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# A study of assessment of the health status of geriatric populationwith special reference to quality of life in urban and urban slum population

**Dr. Leena Salunkhe[1], Dr. Rahul Salunkhe[2], Dr. Prakash Durgawale[3*], Dr. Mahesh Tondare[4]**

[1]Professor, Dept of community medicine, D.Y.Patil Medical College, Kolhapur.India
[2] Consultant Gynacologist, Kolhapur,
[3*] Professor, Department of prevention and community medicine, Krishna Institute of medical sciences, deemed to be university, karad,
[4] Assistant professor, Department of prevention and community medicine, Bidar Institute of Medical sciences, Bidar, Karnataka,

**Corresponding Author**

**Dr.Leena R. Salunkhe**

Professor, Dept of community medicine, D.Y.Patil Medical College, Kolhapur.India

## ABSTRACT

**Background:** Geriatric population requiresspecial needs for theirlife support and health care. Understanding their health-seeking behavior, quality of life (QOL), and morbidities is thus essential for reinforcing health-care services delivery for them.

**Objective:** To assess the health status of geriatric population with special reference to QOL in urban and urban slum population.

**Methodology:** This community based, comparative, cross-sectional studyincluded 288geriatricindividual of either gender, aged≥60 years, from urban (n=153) and urban slum (n = 135) areas. Data was collected through interview for personnel details, family, social and psychological background as per proforma. Medical examination was carried out at home. The QOL was assessed by using tool comprised of Assessment of Quality of Life(AQoL) instrument (Australian Centre for Quality of Life). Statistical analysis was performed by using R software (Version. 3.6.0).

**Results:** Majority of individuals from both the area were in the age group of 60-64 years (35.76%) with female preponderance (Male: Female = 1: 1.2). A significant difference was noted in the demographic and social variables, and HR-QoL(Score) between urban and urban slum area ($P$<0.05). Most individuals in both the area suffered with arthritis. In urban area diabetes and hypertension, and in urban slum area cataract was common morbidity. The mean score for assessment of QOL instrument was higher in case of urban (13.05 ± 7.85) then urban slum area (9.44 ± 7.95). A significant association was observed between HR-QoL (score) and different variables viz. gender, type of family, marital status from urban, and gender, marital status from urban slum area ($p$ <0.05).

**Conclusion:** Due to lack of awareness and poor living conditions the proportion of morbidities is more among geriatric populationin urban slum. However, high expectations from society and believe in having good living conditions along with high expectations, older people in urban area tend to have more depressed life.

**Key words:** Aged, Health Status**,** Mental Health, Morbidity, Quality of Life

## INTRODUCTION

Aging, being an intricate process, is affected by a number of factors. More than 800 million people in the world are over 60 years of age or more, representing 12% of total population.[1]In India, 8.0% population is geriatric population and corresponds to roughly 98 million. In comparison to urban areas (7.9%) the percentage of elderly is more in rural areas (8.1%).[2] By

2026, the geriatric population in India is expected to rise to 12.4% of total population and by 2050it might rise to 20%.[3]

Aging is biologically linked with cellular and molecular damage over age, which further affect the physiological functioning of the body. This enhances the risk of diseases, frailty, and ultimately death.[4]However, these changes are unique in every individual and are not linear. They appear randomly and such changes are highly affected by the behaviors of the individual and the surrounding environment.[5]

In India, the increase among the oldest age of 80 years and above in the geriatric age group is also high (0.8%) and require more special needs for health and support. High levels of health issues, illiteracy, especially among older women in urban slum and rural areas, are yet another facet of susceptibility for senior citizens.[6]

A rapid growth in older population is at risk of a challenge to their quality of life (QOL). In the 21st century the most difficult challenge is to ensure optimal QOL for older people and delay the onset of disability.[7]According to a recent warning by the WHOas people across the world live longer, diminished well-being and soaring levels of chronic illnessare poised to become a major global public health challenge.[8]

The calculation of QoL (Quality of Life) require a scientific and approved tool as it is a subjective phenomenon. The recent and growing interest in valid and sensitive health-related quality of life (HRQoL) measurement has helped in developing such tool.[9,10]Currently there are less reported studies related to this tool, w.r.t geriatric population in urban and urban slum area.[11]Thus, to fill the gap,this study was performedto assess the health status, with special reference to comparative quality of life of elderly in urban and urban slum population.

## MATERIALS AND METHODS

### *Study design*

With the institutional ethics committee's approval (approval no. KIMSDU/IEC/02/2016), this prospective, community based, comparative, cross-sectional studywas conducted in urban and urban slum area of Karad town, Dist.Satara, Maharashtra (India),over a period of 23 months (November 2016 toOctober 2018).Written informed consent was obtained from all the participants included in the study.Random sampling technique/ convenience samplingwas used to get the required sample size.

### *Selection criteria*

Geriatricindividual (288) of either gender,any religion, aged≥60 years,from urban (n=153) and urban slum (n = 135) areas, residing there for at least last six monthswere included in the study. Individuals who were not fit for providing information due to health status, not willing to participate in the study, resided in unauthorized areas or slums, aged<60 years,were excluded from the study.

### *Study assessment tool*

The assessment tool comprised ofAssessment of Quality of Life(AQoL) instrument (Australian Centre for Quality of Life).[9] Itis constituted of 5-dimensions of total 15-items to assess the Health-RelatedQuality of Life (HR-QoL). The dimensions were illness, independence,relationship, senses, and mental health. Each dimension consists of three –items.

The total score ranged from 0-45. The categorization was done as:0-9 = best quality of life; 10-18 = good quality of life; 19-27 = average quality of life; 28-36 =bad quality of life; 37-45 = worst quality of life.

### *Data collection*

Initial visits were paid to develop rapport and to explain nature of study in the groups of study subjects. By house-to-house visits, interviews were taken as per proforma (which was translated into vernacular language)by trained interviewers. Physical examinations were conducted along with interviews. The interview was taken in the local language without changing the meaning of the questionnaire in maximum privacy and confidentiality. The information on personnel data, family, social and psychological background was collected. Thorough physical examination (height, weight) of each elderly subject was carried out at home by the interviewers, and important observations and morbid conditions (medical examination) requiring further investigations were referred to hospital (study center).

The social classification was done according to Modified B.J. Prasad's classification.[12]

***Validity of tool***

Validity of the questionnaire was established by consulting with advisors, extensive literature review, subject matter experts and nursing research faculty along with peer review. The percentage of agreement between content validations was 98%. The content validity index (CVI) across the experts rating for relevance for each item was calculated. A CVI score of 0.80 indicates good content validity. The CVI for total instrument was found 0.99.

***Statistical analysis***

Statistical analysis was performed by using R software (Version. 3.6.0). Data were recorded in Microsoft excel and expressed as mean and standard deviation along with frequency and percentage. Qualitative variables were analyzed using Chi-squaretest of independence and paired *t*-test for continuous variables. Data was considered statistically significant when $P \leq 0.05$.

## RESULTS

This prospective study was carried out on288geriatricindividuals. Majority of individuals in both the residential area were in the age group of 60-64 years (35.76%) with female preponderance (Male: Female = 1: 1.2). Table 1 givesassociation of different variables with residence area (urban and urban slum).

**Table 1: Association of different variables with residence area(urban and urban slum)**

| **Variables** | **Sub-Category** | **Urban (n=153) f (%)** | **Urban Slum (n = 135) f (%)** | **Total (n=288) f (%)** | ***p*-value** |
|---|---|---|---|---|---|
| Age (years) | 60 – 64 | 51 (33.33) | 52 (38.52) | 103 (35.76) | **0.0192[C]*** |
| | 65 – 69 | 41 (26.8) | 42 (31.11) | 83 (28.82) | |
| | 70 – 74 | 24 (15.69) | 25 (18.52) | 49 (17.01) | |
| | 75 – 79 | 15 (9.8) | 12 (8.89) | 27 (9.38) | |
| | ≥80 | 22 (14.38) | 4 (2.96) | 26 (9.03) | |
| Gender | Male | 76 (49.67) | 53 (39.26) | 129 (44.79) | 0.0762[C] |
| | Female | 77 (50.33) | 82 (60.74) | 159 (55.21) | |
| Education | Illiterate | 33 (21.57) | 109 (80.74) | 142 (49.31) | < **0.001[MC]*** |
| | Primary | 30 (19.61) | 19 (14.07) | 49 (17.01) | |
| | Secondary | 47 (30.72) | 4 (2.96) | 51 (17.71) | |
| | Higher secondary | 26 (16.99) | 2 (1.48) | 28 (9.72) | |
| | College | 15 (9.8) | 1 (0.74) | 16 (5.56) | |
| | Graduate | 2 (1.31) | 0 (0) | 2 (0.69) | |
| Head of the family | HOF | 88 (57.52) | 80 (59.26) | 168 (58.33) | 0.7646[C] |
| | No HOF | 65 (42.48) | 55 (40.74) | 120 (41.67) | |
| | Married | 108 (70.59) | 70 (51.85) | 178 (61.81) | |

| | | | | | |
|---|---|---|---|---|---|
| Marital status | Single | 0 (0) | 5 (3.7) | 5 (1.74) | < **0.001$^{MC}$*** |
| | Separated | 0 (0) | 2 (1.48) | 2 (0.69) | |
| | Widower | 45 (29.41) | 58 (42.96) | 103 (35.76) | |
| Type of Family | Joint | 77 (50.33) | 84 (62.22) | 161 (55.9) | **0.0024$^{C}$*** |
| | Nuclear | 46 (30.07) | 43 (31.85) | 89 (30.9) | |
| | Three Generation | 30 (19.61) | 8 (5.93) | 38 (13.19) | |
| Number of members in family | 1 | 9 (5.88) | 9 (6.67) | 18 (6.25) | **0.0093$^{C}$*** |
| | 2 | 25 (16.34) | 6 (4.44) | 31 (10.76) | |
| | 3 | 12 (7.84) | 16 (11.85) | 28 (9.72) | |
| | 4 | 25 (16.34) | 18 (13.33) | 43 (14.93) | |
| | 5 | 36 (23.53) | 49 (36.3) | 85 (29.51) | |
| | ≥ 6 | 46 (30.07) | 37 (27.41) | 83 (28.82) | |
| Socio-Economic status[a] | I | 131 (85.62) | 0 (0) | 131 (45.49) | < **0.001$^{MC}$*** |
| | II | 18 (11.76) | 1 (0.74) | 19 (6.6) | |
| | III | 4 (2.61) | 24 (17.78) | 28 (9.72) | |
| | IV | 0 (0) | 89 (65.93) | 89 (30.9) | |
| | V | 0 (0) | 21 (15.56) | 21 (7.29) | |
| Working status | Working | 18 (11.76) | 45 (33.33) | 63 (21.88) | < **0.001$^{C}$*** |
| | Not working | 135 (88.24) | 90 (66.67) | 225 (78.13) | |
| Pensioners | Pensioners | 39 (25.49) | 1 (0.74) | 40 (13.89) | < **0.001$^{C}$*** |
| | Non- Pensioners | 114 (74.51) | 134 (99.26) | 248 (86.11) | |
| Addiction | No addiction | 87 (56.86) | 45 (33.33) | 132 (45.83) | < **0.001$^{C}$*** |
| | Alcohol | 10 (6.54) | 5 (3.7) | 15 (5.21) | |
| | Tobacco | 44 (28.76) | 74 (54.81) | 118 (40.97) | |
| | Both | 12 (7.84) | 11 (8.15) | 23 (7.99) | |
| Sleeping Habits | Regular | 75 (49.02) | 91 (67.41) | 166 (57.64) | **0.0016$^{C}$ *** |
| | Irregular | 78 (50.98) | 44 (32.59) | 122 (42.36) | |
| Appetite | Good | 100 (65.36) | 82 (60.74) | 182 (63.19) | 0.4173$^{C}$ |
| | Poor | 53 (34.64) | 53 (39.26) | 106 (36.81) | |
| Bladder bowel habits | Regular | 114 (74.51) | 111 (82.22) | 225 (78.13) | 0.1141$^{C}$ |
| | Irregular | 39 (25.49) | 24 (17.78) | 63 (21.88) | |
| Body Mass Index | Under Weight | 1 (0.65) | 0 (0) | 1 (0.35) | 0.0735$^{MC}$ |
| | Normal | 82 (53.59) | 76 (56.3) | 158 (54.86) | |
| | Pre-obese | 59 (38.56) | 57 (42.22) | 116 (40.28) | |
| | Obese | 11 (7.19) | 2 (1.48) | 13 (4.51) | |
| HR-QoL (Score) | Best(0-9) | 59 (38.56) | 82 (60.74) | 141 (48.96) | < **0.001$^{MC}$*** |
| | Good(10-18) | 56 (36.6) | 40 (29.63) | 96 (33.33) | |
| | Average(19-27) | 33 (21.57) | 4 (2.96) | 37 (12.85) | |
| | Bad(28-36) | 4 (2.61) | 8 (5.93) | 12 (4.17) | |
| | Worst(37-45) | 1 (0.65) | 1 (0.74) | 2 (0.69) | |

*a,Modified B.J. Prasad's classification; C,Chi-square test of independence; f- frequency; HR-QoL, Health-Related Quality of Life; MC, Chi-square test with Monte Carlo simulation;% - percentage; *, Significant*

A significant difference was noted in the age distribution, education level, marital status, type of family,number of members in family,socio-economic status,working status,pensioners status,addiction status,sleeping habits and HR-QoL(Score) between urban and urban slum area geriatricindividuals($P$<0.05) (Table 1).

**Table 2: Distribution of Morbidity pattern in urban and urban slum area**

| **Morbidities** | **Urban f (%)** | **Urban Slum f (%)** | **Total f (%)** |
|---|---|---|---|
| Arthritis | 72 (47.06) | 60 (44.44) | 132 (45.83) |
| Hypertension | 43 (28.1) | 23 (17.04) | 66 (22.92) |
| Upper Respiratory Tract Infection | 10 (6.54) | 28 (20.74) | 38 (13.19) |
| Cataract | 16 (10.46) | 30 (22.22) | 46 (15.97) |
| Acid Peptic Disease | 24 (15.69) | 22 (16.3) | 46 (15.97) |
| Diabetes Mellitus | 20 (13.07) | 5 (3.7) | 25 (8.68) |
| Asthma | 9 (5.88) | 8 (5.93) | 17 (5.9) |
| Other | 18 (11.76) | 4 (2.96) | 22 (7.64) |

*f - frequency; % - percentage*

Some individuals had more than one morbidity. Majority of individuals in both the residential area suffered with arthritis (45.83%). This was followed by diabetes (13.07%), Acid Peptic Disease (15.69%) and hypertension (28.1%) in older individuals from urban area, and cataract (22.22%) in case of older individuals from urban slum area(Table 2).

**Table 3: Distribution of mean scores of all dimensions of AQoL in Urban and urban slum area**

| **Dimensions of AQoL** | **Urban (M ± SD)** | **Urban Slum (M ± SD)** |
|---|---|---|
| Illness | 2.77 ± 2.61 | 1.83 ± 2.31 |
| Independent | 2.59 ± 2.20 | 1.61 ± 2.21 |
| Relationship | 2.75 ± 2.62 | 2.17 ± 2.31 |
| Senses | 1.37 ± 1.25 | 1.07 ± 1.35 |
| Mental | 3.57 ± 1.94 | 2.77 ± 1.94 |
| Mean HR-QOL | 13.05 ± 7.85 | 9.44 ± 7.95 |

*AQoL, Assessment of Quality of Life;HR-QoL, Health-Related Quality of Life; M ± SD, Mean ± Standarddeviation*

The mean score for 5-dimensions ofAssessment of Quality of Life (AQoL) instrument was higher in case of older individuals from urban area, as compared to urban slum older individuals, indicating best quality of life in urban slum and good quality of life in urban area while assessing their health-related quality of life (Table 3).

**Table 4: Relationship of HR-QoL(Score) with different variables in urban area**

| **Variables** | | **HR-QoL(Score)** | | | | | ***p* –value** |
|---|---|---|---|---|---|---|---|
| | | **Best f (%)** | **Good f (%)** | **Average f (%)** | **Bad f (%)** | **Worst f (%)** | |
| Gender | Male | 38 (50) | 25 (32.89) | 10 (13.16) | 3 (3.95) | 0 | **0.0065$^{MC}$*** |
| | Female | 21 (27.27) | 31 (40.26) | 23 (29.87) | 1 (1.3) | 1 (1.3) | |
| Type of Family | Joint | 27 (35.06) | 34 (44.16) | 15 (19.48) | 0 | 1 (1.3) | **0.042$^{MC}$*** |
| | Nuclear | 16 (34.78) | 13 (28.26) | 13 (28.26) | 4 (8.7) | 0 | |
| | Three Generation | 16 (53.33) | 9 (30) | 5 (16.67) | 0 | 0 | |
| Marital status | Married | 51 (47.22) | 38 (35.19) | 15 (13.89) | 4 (3.7) | 0 | **< 0.001$^{MC}$*** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Widower | 8 (17.78) | 18 (40) | 18 (40) | 0 | 1 (2.22) | |

*HR-QoL, Health-Related Quality of Life; MC, Chi-square test with Monte Carlo simulation;%, percentage; *, Significant*

A significant association was observed between HR-QoL (score) and different variables viz. gender, type of family and marital status of older individuals from urban area ($p$ <0.05) (Table 4).

**Table 5: Relationship of HR-QoL(Score) with different variables in urban slum area**

| **Variables** | | **HR-QoL(Score)** | | | | | ***p*-value** |
|---|---|---|---|---|---|---|---|
| | | **Best f (%)** | **Good f (%)** | **Average f (%)** | **Bad f (%)** | **Worst f (%)** | |
| Gender | Male | 41 (77.36) | 9 (16.98) | 2 (3.77) | 1 (1.89) | 0 | **0.009$^{MC}$*** |
| | Female | 41 (50) | 31 (37.8) | 2 (2.44) | 7 (8.54) | 1 (1.22) | |
| Type of Family | Joint | 56 (66.67) | 23 (27.38) | 3 (3.57) | 2 (2.38) | 0 | 0.2149$^{MC}$ |
| | Nuclear | 23 (53.49) | 13 (30.23) | 1 (2.33) | 5 (11.63) | 1 (2.33) | |
| | Three Generation | 3 (37.5) | 4 (50) | 0 | 1 (12.5) | 0 | |
| Marital status | Married | 51 (72.86) | 15 (21.43) | 3 (4.29) | 1 (1.43) | 0 | **0.015$^{MC}$*** |
| | Widower | 29 (50) | 23 (39.66) | 1 (1.72) | 5 (8.62) | 0 | |

*HR-QoL, Health-Related Quality of Life; MC, Chi-square test with Monte Carlo simulation;% - percentage; *, Significant*

A significant association was observed between HR-QoL (score) and two variables viz. gender and marital status of older individuals from urban slum area ($p$ <0.05). However, type of family of older individuals showed no association with HR-QoL (score) for urban slum area($p$ >0.05)(Table 5).

## DISCUSSION

In both developing and developed countries, ageing population is a globally acceptedfact. The increasing rate of this ageing or elderly population could be attributed to demographic transition. Further, this population is also facing deteriorating condition due to fast fading traditional family system along with rapid urbanization and modernization.[11] Consequently, this prospective study was carried out to assess the health status, with special reference to comparative quality of life of elderly in urban and urban slum population.

In this study, majority of older individuals in both the residential area were in the age group of 60-64 years (35.76%) with female preponderance. This is in accordance with previously published literature in which the mean age of geriatric individuals was 60-69 yearswith female preponderance (Male: Female= 0.5: 1.0).[13] This could be attributed to the fact that the mortality rate of elderly with age above 68-70 years increases due to deteriorating health conditions, especially men.

A significant difference was noted in the age distribution, education level, marital status, type of family,number of members in family,socio-economic status,working status,pensioners status,addiction status,sleeping habitsbetween urban and urban slum. Most of the urban slum individuals were illiterate with no formal education, were widower/widow, had very poor socio-economic status, were non-working, non-pensioners, as compared to urban slum participants. Similar findings were notedin a study by Mudey et al(2011)in which the education level, marital status, type of family,socio-economic status,working status,pensioners status of geriatric individuals from the two study areas also showed significant difference with urban area being the

superior one.[14]This difference could be due to the lack of awareness regarding the importance of education, health awareness, lazy attitude, in urban slum population.

In this study,some individuals had more than one morbidity. Majority of individuals in both the residential area suffered with arthritis. This was followed by diabetes and hypertension in older individuals from urban area and cataract in case of older individuals from urban slum area, which is in agreement with a study conducted by Sengupta et al(2007)in which arthritis was the most common morbidity found in older individuals of both the residential area.[15] Further, urban area prevalence of diabetes was higher(26%) than urban slum area (16.9%). Cataract was foundon higher side in urban slum older individuals (36.1%) then urban area (20.8%).Acid pepticdisease was also found equally in both areas(urban=18%, urban slum=17%).[15]In countries like India, the geriatric people suffer from both communicable and degenerative diseases indicating dual medical problems. The commonly observed illnesses, irrespective of residential status,are cataract, hypertension, diabetes, respiratory illness, cancer, nerve deafness, etc.This burden increases with advancement of age, possibly as a consequence ofprogressive multi-organ degeneration and lowered immunological status involving one body system after another.[16]

The mean score for 5-dimensions ofAssessment of Quality of Life (AQoL) instrument viz. illness, independent, relationship, senses, mental health was higher in case of older individuals from urban area, as compared to urban slum older individuals, indicating good quality of life in urban area and best quality of life in urban slum area. These results are consistent with the findings from a study conducted by Shekhar et al (2017), in which the elders living in the urbanslum area had significantly lower level of score for QOL in the domains ofillness(1.2 ±7.1), senses (1.83 ±7.1) and mental health score(2.3 ± 1.12) than the urbanelderly population.[17]The geriatric population from urban slum are less perturbed about their living conditions and health, whereas in urban area aged people are more aware of their health or disease conditions. They have high expectations from society and believe in having good living conditions. When these expectations are not met, they tend to have more depressed life. So, these conditions may affect the Quality of life among both the study areas.[18]In urban area, the HR-QoL (score) and different variables viz. gender, type of family and marital status of older individuals from urban area showed a significant association, as males, three generation families and married geriatric individuals showed best HR-QoL (score). In case of urban slum area, HR-QoL (score) and two variables viz. gender and marital status of older individuals showed a significant association, as here males, three generation families and married geriatric individuals too showed best HR-QoL (score). This is in lieu of the study findings by Qadri et al. (2013) and Thadathil et al. (2015)which showed that both male and female had statistically significant different HR-QoL (score) with higher and best scores for males, irrespective of residential area.[10,19]In another study by Sowmiya and Nagarani (2012), it was found that the married geriatric individualshavingliving spouses had bestHR-QOL (score)living in three generation type of familyas compared to their widow/widower counterparts, irrespective of residential area.[20]Familyplays an essential role in providing physical, emotional,and economical supportto aged individuals and thusmight affect their Quality of life. Physical security and safety, nurturing home environment,stable financial resources, family members availability along with social care is important for maintainingtheir Quality of life. For widows/widowers all these dimensionsare usually lacking, may be due to loss of spouse and thus itaffects their Quality of life.[21]

Consideration of the limitations of this study is obligatory. First, follow-up for important observations and morbid conditions requiring furtherinvestigations was not performed which might have helped in providing recommendations and essential interventions for improvement of quality of life. Second, gender-based comparisons and associations were not determined. Third, this is an interview-based study in which respondent's answer is liable to be affected by the social dilemma (good/bad). Future long-term studies involving interstate comparison are required, as in

India it is difficult to generalize these findings due to different cultures and food habits; thus, necessitating larger,multicenter studies in future.

## CONCLUSION

The study concluded that geriatric individuals from slum area were less educated and from lower socioeconomic class. In both the area's most of elderly were not economically independent. Even though older female ratio was comparatively higher than males, they were also high in number w.r.t illiteracy, dependency, widowhood, and chronic diseases. Due to lack of awareness and poor living conditions the percentage of communicable and degenerative diseases was high in urban slum area than urban area. The Quality of life of elderly was most affected by age, marital status, gender, type of family and relationship status. This study evidently supports the fact that health is a vital component for maintaining well-being and Quality of Life of aged population, irrespective of their residential area.

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