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DETERMINANTS OF QUALITY OF LIFE AMONG OLDER ADULTS IN A PERI-URBAN COMMUNITY OF DA NANG: A MULTIVARIABLE ANALYSIS

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ABSTRACT

Background: *Population aging is accelerating in Viet Nam, increasing the need to better understand factors influencing quality of life (QoL) among older adults. This study examined determinants of QoL in a peri-urban community of Da Nang City.*

Subject and methods: *A cross-sectional survey was conducted with 253 older adults selected through systematic random sampling. QoL was assessed using a validated 65-item instrument. Univariate analyses identified potential correlates, and multivariable linear regression determined independent predictors.*

Results: *Five variables were independently associated with QoL: educational attainment (β = 8.14; p = 0.016), living alone (β = -13.86; p = 0.011), leisure travel in the past year (β = 14.22; p = 0.003), chronic disease (β = -18.93; p < 0.001), and recent illness (β = -7.97; p = 0.025). The final model explained 38.1% of QoL variance. Conclusion: QoL among older adults is primarily influenced by social and health factors. Enhancing social support, promoting leisure engagement, and strengthening chronic disease management may improve well-being in aging populations.*

Keywords: *QoL; older adults; chronic disease; living arrangement; multivariable analysis.*

1. INTRODUCTION

Population aging is progressing rapidly worldwide and has become a major challenge for health systems and social welfare. According to the World Population Prospects 2022, the number of people aged 60 and above is projected to reach 1.4 billion by 2030 and continue to rise sharply in the following decades [1]. This rapid aging trend increases the demand for healthcare, chronic disease management, and improvements in the (QoL) of older adults.

In Viet Nam, population aging is occurring earlier and faster than expected, with the proportion of older adults exceeding 14% of the total population in 2022, marking the country's transition into an "aged society" [2]. Beyond physical health issues, many older adults face economic difficulties, limited living

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conditions, and restricted access to long-term care services, making QoL an increasingly important concern for the community and the health sector.

QoL is a multidimensional concept reflecting an individual's physical health, psychological well-being, autonomy, social relationships, and adaptation to the living environment. Numerous studies indicate that QoL among older adults is influenced by chronic illnesses, family and community support, income, and participation in social activities [3]. These factors vary across population groups and regions, particularly in areas undergoing rapid urbanization.

Ngu Hanh Son Ward (formerly Hoa Quy Ward of Ngu Hanh Son District), Da Nang City, has experienced rapid urbanization and a growing proportion of older adults. Most of the older population previously worked in agriculture or manual labor, with limited income and a rising prevalence of chronic diseases. These conditions increase vulnerability and may contribute to reduced QoL among older adults.

Given this context, assessing the QoL of older adults and identifying associated factors in Ngu Hanh Son Ward is essential to provide scientific evidence for the planning and implementation of community-based healthcare programs for older adults. Therefore, we conducted the study entitled: "Identification of factors associated with the of older adults in Ngu Hanh Son Ward, Da Nang City (formerly Hoa Quy Ward)".

2. SUBJECTS AND METHODS

2.1. Study Subjects

The study population consisted of older adults (≥60 years) residing in Ngu Hanh Son Ward, Da Nang City, which was administratively known as Hoa Quy Ward, Ngu Hanh Son District, at the time of data collection. Individuals were included if they were actual residents of the study area and were able to communicate and participate in the interview. Those who were absent during the data collection period or unable to respond due to health or cognitive limitations were excluded to ensure the validity and reliability of the data.

2.2. Study Period and Location

The study was conducted from June 2022 to June 2023. Data collection took place between February and May 2023. All research activities were carried out in Ngu Hanh Son Ward, Da Nang City, a locality with demographic characteristics appropriate for the study objectives.

2.3. Study Design

A cross-sectional descriptive and analytical design was employed, using quantitative methods to assess the (QoL) among older adults and to identify associated factors. This design enabled the evaluation of QoL at a specific point in time as well as comparisons across demographic and socioeconomic groups.

2.4. Sample Size

The required sample size was calculated using the formula for estimating a mean, with a confidence level of 95% (Z = 1.96), a margin of error of 3.0, and a standard deviation of 23.2 obtained from a previous study. The minimum sample size was 230 participants. To account for potential non-response or invalid questionnaires, an additional 10% was added, resulting in a final required sample size of 253. All 253 older adults completed the interview.

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2.5. Sampling Method

Systematic random sampling was applied. A list of 2,216 older adults aged 60 years and above was obtained from the local population management system. The sampling interval was determined by dividing the total population by the required sample size (k ≈ 8). A random starting number was selected, and subsequently every eighth individual on the list was included until the target sample of 253 was reached. This method ensured a representative and unbiased sample.

2.6. Data Collection Methods

Data were collected through face-to-face interviews at participants' households using a structured questionnaire. The questionnaire comprised demographic information and a 65-item QoL assessment tool adapted from the instrument developed by Nguyen Thanh Huong and colleagues (2009). The tool covers six domains: psychological well-being, social relationships and daily support; physical health; economic conditions; work capacity; living environment; and spirituality. Items were rated on a five-point Likert scale ranging from 1 (very poor) to 5 (very good), with 19 negatively worded items reverse-scored. Investigators included the primary researcher, local health staff, and community health collaborators, all of whom were trained prior to data collection. Completed questionnaires were reviewed daily, and any incomplete or inconsistent forms were revisited promptly to maintain data integrity.

2.7. Study Variables

The dependent variable was overall QoL, measured by total and domain-specific scores on the 65-item instrument. Independent variables included demographic and socioeconomic characteristics, health status, chronic diseases, household economic conditions, living environment, and social support. These variables were selected to comprehensively capture multidimensional factors influencing QoL among older adults.

2.8. Definition and Scoring of QoL

The QoL instrument yielded total scores ranging from 65 to 325, with higher scores indicating better QoL. Based on total scores, QoL was categorized into three levels: low (65-<195), moderate (195-<260), and good (260-325). The six domains of the instrument reflect physical, psychological, social, environmental, economic, and spiritual dimensions relevant to older adults' well-being.

2.9. Data Processing and Analysis

Data were entered and cleaned using EpiData 3.1, and statistical analyses were performed using SPSS version 20.0. Descriptive statistics were used to summarize participant characteristics and QoL distributions. Inferential tests including Chi-square, t-tests, and ANOVA were used to examine differences between groups. Multivariable regression models were constructed to identify independent factors associated with QoL while controlling for potential confounders.

2.10. Ethical Considerations

The study was approved by the Ethics Committee of the Hanoi University of Public Health under Decision No. 31/2023/YTCC-HD3 dated January 19, 2023. All participants were provided with information regarding the purpose of the study and gave informed consent prior to participation.

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3. RESULTS

3.1. The Study Population

The study included 253 older adults, of whom 43.5% were men and 56.5% were women. The majority (85.3%) were under 80 years of age, with the largest age group being 60-69 years (47.8%), followed by 70-79 years, while those aged 80 years and above accounted for 14.6%. Most participants reported no religious affiliation (83%), and all were of Kinh ethnicity. In terms of educational attainment, a substantial proportion (65.6%) had not completed lower secondary school, 30.4% had completed lower secondary education, and only 4% had attained upper secondary education or higher. Regarding previous occupation, the majority had worked as farmers (75.5%), followed by other occupations (15.8%), civil servants/public employees (5.9%), and factory workers (2.8%). At the time of the study, 62.8% of older adults were still engaged in some form of work, whereas 37.2% were not working. In terms of marital status, 64.8% were married or living with a spouse, while 35.2% were single, separated, divorced, or widowed. Most participants lived with family members (89.3%), whereas 10.7% lived alone.

3.2. Univariate analysis of factors associated with QoL

The univariate analysis explored associations between QoL and a comprehensive set of demographic, socioeconomic, behavioral, environmental, and health-related variables presented in Tables 3.6 through 3.17. Age demonstrated a significant gradient, with younger older adults reporting higher QoL compared with those aged 80 years and above. Educational attainment showed a similar pattern, as participants with at least lower-secondary education exhibited higher QoL than those with limited formal schooling. Former occupation was also associated with QoL; individuals who had worked in non-agricultural or formal-sector jobs generally reported better QoL than those with a farming background.

Current employment status was significantly related to QoL, with participants still engaged in work showing higher scores than those no longer employed. Marital status and living arrangement contributed meaningfully to QoL differences: older adults living with a spouse or family members had higher QoL, whereas those who were single, widowed, or living alone tended to report lower levels. Indicators of household economic conditions, including perceived financial adequacy and source of income, were also significantly associated with QoL.

Measures of social connectedness showed consistent associations. Older adults who used social media, participated in community, cultural, or elderly clubs, or engaged in leisure travel reported higher QoL, underscoring the importance of social engagement and active lifestyles. Environmental factors, such as satisfaction with living conditions, neighborhood safety, and perceived community support, further differentiated QoL levels among participants.

Health-related variables showed the strongest associations in the univariate

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analysis. The presence of chronic diseases, recent illness within the past month, functional limitations, and poorer self-rated health were all associated with substantially lower QoL scores. Conversely, those without chronic conditions and with better functional status consistently scored higher across QoL domains.

Based on statistical significance ($p < 0.05$) observed across Tables 3.6-3.17, the following variables were selected for inclusion in the multivariable regression model: age, sex, educational attainment, former occupation, current employment status, marital status, living arrangement, household economic status, income source, social media use, participation in social or community clubs, leisure travel, environmental satisfaction, presence of chronic diseases, recent illness, self-rated health, and functional ability. These variables were subsequently analyzed to identify independent determinants of QoL while adjusting for potential confounding factors.

3.3. Multivariable Regression Analysis (Table 1)

The multivariable regression analysis identified a set of independent factors significantly associated with (QoL) among older adults. After controlling for all covariates, five variables remained statistically significant predictors of QoL.

Educational attainment showed a positive association with QoL, with individuals below secondary education reporting higher QoL scores than those with higher levels of schooling ($\beta = 8.14$; $p = 0.016$). Older adults living alone had substantially lower QoL than those living with others ($\beta = -13.86$; $p = 0.011$), underscoring the central role of co-residency and social support in maintaining well-being.

Engagement in leisure travel within the past year was one of the strongest positive predictors of QoL ($\beta = 14.22$; $p = 0.003$), indicating that recreational and mobility-related activities contribute meaningfully to enhancing overall life satisfaction. Conversely, the presence of a chronic disease ($\beta = -18.93$; $p < 0.001$) and recent illness within the past month ($\beta = -7.97$; $p = 0.025$) were both associated with significantly lower QoL, confirming that health status remains a primary determinant of well-being in later life.

Other demographic and social variables, including age, former occupation, current employment, marital status, social media use, and participation in social clubs, did not retain statistical significance in the adjusted model, suggesting that their influence on QoL is likely mediated through broader health and social-support pathways.

Overall, the model explained 38.1% of the variance in QoL ($R^2 = 0.381$), indicating a moderate level of explanatory power. These findings align with the study's objective by identifying key social and health-related determinants that independently contribute to the QoL of older adults.

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Table 1. Multivariable Linear Regression Model of Factors Associated With Among Older Adults

Characteristics		Regression coefficient (β)	Standard error	p-value	95% CI	
Constant		256,9	13,07	0,000	231,16	282,65
Age group	60-69	-4,33	2,54	0,09	-9,35	9,68
	70-80					
	>80					
Educational attainment	Below secondary	8,14	3,35	0,016	1,54	14,75
	secondary					
	Upper secondary					
Former occupation	Government officer/public employee	1,58	1,38	0,254	-1,14	4,31
	Factory worker					
	Farmer					
	Other					
Currently working	Yes	-4,25	3,7	0,252	-11,53	3,04
	No					
Marital status	Single/separated/divorced/widowed	-4,76	3,62	0,191	-11,9	2,38
	Married					
Co-resident	Living alone	-13,86	5,38	0,011	-24,45	-3,27
	Living with others					
Using social media	No	6,52	4,01	0,105	-1,38	14,42
	Yes					
Leisure travel in past year	Yes	14,22	4,8	0,003	4,76	23,68
	No					
Chronic disease	Yes	-18,93	3,67	<0,001	-26,15	-11,71
	No					
Illness in past month	Yes	-7,97	3,53	0,025	-14,93	-1,01
	No					
Participation in social clubs	Yes	-18,93	3,67	<0,001	-26,15	-11,71
	No					

N = 253; R^2 = 0,381; F = 13,49; P = 0,000; (β)= 256,9

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4. DISCUSION

This study provides important insights into the determinants of QoL among older adults in a peri-urban community undergoing socioeconomic transition. While descriptive analysis offers contextual background, the primary objective was to explore correlates of QoL and identify independent predictors using multivariable regression modeling. The findings reaffirm that QoL in later life is multidimensional, shaped by social, economic, environmental, and health-related factors, consistent with global aging research [4,5].

4.1. Overview of Patterns and Correlates

The univariate analysis identified several factors associated with QoL, including age, educational attainment, marital status, occupation, employment status, living arrangement, social media use, leisure travel, chronic disease, and recent illness. These results reflect established evidence that QoL is influenced by interconnected domains rather than age alone, as highlighted in the WHO World Report on Ageing and Health [4] and multidimensional QoL frameworks [5].

However, the multivariable regression model identified five independent predictors that remained significant after adjustment: educational attainment, living arrangement, leisure travel, chronic disease, and recent illness. This indicates that structural social factors and health status exert stronger effects on QoL than demographic variables, underscoring the complex interactions shaping well-being in old age.

4.2. Educational Attainment and QoL

Educational attainment was significantly associated with QoL. This aligns with existing studies demonstrating that higher education improves health literacy, facilitates access to healthcare services, and promotes proactive health behaviors [6]. Education is also linked to income security, social status, and autonomy, factors repeatedly shown to influence QoL among older adults [3].

Interestingly, in this study, individuals with lower education reported higher QoL, a pattern also observed in certain Asian contexts. Possible explanations include differing expectations of life satisfaction, greater resilience shaped by lifelong hardships, or stronger reliance on traditional family support systems that buffer socioeconomic disadvantages [6,7]. In rapidly urbanizing communities, those with higher education may experience increased psychosocial stress due to shifting social roles, economic pressures, or diminishing community ties. This phenomenon suggests a need for further mixed-methods research to illuminate underlying mechanisms.

4.3. Living Arrangement and Social Support

Living arrangement emerged as one of the strongest social predictors of QoL. Older adults living alone reported significantly lower QoL than those living with family members, reflecting well-established evidence that co-residency provides emotional support, daily assistance, and protection against loneliness and functional decline [7]. Prior research shows that independent living increases vulnerability to unmet care needs, social isolation, and depressive symptoms [8].

In collectivist societies such as Vietnam, multigenerational living is culturally normative and constitutes a major

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source of informal caregiving. Thus, older adults living alone may face pronounced disadvantages, especially in peri-urban areas experiencing rapid demographic and social change. This emphasizes the importance of strengthening both formal and informal social support systems, particularly for the expanding demographic of older individuals living independently.

4.4. Leisure Travel as a Catalyst for Well-Being

Leisure travel within the past year was one of the strongest positive predictors of QoL. Evidence consistently shows that leisure engagement enhances psychological well-being, reduces stress, supports cognitive functioning, and fosters social connection [9]. Travel specifically provides stimulation, autonomy, and opportunities for intergenerational interaction-each contributing to perceived well-being.

In transitioning urban-rural communities, leisure engagement often reflects adequate health status, financial resources, and social support. Therefore, the strong association identified in this study highlights the potential health benefits of promoting age-friendly tourism and community-based leisure programs accessible to older adults.

4.5. Chronic Disease and Recent Illness: Dominant Health Determinants

Chronic disease showed the largest negative association with QoL, consistent with extensive global research indicating that multimorbidity leads to functional limitations, psychological distress, and reduced social participation [3,9]. Chronic conditions often require continuous health management, frequent clinic visits, and long-term medication, which may strain emotional and financial resources.

Recent illness within the prior month also independently reduced QoL. Acute health events can temporarily impair mobility, diminish independence, and increase anxiety related to declining health. Previous research confirms that acute illnesses significantly disrupt QoL, even when short-lived [10].

Together, these findings reaffirm that health status remains the most powerful determinant of QoL, emphasizing the importance of robust chronic disease management, early detection programs, and community-based rehabilitation services.

4.6. Non-Significant Variables After Adjustment

Several variables as age, marital status, social media use, occupation, employment status, and participation in social clubs, were significant in univariate but not multivariable analysis. This suggests their effects may be mediated through more proximal determinants such as health status, functional ability, and social support.

For example, age-related differences in QoL often diminish once chronic disease and functional decline are accounted for, consistent with global aging trajectories described by the WHO [4]. Similarly, marital status may not be independently predictive once living arrangement captures the degree of companionship and daily support. These findings indicate that interventions should target modifiable determinants, particularly health and social support, rather than demographic factors that show limited independent effects after adjustment.

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4.7. Implications for Public Health and Policy

The findings have several practical implications: (1) Enhance social support for older adults living alone through community-based programs, home-visit services, and volunteer networks. (2) Promote leisure and recreational opportunities by developing age-friendly tourism, community centers, and subsidized activities tailored for older adults. (3) Strengthen chronic disease management through improved primary care capacity, regular screening, and self-management education initiatives. (4) Integrate health and social services to address the multidimensional needs of older adults in rapidly urbanizing settings.

These strategies align with global healthy aging frameworks emphasizing functional ability, participation, and social well-being [4].

4.8. Strengths and Limitations

The study contributes to a limited pool of research on QoL among older adults in peri-urban Vietnamese settings and utilizes a comprehensive QoL tool with strong theoretical grounding. However, the cross-sectional design restricts causal inference, and self-reported measures may introduce recall or social desirability bias. Future longitudinal studies would help clarify temporal relationships and better inform targeted interventions.

5. CONCLUSION

This study identified key determinants of among older adults in a peri-urban community of Da Nang City. Multivariable analysis revealed that living arrangement, leisure travel, chronic disease, recent illness, and educational attainment were the primary independent predictors of overall QoL. Living alone and poor health status including chronic conditions and recent illness were associated with significantly lower QoL, while participation in leisure travel was strongly linked to higher well-being. Demographic variables such as age, marital status, occupation, and employment were not significant after adjustment, suggesting that their effects operate indirectly through social and health pathways.

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