Quality of life of older adults in nursing homes in Vietnam

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Abstract

This study evaluated the quality of life of older adults in Vietnam. A survey was conducted on 291 old people at eight public and private nursing homes using cluster sampling. Quality of life was predicted by gender, duration of stay, center activities and community tangible support, and connection with family. Results were consistent across the four subscales of the Quality of Life Index. Quality of life of Vietnamese older adults depends not only on the quality of services provided by the nursing homes but also on family and community connections.

Keywords

elderly, nursing home, older adult, quality of life, satisfaction

Introduction

Vietnam is currently in the demographic window period, yet it is predicted that the country will enter aging population period by 2040 (United Nations, 2019). Since 1999, an increasing trend in the percentage of population aged 65 and above has been observed: from 5.8% in 1999 to 6.4% in 2009 and recently, 7.7% in 2019 (Central Population and Housing Census Steering Committee, 2019). The trend will persist as the elderly population of Vietnam (aged 60 and above) will continue to increase, while the youngest population (aged 14 and below) will continue to decrease (United Nations Department of Economic and Social Affairs, Population Division, 2017). Until June 2019, there are 11.3 millions of old people in Vietnam (Vietnam National Committee on Ageing [VNCA], 2016).

The growing elderly population poses a challenge to the social welfare system. Given that non-communicable diseases are the dominant cause of death for both males and females aged 50 and above (Institute for Health Metrics and Evaluation, 2016), healthy aging requires the effort of governments, families as well as the elderly themselves. Institutional care become a convenient option. Until 2017, there are 427 institutions for the elderly, the disabled and orphans; 95.3% of them are managed by the government, such as social protection centers, centers for social work

and social houses (VNCA and UNFPA, 2016). Only social assistance beneficiaries are allowed to stay in public social protection centers. For the elderly, this group covers lonely poor old people or people aged 85 and above without social insurance or pension. According to a report by the Vietnam National Committee on Ageing in 2019, there are about 10,000 old people living in public social protection centers (VNCA, 2016). As a result, the demand for private institutional care is huge. Since the 2000s, private nursing homes have been opened to target seniors who seek companionship of the same age, or whose children fail to provide necessary physical and mental care (Tran, 2019). Private institutions in Vietnam can be run by religious groups or by private organizations. The former usually provides free support for poor old people who need shelter; while the latter are mainly for wealthy people who can pay around USD

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400–1000/month (VNCA and UNFPA, 2019). Private nursing homes for older persons are expanding very slowly, as there are no incentives given for setting these up in the form of tax concessions or loans for construction.

One of the indicators of efficiency of nursing homes is the quality of life of nursing home residents. Quality of life is not only the absence of disease but it reflects subjective assessment of one's complete physical, mental and social well-being (WHOQOL Group, 1998). A systematic review of health-related quality of life models by Bakas et al. (2012) found 3 most commonly used quality of life models in the literature: Wilson and Cleary (1995), Ferrans and colleagues (2005) and the World Health Organization (2001). While all three models conceptualize quality of life as one's satisfaction with different aspects of life, Ferrans and colleagues' model is the only model that puts weight to the individual's evaluation of important life issues (Ferrans and Powers, 1992). As such, in this study, we relied on Ferrans and colleagues' model to conceptualize quality of life.

Previous studies have found that living in nursing homes had significant impacts on the quality of life of old people. While Simeão et al. (2018) found that elderly living in nursing homes had lower quality of life than those attending day center, Salamon (1987) found that frail seniors living in nursing homes had higher satisfaction than those living in their own houses (Salamon, 1987; Simeão et al., 2018). Both of these studies noted that the advantages of nursing homes in comparison to private homes were activities, companionship and medical care; yet, day care centers allowed more autonomy and less dependence than institutionalized centers. Other studies provided support to these claims, confirming the benefits of nursing homes in enhancing communication and social life (Kim and Lee, 2018) and increasing psychological health (Lai et al., 2014). On the other hand, life in nursing homes also means reduced capacity to make decision and lower privacy (Kane, 1991; Paque et al., 2018; Wang et al., 2016; Wetle, 1991).

None of the above studies were conducted in Vietnam. Vietnamese culture is a collectivist culture in which old people have a high social status owing to their knowledge and experiences; thus, old people usually live with their children and grandchildren and are respected for their continual contribution to their family and the society. Vietnamese elderly are unfamiliar with living in institutional care. As a result, their quality of life when living in nursing homes might be affected by culture-specific factors different from previous studies. This study aims to examine the quality of life and its socio-economic correlates in older adults in nursing homes in Vietnam.

Methods

Study design

This was a cross-sectional study.

Study sample

The study was approved by the Ethical Council of Vietnam Psychological Association. Data were collected from 25 August 2019 to 12 December 2019. Participants were recruited from 8 nursing homes in the north, middle and south of Vietnam. The inclusion criteria for subjects were: (i) 60 years old and above and (ii) physically and mentally capable of answering the questionnaire. There were 291 old people in eight nursing homes who met the criteria and completed the questionnaire.

Study setting

This study was conducted in eight nursing homes in Vietnam. Nursing homes included in this study was selected using two-stage cluster sampling. Three clusters of nursing homes in Vietnam were formed: north region, middle region and south region. We then used random sampling to select institutions in each cluster. We followed the percentage distribution of nursing homes across regions: 30% of existing nursing homes for the elderly in Vietnam are in the north region, 23% in the middle region and 47% in the south region (Ministry of Labor, War Invalids and Social Affairs, 2015); thus we randomly selected three nursing homes in the north region cluster, one homes in the middle region cluster and 4 homes in the south region cluster. Of the selected homes, five were state-owned, two were run by religious groups (a Buddhist pagoda and a Catholic church) and one was run by a private organization. All residents in the selected homes were contacted for participation in the study.

Data collection

Nursing home residents who agreed to participate in the study answered a self-administered questionnaire. When residents were unable to write or read the questionnaire, a research assistant read it out for them and recorded the answers.

Measurements

Quality of life was measured by the Quality of Life Index (QLI)—nursing home version, developed by Ferrans & Powers in 1990. The scale was translated from English to Vietnamese using back translation. Participants rated the importance of 33 items about different aspects in life, and their satisfaction with the same aspects, on a Likert scale from 1 (not important/very dissatisfied) to 6 (very important/very satisfied). Importance ratings were used to weight the satisfaction scores. The index has four subscales: (i) health and functioning subscale with 13 items; (ii) social and economic subscale with eight items; (iii) psychological/spiritual subscale with seven items; and (iv) family subscale with five items. The QLI yielded high reliability in 48

previous studies, with Cronbach's alphas ranging from 0.73 to 0.98 (Robinson-Smith et al., 2000; Yang et al., 2003). In this study, Cronbach's alpha of the overall scale was 0.921.

Besides age and gender, all independent variables were measured using single questions with multiple choices.

The duration of living at nursing home was measured by three choices: 1–5 years, 5–10 years, more than 10 years. Self-assessed physical health was measured by three choices: very poor, poor, and normal health. Occupation in the past was measured by three choices: government employee, worker/farmer/freelancer, and others. Sport participation was measured by two choices: yes or no.

Three types of community support were measured: tangible support (yes/no), health support (yes/no) and emotional support (yes/no).

The elderly's connection with family was measured in several aspects: (i) having spouse alive (yes/no); (ii) having descendants (yes/no); (iii) frequency of home visit (never or rarely/monthly/weekly); (iv) contact with family via telephone (never or rarely/sometimes/daily or a few days per week); and (v) being frequently visited by family members (yes/no).

Each of these questions were analyzed separately when testing their relations to quality of life.

Data analysis and statistical method

Quality of life overall and dimension scores were computed according to guidelines in Ferrans and Powers (1992). Descriptive statistics were used to summarize the data, with frequencies and percentages to describe categorical variables, means, and standard deviations to describe quantitative variables. The two-sided independent t-test and ANOVA were used to compare the difference in scores of quality of life overall scale and subscales across participants' characteristics. Multiple linear regressions were performed to identify factors related to the quality of life among elderly people. Variables included in the multivariable models were based on literature review and the authors' experience of factors related to the quality of life among Vietnamese older people. The variance inflation factor (VIF) with the cut-off of > 10 was used to detect the collinearity among covariates in the multivariable models. A p-value of less than 0.05 was considered statistically significant. All analyses were conducted using Stata version 16 (Stata Corp, College Station, TX).

Results

General characteristics of the study sample

The participants' characteristics are shown in Table 1. Most participants were female (61.9%) and the mean age was 75.7 (SD = 8.6). About two thirds of participants had lived in nursing homes for less than 5 years. More than half of the

Table 1. Characteristics of study participants.

Characteristics	n (%)
N	291
Age (years), mean (SD)	75.7 (8.6)
Gender	
Male	111 (38.1)
Female	180 (61.9)
Duration in nursing house	
<5 years	199 (68.4)
5–10 year	51 (17.5)
>10 years	41 (14.1)
Spouse alive	
No	183 (67.5)
Yes	88 (32.5)
Having descendants	
No	137 (52.3)
Yes	125 (47.7)
Occupation in the past	
Officer	118 (40.5)
Worker/Farmer/Freelancer	158 (54.3)
Other	15 (5.2)
Self-health assessment	
Very poor	95 (32.6)
Poor	104 (35.7)
Normal	92 (31.6)
Play any sports	
No	124 (42.6)
Yes	167 (57.4)
Receive tangible support from community	
No	194 (66.7)
Yes	97 (33.3)
Receive health support from community	
No	182 (62.5)
Yes	109 (37.5)
Receive emotional support from community	
No	125 (43.0)
Yes	166 (57.0)
Visit home	
Never/rarely	138 (47.4)
Monthly	135 (46.4)
Weekly	18 (6.2)
Contact with family via telephone	
Never/rarely	20 (6.9)
Sometimes	196 (67.4)
Daily/Few days a week	75 (25.8)
Frequently visited by family members	
No	217 (74.6)
Yes	74 (25.4)

participants had no descendants (52.3%) and had worked as workers, farmers or freelancers in the past (54.3%). Thirty-one percent of respondents reported being in normal health state, 57.4% played at least one type of sport. The percentage of elderly people received tangible support, health support, and emotional support were 33.3%, 37.5%, and 57.0%,

respectively. Regarding family relationship, 46.2% of respondents reported that they visited home every month; the majority sometimes contacted family via telephone (67.4%) and were not frequently visited by other family members (74.6%).

Quality of Life Index scale and subscales score among elderly people

Table 2 shows the overall and subscale scores for quality of life among elderly people. The mean score for the overall quality of life (QLI) of participants was 17.8 (SD = 3.0). Mean scores for Health and functioning, Social and economic, Psychological/Spiritual, and Family subscales were 18.3 (3.7), 18.1 (2.8), 17.4 (4.2), and 18.2 (4.2), respectively. Given that the QLI score can range from 0 to 30, this study found that the nursing homes residents in Vietnam generally had a moderate level of quality of life.

The QLI score was higher among male participants (18.3; SD = 2.6), living in the nursing house for 5–10 years (18.6; SD = 2.1) and for those who were government employees in the past (19.1; SD = 2.3). It is interesting to note that old people living in nursing homes for less than 5 years had the lowest QLI score.

Residents who reported better health and who play sports had better quality of life: (18.8; SD = 2.9) and (18.9; SD = 2.6), respectively. Community support such as tangible and health support were associated with higher quality of life (18.6; SD = 2.1) and (18.3; SD = 2.6), respectively; yet no relationship was found between emotional support from the community and elderly's quality of life.

Elderly people who no longer have family members and people who fail to keep connection with their family had lower quality of life. Higher QLI was observed in seniors having spouse alive (19.2; SD = 1.7), having descendants (18.9; SD = 2.4), contacting with family via telephone daily/weekly (19.8; SD = 2.3), visiting home weekly (22.1; SD = 2.5) and being frequently visited by other family members (20.3; SD = 1.9).

Table 3 compared QLI scores of participants in public and private nursing homes. No difference was found both in overall QLI score and four dimension scores.

Factors related to the quality of life among elderly people

To test factors influencing quality of life of elderly people in nursing homes in Vietnam, we ran multivariate linear models (see Table 4).

For the overall QLI score, after controlling for other variables in the model, gender, duration of living in the nursing home, having descendants, past occupation, physical health, playing sport, receiving tangible support, frequency of home visiting, frequency of communicating with family via phone were independently significant correlates

of QLI score. Together, these variables explained 63% of the variance in QLI.

Female participants had a significantly lower score of QLI (β=–0.90; 95% CI=–1.40: –0.39) as compared to male participants. For occupation, old people who were workers/farmers/freelancers in the past were likely to have a lower score of QLI (β=–0.90, –95%CI=1.64: –0.16) as compared to government employees. People who had lived 5 to 10 years in the nursing house had a higher score of QLI (β=2.00; 95% CI=1.33: 2.68) than those living there for less than 5 years. Elderly people who had descendants were likely to have a higher QLI score (β=1.05; 95% CI=0.36: 1.74). Residents who reported normal physical health had a significantly higher QLI score (β=2.08; 95% CI=1.44: 2.72) compared to those who had very poor health. Playing any type of sports was likely to increase the score of QLI among elderly people (β=1.42; 95% CI=0.85: 1.99). The QLI score was also significantly higher for those who had received tangible support from the community (β=1.78; 95% CI=0.82: 2.74). Regarding the relationship with family members, elderly people who visited home weekly (compared to monthly) and had contact with other family members via telephone daily/weekly (compared to sometimes) had significantly higher scores of QLI (β=2.14; 95% CI=1.06: 3.21) and (β=1.91; 95% CI=1.16: 2.66), respectively.

Discussion

To our knowledge, this is the first study examining the quality of life of older adults living in nursing homes in Vietnam. This study found that, in general, senior residents in nursing homes in Vietnam had a moderate level quality of life. This result was similar to findings in other Asian settings like Hong Kong (Lai et al., 2014), Singapore (Wang et al., 2016) and Korea (Kang and Lee, 2017).

Quality of life of the elderly in nursing homes in Vietnam depends on gender, duration in nursing home, activities in the center (playing sports, material support from the community), current health status, contact with family (children/ grandchildren, frequent visits and telephone contact with family) and career before retirement.

In this study, male seniors had higher quality of life than females. The gender effect was observed in health and functioning and psychological/spiritual subscales but not in the social/economic and family subscales. Nguyen et al's (2017) study on the elderly in rural Vietnam and Nguyen et al's (2012) study on the elderly in Hai Duong province in Vietnam also reported a similar gender effect. Specific to nursing home residents, gender differences in quality of life was found in Brazil (Simeão et al., 2018) but not in Turkey (Top and Dikmetaş, 2015). Simeão et al. (2018) explained this effect by the different views and attitudes between males and females towards aging. Males accept aging and its associated problems more easily while females are more

Table 2. Quality of Life Index scale and subscales score among elderly people in Vietnam.

Characteristics	Health and functioning		Social and economic		Psychological/ Spiritual		Family subscale		QLI total	
	Mean (SD)	p	Mean (SD)	p	Mean (SD)	p	Mean (SD)	p	Mean (SD)	p
Total	18.3 (3.7)		18.1 (2.8)		17.4 (4.2)		18.2 (4.2)		17.8 (3.0)	
Gender										
Male	18.9 (3.5)	0.018	18.3 (2.6)	0.42	17.4 (2.9)	0.88	18.5 (3.8)	0.41	18.3 (2.6)	0.045
Female	17.9 (3.7)		18.0 (3.0)		17.4 (4.8)		18.1 (4.4)		17.5 (3.2)	
Duration in nursing house										
<5 years	17.8 (4.1)	0.005	17.7 (2.9)	<0.001	17.1 (4.2)	0.026	17.2 (3.9)	<0.001	17.4 (3.3)	0.012
5–10 year	19.6 (2.5)		18.8 (2.6)		17.3 (3.3)		20.3 (4.3)		18.6 (2.1)	
>10 years	18.9 (2.2)		19.3 (2.4)		19.0 (4.9)		20.5 (3.3)		18.5 (2.1)	
Spouse alive										
No	17.6 (4.2)	<0.001	17.5 (3.1)	<0.001	16.9 (4.8)	0.002	17.9 (4.7)	0.015	17.1 (3.4)	<0.001
Yes	19.6 (2.3)		19.4 (1.8)		18.6 (2.4)		19.2 (3.1)		19.2 (1.7)	
Having descendants										
No	17.4 (4.2)	0.001	17.1 (3.1)	<0.001	16.0 (4.8)	<0.001	17.3 (4.9)	<0.001	16.7 (3.2)	<0.001
Yes	19.0 (3.1)		19.1 (2.1)		18.9 (3.0)		19.5 (3.1)		18.9 (2.4)	
Occupation in the past										
Officer	18.9 (3.1)	0.034	19.4 (2.3)	<0.001	19.6 (3.0)	<0.001	19.7 (3.2)	<0.001	19.1 (2.3)	<0.001
Worker/Farmer/Freelancer	17.8 (4.1)		17.2 (2.8)		15.9 (4.2)		17.2 (4.5)		16.8 (3.2)	
Other	18.8 (2.0)		17.6 (2.6)		15.7 (3.6)		16.8 (3.2)		17.4 (2.5)	
Self-health assessment										
Very poor	17.5 (3.5)	<0.001	17.5 (3.0)	0.012	17.8 (4.1)	<0.001	17.7 (4.1)	0.14	17.5 (3.0)	0.001
Poor	17.2 (3.8)		18.6 (2.9)		16.1 (2.9)		18.9 (4.4)		17.3 (3.0)	
Normal	20.2 (2.9)		18.3 (2.4)		18.4 (5.1)		18.0 (3.9)		18.8 (2.9)	
Play any sports										
No	16.7 (4.2)	<0.001	16.7 (2.3)	<0.001	16.2 (4.5)	<0.001	15.7 (3.4)	<0.001	16.3 (2.9)	<0.001
Yes	19.4 (2.8)		19.2 (2.7)		18.3 (3.6)		20.1 (3.7)		18.9 (2.6)	
Receive tangible support from community										
No	17.7 (4.2)	<0.001	17.9 (2.9)	0.10	17.0 (4.4)	0.037	18.0 (4.6)	0.23	17.4 (3.3)	0.002
Yes	19.5 (1.8)		18.5 (2.6)		18.1 (3.6)		18.6 (3.2)		18.6 (2.1)	
Receive health support from community										
No	17.8 (4.0)	0.007	17.9 (2.8)	0.11	16.9 (4.2)	0.005	17.8 (4.6)	0.032	17.5 (3.2)	0.018
Yes	19.0 (2.9)		18.5 (2.8)		18.3 (4.1)		18.9 (3.2)		18.3 (2.6)	
Receive emotional support from community										
No	18.8 (3.6)	0.053	18.2 (2.8)	0.59	17.3 (4.3)	0.69	18.5 (4.5)	0.25	18.0 (2.9)	0.24
Yes	17.9 (3.7)		18.0 (2.9)		17.5 (4.1)		18.0 (3.9)		17.6 (3.1)	
Visit home										
Never/rarely	17.2 (3.7)	<0.001	17.2 (2.9)	<0.001	15.6 (4.0)	<0.001	17.1 (4.6)	<0.001	16.5 (2.7)	<0.001
Monthly	19.0 (3.3)		18.6 (2.2)		18.4 (3.3)		18.9 (3.4)		18.6 (2.6)	
Weekly	21.9 (2.3)		21.7 (2.6)		23.2 (3.6)		21.3 (3.2)		22.1 (2.5)	
Contact with family via telephone										
Never/rarely	18.7 (2.8)	0.006	18.5 (3.0)	<0.001	17.7 (4.2)	<0.001	19.1 (2.1)	<0.001	18.1 (1.7)	<0.001
Sometimes	17.8 (3.8)		17.4 (2.7)		15.9 (3.4)		17.1 (4.3)		17.0 (3.0)	
Daily/Few days a week	19.4 (3.3)		19.9 (2.3)		21.1 (3.6)		21.0 (2.6)		19.8 (2.3)	
Frequently visited by family members										
No	17.6 (3.8)	<0.001	17.4 (2.7)	<0.001	16.2 (3.8)	<0.001	17.2 (4.2)	<0.001	16.9 (2.8)	<0.001
Yes	20.4 (2.2)		20.3 (2.0)		20.9 (3.1)		21.1 (2.5)		20.3 (1.9)	

concerned about the negative aspects of aging. This is a suitable explanation for the current finding, especially when subscale scores were taken into account.

People who are in good health and participate in sport activities have higher quality of life. Many studies have confirmed that activities, not restricted to sports, play an

Table 3. Quality of life of elderly people in public and private nursing homes.

Characteristics	Public setting	Private setting	*p*
N	211	80	
Health and Functioning, mean (SD)	18.3 (3.8)	18.3 (3.3)	0.96
Social and Economic, mean (SD)	18.2 (2.7)	17.8 (3.1)	0.23
Psychological/Spiritual, mean (SD)	17.5 (4.2)	17.2 (4.2)	0.70
Family Subscale, mean (SD)	18.4 (4.2)	17.7 (4.1)	0.20
QLI total, mean (SD)	17.8 (3.0)	17.7 (3.0)	0.71

important role in elderly's life (Mitchell and Kemp, 2000; Simeão et al., 2018).

It is interesting to note that of the 3 types of community support, only tangible support predicts higher quality of life, while health and emotional support do not have any significant relationships. Tangible support is mostly in the form of money, food or improved meal quality. Since most nursing homes in this study are free of charge to residents, meal quality is not high: there was reported low quantity of daily food, few food choices and little changes in daily food. As such, tangible support brings more pragmatic changes than the two other forms of support, which might explains its impact on residents' quality of life. While previous studies have confirmed the positive relationship between financial security and quality of life in Vietnamese old people (Hoang et al., 2012; Nguyen et al., 2017; Nilsson et al., 2012), we believe that this relationship as shown through the need for tangible support in this study is more robust in Vietnamese old people living in nursing homes as the majority of them have little financial independence.

Having descendants and being able to hold regular contact with their family increases nursing home residents' quality of life but having a spouse does not. Vietnamese culture emphasizes family relationships; thus, being able to hold regular contact with family members is the key to happiness in old people. Nguyen et al. (2017) noted that relationship with children was more frequently reported as a predictor of high quality of life than relationship with spouse, although both were important to old people's happiness. Thus, for Vietnamese old people in general, relationship with children and children's success is of prime importance. Moreover, this study found that old people who are able to visit home weekly have the highest quality of life. This is a very frequent rate, almost equal to the rate of visiting parents' home among married couples in urban areas (Hirschman and Vu, 1996). This result supports the need for family connections in Vietnamese elders. It also gives hint to the idea that old people in Vietnam might prefer daycare centers more than nursing homes. The former allows them to maintain family connections while increasing social contact and activities; while the latter might cut family connections.

In general, nursing home elders are not much different from general Vietnamese elderly in terms of predictors of

quality of life. Male, healthy, physically active old people who have financial stability and strong family connections are more likely to have higher quality of life, whether they stay in nursing homes or not. These reflect core demands of Vietnamese old people. The most notable differences between the elderly staying in nursing homes and general Vietnamese elderly population are nursing home residents are more likely to be poor and most of the time are unable to stay with their children. As such, their need for tangible support and family connection are strong predictors of their quality of life.

This study did not find any difference in quality of life between old people living in public and private nursing homes. It should be taken into account that not all private nursing homes in Vietnam charge its residents for its services; many private nursing homes are run by religious organizations and offer full-time care free of charge. As such, both public and private systems in Vietnam seem to provide services of equivalent quality.

The results of the independent variables and the four dimensions of quality of life are very similar to the relationships between the independent variables and the quality of life, suggesting a close connection between the four component dimensions of the life quality with the concept of quality of life of the elderly in nursing centers.

Overall, our study has found that quality of life of elderly in nursing homes in Vietnam was moderate. Many modifiable factors can help improve old people's quality of life, such as activity organization, tangible support from the community, and regular contact with family. Given that this model of living is relatively new to Vietnamese culture, these findings are good news to the social welfare system. Evidently, in order to change the above factors, it requires tremendous effort from the state, especially in funding and manpower, to improve the quality of services at nursing homes.

The main limitation of this study is that more than a third of elderly people living in nursing centers who were surveyed have poor physical health, are unable to perform daily activities, and have cognitive impairment. Therefore, these people were unable to participate in this study. Future studies might use simpler instruments suitable for old people with cognitive impairment in order to reach a bigger subject pool.

Table 4. Multivariable models of factors related to quality of life among elderly people in Vietnam.

Characteristics	Health and functioning		Social and economic		Psychological/Spiritual		Family subscale		QLI total	
	Coef (95%CI)	p	Coef (95%CI)	p	Coef (95%CI)	p	Coef (95%CI)	p	Coef (95%CI)	p
Age (years)	0.005 (−0.05; 0.06)	0.861	−0.02 (−0.06; 0.02)	0.364	0.08 (0.03; 0.14)	0.002	0.01 (−0.05; 0.06)	0.778	0.01 (−0.03; 0.05)	0.641
Gender (Ref: Male)										
Female	−1.39 (−2.08; −0.70)	<0.001	−0.17 (−0.69; 0.36)	0.538	−0.74 (−1.45; −0.02)	0.043	−0.38 (−1.12; 0.36)	0.315	−0.90 (−1.40; −0.39)	0.001
Duration in nursing house (Ref: <5years)										
5–10year	2.45 (1.53; 3.37)	<0.001	1.80 (1.09; 2.50)	<0.001	1.53 (0.58; 2.48)	0.002	4.21 (3.22; 5.20)	<0.001	2.00 (1.33; 2.68)	<0.001
>10years	−0.32 (−1.41; 0.78)	0.568	0.65 (−0.18; 1.48)	0.123	−0.51 (−1.64; 0.61)	0.368	1.33 (0.16; 2.50)	0.026	−0.48 (−1.27; 0.32)	0.240
Spouse alive (Ref: No)										
Yes	1.45 (0.53; 2.37)	0.002	0.25 (−0.44; 0.95)	0.475	−0.63 (−1.57; 0.31)	0.188	−2.11 (−3.09; −1.13)	<0.001	0.56 (−0.11; 1.22)	0.103
Having descendants (Ref: No)										
Yes	0.99 (0.04; 1.93)	0.041	0.44 (−0.28; 1.17)	0.226	1.31 (0.34; 2.29)	0.009	2.00 (0.99; 3.02)	<0.001	1.05 (0.36; 1.74)	0.003
Occupation in the past (Ref: Officer)										
Worker/Farmer/Freelancer	−0.06 (−1.07; 0.95)	0.910	−1.13 (−1.90; −0.36)	0.004	−1.63 (−2.67; −0.59)	0.002	−1.27 (−2.36; −0.19)	0.021	−0.90 (−1.64; −0.16)	0.017
Other	1.10 (−0.58; 2.77)	0.198	−0.36 (−1.64; 0.91)	0.574	−3.06 (−4.78; −1.34)	0.001	−2.84 (−4.63; −1.05)	0.002	−0.54 (−1.76; 0.69)	0.389
Self-health assessment (Ref: Very poor)										
Poor	0.36 (−0.51; 1.22)	0.418	1.85 (1.20; 2.51)	<0.001	−1.14 (−2.03; −0.25)	0.012	1.48 (0.56; 2.40)	0.002	0.47 (−0.16; 1.10)	0.147
Normal	3.54 (2.66; 4.42)	<0.001	1.39 (0.73; 2.06)	<0.001	1.37 (0.47; 2.27)	0.003	1.66 (0.72; 2.60)	<0.001	2.08 (1.44; 2.72)	<0.001
Play any sports (Ref: No)										
Yes	1.52 (0.74; 2.30)	<0.001	1.22 (0.63; 1.82)	<0.001	1.11 (0.30; 1.91)	0.007	3.51 (2.68; 4.35)	<0.001	1.42 (0.85; 1.99)	<0.001
Receive tangible support from community (Ref: No)										
Yes	3.20 (1.89; 4.52)	<0.001	1.64 (0.64; 2.64)	0.001	−1.18 (−2.53; 0.17)	0.087	1.10 (−0.31; 2.51)	0.125	1.78 (0.82; 2.74)	<0.001
Receive health support from community (Ref: No)										
Yes	0.15 (−1.09; 1.38)	0.816	−0.38 (−1.32; 0.56)	0.431	3.02 (1.75; 4.30)	<0.001	0.37 (−0.96; 1.69)	0.584	0.59 (−0.31; 1.49)	0.199
Receive emotional support from community (Ref: No)										
Yes	−1.32 (−2.13; −0.50)	0.002	0.09 (−0.53; 0.71)	0.783	0.95 (0.11; 1.79)	0.026	−0.47 (−1.34; 0.41)	0.294	−0.33 (−0.93; 0.26)	0.271
Visit home (Ref: Monthly)										
Never/rarely	0.47 (−0.50; 1.43)	0.340	−0.09 (−0.82; 0.64)	0.807	−0.22 (−1.21; 0.77)	0.661	1.09 (0.06; 2.12)	0.038	0.002 (−0.70; 0.71)	0.995
Weekly	0.89 (−0.58; 2.36)	0.237	2.43 (1.31; 3.55)	<0.001	3.97 (2.46; 5.49)	<0.001	0.61 (−0.97; 2.18)	0.449	2.14 (1.06; 3.21)	<0.001
Contact with family via telephone (Ref: Sometimes)										
Never/rarely	−0.04 (−1.46; 1.38)	0.955	−0.08 (−1.17; 1.00)	0.878	2.56 (1.09; 4.02)	0.001	1.48 (−0.04; 3.00)	0.057	0.37 (−0.67; 1.41)	0.484
Daily/Few days a week	1.28 (0.26; 2.31)	0.014	1.35 (0.57; 2.13)	0.001	4.04 (2.99; 5.10)	<0.001	3.44 (2.34; 4.53)	<0.001	1.91 (1.16; 2.66)	<0.001
Frequently visited by family members (Ref: No)										
Yes	0.90 (−0.14; 1.93)	0.089	0.99 (0.20; 1.78)	0.014	0.07 (−0.99; 1.13)	0.897	0.47 (−0.64; 1.58)	0.405	0.71 (−0.05; 1.46)	0.067
Adjusted R^2	0.53		0.54		0.61		0.58		0.63	

Conclusion

Our study showed that nursing homes in Vietnam have somewhat addressed the needs of old people, but there is a lot of room for improvement. More attention should be given to the quality of life of the elderly in nursing centers so that they can improve their health; both physically and mentally. While sharing similarities with previous studies on factors affecting quality of life in nursing homes, this study found that family played a significantly important role in the quality of life of Vietnamese old people. As such, while old people in nursing homes would enjoy more tangible support from the community, more family connection should be encouraged in the form of frequent visits, encouragement and material support for the elderly.

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