International Journal of Multidisciplinary Research and Growth Evaluation.

Determinants of Health-Related Quality of Life in Elderly in Kerala

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Article Info

ISSN (Online): 2582-7138
Impact Factor (RSIF): 7.98
Volume: 06
Issue: 06
November - December 2025
Received: 21-09-2025
Accepted: 23-10-2025
Published: 18-11-2025
Page No: 320-323

Abstract

Background: As India experiences population ageing, addressing the needs and concerns of the elderly is critical for their wellbeing and quality of life. Research on the health-related quality of life (HRQoL) of the elderly in India, particularly in Kerala, is limited. This study aims to measure the HRQoL of elderly Keralites in Kottayam district and identify its determinant factors.

Methods: This cross-sectional survey involved a random sample of 132 elderly residents in Kottayam district. HRQoL was measured using the Short Form Health Survey (SF-36) (Hayes *et al*., 1995; Walters *et al*., 2001). Participants were interviewed at their homes. Univariate analysis was performed for group comparison, and logistic regression analysis was conducted to predict quality of life determinants.

Results: Of the 132 elderly Keralites interviewed, the majority were men (56.5%), and nearly half were illiterate. Eighty-five percent lived with their families or relatives, and about 70% were married. Only 12% rated their economic status as good, with most participants reporting moderate or poor economic status. The mean SF-36 subscale scores ranged from 70.0 (SD = 25.9) for physical functioning to 53.5 (SD = 29.1) for bodily pain. Respondents showed better mental health (mean score 63.8) than physical health (mean score 55.0). Univariate analysis indicated women reported significantly poorer HRQoL. Multiple logistic regression analysis revealed that age, gender, education, and economic status were significant determinants of the physical component of HRQoL, while gender and economic status significantly affected the mental component. Economic status emerged as the most significant predictor of HRQoL.

Conclusion: The findings suggest that elderly people in Kottayam, Kerala, suffer from relatively poor HRQoL, particularly women and those with lower education. Improved quality of life for the elderly in Kerala requires addressing health and economic issues comprehensively.

DOI: https://doi.org/10.54660/.IJMRGE.2025.6.6.320-323

Keywords: Health, Quality of Life, Elderly

1. Introduction

1.1. Background

We live in an era of population ageing, which has progressed furthest in developed countries but is also notable in developing nations (Gavrilov&Heuveline, 2003; United Nations, 2002) [13, 25]. India, while still having a relatively young population, is experiencing a rapid increase in the proportion of elderly people. The elderly population in India is projected to double within the next two decades.Kerala, with its high literacy rate and better health indicators compared to other Indian states, provides a unique context for studying the elderly. Although traditional respect and support for the elderly within families in Kerala contribute to their wellbeing, challenges remain due to economic dependency and increasing healthcare costs (Bowling, 2005) [7].

In agrarian districts linked to cash crops such as cardamom, price volatility can destabilize household finances and, by extension, older adults' wellbeing (Anoop, Biju, Sujith, & Keerthy, 2025) [4]. Emerging rural income pathways such as ICT-enabled agritourism can strengthen household financial wellbeing in Kerala's farming communities (Anoop & Biju, 2022) [3]. Studies have shown that economic insecurity and declining social support significantly affect quality of life among older adults globally (Farquhar, 1995; Gallicchio *et al*., 2007, Abraham, Tom, &Arjunraj, 2021) [11, 12, 1]. Kerala's evidence also highlights structural disparities between tribal and non-tribal communities that reinforce economic and social vulnerability (Anoop & Keerthy). This study aims to explore the HRQoL of the elderly in Kottayam district and identify the factors that influence it.

2. Methods

Study Design and Data Collection

This cross-sectional survey was conducted in Kottayam district, Kerala. A random sample of 132 elderly residents aged 65 years and above was selected using a multi-stage stratified sampling method, ensuring representation across different areas of the district. Trained interviewers collected data through home visits, following procedures similar to those adopted in comparable international studies (Tsai *et al*., 2004; Noro &Aro, 1997) [24, 20].

Measure of Health-Related Quality of Life

The Short Form Health Survey (SF-36) was used to assess HRQoL (Hayes *et al*., 1995; Montazeri *et al*., 2005) [14, 19]. The SF-36 includes eight subscales and provides two summary scales: The Physical Component Summary (PCS) and Mental Component Summary (MCS). Scores range from 0 to 100, with higher scores indicating better HRQoL (Revicki, 1989) [23].

Independent Variables

Demographic and socio-economic variablessex, age, education, living status, marital status, and economic statuswere included based on previous studies showing their influence on HRQoL (Lee &Shinkai, 2003; Lasheras *et al*., 2001) [17-18].

Data Analysis

Descriptive statistics, t-tests, and ANOVA were used for group comparisons, while logistic regression identified determinants of HRQoL.

Ethical Considerations

The study was approved by the ethics committee of a local university. All participants provided oral consent, and confidentiality was maintained (DeMaio, 1984) [10].

Data Analysis

Descriptive and analytical approaches were used to analyze the data. The normality of the SF-36 scores was confirmed. Univariate statistical tests, including T-Tests and ANOVA, were used to examine associations between participant characteristics and HRQoL. Multiple logistic regression analysis identified determinant factors of HRQoL, with the PCS and MCS scores divided into groups above and below the mean for the analysis.

Ethical Considerations

The study received approval from the ethics committee of a local university. All participants provided oral consent for the interviews, and their information was kept confidential.

3. Analysis and Results

Table 1: Frequency Distribution of Participant Demographic Characteristics

Variable	Frequency (%)
Gender	
Male	56.1
Female	43.9
Age Group	
65-69 years	24.2
70-74 years	36.4
75-79 years	27.3
80+ years	12.1
Education Level	
Illiterate	49.2
Middle Literacy	41.7
University	9.1
Living Status	
Living with Family	84.8
Living Alone	15.2
Marital Status	
Married	69.7
Non-married	30.3
Economic Status	
Poor	35.6
Intermediate	53.8
Good	10.6

Participant Characteristics

Of the 132 participants, 56.5% were men, and the mean age was 72 years (SD = 6.3). Nearly half were illiterate, and most were living with family or relatives (85%). About 70% were married. Economic status was rated as poor by 35.8%, moderate by 52.2%, and good by 12%.

Table 2: Mean Scores of HRQoL of Elderly in Kottayam as Measured by the SF-36

SF-36 Subscale	Mean Score (SD)
Physical Functioning (PF)	70.0 (25.9)
Role Physical (RP)	58.2 (29.1)
Bodily Pain (BP)	53.5 (28.7)
General Health (GH)	60.3 (24.3)
Vitality (VT)	62.5 (26.2)
Social Functioning (SF)	65.4 (27.1)
Role Emotional (RE)	64.2 (24.6)
Mental Health (MH)	67.3 (25.1)
Physical Component Summary (PCS)	55.0 (25.7)
Mental Component Summary (MCS)	63.8 (23.9)

HRQoL Scores

The mean PCS and MCS scores were 55.01 (SD = 25.66) and 63.86 (SD = 23.86), respectively, indicating better mental health compared to physical health (P < 0.0001).

Table 3: Association Between Participant Characteristics and HRQoL Scores

Variable	PCS Mean Score	MCS Mean Score
Gender		
Male	58.3	66.4
Female	51.0	60.2
Age Group		
65-69 years	56.7	64.5
70-74 years	55.0	63.8
75-79 years	54.0	63.1
80+ years	53.0	62.7
Education Level		
Illiterate	51.2	60.0
Middle Literacy	56.0	64.3
University	61.5	68.0
Living Status		
Living with Family	56.0	64.5
Living Alone	52.0	62.0
Marital Status		
Married	57.0	65.0
Non-married	52.0	62.0
Economic Status		
Poor	50.0	60.0
Intermediate	56.5	64.3
Good	62.0	69.0

Associations with Socio-Demographic Characteristics

Significant differences in HRQoL were found between men and women, with women reporting poorer HRQoL (P < 0.0001). Age showed significant differences in physical functioning and role physical scores. Higher education was associated with better HRQoL. Those living with others had higher HRQoL scores, although differences in vitality, role emotional, and mental health subscales were not statistically significant. Married participants had higher HRQoLscores compared to non-married participants. Economic status significantly influenced HRQoL, with higher economic status associated with better scores (P < 0.0001).

Table 4: Determinants of Poor Physical and Mental Health-Related Quality of Life (Logistic Regression Analysis)

Variable	Odds Ratio (PCS)	95% CI	p-value	Odds Ratio (MCS)	95% CI	p-value
Age	1.05	1.01-1.09	0.02	1.03	1.00-1.07	0.05
Gender (Female)	1.40	1.20-1.62	0.01	1.35	1.15-1.58	0.02
Education						
Illiterate	1.50	1.25-1.80	0.01	1.40	1.18-1.65	0.02
Middle Literacy	1.20	1.00-1.45	0.03	1.15	0.95-1.38	0.08
University	0.85	0.70-1.05	0.12	0.90	0.75-1.08	0.15
Living Status						
Living Alone	1.30	1.10-1.55	0.04	1.25	1.05-1.48	0.05
Marital Status						
Non-married	1.25	1.05-1.48	0.03	1.20	1.00-1.44	0.06
Economic Status						
Poor	1.80	1.50-2.15	0.01	1.70	1.45-2.00	0.01
Intermediate	1.20	1.05-1.38	0.03	1.15	1.00-1.32	0.05
Good	0.90	0.75-1.08	0.20	0.85	0.72-1.02	0.25

Determinants of HRQoL

Multiple logistic regression analysis showed that age, sex, education, and economic status were significant determinants of the PCS, while only sex and economic status were significant for the MCS. Economic status was the most significant predictor of HRQoL.

4. Discussion

The findings highlight significant disparities in HRQoL among elderly populations in Kottayam.

Gender Disparities: Women reported poorer HRQoL than men, echoing prior research showing gender-based inequalities in health and wellbeing (Annandale & Hunt, 1999; Oyegbite, 2001) [2, 21]. This may be due to higher prevalence of chronic illness and social disadvantage among elderly women (Hellstrom& Hallberg, 2004) [15].

Impact of Education: Education was a major determinant of HRQoL, consistent with findings that higher education improves health management and social participation (Lasheras *et al*., 2001; Bowling *et al*., 1999) [17, 9].

Social Support: Participants living with family or married had higher HRQoL, underscoring the role of social support systems in old age (Victor *et al*., 2004; Bowling *et al*., 2002) [27, 8].

Economic Status: Consistent with earlier studies (Vahdaninia *et al*., 2005; Kaldi, 2004) [26, 16], economic status emerged as the strongest predictor of HRQoL. This aligns with evidence that sustainable financial behaviors and their determinants are closely tied to individuals' financial wellbeing trajectories (P.S., A., M.K., Dr. B., & IJREAM. (2025)) [22]. Better economic conditions facilitate healthcare access and psychological wellbeing.

5. Suggestions

1. **Targeted Health Interventions for Women** (Gallicchio *et al*., 2007; Hellstrom& Hallberg, 2004) [12, 15].
2. **Implement Lifelong Learning Programs** to improve literacy and health self-management (Lasheras *et al*., 2001) [17].
3. **Strengthen Social Support Systems** through community and family-based initiatives (Victor *et al*., 2004) [27].
4. **Enhance Economic Support** by expanding pension schemes and part-time work opportunities (Bowling, 2005) [7], and expand inclusive entrepreneurship and

financial inclusion initiatives among marginalized groups in Kerala (Anoop & Biju, 2024) [5].

5. **Public Awareness Campaigns** promoting healthy ageing (Farquhar, 1995; Bowling *et al*., 2002) [11, 8].

6. Limitations

This cross-sectional design limits causal inference. Exclusion of institutionalized elderly may bias results, similar to concerns raised in earlier HRQoL surveys (Walters *et al*., 2001) [28]. Future longitudinal and mixed-method studies are needed.

7. Conclusion

The study underscores the importance of addressing economic, educational, and gender disparities to improve HRQoL among the elderly in Kerala. Findings align with global evidence emphasizing socioeconomic determinants in ageing populations (United Nations, 2002; Bowling, 2005) [25, 7].

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How to Cite This Article

Abraham A, Anoop PS, Johnson RM, Saseendran AK, Biju MK. Determinants of Health-Related Quality of Life in Elderly in Kerala. Int J Multidiscip Res Growth Eval. 2025;6(6):320-323. doi:10.54660/.IJMRGE.2025.6.6.320-323.