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Assessment of Quality of Life and its Associated Sociodemographic Factors Among the Geriatric Population in Rural Thane, Maharashtra: A CrossSectional Study

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ABSTRACT

Background: Quality of Life (QOL) among the elderly is a multidimensional construct encompassing physical health, psychological well-being, social relationships, and environmental conditions. In India, the geriatric population is rapidly expanding, yet QOL research in rural settings remains limited.
Objectives: To assess QOL domains among the elderly in rural Thane, to estimate the prevalence of self-reported morbidities, and to determine associations between sociodemographic variables and QOL scores.
Methods: A community-based cross-sectional study was conducted among 106 geriatric individuals (aged ≥60 years) in Vangani Gaav, rural Thane, Maharashtra, using systematic random sampling (k=44) from a total of 4,652 registered households. A semi-structured, pre-tested 33-item questionnaire based on WHOQOL-BREF domains was used, scored on a 5-point Likert scale. Data were analysed using jamovi; descriptive statistics, independent t-tests, and Pearson correlation were applied.
Results: Mean age was 67.75 ± 7.06 years. Females constituted 54.7%. Morbidity prevalence was 60.4%; cataract/visual impairment (48.1%) was most prevalent. Mean overall QOL was 4.31 ± 0.37/5. Social domain scored highest (4.75 ± 0.38); Physical domain lowest (3.78 ± 0.38). Current illness significantly predicted lower QOL ($t = -4.59$, $p < 0.001$). Age negatively correlated with QOL ($r = -0.238$, $p = 0.014$).
Conclusion: Physical health was most impaired among rural geriatric individuals. Illness status and advancing age were significant QOL predictors. Targeted geriatric health programmes addressing chronic disease and physical rehabilitation are warranted in rural Maharashtra.

Keywords: Quality of Life, Geriatric, Rural, WHOQOL-BREF, Morbidity, Maharashtra, CrossSectional Study.

INTRODUCTION

Globally, the proportion of older adults is growing at an unprecedented rate. According to the World Health Organization, the number of people aged 60 years and above is expected to double by 2050, reaching 2.1 billion [1]. In India, the 2011 Census recorded approximately 104 million elderly individuals, comprising 8.6% of the total population, a figure projected to rise significantly in subsequent decades [2].

Quality of Life (QOL) is defined by the WHO as an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns [3]. For the elderly, QOL is a particularly complex and multidimensional construct that reflects physical health, psychological state, level of independence, social relationships, personal beliefs, and relationships to salient features of the environment [4].
In India, the rural elderly face unique challenges including limited access to healthcare, lower educational attainment, financial dependency, and social isolation [5]. Maharashtra, one of India's most populous states, has a growing geriatric population in both urban and rural settings [2]. Several community-based studies have documented varied quality of life

among rural elderly across Indian states [6,7]. However, community-based QOL studies specifically targeting rural geriatric populations in Thane district remain scarce [8].

The WHOQOL-BREF is a widely validated, cross-culturally applicable instrument developed by the WHO for assessing quality of life across four domains: Physical Health, Psychological Well-being, Social Relationships, and Environmental Health [3]. It has been used extensively in geriatric QOL research both in India and globally [4,9]. This study was undertaken with the aim of systematically assessing quality of life and identifying its sociodemographic determinants among the elderly population of rural Thane, Maharashtra.

OBJECTIVES

Primary Objective: To assess the Quality of Life (QOL) domains—Physical, Psychological, Social, and Environmental—among the elderly population (aged ≥60 years) residing in rural Thane, Maharashtra.
Secondary Objectives: (i) To estimate the prevalence of self-reported morbidities; (ii) To determine the association between sociodemographic variables (gender, age, marital status, family type, education, income, and illness status) and QOL scores

MATERIALS AND METHODS

Study Design: A community-based, cross-sectional observational study.

Study Setting: The study was conducted in Vangani Gaav, under Sub-centre Vangani 1, Rural Health Training Centre (RHTC), PHC Vangani, Tal. Ambarnath, Dist. Thane, Maharashtra, India. The study area comprises predominantly agricultural and labour-class communities representative of rural Maharashtra.

Study Duration: study was conducted for 3 months from December 2025 to February 2026.
Data collection was conducted from 2nd January 2026 to 27th January 2026, spanning 25 days.

Study Population: All permanent residents aged 60 years and above residing in Vangani Gaav for at least six months prior to the study, willing to provide informed consent.

Inclusion and Exclusion Criteria: Inclusion: (a) Age ≥60 years; (b) Resident ≥6 months; (c) Verbal informed consent.

Exclusion: (a) Severe cognitive impairment/dementia; (b) Bedridden/unable to communicate; (c) Refusal to participate.

Sample Size: Calculated using $N = Z^2(1-\alpha/2) \cdot p \cdot (1-p) / d^2$, where Z = 1.96 (95% CI), p = 0.50, d = 0.10, yielding N = 96, rounded to 106 with 10% non-response buffer.

Sampling Technique: Systematic random sampling was employed. As per the PHC Vangani household register (2025–26), Vangani Gaav has a total registered population of 16,405 individuals across 4,652 households, constituting the sampling frame. The sampling interval (k) was calculated as: $k = 4,652 \div 106 \approx 44$. The first household was selected by lottery (random number 1–44); thereafter, every 44th household was approached sequentially. Where multiple elderly individuals resided in one household, a single participant was selected by chit method. If no eligible individual was found, the next sequential household was substituted.

Study Tool: A semi-structured, pre-tested questionnaire administered via personal interview comprising: Section A — Sociodemographic Profile (age, gender, education, marital status, family type, occupation, income, illness status, healthcare preference); Section B — 33-item QOL scale adapted from WHOQOL-BREF, rated on a 5-point Likert scale (1 = Very Poor/Never to 5 = Very Good/Always). Higher scores indicate better QOL. Negatively-worded items were reverse-coded (Q18: pain, Q31: anxiety/depression). Domain scores represent the mean of constituent item scores.

Statistical Analysis: Data were entered and cleaned in Microsoft Excel 2019. Analysis was performed using jamovi (version 2.7.13). Descriptive statistics, independent samples t-tests, and Pearson's correlation coefficient were applied. A p-value of <0.05 was considered statistically significant.

Ethical Considerations: This study is a non-interventional, community-based observational study involving no clinical procedures, biological samples, or identifiable personal data. As per the guidelines of Rajiv Gandhi Medical College, Thane, formal ethics committee approval was not mandatory for this category of study. Written informed consent was obtained from each participant prior to enrolment. The study was conducted in accordance with the principles of the Declaration of Helsinki. Confidentiality and anonymity were strictly maintained throughout.

RESULTS

Sociodemographic Profile

A total of 106 elderly individuals participated. The mean age was 67.75 ± 7.06 years (range: 60–95 years). The majority belonged to the 60–65 years age group (50.9%). Females constituted 54.7%. Most participants had elementary school

education (50.0%), were married (71.7%), lived in joint families (60.4%), and belonged to the lower middle-income class (74.5%). Detailed sociodemographic characteristics are presented in Table 1.

Table 1: Sociodemographic Characteristics of Study Participants (n = 106)

Sociodemographic Variable	Frequency (n)	Percentage (%)
Age Group (years)		
60 – 65	55	51.9
66 – 70	21	19.8
71 – 75	16	15.1
76 and above	14	13.2
Mean ± SD	67.75 ± 7.06 years	—
Gender		
Female	58	54.7
Male	48	45.3
Education Level		
No formal education	42	39.6
Elementary School (Primary)	53	50.0
High School / College	11	10.4
Marital Status		
Married	76	71.7
Widowed	29	27.4
Single / Unmarried	1	0.9
Type of Family		
Joint Family	64	60.4
Nuclear Family	42	39.6
Monthly Household Income (INR)*		
< ₹20,000 (Lower Class)	4	3.8
₹20,000 – ₹30,000 (Lower Middle Class)	79	74.5
> ₹30,000 (Middle / Upper Middle Class)	23	21.7
Mean ± SD (Median)	₹28,406 ± ₹7,301 (₹30,000)	—
Preferred Healthcare Facility		
Government	45	42.5
Private	22	20.7
Both	39	36.8

* Income grouped per Modified B.G. Prasad Classification (CPI-IW adjusted, January 2025).
Median income (₹30,000) is more representative given mild positive skewness (0.87).

Prevalence of Self-Reported Morbidities

Of the 106 participants, 64 (60.4%) reported one or more illnesses. Cataract or visual impairment was the most prevalent condition (48.1%), followed by joint pain (29.2%), hypertension (13.2%), diabetes mellitus (8.5%), and respiratory illness (3.8%). Participants with multiple morbidities are counted individually per condition (Table 2).

Table 2: Prevalence of Self-Reported Morbidities (n = 106)

Morbidity	Frequency (n)	Percentage (%)
Currently Ill (any illness)	64	60.4

Cataract / Visual Impairment	51	48.1
Joint Pain / Osteoarthritis	31	29.2
Hypertension	14	13.2
Diabetes Mellitus	9	8.5
Respiratory Illness	4	3.8

Note: Total of specific morbidities may exceed 64 due to multimorbidity.

Quality of Life Domain Scores

Domain-wise QOL scores were computed on a 1–5 scale. The Social Relationships domain scored highest (4.75 ± 0.38) and Physical Health scored lowest (3.78 ± 0.38). The overall mean QOL score was 4.31 ± 0.37 (Table 3).

Table 3: Mean QOL Domain Scores (Scale: 1–5)

QOL Domain	Mean	SD (±)	Range
Physical Health	3.78	0.38	2.00 – 4.62
Psychological Well-being	4.48	0.50	1.12 – 5.00
Social Relationships	4.75	0.38	2.33 – 5.00
Environmental Health	4.23	0.60	3.00 – 5.00
Overall QOL Score	**4.31**	**0.37**	**2.11 – 4.88**

Association of Sociodemographic Variables with QOL

Table 4 presents the independent samples t-test results. Current illness status was the only sociodemographic variable with a statistically significant association with total QOL score ($t = -4.59$, $p < 0.001$). Gender ($p = 0.202$), family type ($p = 0.327$), and marital status ($p = 0.081$) showed no significant differences.

Table 4: Association Between Sociodemographic Variables and Total QOL Score

Variable	Group	n	Mean QOL ± SD	t-value	p-value
Gender	Male	48	4.36 ± 0.46	1.284	0.202 (NS)
	Female	58	4.27 ± 0.28		
Family Type	Joint	64	4.28 ± 0.41	−0.986	0.327 (NS)
	Nuclear	42	4.35 ± 0.30		
Illness Status	Currently Ill	64	4.19 ± 0.36	−4.588	< 0.001**
	Not Currently Ill	42	4.49 ± 0.31		
Marital Status	Married	76	4.34 ± 0.38	1.763	0.081 (NS)
	Widowed	29	4.20 ± 0.24		

** $p < 0.001$ — statistically significant. NS = Not Significant ($p > 0.05$).

Table 5 presents Pearson correlation results for continuous variables.

Table 5: Pearson Correlation of Age and Income with Total QOL Score

Variable	Pearson's r	p-value	Interpretation
Age (years)	−0.238	0.014*	Weak negative correlation (significant)
Monthly Income (INR)	+0.015	0.882 (NS)	No significant correlation

* $p < 0.05$ — statistically significant.

QOL Scores by Age Group

A declining trend in QOL was observed with increasing age. The 60–65 years group recorded the highest mean QOL (4.41 ± 0.43) and the 76+ years group the lowest (4.08 ± 0.30), consistent with the significant negative correlation between age and QOL (Table 6).

Table 6: Mean Total QOL Score by Age Group

Age Group	n	Mean QOL ± SD
60 – 65 years	54	4.41 ± 0.43
66 – 70 years	21	4.30 ± 0.24
71 – 75 years	16	4.18 ± 0.24
76 years and above	14	4.08 ± 0.30

DISCUSSION

This cross-sectional study assessed QOL among 106 elderly individuals in rural Thane, Maharashtra. The dominance of females (54.7%) reflects higher female life expectancy and rural household composition patterns [2].

The morbidity prevalence of 60.4% is consistent with findings from rural Wardha, Maharashtra [6]. Cataract or visual impairment was the most prevalent condition (48.1%), consistent with WHO estimates that cataract is the leading cause of visual impairment in India, particularly where surgical access remains limited [1]. Joint pain (29.2%), hypertension (13.2%), and diabetes mellitus (8.5%) followed, aligning with NSS 60th Round data indicating sensory, musculoskeletal, and cardiovascular disorders as leading morbidities in Indian elderly [5].

The mean overall QOL of 4.31 ± 0.37 indicates moderately good perceived quality of life. Social Relationships scored highest (4.75 ± 0.38), consistent with the predominantly joint family structure (60.4%) providing strong social support [10]. Physical Health scored lowest (3.78 ± 0.38), reflecting the burden of physical morbidities. These findings are consistent with Barua et al. [4] who reported similar domain-wise distribution using the WHOQOL-BREF among Indian elderly.
Illness status was the strongest predictor of QOL ($t = -4.59$, $p < 0.001$). Age showed a significant negative correlation ($r = -0.238$, $p = 0.014$). Gender ($p = 0.202$) and family type ($p = 0.327$) were not significant. Monthly income showed no correlation ($r = 0.015$, $p = 0.882$), likely reflecting income homogeneity in this rural cohort [7].

CONCLUSION

This community-based cross-sectional study among 106 geriatric individuals in rural Thane, Maharashtra revealed a moderately good overall QOL (mean: 4.31/5). Social relationships were the strongest domain, while physical health was most impaired, driven by a high burden of morbidities— cataract/visual impairment (48.1%), joint pain (29.2%), and hypertension (13.2%)—affecting 60.4% of the population.
Illness status and advancing age were identified as statistically significant predictors of reduced QOL. These findings underscore the need for: (i) Strengthening chronic disease management and physiotherapy services at the PHC/RHTC level; (ii) Community-level geriatric screening programmes; (iii) Psychosocial support for widowed and older-old (>75 years) individuals.

LIMITATIONS

The cross-sectional design precludes causal inferences. The study was restricted to a single village (Vangani Gaav), limiting generalisability. Recall bias and social desirability bias in self-reporting cannot be excluded. The adapted QOL tool was not independently validated in this population prior to use. Minor data quality issues (one under-age participant enrolled, isolated missing QOL item responses, and three Q9/Q10 inconsistencies) were identified and addressed in the dataset.

DECLARATIONS

Author Contributions: Dr. Anjali Borade: Conceptualisation, data collection, data analysis, manuscript writing. Dr. Ranjana Zade: Study design, supervision, manuscript review. Dr. Purushottam Swrate: Data collection, statistical analysis, manuscript review. All authors read and approved the final manuscript.
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Ethical Approval: Written informed consent was obtained from all participants prior to enrolment.

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