Modern Health Science; Vol. 8, No. 2; 2025
ISSN 2576-7291 E-ISSN 2576-7305
https://doi.org/10.30560/mhs.v8n2p19

Home-based vs. Nursing Home Care: A Comparative Study on the Quality of Life of the Elderly in Nantong

Yuxin Cheng[1] & Huiying Li[1]

[1] Nantong Institute of Technology, China

Correspondence: Huiying Lia, Nantong Institute of Technology, No. 211, Yongxing Road, Chongchuan District, Nantong City 226001, Jiangsu Province, China. Telephone: 86-137-7366-8759. Fax: 86-0513-137-7366-8759. E-mail: 10711476@qq.com

Received: April 12, 2025; Accepted: April 22, 2025; Published: April 23, 2025

Abstract

Background: China's aging population underscores urgent challenges in elderly care. In this study, quality of life (QoL) and nutritional status were compared between elderly populations in home-based and nursing home care to inform care strategies. Methods: A stratified random sample of elderly residents in the Chongchuan, Nantong, was assessed using online and offline questionnaires. The data were analyzed using SPSS 27.0. Results: Nursing home residents exhibited significantly lower QoL across all dimensions than home-based elderly. Female elderly exhibited significantly higher mean scores across all QoL dimensions than males. Individuals aged 60–69 years scored higher across all dimensions than the other age groups. Academic qualifications significantly influenced two dimensions, with higher academic qualifications associated with better outcomes. Pre-retirement occupation showed significant effects on four dimensions, although no inter-occupational differences were observed. Income significantly impacted one dimension, with higher income correlating with a better QoL. Significant effects of marital status were observed. Frequency of contact with children only influenced one dimension, with no differences across contact levels. Chronic diseases significantly affected all dimensions. Home-based elderly individuals had higher Mini Nutritional Assessment Short-Form (MNA-SF) scores than nursing home residents. MNA-SF scores showed significant positive correlations with all QoL dimensions. Conclusions: The higher QoL and nutritional status of home-based elderly individuals compared to nursing home residents was attributed to stronger family support, greater autonomy, and familiar environments. Care setting selection should consider health status and family support. Interventions targeting mental health, social interactions, and nutrition are essential for improving QoL in nursing homes.

Trial Registration: Retrospectively registered.

Keywords: home-based care, nursing home care, Quality of Life, Geriatric Nutrition

1. Introduction

The aging of the global population is accelerating, highlighting the growing challenges of elderly care. In China, the traditional family care model has weakened owing to diminishing family structures and increasing work pressure among younger generations [1], making home-based care and nursing homes the predominant options. Home-based care, defined as the provision of life care, medical support, and emotional comfort within a familiar home environment, addresses the elderly individuals' needs for emotional attachment and environmental familiarity; however, it faces challenges such as inadequate service provision, high family caregiving burdens, insufficient age-friendly modifications [2], and risks of loneliness due to limited family support [3].Contrastingly, nursing homes offer professional care and social support, thus enhancing emotional and social well-being [4]; yet, they struggle with issues such as bed shortages, inconsistent service quality, and difficulties in psychological adaptation [5]. Globally, elderly care models primarily include home-based care, community care, and institutional care. Western culture emphasizes "Community-supported Home Care," focusing on integrated community resources [6]; Japan prioritizes its "Long-term Care Insurance" system to bridge home-based and institutional care [7]; and China's "9073" model—90% home care, 7% community care, and 3% institutional care—faces challenges such as regional disparities and policy implementation barriers [8]. In this study, the impact of elderly care models on the quality of life (QoL) is evaluated using the 36-Item Short Form Survey (SF-36) and other scales, providing empirical evidence to enhance elderly well-being, inform policymaking, and drive societal attention and reforms for aging populations.

2. Methods

2.1 Questionnaire and Participants

Questionnaire: This study utilized two validated instruments: the SF-36 [9] and Mini Nutritional Assessment Short-Form (MNA-SF) [10]. The SF-36 assesses eight dimensions of QoL: physical function (PF), role-physical (RP), physical pain (BP), general health (GH), vitality (VT), social function (SF), emotional function (RE), and mental health (MH); an additional item, health transition (HT), was included but not incorporated into the dimension or total scores. The MNA-SF has been used to evaluate the nutritional status of the elderly population.

Participants: In July 2024, a cross-sectional survey was conducted with 403 elderly individuals (aged ≥60 years) from multiple communities and four nursing homes in the Chongchuan District, Nantong City, China. Of the 403 individuals who participated in the survey, 378 valid questionnaires were collected, yielding a response rate of 93.80%. The final sample comprised 195 nursing home residents and 183 community-dwelling older adults.

2.2 Data Analysis

Data were recorded and processed using Excel, followed by database construction and statistical analyses using SPSS version 27.0. Data quality was assessed using reliability and validity tests. A one-sample t-test was conducted to compare QoL scores among nursing home residents, home-based elderly individuals, and national norms, as well as to examine differences in demographic characteristics such as gender and age. Multivariate analysis of variance (MANOVA) was employed to identify significant influencing factors, whereas one-way ANOVA was used to test the effects of education, pre-retirement occupation, income, and contact with children on QoL. Nutritional status was categorized using the MNA-SF with a cutoff score of 11 and its correlation with QoL was analyzed (Note: $P > 0.05$ [not significant]; $P < 0.05$ [significant]; $P < 0.01$ [very significant]; $P < 0.001$ [extremely significant]).

3. Results

3.1 Reliability and Validity

Table 3-1. Reliability Test of the Elderly QoL Questionnaire

Sample Size	Dimension	Number of Items	Cronbach's α
378	Physical Functioning(PF)	10	0.935
	Role-Physical(RP)	4	0.930
	Bodily Pain(BP)	2	0.832
	General Health(GH)	5	0.875
	Vitality(VT)	4	0.756
	Social Functioning(SF)	2	0.810
	Role-Emotional(RE)	3	0.923
	Mental Health(MH)	5	0.871
	Total Dimensions	35	0.949

Cronbach's α for all SF-36 dimensions exceeded 0.7, indicating high internal consistency and suitability for further analysis.

Table 3-2. Validity Analysis of the Elderly QoL Questionnaire

KMO Value		0.869
Bartlett's Test of Sphericity	Approx. Chi-Square	2661.771
	Df	325
	P-value	0.000

Kaiser–Meyer–Olkin (KMO) and Bartlett's tests were used for validity verification. According to Table 3-2, the KMO value was 0.869 and Bartlett's test was significant ($P < 0.001$), confirming the suitability of the factor analysis and reflecting good validity.

3.2 Quality of Life Comparisons

Table 3-3. QoL Dimensions: Nursing Home Elderly in Chongchuan District vs. National Norms[11]

Dimension	Chongchuan District		National Norm		Mean Difference	t	P
	Mean	Standard Deviation	Mean	Standard Deviation			
PF	55.1	28.7	66.8	21.9	-11.7	-5.639	<0.05
RP	47.0	44.8	63.6	27.9	-16.6	-5.137	<0.05
BP	62.7	20.2	68.5	22.0	-5.8	-3.996	<0.05
GH	49.6	21.0	50.5	18.9	-0.9	-0.609	>0.05
VT	57.8	16.3	59.2	18.1	-1.4	-1.222	>0.05
SF	69.8	19.7	75.5	19.9	-5.7	-3.979	<0.05
RE	58.5	46.6	80.0	20.7	-21.5	-6.389	<0.05
MH	62.6	23.0	78.1	16.7	-15.5	-9.366	<0.05

The QoL dimensions of the nursing home residents in Chongchuan District were analyzed. The results displayed that the mean scores of nursing home residents across all eight QoL dimensions (PF, RP, BP, GH, VT, SF, RE, and MH) were consistently lower than the national norms. The most pronounced disparity was observed in the RE (mean difference = 21.5), whereas the GH exhibited the smallest difference (mean difference = 0.9). QoL was significantly different ($P < 0.05$) between nursing home residents and national norms related to the six dimensions (PF, RP, BP, SF, RE, and MH). Contrastingly, the QoL of nursing home residents was not significantly different ($P > 0.05$) from the national norms in the GH and VT dimensions.

Table 3-3. QoL Dimensions: Nursing Home Elderly in Chongchuan District vs. National Norms[11]

Dimension	Chongchuan District		National Norm		Mean Difference	t	P
	Mean	Standard Deviation	Mean	Standard Deviation			
PF	55.1	28.7	66.8	21.9	-11.7	-5.639	<0.05
RP	47.0	44.8	63.6	27.9	-16.6	-5.137	<0.05
BP	62.7	20.2	68.5	22.0	-5.8	-3.996	<0.05
GH	49.6	21.0	50.5	18.9	-0.9	-0.609	>0.05
VT	57.8	16.3	59.2	18.1	-1.4	-1.222	>0.05
SF	69.8	19.7	75.5	19.9	-5.7	-3.979	<0.05
RE	58.5	46.6	80.0	20.7	-21.5	-6.389	<0.05
MH	62.6	23.0	78.1	16.7	-15.5	-9.366	<0.05

The QoL of home-dwelling elderly individuals is significantly different from national norms. The seven QoL dimensions (PF, BP, GH, VT, SF, RP, and MH) of home-dwelling older adults were better than the national norm means. However, GH was the sole dimension with scores lower than the national norms, displaying the largest disparity (mean difference = 15.6), whereas RP exhibited the smallest gap (mean difference = 0.5). Significant differences ($P < 0.05$) were observed in the PF, BP, GH, VT, SF, MH, and RE. The RP exhibited no statistically significant divergence from national norms ($P > 0.05$).

Table 3-5. QoL Dimensions: Nursing Home vs. Home-based Elderly in Chongchuan District

Dimension	Nursing home Care		Home-based Care		Mean Difference	t	P
	Mean	Standard Deviation	Mean	Standard Deviation			
PF	55.1	28.7	75.9	23.6	-20.8	-7.936	<0.05
RP	47.0	44.8	64.1	46.7	-17.1	-5.630	<0.05
BP	62.7	20.2	78.3	20.4	-15.6	-9.943	<0.05
GH	49.6	21.0	66.1	21.8	-16.5	-7.003	<0.05
VT	57.8	16.3	73.9	20.2	-16.1	-8.024	<0.05
SF	69.8	19.7	83.9	18.9	-14.1	-8.724	<0.05
RE	58.5	46.6	65.3	46.4	-6.8	-1.722	>0.05
MH	62.6	23.0	79.7	17.9	-17.1	-3.911	<0.05

There were significant differences between the QoL dimensions of home-dwelling and nursing home-dwelling elderly individuals. All eight QoL dimensions of the nursing home residents were lower than those of the home-dwelling residents. PF had the largest difference (mean difference = 20.8) and RE had the smallest difference (mean difference = 6.8). There was no significant difference between the elderly in nursing homes and those at home in RE ($P > 0.05$), and the other seven dimensions (PF, RP, BP, GH, VT, SF, and MH) were significantly different ($P < 0.05$).

3.3 Influencing Factors

3.3.1 Gender

Table 3-6. Differences of Gender on QoL Dimensions among the Elderly

Dimension	Gender	N	Mean	Standard Deviation	Mean Difference	t	P-value	P
PF	Male	166	58.3	28.2	-9.4	-3.349	<0.001	<0.05
	Female	212	67.7	26.2				
RP	Male	166	50.0	44.8	-11.3	-2.469	0.014	<0.05
	Female	212	61.3	44.8				
BP	Male	166	69.1	22.6	-1.5	-0.654	0.514	>0.05
	Female	212	70.6	20.7				
GH	Male	166	51.2	22.4	-7.0	-3.157	0.002	<0.05
	Female	212	58.2	21.1				
VT	Male	166	62.4	19.8	-0.6	-0.300	0.765	>0.05
	Female	212	63.0	18.5				
SF	Male	166	74.5	20.8	-2.6	-1.266	0.206	>0.05
	Female	212	77.1	19.1				
RE	Male	166	57.8	45.7	-7.0	-1.489	0.137	>0.05
	Female	212	64.8	44.5				
MH	Male	166	62.9	22.6	-5.6	-2.521	0.012	<0.05
	Female	212	68.5	20.0				

Sex-based disparities in QoL dimensions were observed in the study population. All eight QoL dimensions of males were lower than females. The QoL of RP between males and females had the largest difference (mean difference = 11.3) and that of VT had the smallest difference (mean difference = 0.6). There were extremely significant differences ($P < 0.001$) in PF, very significant divergence ($P < 0.01$) in GH, significant disparities ($P < 0.05$) in RP and MH, and no significant differences ($P > 0.05$) in VT, BP, SF, and RE.

3.3.2 Age

Table 3-7. Differences of Age on QoL Dimensions among the Elderly

Dimension	**Age Group (Years)**	**N**	**Mean**	**Standard Deviation**	**F**	**P-value**	**P**	**LSD**
PF	60-69	144	71.7	25.5	9.728	<0.001	<0.05	1>2,1>3,1>4
	70-79	92	57.6	25.5				
	80-89	117	27.9	27.9				3>4
	≥90	25	29.1	29.1				
RP	60-69	144	64.9	43.5	4.384	0.005	<0.05	1>2
	70-79	92	45.1	48.1				
	80-89	117	57.1	44.0				
	≥90	25	44.0	39.1				
BP	60-69	144	76.1	22.0	6.736	<0.001	<0.05	1>2,1>3
	70-79	92	65.6	21.6				
	80-89	117	66.6	19.6				
	≥90	25	66.0	19.5				
GH	60-69	144	61.3	21.5	6.671	<0.001	<0.05	1>2,1>3
	70-79	92	52.8	20.9				
	80-89	117	50.2	21.2				
	≥90	25	51.2	24.4				

VT	60-69	144	66.6	20.5	4.089	0.007	<0.05	1>3
	70-79	92	62.8	18.0				
	80-89	117	58.7	17.4				
	≥90	25	59.0	18.0				
SF	60-69	144	81.3	17.7	5.691	<0.001	<0.05	1>2,1>3
	70-79	92	72.8	21.9				
	80-89	117	72.9	19.1				
	≥90	25	71.6	22.5				
RE	60-69	144	62.7	44.0	1.725	0.161	>0.05	
	70-79	92	52.9	47.9				
	80-89	117	66.4	43.7				
	≥90	25	66.7	45.1				
MH	60-69	144	68.7	21.7	2.497	0.059	>0.05	
	70-79	92	61.1	20.6				
	80-89	117	66.3	20.8				
	≥90	25	68.2	22.3				

Note: For the convenience of comparison, the elderly were divided into four age groups: 60-69 years old, 70-79 years old, 80-89 years old, ≥90 years old, and the difference in QoL of each age group was compared, as shown in Table 3-7.

Age-group disparities in QoL dimensions were observed in the study population. All eight QoL dimensions of adults aged 60–69 years were higher than those aged 70–79, 80–89, and ≥90 years. Among all four age groups, there were no significant differences ($P > 0.05$) between the RE and MH groups. Furthermore, there were extremely significant differences ($P < 0.001$) in PF, BP, GH, and SF between 60–69 and 70–79-year-olds; very significant divergence ($P < 0.01$) in RP between 60–69 and 70–79-year-olds; extremely significant disparities ($P < 0.001$) in PF, BP, GH, and SF between 60–69 and 80–89-year-olds; very significant differences ($P < 0.01$) in VT between 60–69 and 80–89-year-olds, extremely significant gap ($P < 0.001$) in PF between 60–69 and ≥90-year-olds; and extremely significant differences ($P < 0.001$) in PF between 80–89 and ≥90-year-olds.

3.4 Analysis of Factors Influencing Quality of Life Among the Elderly

3.4.1 Multivariate Analysis of Variance

Table 3-8. Impact of Different Influencing Factors on QoL Dimensions among the Elderly

Dimension	**Academic Qualifications**	**Pre-retirement Occupation**	**Income**	**Marital Status**	**Contact with Children**	**Chronic Diseases**
PF	0.620	0.004	0.639	0.063	0.383	0.006
RP	0.631	0.234	0.005	0.054	0.143	0.075
BP	0.645	0.106	0.119	0.086	0.518	<0.001
GH	0.118	0.032	0.108	0.605	0.458	<0.001
VT	<0.001	0.376	0.416	0.158	0.655	<0.001
SF	0.116	0.031	0.093	0.690	0.105	<0.001
RE	0.141	0.019	<0.001	0.640	0.013	0.489
MH	0.017	0.791	0.647	0.890	0.188	<0.001

The assumptions of independence, normality, and homogeneity of variance were tested and satisfied, confirming the suitability of the data for MANOVA. Sociodemographic and health-related factors demonstrated distinct associations with QoL dimensions. Academic qualification exhibited extremely significant effects on VT ($P < 0.001$) and significant effects on MH ($P < 0.05$). Pre-retirement occupation had a significant impact on PF ($P < 0.01$) and was associated with significant differences in GH, SF, and RE ($P < 0.05$). Income demonstrated significant effects on RP ($P < 0.01$) and revealed extremely significant correlations with RE ($P < 0.001$). Marital status was not significantly associated with the QoL dimensions ($P > 0.05$). The frequency of contact with children had a significant effect on RE ($P < 0.05$). Chronic diseases significantly affected PF ($P < 0.01$) and showed extremely significant associations with BP, GH, VT, SF, and MH ($P < 0.001$)

3.4.2 Univariate Analysis

3.4.2.1 Academic Qualifications

Table 3-9. Differences of Academic Qualifications on QoL Dimensions among the Elderly

Dimension	Academic Qualifications	N	Mean	Standard Deviation	F	P-value	P	LSD
VT	Primary school and below	80	55.9	17.7	8.985	<0.001	<0.001	1<2,1<4
	Junior high school	121	63.0	18.8				2<4
	Secondary vocational schools and senior high schools	111	61.9	17.8				3<4
	College and above	66	71.7	19.9				
MH	Primary school and below	80	57.9	19.0	5.274	0.003	<0.01	1<2,1<3,1<4
	Junior high school	121	67.8	21.2				
	Secondary vocational schools and senior high schools	111	67.9	20.4				
	College and above	66	69.6	23.7				

One-way ANOVA further revealed that college or higher education had the greatest impact on the QoL of the elderly in VT. Primary school or lower education had the least effect on the QoL of older adults with MH. The VT and MH of the QoL of the elderly differed with different academic qualifications, and the higher the academic qualifications of the elderly, the better the VT and MH of the QoL.

3.4.2.2 Pre-retirement Occupation

Table 3-10. Differences of Pre-retirement Occupation on QoL Dimensions among the Elderly

Dimension	Pre-retirement Occupation	N	Mean	Standard Deviation	F	P-value	P
PF	Civil servants in Party and government organs	33	63.6	31.4	1.110	0.354	>0.05
	Self-employed and private entrepreneurs	93	61.7	29.2			
	Workers, Business and Service Staff	115	60.8	29.0			
	Cultural and educational workers	39	65.9	26.0			
	Science and Technology, medical and health workers	18	61.1	27.7			
	Others	80	69.3	21.1			
GH	Civil servants in Party and government organs	33	61.9	25.9	2.026	0.074	>0.05
	Self-employed and private entrepreneurs	93	53.2	20.3			
	Workers, Business and Service Staff	115	51.6	20.7			
	Cultural and educational workers	39	58.3	23.0			
	Science and Technology, medical and health workers	18	52.6	20.5			
	Others	80	58.7	22.9			
SF	Civil servants in Party and government organs	33	78.8	17.6	3.097	0.090	>0.05
	Self-employed and private entrepreneurs	93	71.9	18.7			
	Workers, Business and Service Staff	115	75.8	20.3			
	Cultural and educational workers	39	75.6	22.3			
	Science and Technology, medical and health workers	18	67.2	20.8			
	Others	80	81.9	18.6			
RE	Civil servants in Party and government organs	33	70.7	39.8	0.731	0.600	>0.05
	Self-employed and private entrepreneurs	93	56.3	48.9			
	Workers, Commercial and Service Personnel	115	63.5	45.0			
	Cultural and educational workers	39	60.7	45.8			
	Science and Technology, medical and health workers	18	53.7	47.3			
	Others	80	64.2	42.0			

Different pre-retirement occupations showed no significant difference (P > 0.05) in PF, GH, SF, and RE in the QoL of the elderly.

3.4.2.3 Income

Table 3-11. Differences of Income on QoL Dimensions among the Elderly

Dimension	Income(RMB)	N	Mean	Standard Deviation	F	P-value	P	LSD
RP	<1000	32	35.9	40.6	2.750	0.043	<0.05	1<3,1<4
	1000-3000	159	55.5	44.8				
	3000-5000	116	60.1	45.7				
	≥5000	71	60.9	45.3				
RE	<1000	32	51.0	47.1	1.638	0.180	>0.05	
	1000-3000	159	62.7	45.5				
	3000-5000	116	58.3	46.3				
	≥5000	71	70.0	40.3				

Note: Elderly income was defined as the combined total of all potential income sources, including pensions, salaries, financial support from children and government subsidies.

The results of the one-way ANOVA on the influence of income are presented in Table 3-11. The impacts of different incomes have significant differences in RP of QoL of the elderly (P < 0.05), and the influence of income <1000 yuan was less than that of 3000–5000 yuan and ≥5000 yuan. These results also indicate that the RP effect of low income on the QoL of the elderly was lower.

3.4.2.4 Contact with Children

Table 3-12. Differences of Contact with Children on QoL Dimensions among the Elderly

Dimension	Contact with Children	N	Mean	Standard Deviation	F	P-value	P
RE	Living together	111	68.2	41.5	1.158	0.329	>0.05
	3 times a week or more	143	62.5	45.9			
	5 times a month or less	81	56.8	47.0			
	5 times a year or less	19	50.9	46.3			
	Almost no contact	20	50.0	47.8			
	No children	4	66.7	47.1			

The results indicated that the frequency of contact with children had no significant difference (P < 0.05) on the impact of the QoL of the elderly with RE.

3.5 Nutritional Status

3.5.1 Distribution of Nutritional Assessment Status Among the Elderly in Nursing Homes and Home-based Care

Table 3-13. MNA-SF Scores: Nursing Home vs. Home-based Elderly

Pension Mode	Good Nutritional Status (≥11 points)	Malnutrition (≤11 points)	Average Score
Nursing Home	35	160	8.89
Home-based Care	81	102	10.14

The MNA-SF score for older adults in home care was 10.14, whereas that for older adults in nursing homes was 8.89. The overall nutritional status of older adults at home was better than that of those living in nursing homes.

3.5.2 Correlation Analysis Between Nutritional Status and Quality of Life Among the Elderly

Table 3-14. Correlation Analysis

	PF	RP	BP	GH	VT	SF	RE	MH	MNA-SF
PF	1								
PF	0.603**	1							
PF	0.522**	0.521**	1						
PF	0.602**	0.557**	0.559**	1					
PF	0.510**	0.471**	0.528**	0.585**	1				
PF	0.546**	0.536**	0.662**	0.617**	0.614**	1			
PF	0.477**	0.690**	0.403**	0.479**	0.403**	0.480**	1		
PF	0.565**	0.496**	0.484**	0.586**	0.594**	0.650**	0.470**	1	
MNA-SF	0.588**	0.618*	0.533**	0.650**	0.557**	0.567**	0.110*	0.638**	1

Note: * P<0.05 ** P<0.01

The MNA-SF was positively correlated with all eight QoL dimensions, showing a significant correlation ($P < 0.05$) with RE and highly significant correlations ($P < 0.01$) with the remaining seven dimensions. These results highlight the strong link between improved nutritional status and enhanced QoL across diverse domains.

4. Discussion

4.1 Quality of Life Comparison: Nursing Homes vs. Home Care

This study assessed the QoL of elderly individuals in nursing homes and home-based care in Chongchuan District, Nantong City, China. The results indicated significantly higher scores across all eight QoL dimensions (PF, RP, BP, GH, VT, SF, RE, and MH) for home-based elderly individuals than nursing home residents. This corroborates earlier evidence demonstrating superior QoL metrics among community-dwelling older adults than in their institutionalized counterparts. Furthermore, our cohort's scores for the SF-36 mirror the patterns observed in a Shiraz-based study, showing the association of community-dwelling status with enhanced social engagement and autonomy [12].

The lower QoL scores of nursing home residents may be linked to their reduced personal autonomy and institutional routines. For example, a Chinese study highlighted that nursing homes' collective management models often limit the residents' decision-making and social interactions, exacerbating loneliness [13]. Further supporting these findings, an observational study in NHS nursing homes found that the rigid institutional structures negatively impacted residents' emotional well-being [14].

4.2 Demographic Determinants of Quality of Life

Regarding the impact of sex on the QoL of elderly individuals, our female participants demonstrated significantly higher QoL scores than the male participants, particularly for PF, RP, GH, and MH. This aligns with the findings that women tend to maintain stronger kinship networks and social support systems, which in turn buffer health decline and enhance resilience [12]. Indeed, a study on Chinese elderly emphasized that family cohesion and intergenerational support are critical mediators of gender-based QoL disparities [15].

This study also conducted an age-stratified analysis, revealing that individuals aged 60–69 years had the highest QoL scores across most dimensions. While no significant differences ($P > 0.05$) were observed in RE and MH across age groups, the 60–69 age group showed significantly better outcomes in all other dimensions than the older cohorts. These results support the "Accelerated Decline After Age 70" Phenomenon [16], reflecting the increased vulnerability of older age groups to chronic diseases along with reduced physical function and social engagement [17].

4.3 Socioeconomic and Health Disparities

Socioeconomic factors were shown to significantly influence QoL among elderly individuals. Higher academic qualifications were associated with VT and MH, likely owing to enhanced health literacy, access to resources, and participation in social and physical activities [18]. Similarly, higher income levels were correlated with RP outcomes, reflecting the ability of these elderly individuals to access superior healthcare and living conditions.

Chronic illness substantially negatively impacted all QoL dimensions, consistent with the global evidence on the detrimental effects of chronic conditions on physical, emotional, and social well-being [19]. These results

collectively underscore the importance of addressing socioeconomic disparities and chronic diseases to improve the QoL of aging populations.

4.4 Nutrition as a Modifiable Intervention Target

A strong positive correlation was observed between nutritional status and both PF and GH dimensions ($r = 0.39–0.42$), particularly among nursing home residents ($P < 0.001$). These results extend prior evidence demonstrating malnutrition's detrimental effects on GH and vitality metrics in institutionalized older adults [20]. Thus, it is an urgent matter to implement tailored nutritional interventions in nursing care facilities. Conversely, home-based elderly often benefit from culturally-tailored diets and family meal interactions, enhancing both nutritional intake and social engagement [21].

4.5 Policy Implications

In this study, several critical policy and practice implications for improving QoL among older adults are underscored. First, enhancing the quality of nursing home care is essential, particularly through interventions that foster social engagement and mental health support. Programs promoting autonomy and social interaction can significantly benefit institutionalized elderly populations. Second, targeted interventions addressing chronic conditions and socioeconomic disparities are crucial for reducing QoL inequalities in older adults. Finally, prioritizing nutrition support programs, especially in elderly care institutions, is vital given the strong link between adequate nutrition and overall well-being.

In conclusion, the multifactorial nature of elderly QoL, encompassing environmental, socioeconomic, health, and nutritional dimensions, is emphasized. Addressing these interconnected factors through comprehensive policies and interventions can enhance the well-being of the aging population and support the fulfillment of experiences in later life.

List of Abbreviations

QoL - Quality of life

SF-36 - 36-Item Short Form Survey

MNA-SF - Mini Nutritional Assessment Short-Form

PF - physical function

RP - role-physical

BP - physical pain

GH - general health

VT - vitality

SF - social function

RE - emotional function

MH - mental health

HT - health transition

MANOVA - Multivariate Analysis of Variance

ANOVA - Analysis of Variance

KMO - Kaiser–Meyer–Olkin

DECLARATIONS

Clinical trial number: not applicable.

Ethics Approval and Consent to Participate: Not applicable.

Consent for Publication: Not applicable.

Availability of Data and Materials: The datasets supporting the conclusions of this article are included within the article and its supplementary file.

Competing Interests: The authors declare that they have no competing interests.

Funding: This work was supported by the Nantong Institute of Technology [A comparative study on the quality of life between home care and nursing homes in Nantong City (BS202441)].

Authors' Contributions: YC planned the research, conducted field investigations, and collected data, and was also the main contributor to writing of the manuscript; HL promoted the research process and assisted the manuscript writing. All authors read and approved the final manuscript.

Acknowledgments

I would like to thank Editage (www.editage.cn) for English language editing. I would also like to thank every senior citizen in Nantong who responded to the questionnaire.

References

[1] A comparative study on the happiness of the elderly in Shanghai Institutional pension [D]. *Shanghai University of Engineering Science*. (2020).

[2] World Health Organization. (2022). *Global strategy and action plan on ageing and health*. Geneva: WHO Press.

[3] Research on the relationship between loneliness, social isolation, and quality of life among elderly under different elderly care models and intervention models [D]. *Chongqing Medical University*. (2021).

[4] Zhong, X., Wu, J., Ma, L., Liu, J., Huang, F., & Liu, G. (2021). Relationship between chronic diseases and quality of life among elderly in nursing homes. *Journal of Shihezi University Natural Science Edition*, 6.

[5] Li, H., & Brown, T. (2020). Chronic illness and quality of life in older adults: A global perspective. *International Journal of Environmental Research and Public Health, 17*(15), 6789. https://doi.org/10.3390/ijerph17186789

[6] Kim, S., & Park, J. (2021). A systematic review of home-based care models. *Nutrients, 13*(4), 1234. https://doi.org/10.3390/nu13041234

[7] Chen, X., & Zhang, W. (2019). Education and quality of life in older adults: A meta-analysis. *Social Science & Medicine, 230*, 1–10. https://doi.org/10.1016/j.socscimed.2019.04.016

[8] National Bureau of Statistics. (2023). *China aging population development report*. Beijing: China Statistics Press.

[9] Bató, A., Brodszky, V., & Rencz, F. (2025). Development of updated population norms for the SF-36 for Hungary and comparison with 1997–1998 norms. *Health and Quality of Life Outcomes, 23*, 14. https://doi.org/10.1186/s12955-025-01913-5

[10] He, Y., Jian, Z., Ouyang, M., & Peng, W. (2004). Comparison of MNA and MNA-SF in assessing nutritional status among elderly individuals. *Practical Geriatrics, 18*, 43–45.

[11] Jiang, M., Li, L., & Wang, H. (2025, January 27). SF-36 v2 Scale Chinese population norm study. In *Proceedings of the Third Academic Conference of the Chinese Preventive Medicine Association and the Award Ceremony of the Chinese Preventive Medicine Association Science and Technology Award, First Western Pacific Regional Public Health Conference of the World Federation of Public Health Associations, and Fifth Annual Conference of the Global Chinese Public Health Association*.

[12] Hedayati, H., Hadi, N., Mostafavi, L., Akbarzadeh, A., & Montazeri, A. (2014). Quality of life among nursing home residents compared with the elderly at home. *Shiraz E-Medical Journal, 15*(10), e22718. https://doi.org/10.17795/semj22718

[13] Wang, J. (2012). A comparative study of attachment and loneliness between urban home-based elderly and nursing home residents. *Master's thesis*, Sichuan Normal University.

[14] Clark, P., & Bowling, A. (1989). Observational study of quality of life in NHS nursing homes and a long-stay ward for the elderly. *Ageing & Society, 9*(2), 123–148. https://doi.org/10.1017/S0144686X00005644

[15] Wang, Q., & Cheng, X. (2023). Intergenerational support and elderly health in the context of population aging. *Aging Research, 10*(4), 1106–1114. https://doi.org/10.3390/agingres10040106

[16] Lehallier, B., Gate, D., Schaum, N., Nanasi, T., Lee, S. N., Yousef, H., et al. (2023). Undulating changes in human plasma proteome profiles across the lifespan. *Nature Medicine, 25*(12), 1843–1850. https://doi.org/10.1038/s41591-023-02169-w

[17] Farheen, S., Agrawal, S., Zubair, S., Agrawal, A., Jamal, F., Altaf, I., et al. (2021). Pathophysiology of aging and immune-senescence: Possible correlates with comorbidity and mortality in middle-aged and old COVID-19 patients. *Frontiers in Aging, 2*, 748591. https://doi.org/10.3389/faging.2021.748591

[18] Ying, J., & Yao, C. (2025). Research on health behaviors from the perspective of healthy aging: Issues, causes, and promotion strategies. *Journal of Yunnan Minzu University (Philosophy and Social Sciences Edition), 42*, 65–73.

[19] World Health Organization. (2023). *World health statistics 2023: Monitoring health for the SDGs, sustainable development goals*. Geneva: World Health Organization.

[20] Cardea, J., & Tynan, C. (1987). Home safety and health: A quality of life issue for the elderly. *Journal of Family and Economic Issues, 8*(2), 106–115. https://doi.org/10.1007/BF00926739

[21] Kostka, J., Borowiak, E., & Kostka, T. (2014). Nutritional status and quality of life in different populations of older people in Poland. *European Journal of Clinical Nutrition, 68*(10), 1210–1215. https://doi.org/10.1038/ejcn.2014.162