintaining the health and well-being of older adults. Lack of support can lead to poorer physical health and a higher risk of disability, especially among those living alone or only with a spouse. (6) With ageing, physical abilities decline, making daily activities difficult, while poor social support increases the risk of disability.(7)

So the present study was done to assess Social support and its association with physical health among elderly in district Ghaziabad.

## MATERIAL & METHODS

**Study Type & Study Design-** A community-based cross-sectional study

**Study Setting:** The study was carried out in rural areas of District Ghaziabad, Uttar Pradesh, specifically in Asalat Nagar and Sainthli villages which comes under PHC Muradnagar using multistage random sampling technique.

**Study Population:** Elderly individuals who were aged 60 years and above residing in rural areas of district Ghaziabad

**Study Duration**: The study was conducted over a period of 26 December 2024 to 30 July 2025.

**Sample Size**: Calculation Sample size was determined using Fisher's formula:

Where,

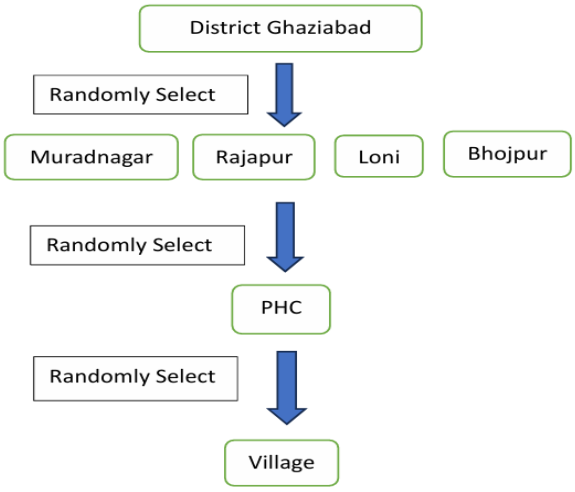
n= Sample Size

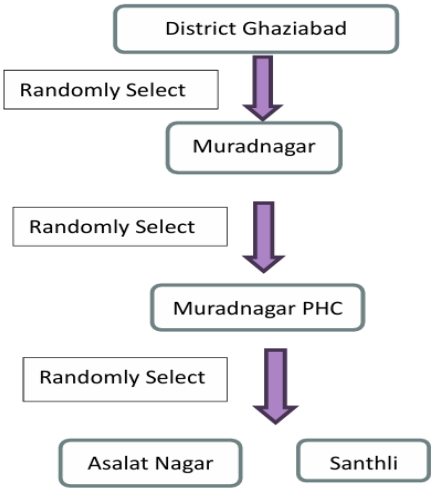
Z= 1.96 (95% confidence limit)

p = 38.47 (by following the previous study Khandre R. R. et al. (2023) in Wardha , the prevalence of moderate social support was found to be 38.47%
l= 10% relative precision of p
$n = \frac{1.96 \times 1.96 \times 38.47(100-38.47)}{3.8 \times 3.8}$ =630

**Inclusion criteria:** Elderly of 60 years of age and above
Elderly people who are willing to give consent
Elderly people who were able to complete a normal conversation and communicate about their experiences
**Exclusion criteria:** Age <60 years
Elderly who were not willing to give consent.
Elderly who were not able to speak due to some illness
Elderly who were not present in their house
Elderly who had psychotic disorder beside depression
**Strategy for Data Collection**- Participants were selected using a multistage random sampling technique. Data were collected through house-to-house visits, and one eligible elderly participant per household was selected for inclusion in the study.
**Study Tool / Working Definition**- Data were collected using a pre-designed and pre-tested semi-structured questionnaire, which included:
MSPSS (Multidimensional Scale of Perceived Social Support): to assess perceived social support
Barthel Index: to assess physical health in terms of activities of daily living (ADL)
**Ethical Issues & Informed Consent**- Ethical approval was obtained from the institutional Ethical committee, Santosh Medical college before the start of the study and Informed consent was taken prior to the interview and privacy and confidentiality was maintained throughout the process.
**Data Analysis (Software)**- Data was entered and analyzed using SPSS software version 26.

**Flow Diagram:**




## RESULTS

Table 1 The majority of participants were in the 60–69 years age group and were predominantly male. Most participants belonged to the Hindu religion and the general caste category. Over half were married, and joint family was the most prevalent family structure. A considerable proportion were not working, and nearly half were financially dependent.
The figure 1 depicts the percentage distribution of participants' responses to the 12 items of the Multidimensional Scale of Perceived Social Support. Responses are presented across the Likert scale categories ranging from strongly disagree to strongly agree.
Table 2 The majority of participants had a moderate level of social support, while smaller proportions reported either low or high levels of support.
Table 3 and Figure 2 Most participants were independent in basic activities such as feeding, bathing, grooming, dressing, toileting, transfers, and mobility. However, a considerable proportion required assistance with bowel and bladder control, and difficulty in climbing stairs was notably common.
Table 4 Most participants had moderate dependence, followed by total independence. Smaller proportions showed severe or total dependence, while only a few had slight dependence.
Table 5 The overall mean Barthel Index score indicated a moderate level of functional ability among the participants.
Table 6 The scores showed a wide distribution, with a high median and mode, indicating that a considerable proportion of participants had good functional ability.
The present study demonstrates a strong positive relationship between social support and physical independence among the elderly. Participants with higher perceived social support were more capable of performing daily activities independently, as reflected in higher Barthel Index scores. There was a statistically significant association between overall social support and physical health status (Barthel Index) among the elderly with p value< 0.001.
Higher perceived social support was associated with better physical health and greater independence in ADL. There was a statistically significant association between perceived social support (MSPSS Score) and physical health status as measured by Barthel Index among the elderly with p value< 0.001

**Table-I: Socio-Demographic Profile of Participants.**

| Socio-demographic Characteristics | Number (n) | Percent (%) |
|---|---|---|
| Age | | |
| 60-69 | 265 | 42.1% |
| 70-79 | 193 | 30.6% |
| 80-89 | 109 | 17.3% |
| >90 | 63 | 10.0% |
| Gender | | |
| Male | 465 | 73.8% |
| Female | 165 | 26.2% |
| Religion | | |
| Hindu | 523 | 83.0% |
| Muslim | 67 | 10.6% |
| Christian | 16 | 2.5% |
| Sikh | 24 | 3.8% |
| Caste | | |
| General | 411 | 65.2% |
| Other Backward Class | 82 | 13.0% |
| Scheduled Caste | 130 | 20.6% |
| Schedule Tribe | 7 | 1.1% |
| Marital Status | | |
| Unmarried | 4 | 0.6% |
| Married | 332 | 52.7% |
| Divorced/Separated | 58 | 9.2% |
| Widow/Widower | 236 | 37.5% |
| Family Type | | |
| Nuclear Family | 190 | 30.2% |
| Joint Family | 374 | 59.4% |
| Three Generation Family | 66 | 10.5% |
| Working status | | |
| Working | 226 | 35.9% |
| Not Working | 404 | 64.1% |
| Financial Dependency | | |
| Yes | 306 | 48.6% |
| No | 324 | 51.4% |
| Total | 630 | 100 % |

**Figure 1: Distribution of Responses to MSPSS Item**

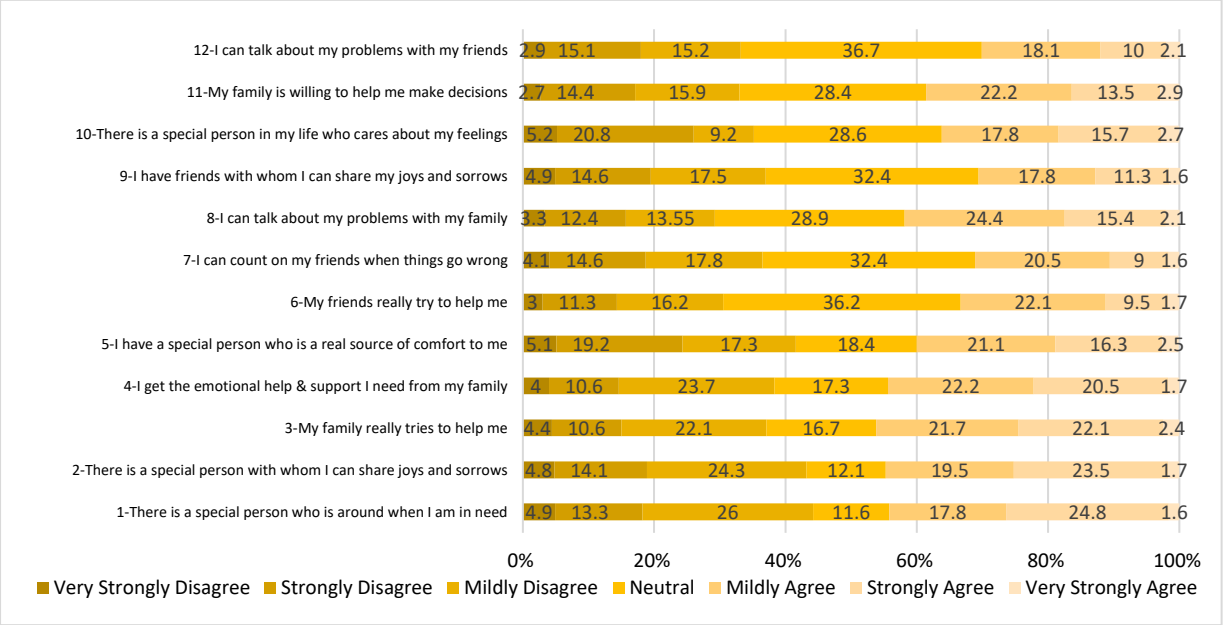



**Table 2: Distribution of Study Participants as per Level of Social Support**

| S. No | Level of Support | Number | Percentage |
|---|---|---|---|
| **1.** | Low Support (12-35) | 106 | 16.8 |
| **2.** | Moderate Support (36-60) | 411 | 65.2 |
| **3.** | High Support (61-84) | 113 | 17.9 |
| **Total** | | **630** | **100.0** |

**Figure 2: Level of Social Support**

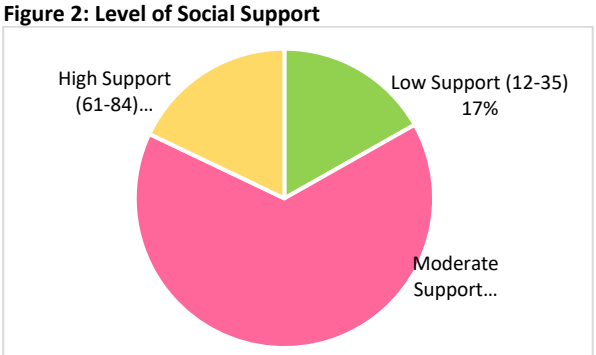


**Table 3: Distribution of Study Participants According to Functional Ability Based on Barthel Index Items**

| Barthel Index Item | Category | Score | Number (n) | Percentage (%) |
|---|---|---|---|---|
| **Feeding Ability** | Unable | 0 | 83 | 13.2 |
| | Needs help cutting, spreading butter etc or requires modified diet | 5 | 93 | 14.8 |
| | Independent | 10 | 454 | 72.1 |
| **Bathing Ability** | Dependent | 0 | 132 | 21.0 |
| | Independent (or in shower) | 5 | 498 | 79.0 |
| **Grooming Ability** | Needs to help with personal care | 0 | 158 | 25.1 |
| | Independent (face/ hair/ teeth/ shaving) | 5 | 472 | 74.9 |
| **Dressing Ability** | Dependent | 0 | 90 | 14.3 |
| | Needs help but can do half aided | 5 | 109 | 17.3 |
| | Independent (including buttons, zips, laces etc) | 10 | 431 | 68.4 |
| **Bowel Control** | Incontinent (or needs to be given enema) | 0 | 63 | 10.0 |
| | Occasional Accident | 5 | 141 | 22.4 |
| | Continent | 10 | 426 | 67.6 |
| **Bladder Control** | Incontinent, or catheterized and unable to manage alone | 0 | 66 | 10.55 |
| | Occasional Accident | 5 | 187 | 29.7 |
| | Continent | 10 | 377 | 59.8 |
| **Toilet Use** | Dependent | 0 | 68 | 10.8 |
| | Needs some help, but can do something alone | 5 | 124 | 19.7 |
| | Independent (on and off, dressing, wiping) | 10 | 438 | 69.5 |
| **Transfers (Bed to Chair and Back)** | Unable, no sitting Balance | 0 | 40 | 6.3 |
| | Major Help (one or two people, physical) can sit | 5 | 60 | 9.5 |
| | Minor Help (verbal or physical) | 10 | 140 | 22.2 |
| | Independent | 15 | 390 | 61.9 |
| **Mobility** | Immobile<50 yards | 0 | 69 | 11.0 |
| | Wheelchair Independent, including corners>50 yards | 5 | 35 | 5.6 |
| | Walks with help of one person (verbal or physical) >50 yards | 10 | 89 | 14.1 |
| | Independent (but may use any aid for ex- stick) >50 yards | 15 | 437 | 69.4 |
| **Stairs** | Unable | 0 | 291 | 46.2 |
| | Needs Help (verbal, physical, carrying aid) | 5 | 133 | 21.1 |
| | Independent | 10 | 206 | 32.7 |
| **Total** | | | 630 | 100 |

**Table 4: Distribution of Study Participants by Barthel Index Score**

| S. No | Barthel Index Score Range | Functional Category | Frequency (n) | Percentage (%) |
|---|---|---|---|---|
| **1.** | 0-20 | Total Dependence | 68 | 10.8 |
| **2.** | 21-60 | Severe Dependence | 94 | 14.9 |
| **3.** | 61-90 | Moderate Dependence | 270 | 42.9 |
| **4.** | 91-99 | Slight Dependence | 39 | 6.2 |
| **5.** | 100 | Total Independence | 159 | 25.2 |
| **Total** | | | 630 | 100 |

**Table 5: Mean and Standard Deviation of Barthel Index Scores**

| S. No | Variable | Mean | Standard Deviation (SD) |
|---|---|---|---|
| **1.** | Barthel Index Score | 75.19 | 29.69 |

**Table 6: Minimum, Maximum, Range, Median and Mode of Barthel Index Scores**

| S. No | Statistic | Barthel Index Score |
|---|---|---|
| **1.** | Minimum | 0 |
| **2.** | Maximum | 100 |
| **3.** | Range | 100 |
| **4.** | Median | 90 |
| **5.** | Mode | 100 |

**Table 7: Association of Overall Social support and physical health (Barthel Index Category) among elderly**

| Level of Social Support (MSPSS) | Dependence n (%) | | | | | Total Independence (100) | Total (n=630) |
|---|---|---|---|---|---|---|---|
| | Total (0–20) | Severe (21–60) | Moderate (61–90) | | Slight (91–99) | | |
| **Low Support (12–35)** | 58 (54.7) | 29 (27.4) | 16 (15.1) | | 2 (1.9) | 1 (0.9) | **106 (100)** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Moderate Support (36–60)** | 10 (2.4) | 54 (13.1) | 221 (53.8) | 32 (7.8) | 94 (22.9) | **411 (100)** |
| **High Support (61–84)** | 0 (0.0) | 11 (9.7) | 33 (29.2) | 5 (4.4) | 64 (56.6) | **113 (100)** |
| **Total** | **68 (10.8)** | **94 (14.9)** | **270 (42.9)** | **39 (6.2)** | **159 (25.2)** | **630 (100)** |

*Chi-square- 147.82 df- 8 p<0.001*

**Table 8: Corelation between Total Social Support score and Barthel Index Score (Spearman's Rank Corelation)**

| Variables Correlated | Mean (SD) | Spearman's Correlation (ρ) | p-value |
|---|---|---|---|
| **MSPSS Total vs. Barthel Index** | 47.95 (13.88) vs 75.19 (26.69) | 0.605 | < 0.001 |

## DISCUSSION

In the present study, the largest proportion of elderly participants belonged to the 60–69 years age group 265 (42.1%), followed by those aged 70–79 years 193 (30.6%), while the least number were aged above 90 years 63 (10%). A similar age distribution was reported by Gupta et al. (2017) in rural Jhansi, where most elderly participants were in the 60–69 years age group 172 (65%).(8)

Males constituted a higher proportion of the study population 465 (73.8%) compared to females 165 (26.2%). This finding is comparable to Gupta et al. (2017), who also observed male predominance 57% males and 43% females among elderly participants.(8)

The majority of participants were Hindus 523 (83.0%), followed by Muslims 67 (10.6%), Sikhs 24 (3.8%), and Christians 16 (2.5%), reflecting the religious composition of the study area. Similar findings were noted by Khandre et al. (2023) in Maharashtra, where Hindus constituted around 75% of the elderly population, followed by Muslims about 18%.(9)

In this study, elderly belonging to the General caste formed the largest group 411 (65.2%), followed by Scheduled Castes 130 (20.6%), Other Backward Classes 82 (13.0%), and Scheduled Tribes 7 (1.1%). Comparable results were reported by Mondal et al. (2024), where 55.3% of elderly belonged to the General caste followed by Scheduled Caste 18.7% and OBC 18%.(10)

More than half of the elderly participants were married 332 (52.7%), while a substantial proportion were widowed (236; 37.5%). Divorced or separated elderly constituted 58 (9.2%), and only 4 (0.6%) were unmarried. Mondal et al. (2024) similarly reported that most elderly were married 134 (89.3%), with a smaller proportion being widowed, unmarried, divorced, or separated.(10)

Regarding family type, the majority of elderly lived in joint families 374 (59.4%), followed by nuclear families 190 (30.2%), and three-generation families 66 (10.5%). This finding indicates the continued importance of joint family systems and is supported by Saha et al. (2021), who reported that 79.1% of elderly resided in joint or extended families.(4)

In terms of financial status, 324 (51.4%) elderly were financially independent, while 306 (48.6%) were financially dependent on others. This near-equal distribution highlights financial vulnerability among the elderly and is consistent with Agrawal et al. (2019), who reported that nearly half of the elderly (48.1%) were partially dependent on others for financial support.(11)

In the present study, the majority of elderly participants had moderate social support as assessed by the MSPSS scale 411 (65.2%), followed by those with high social support 113 (17.9%) and low social support 106 (16.8%). A similar pattern was reported in a study from Purba Bardhaman district, West Bengal (2023), where 44.1% of elderly had moderate social support, 36.6% had low social support, and 19.3% had high social support.(12)

In this study, the family subscale recorded the highest mean score (4.12 ± 1.26), indicating that family was the strongest source of perceived social support among the elderly. This finding is consistent with Khandre et al. (2023), who reported a higher family subscale score (5.26 ± 1.20), further emphasising that family continues to be the primary source of support for elderly individuals in the Indian context.(9)

In the present study, the largest proportion of elderly had moderate dependence 270 (42.9%), followed by those who were totally independent 159 (25.2%). Severe dependence was observed in 94 (14.9%) elderly, total dependence in 68 (10.8%), and slight dependence in 39 (6.2%). These findings indicate that although one-fourth of the elderly were fully independent, a considerable proportion required partial or complete assistance in activities of daily living such as bathing, dressing, toileting, and mobility. Similar findings were reported by Gupta et al. (2017) in Jhansi, where 23.4% of elderly had ADL disability using the Barthel Index, highlighting the common occurrence of functional dependence among community-dwelling elderly.(8)

The mean Barthel Index score in the present study was 75.19 ± 29.69, indicating wide variability in functional status among participants. Barthel Index scores ranged from 0 to 100, with a mode of 100 and a median of 90. The median score suggests that more than 50% of the elderly were able to perform daily activities with little or no assistance, while the presence of very low scores indicates a vulnerable subgroup requiring extensive care.

## CONCLUSION

The present study revealed that most elderly individuals had moderate social support and moderate functional dependence. A statistically significant association and strong positive correlation were observed between perceived social support and physical health status. Elderly individuals with higher social support demonstrated better functional independence in activities of daily living. These findings emphasize the critical role of social support in promoting healthy ageing and improving quality of life among the rural elderly population.

## RECOMMENDATION

- Strengthening family-based support systems should be encouraged through awareness and counselling, as family remains the primary source of support for the elderly.
- Community-level interventions such as elderly support groups, day-care centres, and social engagement activities should be promoted to reduce isolation and improve well-being.
- Integration of geriatric care services at primary healthcare level (PHC) should be strengthened, including routine assessment of ADL using simple tools like the Barthel Index.
- Government should enhance social security schemes and financial support programs for elderly, especially in rural areas.
- Regular screening and monitoring of elderly health and functional status should be incorporated into existing national health programs.

## LIMITATION OF THE STUDY

- The study was done in only few rural areas of Ghaziabad, so the results may not apply to all populations.
- Social support was measured using self-reported responses, so there may be some bias.

## RELEVANCE OF THE STUDY

This study adds to existing knowledge by providing evidence that higher social support is strongly associated with better physical health and functional independence among the rural elderly. It highlights the importance of social support as a key determinant of healthy ageing. The study also emphasizes the need to focus on strengthening family and community support systems in rural settings, where formal care services are limited.

## AUTHORS CONTRIBUTION

All authors have contributed equally.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Nil


## CONFLICT OF INTEREST

There are no conflicts of interest.


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## DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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