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Social Support Effect on Health of Older People in Vietnam: Evidence from a National Aging Survey

Long Thanh Giang[1,2] · Nam Truong Nguyen[3] · Trang Thi Nguyen[3] · Hoi Quoc Le[4] · Ngoc Thuy Thi Tran[5]

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Abstract

This study examined the relationship between social support and activities of daily living (ADL) limitations among older men and women in Vietnam. We applied bivariate analysis to explore the dependent variable and all social support variables, and then logistic regression models for older men and women to examine the relationship between social support and their ADL limitations. Data were from the nationally representative Vietnam Aging Survey (VNAS) in 2011. We found that social support was associated with ADL limitations, but different impacts were observed between older men and women. In particular, living arrangements, emotional support, financial support, and social connection presented consistent association with ADL limitations for both older men and women. From such findings, we argued that, in making policies for older people, the government should pay more attention to supporting living-alone people, encouraging familial and community connections, and reforming health and long-term care systems.

Keywords Aging · Activities of daily living (ADLs) · Health · Older people · Social support · Vietnam

✉ Long Thanh Giang
longgt@neu.edu.vn

Nam Truong Nguyen
ntnam@isms.org.vn

Trang Thi Nguyen
nttrang@isms.org.vn

Hoi Quoc Le
longgt@neu.edu.vn

Ngoc Thuy Thi Tran
ngocttt@due.edu.vn

Extended author information available on the last page of the article

Introduction

An increased older population is a global demographic trend during the twenty-first century, and this has resulted from both decreasing mortality and fertility rates along with increasing life expectancy. Vietnam has experienced similar demographic changes in the past three decades. During 1979–2009, the number of older people (those aged 60 and over) increased gradually from 3.7 million (accounted for 6.9%) to 7.7 million (accounted for 9.0%) of the total population (UNFPA 2011). However, the population projections by the General Statistics Office (2016) for the period 2009–2049 showed that the aging population would increase much faster in these next decades: the proportion of older people in the total population would rapidly increase from 8.7% in 2009 to 16.7% in 2019 and 26.1% in 2049. This means that Vietnam will be one of rapidly aging countries in the world in the coming decades.

Along with rapid aging, Vietnam has also experienced many changes in health patterns among older people. A growing number of older people reported chronic diseases and functional disabilities. Many studies have investigated disease patterns of older people, such as communicable, non-communicable and chronic diseases (Dam 2010; VNCA 2007; VWU 2012; Le and Giang 2016), and indicated that more than 90% of Vietnamese older people had at least one chronic disease. At the same time, a number of studies have found that longer life also presented higher rates of disability among older people (Evans et al. 2007; UNFPA 2011; VWU 2012).

Regarding the association between social support and health, many studies found that social factors (in terms of social support) were associated with many health aspects of older people. Social support is broadly defined as "resources provided by other people". There are several different perspectives on social support that are encompassed in this definition and these are reflected in different assessment approaches and research designs (Wills and Fegan 2001). There are a number of studies around the world that have examined the relationship between social support and health outcomes of older people, but the findings are still inconsistent. For instance, several studies found a positive association between social support and health outcomes among older people: people receiving a high level of social support usually enjoy enhanced health and well-being (Cohen and Wills 1985; Pierce et al. 1997), improved physical health (Auslander and Litwin 1991; Cohen and Wills 1985; Cutrona et al. 1986; Liu et al. 1995; Thiyagarajan et al. 2014), less depression (Cutrona and Russell 1987; Dean et al. 1992; Kogan et al. 1995; Lynch et al. 1999), improved life satisfaction (Aquino et al. 1996), and less loneliness (Jones and Moore 1987; Rook and Pietromonaco 1987). In contrast, some studies showed that social support had a negative effect on older people's health outcomes: a negative effect on psychological health (Abraido-Lanza 2004; Peeters and Le Blanc 2001; Frese 1999; Iwata and Suzuki 1997) or physical health (Liu et al. 1995).

In Vietnam, there have been few researches on the relationship of social support and health outcomes, especially among older people. Social support was considered in such a narrow aspect as living arrangements, tangible support or social connectedness (see, for instance, Fisher et al. 2007; Duong et al. 2012; Lee et al. 2014).

Only Teerawichitchainan et al. (2015) discussed the association of living arrangements and psychological health among older people in Myanmar, Thailand, and Viet Nam.

Given the importance of social support in health of older people, we conducted this study with the purpose of providing a more comprehensive association between social support and health outcomes among older people in Vietnam, in which gender was the central perspective. We aimed to answer the following questions: (i) What were gender differences in health status among the Vietnamese older people in association with social support? and (ii) What should be the policy directions to improve health status for male and female older people in regard to social support factors?

Social Support and Health: Definitions and Measures

Social support is often considered in two aspects, i.e., structural support and functional support. Structural support (in terms of social networks) captures the structure or quantity of social relationships and the connection of social relationships. It includes items asking about the existence of primary social relationships (marital status, having relative or children who live nearby…), the existence of normative social roles (employment, social participation) and frequency of visiting/contacting with children/friends/neighbors. These items can be used as single items or combined to produce indices for total size of network, individual's number of difference roles, social ties.

Functional support focuses on the quality of available resources that are available to an individual. These resources include emotional support (having someone available to talk with), instrumental support (having someone available to provide financial or physical assistance), and informational support (having someone available who can provide information and make suggestions) (Cohen and Wills 1985). Functional social support is often considered in two differences perspectives: perceived and received support. Perceived support refers to an individual's belief about the availability of support if it was needed (Cobb 1976), while received support (also called enacted support or supportive behaviors) concerns an individual's experiences of social interactions and what support he or she experienced. Over the last decades, a number of studies focused on the effect of perceived support on health outcomes and less interested in received support than today.

In this paper, social support included structural support and functional support, in which the former was measured by socio-demographics, social connection, and social and participation, while the latter was considered by emotional support, instrumental support (such as financial support, physical support), and informational support.

In regard to health status, in this paper, we used limitation in Activities of Daily Living (ADLs) as a proxy. For this, we constructed the Index of Independence in ADLs to indicate the degree of difficulty in five basic daily activities: eating, dressing, bathing, moving in and out of bed, and going to the toilet.

Research Design

Data

Data Description

In this study, we used the cross-sectional data from the Vietnam Aging Survey (VNAS) in 2011. VNAS was the first-ever nationally representative data for near-elderly persons (age 50–59) and older people (age 60 and over) in Vietnam. The sampling of VNAS applied the probability proportional to size (PPS) method to select locations from provinces to communes, villages and households with the data from the Population and Housing Census 2009.

This survey collected general information about socio-economic characteristics; health status and health care utilization; perception, knowledge and assessment about laws and rights of the Vietnamese older people; and contribution of older people to their families and communities.

VNAS collected data from 4007 persons aged 50 and over, but we used only the sample of 2789 persons aged 60 and above (defined as older people). To remove inconsistent information in regard to ADLs, we excluded 251 observations, and thus the final sample for this paper's analyses included 2538 older people.

Data Measurements

Data were measured using various demographic and socio-economic variables along with control variables, including living area, gender, age, education, household income, and employment.

- Gender was indexed as a dummy variable, with male as 1 and female as 0.
- Age was categorized into three groups (young old: 60–69; middle old: 70–79; and oldest old: 80+).
- Place of residence was indicated as a dummy variable with rural residence coded as 0, and urban residence as 1.
- Education was divided into five levels: No schooling; primary school; secondary school; high school; and vocational school/college/university;
- Household income was coded into four categories: 1-Under 10 million VND; 2-From 10-<=50 million VND; 3-From 50-<=100 million VND; and 4-From 100 million VND and more;
- Employment was categorized into 3 groups: 1- Not working; 2- Working in agriculture; and 3-Working in non-agriculture.

Analytical Methods

Bivariate analysis was used to analyze the dependent variable and all social support variables. Correlation was measured using chi-square test for categorical variables, and t-test was conducted to measure the association between continuous variables. These tests were conducted between and within female and male older people.

Multivariable logistic regressions were conducted, using two separate models for female and male older people. Socio-demographics (including age groups, ethnicity, living area, education, employment, and household income) were used as control variables.

For each type of social support measurement, both single variables and total score were used. If both were found to be significant in a single variable and in the total score, the total score was used for the multivariate regression. If only the single variables were found to be significant, they were used for multivariate regression, while the total score was excluded. Multi-collinearity was tested between independent variables in the models, and we removed variables that were found to have multi-collinearity.

Variables

Dependent Variables

In terms of ADL limitation, we constructed the Index of Independence in ADLs in order to indicate the degree of difficulty in eating, dressing, bathing, moving in and out of bed, and going to the toilet. An older person was defined as "ADL limitation" in a given activity if he/she had any degree of difficulty in performing the activity without help in the last 30 days. On the basis of such an operational definition, functional status was indexed as the number of ADL limitation, ranging from 0 to 5.

Independent Variables

As discussed, social support was measured by structural support and functional support.

Structural support was investigated, using:

- Social demographics: living arrangements and marital status. Living arrangements were classified into two groups (living alone = 0 and living with others = 1); and marital status was coded as a dummy variable (with 1 = currently married).
- Social connection: was measured by the total number of living children; number of people living with children; number of family members; and number of children living nearby; and frequency of contact with family members (measured by the average frequency of contacting children on phone or in person).
- Social participation: was measured by the number of social groups that an older person participated in the past 12 months.

Functional support was examined, using:

- Emotional support: was measured using two five-point (1 to 5) scales assessing the i) satisfaction of older persons and ii) number of persons who older persons could count on.
- Instrumental support: was measured by financial support (based on the financial support received from children in the last 12 months and from siblings/relatives/friends/neighbors; or if the respondent received financial for illness treatment in the last 12 months), physical support (based on the support received from children in

the house, daily chores, and taking care of the respondent when they were sick or injured), and an instrumental total score (created by summing up all single variables of financial support and physical support).

- Informational support: was coded as a dummy variable (with "Yes" if an older person received the information regarding the rights of senior citizens).

Results

Characteristics of the Study Sample

Table 1 shows the socio-demographics characteristic of older men and women who were included in this study. The proportion of older people in three age groups was 59.9%; 27.3%; and 12.8%, respectively.

Among female older people, 21.7% of the population had no schooling; 58% had a primary school education; 12% had completed secondary school; and 8.3% had a high school and/or higher education. About 22% older women lived in households with total income at less than 10 million Vietnamese Dong (VND); 45.3% lived in households with total income at between 10 to 50 million VND; 22.7% lived in households with total income at between 50 to 100 million VND; and only 10% reported to live in households with total income at 100 million VND or more. Nearly 40% of older women still worked; 20.4% worked in the agricultural sector; and 15.9% worked in the non-agricultural sectors. Two-thirds of female older people lived in rural areas. About 90% female older people were Kinh.

Among male older people, 7.8% had no schooling; 39.9% completed primary school; 24.7% had finished secondary school; and 27.6% had a high school or higher education. About 14.5% lived in households with total income at less than 10 million VND, and the respective numbers were 48.9%; 23.3%; and 13.3% for those lived in households with total income at between 10 to 50 million VND; 50 to 100 million VND; 100 million VND or more. More than 50% older men still worked; 31.3% worked in the agricultural sector; and 19.2% worked in the non-agricultural sectors. Two- third male OPs lived in rural areas. About 90% were Kinh.

Table 2 presents the social support that older women and older men received in the past 12 months. In the total sample, 94.6% of older people lived with others; 5.4% lived alone; and 71.5% were married. Among female older people, 91.8% lived with others; 8.2% lived alone; and 56.4% were married. Among older men, 98.2% lived with others; 1.5% lived alone; and 91.3% were married. More elder women lived alone and were single/separated/divorced/widowed than were older men. The difference in social demographics between older women and older men was statistically significant ($p < 0.001$).

Social connections included household size, number of living children, number of co-resident children, number of children nearby, and frequency of contacting children (in person or on phone). In the total sample, the mean household size was 4.17 persons. The total living children; number of co-resident children; and number of children lived nearby was 8.45; 1.39; and 3.39, respectively. There was no difference between older women and men in terms of household size. Older men contacted their children (both in person or on phone) more often than did older women. The average number of visiting

Table 1 Characteristics of the Study Sample

Characteristics	*Female (n = 1521) %*	*Male (n = 1017) %*	*Total (N = 2538) %*
Socio-demographic characteristics			
Age group (years)			
60–69	58.1	62.2	59.9
70–79	27.9	26.6	27.3
80+	14.0	11.2	12.8
Education			
No schooling	21.7	7.8	15.7***
Primary school	58.0	39.9	50.2
Secondary school	12.0	24.7	17.5
High school	3.7	16.4	9.2
Vocational/College/University and Higher	4.6	11.2	7.4
Household income			
Under 10 million VND	22.0	14.5	18.7
10- < 50 million VND	45.3	48.9	46.9
50- < 100 million VND	22.7	23.3	22.9
100 million VND and more	10.0	13.3	11.5
Employment			
Do not work	63.7	49.5	57.5**
Agricultural	20.4	31.3	25.1
Non-Agricultural	15.9	19.2	17.4
Living area			
Urban	32.8	32.2	32.5
Rural	67.2	67.8	67.5
Ethnicity			
Other	9.6	9.0	9.3
Kinh	90.4	91.0	90.7

*p < 0.05, **$p < 0.01$, ***$p < 0.001$. The difference was tested between female and male OP

Source: Own estimates, using VNAS 2011

children or contact on phone among older men was higher than among older women (4.59 vs. 4.33, $p < 0.05$; 3.62 vs. 3.12, $p < 0.001$, respectively).

Older men were also more active in social activities than older women: 76.5% of older men participated in at least one social group, compared to 62.0% of older women. Older men participated in 2 social groups and 3 or more social groups than older women (34.0%, 24.4% vs. 26.0%, 15.7%, respectively, $p < 0.001$).

Male and female older people reported differently in terms of perceived emotional support. The average level of satisfaction with respect from other community members among older women was higher than men (4.04 vs. 3.85, respectively, $p < 0.05$). Older women reported having a fewer number of persons whom they could count on than older men (1.29 vs. 1.57, respectively, $p < 0.01$).

Table 2 Social Support of the Study Sample

	Female (n = 1521) Mean/SD	*Male (n = 1017) Mean/SD*	*Total (N = 2538) Mean/SD*
Structural support			
Social demographic			
Living arrangement (%)			
Live with other	91.8	98.2	94.6***
Live alone	8.2	1.8	5.4
Marital status (%)			
Single/Separated/Divorced/Widowed	43.6	8.7	28.5***
Married	56.4	91.3	71.5
Social connection			
Number of family members	4.17 (2.33)	4.14 (1.90)	4.16 (2.14)
Number of living children (included children in law /step children/adopted)	8.33 (4.85)	8.60 (3.95)	8.45 (4.47)
Number of co-resident children	1.40 (1.36)	1.37 (1.28)	1.39 (1.32)
Number of children who live nearby	3.38 (3.58)	3.40 (3.47)	3.39 (3.54)
Frequency of contact with family member			
Average frequency visit to/by children	4.33 (1.64)	4.59 (1.12)	4.44 (1.43) *
Average frequency talk on phone with children	3.12 (1.75)	3.62 (1.42)	3.34 (1.63) ***
Average frequency of contacting children	3.80 (1.26)	4.11 (0.92)	3.95 (1.12) ***
Social participation (%)			
No participation	38.0	23.5	31.8***
Participated in one social group	20.3	18.3	19.4
Participated in two social groups	26.0	34.0	29.5
Participated in 3 social groups or more	15.7	24.2	19.4
Social participation total score	1.23 (1.21)***	1.63 (1.12)	1.40 (1.19)
Functional support			
Emotional support			
Respect from family member	4.01 (0.88)	4.02 (0.70)	4.01 (0.80)
Respect from community members	4.04 (1.05)*	3.85 (0.91)	3.96 (0.99)
Having person who respondents can count on	1.29 (1.38)**	1.57 (1.44)	1.42 (1.42)
Emotional support total score	9.30 (2.05)	9.36 (1.86)	9.32 (1.97)
Instrumental support – Financial support			
Financial support from children –in cash (%)	45.6	50.1	47.5
Financial support from children –in kind (%)	44.5	45.0	44.4
Financial support from siblings, relatives, friends, neighbors (%)	8.8	3.9	6.7*
Financial support during sickness/injuries (%)	36.8	21.5	30.7**
Instrumental support – Physical support			
Physical support with household chores (%)	67.9	65.4	66.8
Physical support with daily acts (%)	29.4	25.3	27.8
Physical support when OP got sickness/injuries (%)	90.1	94.0	91.6

Table 2 (continued)

	Female (n = 1521) Mean/SD	*Male (n = 1017) Mean/SD*	*Total (N = 2538) Mean/SD*
Instrumental support total score	1.67 (1.03)	1.64 (0.94)	1.66 (0.99)
Informational support (%)	73.0	81.7	76.8

*p < 0.05, **p < 0.01, ***p < 0.001. The difference was tested between female and male OP

Source: Own estimates, using VNAS 2011

More female older people received financial support from sibling/relatives/friends/neighbors and financial support during sickness/injuries than older men (8.8% and 36.8% vs. 3.9% and 21.5%, respectively).

About 40% older people received financial support from their children (either in cash or in kind). Nearly 70% older people received physical support with household chores. There was no difference between older women and men who received this support.

More older women received financial support from others or financial support during sickness/injuries than men (8.8% vs. 3.9%, 36.8% vs. 21.5%, respectively).

Table 3 shows the health status of older people. About one-third of older people had at least one ADL limitation. There was no difference between older women and older men in this regard.

Association between Social Support and Health

Table 4 shows bivariate association of ADL limitations and some social support dimensions among older women and older men, separately. Among women, the results indicate the relationship of ADL limitations with social connection and instrumental support (financial support) and informational support. Social connection was negatively associated with ADL limitation: higher average frequency of contacting children among older women who did not have any ADL limitation than those who had at least an ADL limitation (3.90 vs. 3.64, respectively, $p < 0.05$).

Instrumental support - including financial support from children in cash or financial support from other people (sibling, friends, and neighbors) - was related to ADL limitation among women. Receiving financial support from children in cash had a negative association with ADL limitation. Less older women who received cash from children reported to have any ADL limitation than those who did not receive cash from children (30.5% vs. 41.8%, respectively, $P < 0.01$). In contrast, receiving financial support from other people (sibling, friends, and neighbors) was positively associated

Table 3 Health Status of the Study Sample

Variables	*Female (n = 1521) %*	*Male (n = 1017) %*	*Total (N = 2538) %*
Has at least one ADL limitation	36.6	30.9	34.2

Source: Own estimates, using VNAS 2011

Table 4 Social Support and ADL Limitations

	Female (n = 1521) Mean/SD		*Male (n = 1017) Mean/SD*	
	ADL limitation?			
	No	*Yes*	*No*	*Yes*
Structural support				
Social demographic				
Living arrangement (%)				
Live with other	64.3	35.7	69.3	30.7
Living alone	53.1	46.9	58.2	41.8
Marital status (%)				
Single/Separated/Divorced/Widowed	62.5	37.5	69.5	30.5
Married	64.1	35.9	69.1	30.9
Social connection				
Number of family members	4.29 (2.25)	3.96 (2.29)	4.16 (2.04)	4.11 (1.81)
Number of living children	8.30 (4.69)	8.39 (4.78)	8.31 (4.16)	9.25 (3.91)
Number of co-resident children	1.45 (1.31)	1.33 (1.33)	1.34 (1.36)	1.44 (1.24)
Number of children who live nearby	3.23 (3.46)	3.63 (3.51)	3.32 (3.77)	3.60 (3.20)
Frequency of contact with family member				
Average frequency visit to/by children	4.45 (1.36)	4.32 (1.45)	4.58 (1.17)	4.65 (0.96)
Average frequency talk on phone with children	3.33 (1.61)**	2.96 (1.51)	3.65 (1.45)	3.60 (1.40)
Average frequency of contacting children	3.90 (1.23)*	3.64 (1.21)	4.11 (0.99)	4.12 (0.88)
Social participation in the last 12 months				
No participation	64.3	35.7	70.5	29.5
Participated in one social group	61.4	38.6	62.0	38.0
Participated in two social groups	62.1	37.9	79.0	21.0
Participated in 3 social groups & more	65.6	34.4	59.3*	40.7
Social participation total score	1.23 (1.16)	1.23 (1.21)	1.59 (1.11)	1.73 (1.26)
Functional support				
Emotional support				
Respect from family members	4.00 (0.71)	3.89 (0.74)	4.06 (0.65)*	3.90 (0.79)
Respect from community members	3.86 (0.57)	3.89 (0.63)	3.85 (0.77)*	3.67 (0.83)
Having person who respondents can count on	1.33 (1.38)	1.23 (1.23)	1.44 (1.34)*	1.86 (1.77)
Emotional support total score	9.19 (1.90)	9.01 (1.82)	9.36 (1.81)	9.43 (2.54)
Instrumental support – Financial support				
Financial support from children –in cash (%) No	58.2	41.8	70.0	30.0
Yes	69.5**	30.5	68.2	31.8
Financial support from children –in kind (%) No	62.3	37.7	70.1	29.9
Yes	64.7	35.3	67.9	32.1
Financial support from siblings, relatives, friends, neighbors (%) No	64.6	35.4	68.7	31.3

Table 4 (continued)

	Female (n = 1521) Mean/SD		*Male (n = 1017) Mean/SD*	
	ADL limitation?			
	No	*Yes*	*No*	*Yes*
Yes	50.4*	49.6	79.7	20.3
Financial support during sickness/injuries ($n = 872$) (%)	47.6	52.4	51.3	48.7
No				
Yes	36.8	63.2	27.7**	72.3
Instrumental support – Physical support				
Physical support with household chores (%)	64.6	35.4	73.0	27.0
No				
Yes	62.8	37.2	67.1	32.9
Physical support with daily acts ($n = 990$) (%)	–	29.4		74.7
No				
Yes	–	70.6		25.3
Physical support when getting sickness/injuries (%)	28.2	71.8	52.9	47.1
No				
Yes	44.9	55.1	48.7	51.3
Instrumental support total score	1.70 (1.02)	1.62 (0.98)	1.62 (0.98)	1.71 (0.98)
Informational support (%)	73.3	26.7	57.0	43.0
No				
Yes	59.7*	40.3	71.8	28.2

*p < 0.05, ** p < 0.01, *** p < 0.001. The difference was tested within female OP and within male OP, separately

Source: Own estimates, using VNAS 2011

with ADL limitation: the proportion of elder women who received financial support from other people reported having any ADL limitation was higher than those who did not receive financial support from other (49.6% vs. 35.4%, $p < 0.05$, respectively). Similarly, more elder women who received informational support reported having ADL limitation than those who did not receive this type of support (40.3% vs. 26.7%, $p < 0.05$).

Among older men, ADL limitation was associated with social support in some different aspects, such as social participation, emotional support, and financial support. Participation in social groups was found to be significantly related to ADL limitation among men. Among men reporting no ADL limitation, the proportion of people participated in 1 or in 3 or more social groups was lower than those who did not participate in any social group ($p < 0.01$): 62% and 59.3% of older men who participated in one social group and three or more social groups, respectively, reported no ADL limitation, compared with 70.5% of older men who did not participate in any social group and who reported no ADL limitation. However, more older men who

participated in two social groups reported no ADL limitation than older men who did not participate in any social group (79% vs. 70.5%).

Emotional support among older men was associated with ADL limitation in both positive and negative directions. The level of satisfaction of respect from family members and respect from other community members had a negative association with ADL limitation. The average satisfaction level of respect from family members and respect from community members, among elder men who did not report having any ADL limitation, was higher than elderly men whom reported having any ADL limitation (4.06 vs. 3.90, 3.85 vs. 3.67, respectively, $p < 0.01$). In contrast, the average number of people elder men could count on presented a positive association with ADL limitation. Older men who had any ADL limitation reported a higher average number of people that they could count on than older men who did not have any ADL limitations (1.86 vs. 1.44, respectively, $p < 0.05$).

Financial support received by male OP during sickness or injury in the past 12 month had a strong relationship to ADL limitation. More older men who had received physical support during sickness or injury reported having any ADL limitation than those who did not receive the same support (72.3% vs. 48.7%, respectively, $p < 0.01$).

Table 5 presents the results showing the association between ADL limitation and social support variables. Demographic variables (age, ethnicity, education, employment, living area, and household income) were control variables. The logistic regression for ADL limitations shows an association between emotional support (level satisfaction with respect from family members) and informational support among older women. For each point of increase in the level of satisfaction regarding respect from family members, the odds of having at least one ADL limitation among older women decreased by 27% ($p < 0.05$). The model also shows that older women who received informational support were 2.75 times more likely to experience ADL limitations than older women who did not receive informational support ($p < 0.001$).

Among older men, emotional support (i.e., having any person whom the older person could count on) related to having at least one ADL limitation. For each number of person who older men could count increase, the odd of having at least one ADL limitation among older men increased by 16% ($p < 0.05$).

Discussion and Policy Recommendations

The linkage between social support and ADL limitation indicated different directions based on the type of support and gender. ***Structural support*** investigated different impact on ADL limitation among older women and older men. Among older women, social connection was found to have a negative association with having ADL limitation. More frequent contact with children was found to be associated with less ADL limitation experienced. On the other hand, among older men, social participation was negatively associated with having at least one ADL limitation. Social engagement was found to be a protective factor to ADL limitation. The linkage between social connections and ADL limitation among older men had the same direction with previous studies. Close social network associated with better physical function (Magai et al. 2003; Litwin 1998). The findings of the relationship between social participation with physical disabled among older men were similar with those in Mazo et al. (2011).

Table 5 Multivariate Logistic Regression of the Association between Social Support and ADL Limitations among Older Women and Men

Variables	*ADL Limitations (No* vs. *Yes)*			
	Female		*Male*	
	OR	*95% CI*	*OR*	*95% CI*
Social network				
Living arrangement				
Live with other (ref)	–		–	
Living alone	0.89	0.53–1.49	1.01	0.22–4.74
Marital status				
Single/Separated/Divorced/Widowed (ref)	–		–	
Married	1.45	0.95–2.23	0.86	0.26–2.82
Number of living children			0.99	0.94–1.06
Average frequency of contacting children	0.98	0.80–1.20	–	–
Social participation				
No participation (ref)	–	–	1	–
Participated in one social group	–	–	1.31	0.61–2.82
Participated in two social groups	–	–	0.74	0.40–1.38
Participated in 3 social groups or more	–	–	2.00	0.94–4.27
Emotional support				
Respect from family members	0.73*	0.56–0.96	0.88	0.60–1.29
Respect from community members	–	–	0.78	0.60–1.01
Having person who respondents can count on	–	–	1.16*	1.01–1.34
Instrumental support				
Financial support from children - in cash	0.68	0.46–1.01	–	–
Financial support from siblings, relatives, friends, neighbors	1.80	0.82–3.86	–	–
Informational support	2.75***	1.65–4.56	0.59	0.28–1.23

*$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Own estimates, using VNAS 2011

Emotional support indicated association with ADL limitation among older men only. Emotional support showed mixed effects with ADL limitation. Respect from family or community member showed as protective factors to ADL limitation, while the availability of people who could count on indicated a positive association. Older men who had ADL limitations reported more people that they could count on. ***Instrumental support***, which included financial support and physical support, was found to be positively associated with ADL limitation among both older men and women. Receiving instrumental support also reported higher rate of ADL limitation. Informational support indicated a positive association with ADL limitation among older women only. Receiving informational support reported higher rate of ADL limitation.

Previous studies only explored the relationship between social support and ADL limitation in structural aspects, and they did not mention the functional aspect of social

support in relationship to ADL limitation. Thus, our findings in this research contributed to fill such a gap.

From the aforementioned findings, there are some policy recommendations as follows. ***For government and policy makers***, there should be more policies focusing on older people who are not married and/or living alone. Investments in developing system of social workers and community-based care system for older people should be considered as the most cost-effective ways in promoting health and social care services for older people. Allocating more resources for further in-depth research on social support and health among older people with a gender perspective in order to provide evidence for policy development (UNFPA 2011; VWU 2012). ***For healthcare and long-term care system*****,** healthcare providers should pay particular attention to vulnerable older people – both men and women – so as to make sure that they could be accessible and affordable to services. Giang and Phi (2017) showed that more vulnerable and poor older people faced heavier out-of-pocket payments in healthcare services than did their counterparts, and such a situation prevented them from getting healthcare services as well as making their household impoverished. Health insurance should be used as an important health and long-term care financing mechanism for older people. ***For local authorities and socio-political groups***, the outreach and capacity of local mass organizations should be enhanced in order involve more elderly people in social activities. Through education and communication, local authorities, mass organizations, and social groups should promote awareness to families and communities about the roles of older people. This awareness should focus on the role respect plays among family members and community members to older people. ***Families and communities*** should have more support to organize social activities for older people. Health education should be encouraged for family members and community members so as to help them have necessary skills in taking care of older people. Efforts should be made through education to encourage family members to maintain regular contact with older people. Initiatives to enhance financial support and physical support for female older people whom are considered more vulnerable than men at the same age should be encouraged and implemented (Le and Giang 2016; Giang et al. 2018). Last but not least, ***older people*** should be also facilitated so as to keep contact more often with their children and actively participate in socio-political groups. Such activities would especially help improve emotional and instrumental supports to older persons.

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Compliance with Ethical Standards

Conflict of Interest The authors declare no potential conflicts of interest with respect to theresearch, authorship, and/or publication of this article.

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Giang Thanh Long: Associate Professor of Faculty of Economics, National Economics University, Hanoi; a Senior Researcher at Institute of Social and Medical Studies (ISMS), Hanoi; an Affiliate Senior Researcher, Menzies School of Medical Research, University of Tasmania. His research interests include the economics of aging and health protection for older people, using actuarial and micro-simulation techniques to provide evidence-based policy studies. His research outcomes have been published widely, including Asian Economic Journal; Asia Pacific Migration Journal; Asia Pacific Population Journal; Asia Pacific Development Journal; Asia Pacific Economic Literature; Development and Change; International Social Science Journal; Journal of Population Ageing; and Social Science and Medicine. He was a member of the drafting team for the Vietnam's Social Protection Strategy 2011–2020; a key member of taskforce and research group for reforming social assistance system in Vietnam 2017–2021, under Ministry of Labour, Invalids and Social Affairs (MoLISA); a member of the drafting team for the Ministry of Health's Joint Annual Health Report 2017, namely 'Toward a Healthy Aging'. Dr. Long earned a MA degree in public policy from Hitotsubashi University, Japan; a PhD degree in public policy from National Graduate Institute for Policy Studies (GRIPS), Japan.

Nguyen Thi Trang: Director of the Survey Center, Institute of Social and Medical Studies (ISMS). Her research interests include the sociology of aging and health of older people. Her research outcomes have been published in various journals in Vietnamese. Trang was a member of the survey team for the first-ever Vietnam Aging Survey (VNAS) in 2011. She has also involved in organizing a number of surveys on older people and health-related issues for UNFPA Vietnam, and Vietnam Women Union. Trang earned a BA degree in public health and a MA degree in development economics from the Vietnam-Netherlands Master's Program in Development Economics (MDE) at the National Economics University, Vietnam.

Nguyen Truong Nam: Director, Institute of Social and Medical Studies (ISMS).Dr. Nam's research interests include, but are not limited to reproductive health, gender and sexuality, non-communicable disease (NCDs), behavior change communication, and monitoring and evaluation. He has served as Principal (PI) or Co-Investigator for more than 30 large-scale quantitative and qualitative studies. Nam was a co-principal investigator of the Vietnam Aging Survey (VNAS) in 2011. Dr. Nam Nguyen received his Doctor of Public Health degree in Sociomedical Sciences in 2007 from Columbia University.

Le Quoc Hoi: Associate Professor & Editor-in-Chief, Journal of Economics and Development, National Economics University. Dr. Hoi's main research interests include population aging, growth and productivity. He has involved in a number of studies providing both qualitative and quantitative evidence-based inputs for

government and line ministries in relevant fields. Dr. Hoi was a research advisor for the team in designing and conducting the Vietnam Aging Survey (VNAS) in 2011. Hoi received his PhD degree in Economics from University of Adelaide (Australia) in 2006, and completed his post-doctoral research at Johns Hopkins University during January – June 2010.

Tran Thi Thuy Ngoc: Senior Lecturer, Faculty of Development Economics, University of Economics, The University of Da Nang (DUE)**.** Her research interests include health and wealth-related effects on living arrangements of older people. Her research outcomes have been published in various journals in Vietnamese. She is now completing her PhD dissertation on the effects of living arrangements on health and work of older people. Ngoc has taught at DUE for about 15 years. She has worked closely with Institute of Public Policy and Management at the National Economics University in a number of research project for ILO, UNFPA, Vietnam Association of the Elderly and Vietnam Women Union. Ngoc earned both BA and MA degrees in development economics from DUE.

Affiliations

Long Thanh Giang [1,2] · Nam Truong Nguyen [3] · Trang Thi Nguyen [3] · Hoi Quoc Le [4] · Ngoc Thuy Thi Tran [5]

1 Faculty of Economics, Suite 1510, Building A1, National Economics University (NEU), Hai Ba Trung District, Hanoi, Vietnam

2 Menzies Institute of Medical Research, University of Tasmania, Hobart, Australia

3 Institute of Social and Medical Studies (ISMS), Nam Tu Liem District, Hanoi, Vietnam

4 Journal of Economics and Development, Suite 1406, Building A1, National Economics University (NEU), Hai Ba Trung District, Hanoi, Vietnam

5 University of Economics, The University of Da Nang, City, Da Nang, Vietnam