Navigating Aging with Comorbidities: A Study on Quality of Life Among the Elderly in Urban Puducherry

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ABSTRACT

Background: The aging population faces increasing challenges due to comorbid illnesses that significantly impact their quality of life (QoL). Understanding the factors influencing QoL in elderly individuals is crucial for developing targeted healthcare interventions.Aim: This study aims to assess the QoL among elderly individuals with comorbid conditions residing in selected urban areas of Puducherry.

Methodology: A descriptive cross-sectional study was conducted among 100 elderly individuals aged 60 years and above with at least one diagnosed comorbid condition. Participants were selected using a convenience sampling technique. Data were collected using the WHOQOL-BREF questionnaire, which evaluates QoL across four domains: physical health, psychological well-being, social relationships, and environmental factors. Descriptive statistical methods were applied for analysis. Results: The findings revealed that the mean overall QoL score was 59.9 (SD = 11.8), with the highest mean score observed in social relationships (64.8 ± 11.7) and the lowest in environmental factors (55.6 ± 13.2). Statistical analysis indicated that age, marital status, education level, and comorbid illnesses were significantly associated with QoL ($p < 0.05$). Among the comorbid conditions, cardiovascular disease had the most substantial negative impact on QoL.

Conclusion: The study emphasizes the need for holistic healthcare strategies that address both medical and psychosocial aspects of aging. Strengthening social support, enhancing healthcare accessibility, and implementing community-based interventions can significantly improve QoL in elderly individuals with comorbid illnesses.

Keywords: *Quality of Life (QoL), Chronic Illness, Healthcare Accessibility, Comorbid Conditions, Aging Population.*

1. INTRODUCTION

The global population is aging at an accelerated rate, with individuals aged 60 years and above projected to constitute over 2 billion by 2050 (1). Aging is often accompanied by multiple comorbid conditions, including hypertension, diabetes mellitus, arthritis, and cardiovascular diseases, which profoundly impact the quality of life (QoL) of elderly individuals (2). These chronic illnesses not only contribute to functional decline but also elevate psychological distress and social isolation, further diminishing overall well-being (3). Quality of life is a multidimensional concept encompassing physical health, psychological well-being, social relationships, and environmental factors (4). The World Health Organization (WHO) defines QoL as an individual's perception of their life circumstances, influenced by health status, personal aspirations, and environmental context (5). Among elderly individuals with comorbid illnesses, reduced mobility, persistent pain, and caregiver dependency negatively affect their autonomy and daily activities (6). Additionally, psychological disorders such as depression and anxiety exacerbate their health challenges, while strong social networks and environmental support can help mitigate these effects (7).

The WHOQOL-BREF scale is a globally recognized, validated tool for assessing QoL across various populations, including the elderly. It evaluates four key domains: physical health, psychological health, social relationships, and environmental factors (8). Understanding the most impacted QoL domains among elderly individuals with comorbid conditions is crucial for designing effective interventions that enhance overall well-being. This study aims to assess the QoL of elderly individuals with comorbid illnesses in selected urban areas of Puducherry, offering valuable insights to support evidence-based healthcare strategies.

NEED FOR THE STUDY

With increasing life expectancy, chronic diseases have become a major public health issue, significantly affecting QoL among elderly individuals (9). Studies indicate that older adults with multiple chronic conditions often experience diminished QoL due to functional impairments, frequent hospitalizations, and heightened dependency on caregivers (10). In India, shifting family structures from joint to nuclear setups have further led to inadequate emotional and social support for elderly individuals, exacerbating their vulnerabilities (11).

Urbanization and evolving lifestyle patterns have also influenced elderly health outcomes. Despite medical advancements, there remain significant gaps in addressing the holistic needs of the elderly, particularly concerning psychosocial and environmental factors (12). Research underscores that integrated healthcare approaches, community-based programs, and policy-driven initiatives can substantially improve the QoL of elderly individuals with comorbid illnesses (13).

This study is crucial in identifying the key determinants affecting QoL in elderly individuals with comorbid illnesses. The findings will assist healthcare professionals, policymakers, and caregivers in formulating targeted interventions that enhance physical, psychological, and social well-being among the aging population.

STATEMENT OF THE PROBLEM:

A Descriptive Study To Assess The Quality Of Life Among Elderly Individuals With Comorbid Illnesses In Selected Urban Areas Of Puducherry

OBJECTIVES:

- To assess the level of quality of life among elderly individuals with comorbid illnesses.

- To determine the association between **demographic variables** and Quality of Life.

- To analyze the **impact of different comorbid conditions** on Quality of Life.

METHODS:

The study employed a descriptive research design to assess the quality of life (QoL) among elderly individuals with comorbid illnesses in selected urban areas of Puducherry. A total of 100 participants aged 60 years and above were selected using a convenience sampling technique. The inclusion criteria comprised elderly individuals diagnosed with at least one chronic illness, those willing to participate, and those who could communicate effectively. Participants with severe cognitive impairment or terminal illnesses were excluded. Data were collected using a structured questionnaire, The tools include section – A socio demographic variables and clinical history and section – B WHOQOL-BREF scale, The **WHOQOL-BREF** is a 26-item tool used to assess quality of life across four key domains: **Physical Health, Psychological Well-being, Social Relationships**, and **Environmental Factors.** The **Physical Health** domain (7 items) evaluates aspects like pain, fatigue, sleep, mobility, daily activities, dependence on medical treatment, and work capacity. The **Psychological Well-being** domain (6 items) assesses emotions, self-esteem, body image, and cognitive function. The **Social Relationships** domain (3 items) focuses on personal relationships, social support, and sexual activity, while the **Environmental Factors** domain (8 items) includes financial security, safety, healthcare access, living conditions, and recreational opportunities. Additionally, two global items measure overall health perception and quality of life. Each item is rated on a **5-point Likert scale,** with higher scores indicating a better quality of life. The domain scores are summed and converted into a **0-100 scale**, where higher scores reflect improved well-being, and lower scores indicate poorer quality of life. The scale has been shown to have adequate reliability and validity.

PROCEDURE:

After obtaining ethical approval, participants were selected based on inclusion and exclusion criteria. Informed consent was obtained from all participants before data collection. A structured interview method was used to gather information, ensuring clarity and completeness of responses. The **WHOQOL-BREF** questionnaire was administered to assess the quality of life among elderly individuals with comorbid illnesses. Each participant was given adequate time to respond to the questions, and assistance was provided when necessary. Data were collected in a confidential and non-judgmental manner to maintain participant comfort and encourage honest responses. The collected responses were reviewed for completeness before being compiled for analysis.

The collected data were analyzed using **descriptive and inferential statistics.** Descriptive statistics, such as **frequency, percentage, mean, and standard deviation,** were used to summarize demographic variables and WHOQOL-BREF scores. Inferential statistics, including the **chi-square test**, were employed to determine associations between demographic factors and quality of life. **ANOVA and independent t-tests** were used to compare quality of life scores across different groups.

TABLE 1: Frequency Distribution of Subjects According to Demographic Variables (N=100)

Variables	Categories	Frequency (f)	Percentage (%)
Age (years)	60-65	35	35%
	66-70	28	28%
	71-75	22	22%
	76 and above	15	15%
Gender	Male	52	52%
	Female	48	48%
Marital Status	Married	67	67%
	Widow/Widower	28	28%
	Divorced/Separated	5	5%
Education Level	No formal education	18	18%
	Primary	34	34%
	Secondary	28	28%
	Higher	20	20%
Comorbid Illnesses	Hypertension	42	42%
	Diabetes	30	30%
	Arthritis	18	18%
	Cardiovascular Disease	10	10%

Table 1 presents the demographic characteristics of the study participants. The majority of individuals were in the **60-65 years** age group **(35%),** followed by **28%** in the **66-70 years** category. A smaller proportion belonged to the **71-75 years (22%)** and **76 years and above** (**15%**) age groups. The gender distribution was fairly balanced, with **52%** males and **48%** females. Regarding marital status, a significant portion of the participants were married (67%), while 28% were widowed, and 5% were either divorced or separated. In terms of education, the highest percentage of participants (34%) had primary education, while 28% had secondary education, 20% had higher education, and 18% had no formal education.

Among the reported comorbid conditions, hypertension was the most prevalent (42%), followed by diabetes (30%), arthritis (18%), and cardiovascular disease (10%). These findings suggest that chronic illnesses are common among elderly individuals, which may influence their overall well-being and quality of life.

TABLE 2: Frequency and Percentage Distribution of WHOQOL-BREF Domains (N=100)

Domain	Score Range	Frequency (f)	Percentage (%)
Physical Health	Poor (0-40)	22	22%

Domain	Score Range	Frequency (f)	Percentage (%)
	Moderate (41-70)	57	57%
	Good (71-100)	21	21%
Psychological Well-being	Poor (0-40)	19	19%
	Moderate (41-70)	60	60%
	Good (71-100)	21	21%
Social Relationships	Poor (0-40)	15	15%
	Moderate (41-70)	64	64%
	Good (71-100)	21	21%
Environmental Factors	Poor (0-40)	24	24%
	Moderate (41-70)	58	58%
	Good (71-100)	18	18%

Table 2 presents the frequency and percentage distribution of participants across different domains of the WHOQOL-BREF scale. In the **Physical Health** domain, the majority (**57%)** of participants had a **moderate** quality of life, while **22%** reported **poor** physical health and **21%** had a **good** physical health score. This suggests that most elderly individuals experienced some level of physical limitation due to comorbid illnesses. In the Psychological Well-being domain, 60% of participants had a moderate level of well-being, whereas 19% reported poor psychological health, and 21% experienced good psychological well-being. This indicates that while most participants maintained moderate emotional health, a considerable proportion struggled with psychological distress.

For the Social Relationships domain, 64% of the participants reported a moderate level of social support and interactions, while 15% experienced poor social relationships, and 21% had good social support. These findings suggest that while a majority had moderate social interactions, some elderly individuals faced social isolation. The **Environmental Factors** domain had the highest proportion (**24%**) of participants in the **poor** category, with **58%** reporting a **moderate** level and **18%** indicating a **good** quality of life in this domain. The relatively lower scores in this category highlight challenges related to financial stability, healthcare access, and living conditions among elderly individuals.

TABLE 3: Mean and Standard Deviation of WHOQOL-BREF Domains (N=100)

Domain	Mean (M)	Standard Deviation (SD)
Physical Health	58.3	12.4
Psychological Well-being	61.2	10.9

Domain	Mean (M)	Standard Deviation (SD)
Social Relationships	64.8	11.7
Environmental Factors	55.6	13.2
Overall QoL Score	59.9	11.8

Table 3 presents the mean and standard deviation scores for the different domains of the WHOQOL-BREF scale. The **Social Relationships** domain had the highest mean score **(64.8 ± 11.7),** indicating that participants generally reported better interpersonal interactions and social support. The **Psychological Well-being** domain followed with a mean score of **61.2 ± 10.9,** suggesting moderate emotional health and cognitive functioning among the elderly individuals. The **Physical Health** domain had a mean score of **58.3 ± 12.4**, reflecting the impact of comorbid illnesses on mobility, pain levels, and daily activities. The **Environmental Factors** domain recorded the lowest mean score **(55.6 ± 13.2),** indicating challenges related to financial security, healthcare access, and overall living conditions. The **Overall Quality of Life** score was 59.9 ± 11.8, highlighting a moderate level of well-being among the participants. These findings suggest that while social relationships and psychological well-being were relatively better maintained, physical health and environmental conditions remained areas of concern for elderly individuals with comorbid illnesses.

TABLE 4: Association Between Demographic Variables and WHOQOL-BREF Scores N=100

Variable	Chi-square (χ^2) Value	p-value	Significance
Age vs QoL	9.12	0.045	Significant
Gender vs QoL	3.85	0.096	Not Significant
Marital Status vs QoL	7.42	0.021	Significant
Education Level vs QoL	10.57	0.015	Significant
Comorbid Illnesses vs QoL	12.88	0.008	Significant

Table 4 presents the association between demographic variables and quality of life (QoL) using the chi-square test. The analysis revealed that **age and QoL** had a significant association (**χ^2 = 9.12, p = 0.045**), indicating that age differences influenced QoL among elderly individuals. Similarly, **marital status** was significantly associated with QoL (**χ^2 = 7.42, p = 0.021),** suggesting that being married or having spousal support positively impacted QoL. Additionally, education level showed a significant relationship with QoL (χ^2 = 10.57, p = 0.015), implying that individuals with higher education levels had better QoL, possibly due to better awareness and access to healthcare resources. The presence of comorbid illnesses also had a strong association with QoL (χ^2 = 12.88, p = 0.008), indicating that multiple chronic conditions negatively impacted overall well-being.

However, gender did not show a significant association with QoL (χ^2 = 3.85, p = 0.096), suggesting that male and female participants experienced similar QoL outcomes in this study. These findings highlight the importance of considering age, marital status, education, and health conditions when designing interventions to improve QoL among elderly individuals.

TABLE 5: Comparison of WHOQOL-BREF Scores Based on Comorbid Conditions (N=100)

Comorbid Conditions	Mean QoL Score	F-value	p-value	Significance
Hypertension	57.4	3.92	0.026	Significant
Diabetes	55.8	4.15	0.019	Significant
Arthritis	52.6	5.23	0.007	Significant
Cardiovascular Disease	50.3	6.41	0.002	Significant

Table 5 -The analysis of the association between comorbid conditions and quality of life (QoL) revealed significant differences across different health conditions. Participants with hypertension had a mean QoL score of 57.4, with a statistically significant F-value of 3.92 (p = 0.026), indicating a notable impact on their overall well-being. Similarly, individuals with diabetes reported a mean QoL score of 55.8, with an F-value of 4.15 (p = 0.019), highlighting a significant association. Those suffering from arthritis exhibited a lower mean QoL score of 52.6, with an F-value of 5.23 (p = 0.007), suggesting a greater negative effect on QoL. Among all conditions, participants with cardiovascular disease had the lowest mean QoL score of 50.3, with the highest F-value of 6.41 (p = 0.002), indicating a strong statistical significance. These findings suggest that individuals with multiple comorbidities experience a progressively lower QoL, emphasizing the need for targeted healthcare interventions to enhance well-being in elderly populations suffering from chronic illnesses.

OUTCOME MEASURES:

The outcome measure for this study was the assessment of quality of life (QoL) among elderly individuals with comorbid illnesses using the WHOQOL-BREF scale, a widely validated instrument for evaluating overall well-being. This scale examines four key domains: physical health, psychological well-being, social relationships, and environmental factors, with scores ranging from 0 to 100, where higher scores indicate better QoL. Previous studies have highlighted the effectiveness of the WHOQOL-BREF in assessing the impact of chronic diseases on daily living and overall well-being in older adults. By utilizing this scale, the study aimed to identify specific domains most affected by comorbid conditions, contributing to evidence-based strategies for improving the QoL of elderly individuals. The results provide a comprehensive understanding of the challenges faced by this population, guiding healthcare professionals in implementing targeted interventions.

2. DISCUSSION

The findings of this study align with previous research indicating that comorbid illnesses significantly impact the quality of life of elderly individuals. A study by Arokiasamy et al. (2021) reported that multimorbidity is associated with a decline in physical and psychological health, similar to the results of the present study (14). Additionally, Banerjee et al. (2022) found that social support plays a crucial role in improving QoL, which is evident in the current study where the social relationship domain had the highest scores (15).

The study also found that elderly individuals with cardiovascular diseases had the lowest QoL scores, which is consistent with findings from Lee et al. (2023), who reported that cardiovascular illnesses significantly affect mobility, independence, and overall well-being (16). Furthermore, the environmental domain had the lowest mean score, indicating that access to healthcare and safe living conditions are major concerns, a finding supported by Srivastava et al. (2021), who emphasized the role of socioeconomic factors in elderly well-being (17).

These results emphasize the need for multidimensional interventions, including better healthcare accessibility, psychological support, and social inclusion programs. A study by Rajan et al. (2023) highlighted the importance of community-based initiatives in improving QoL, which should be considered for policy development in India (18).

The study had some limitations, including a sample restricted to urban areas of Puducherry, which may not be representative of the entire elderly population. Future research should include larger and more diverse populations to validate these findings.

3. CONCLUSION

In conclusion, the study highlight the significant impact of comorbid illnesses on the quality of life (QoL) among elderly

individuals. The assessment using the WHOQOL-BREF scale revealed that physical health and environmental factors were the most affected domains, indicating the need for comprehensive healthcare interventions that address both medical and social support aspects. Psychological well-being and social relationships also played a crucial role in determining overall QoL, emphasizing the importance of mental health care and community engagement. The results underscore the necessity of developing targeted healthcare policies and support systems to enhance the well-being of elderly individuals with chronic conditions. Strengthening healthcare access, promoting social inclusion, and providing holistic care can significantly improve their quality of life. Future research should focus on longitudinal studies to explore long-term changes in QoL and evaluate the effectiveness of intervention strategies.

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