SOCIAL SUPPORT AND DEPRESSIVE SYMPTOMS AMONG ELDERLY VETERANS IN VIETNAM: A CROSS-SECTIONAL STUDY

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ABSTRACT

In Vietnam, elderly veterans are prone to suffer depressive symptoms from their traumatic experiences. Social support is recognized as a stress buffer. Therefore, we aimed to identify the associations between social support and depressive symptoms among veterans ages 65 and older in Vietnam. A cross-sectional study was conducted from June to August 2010. We contacted male veterans age 65 and older and recruited 828 participants. They responded to a structured questionnaire completed as an in-person interview conducted by a researcher. Indicators of depressive symptoms and social support were validated in previous studies. Multiple linear regression analyses were used to identify the associations between social support and their depressive symptoms as well as to identify the influential sources of social support among family, friends and significant others. The mean (SD) score of depressive symptoms among elderly veterans was 15.4 (9.2). A significant association was detected between social support and depressive symptoms among the participants ($p<0.01$). Those who perceived higher levels of social support were less likely to have depressive symptoms. Regarding the sources of social support like family, friends and significant others, support from family ($p<0.01$) and support from friends ($p<0.01$) were significantly associated with depressive symptoms. However, support from significant others was not significant. Social supports from family members and friends are important factors against depressive symptoms among elderly veterans in Vietnam.

Keywords: *Depressive symptoms; elderly; social support; veteran; Vietnam*

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INTRODUCTION

In many countries, elderly populations are growing in the coming years, both regards to absolute numbers and proportion of the population. Vietnam is not an exception. The medium-variant projections of the United Nations indicate that the elderly population in Vietnam will increase significantly from 7.5% of the total population in 2005 to about 26% in 2050[1]. Despite the country's great successes in development activities, many people in Vietnam, including the elderly, are still living in poor and vulnerable conditions. For example, of the current elderly population, a majority (74%) are living in rural and disadvantaged areas[1]. Among them, Vietnam War veterans are one of the most vulnerable groups. Combat trauma in early adulthood can influence physical and psychological functioning in later life among veterans[2]. Exposure to a combat environment can disrupt civilian life and can have a strong impact on mental health and psychological well-being. When veterans return from war, they are expected to readjust themselves to their civilian lives that include but are not limited to work, marriage and families. Memories and emotions associated with combat events can re-emerge later in life and lead to depressive symptoms[3]. They may also suffer from loss of health, physical disabilities and retirement. Coping mechanisms that aging veterans rely on may be weak and thus expose them to a greater risk of depression[4]. All of these factors can cause elderly veterans to be at higher risks of depressive symptoms than non-veterans[5].

The risk factors of depressive symptoms among elderly people in the community have been researched in previous studies[6,7]. Major risk factors found in a systematic review and meta-analysis included bereavement, sleep disturbance, disability, and prior depression[8]. Other risk factors of depressive symptoms may include social support, socio-economic status and chronic conditions[9]. The elderly veterans are known to be vulnerable for psychological problems and therefore they may need more social support than others. Moreover, social support has an important role in post-war adjustment for the elderly veterans. In particular, family support helped elderly veterans adapt to civilian life and sometimes to come to terms with the long-term effects of wounds[10]. Support from friends, especially friends through the war service, was also a valuable resource for discussing war experiences among World War II veterans[10].

However, many people with mental disorders do not receive any care at all in developing countries. In Vietnam, increasing levels of mental health problems are reported in the media and in public debate[11]. However, until now, few studies have been conducted on depressive symptoms among elderly veterans in Vietnam even though they might hold a greater risk of experiencing depressive symptoms[12]. Therefore, this study, aims to identify the association between social support and depressive symptoms among elderly veterans in Vietnam.

METHODS

Study design and settings

A cross-sectional study was conducted in Thai Binh province. We targeted male veterans ages 65 and older who participated in the Vietnam War. Elderly people in Vietnam are defined as people of 60 years and older. However, older veterans are more likely to have been exposed to war and their participation in war is more

likely to be longer and intense. As a result, this study sampled veterans 65 years of age and older.

Based on the policy of Vietnamese armed forces at that time to recruit soldiers to participate in war, healthy males ages 18 years and older joined the army. Therefore, only a small number of females were recruited to do light tasks away from the battlefield like serving meals or transferring information. Female veterans constituted only about less than 10% of the total veterans and were excluded from the study because of their small numbers.

Sampling

The estimated minimum sample size was calculated as 400. As the target population of this study was the elderly, we doubled the sample size to account for potential problems of non-response or incomplete survey reports.
We used a random sampling method to select communes. There are a total of 287 communes in Thai Binh province. Socio demographic characteristics of these communes were almost comparable as most people live in the similar rural areas. Based on the available data from Thai Binh Veteran Association, each commune was supposed to have an average of 153 male veterans ages 65 and older. Therefore, to obtain participants, we randomly selected 6 communes from the total 287 communes. Within each sampled commune, we recruited male veterans aged 65 years and older. Based on the available list of veterans in those 6 selected communes, we identified 853 male veterans.

Instruments

To measure depressive symptoms, we used the Center for Epidemiological Studies Depression Scale (CES-D)[13]. The original CES-D is a 20-item, self-report, Likert-type rating scale. In the Vietnamese version of the CES-D, the only item omitted from the original CES-D scale was the statement, "I felt that I was just as good as other people," because it effects to low Cronbach's alpha value. Except from that item, the Vietnamese version of CES-D was reported to achieve the optimum level of cross-cultural validity or conceptual equivalence. This 19-item CES-D Scale had a Cronbach's alpha value of 0.82 and 0.91 in previous studies. In this study, the Cronbach's alpha value of this scale was 0.86. For social support, we used the Multidimensional Scale of Perceived Social Support (MSPSS)[14]. The MSPSS comprised 12 items with questions on the sources and levels of social support provided by family, friend, or significant other. The scale is a 7-point Likert-type questionnaire with responses ranging from "very strongly disagree" to "very strongly agree". Higher scores on this scale represented higher levels of perceived social support (score range: 0 to 24). In this study, the Cronbach's alpha value of this scale among the sample of elderly veterans was 0.87.

Besides above main variables, we measured age, marital status, education level, occupation, income, history of physical disease and medication, history of being wounded and history of losing a relative or friend during the war. History of physical disease was obtained by asking respondents whether they had any kind of chronic diseases including the following: hypertension, heart disease, diabetes, gout, hepatic disease, ulcer, respiratory disease, cancer, difficulty in hearing, cataract, glaucoma, arthritis, urinary incontinence, bowel incontinence and prostate enlargement. These items were chosen based on past studies, which have shown that they are factors related

to depression status among elderly people or because we considered them as important related factors in usual clinical findings[5]. In addition, we measured activities of daily living (ADL) and instrumental activities of daily living (IADL). For ADL, each participant rated his independence in seven items (walking, ascending and descending stairs, feeding, dressing, going to the toilet, bathing, and grooming). To measure IADL, we used the Tokyo Metropolitan Institute of Gerontology Index of Competence (TMIG-IC)[15]. This is a 13-item index including three sublevels of competence: (1) instrumental self-maintenance (5 items); (2) intellectual activities (4 items); and (3) social role (4 items) rated on a yes/no basis. These two measurements had been translated from English into Vietnamese and used in a previous study on a Vietnamese elderly population[16]. ADL and IADL scores were recoded into three levels of "low ability", "middle ability" and "high ability" based on the distribution of the scores on the ability to perform daily activities.

Data collection

Health worker volunteers at each commune health station accompanied interviewers to veteran's houses at the beginning to guide them and to ask the veterans to participate in the study. Face-to-face interviews with the structured questionnaire were conducted by five interviewers from the Thai Binh University of Medicine and Pharmacy.

Data analysis

We performed all statistical analyses using the Stata version 11. We conducted bivariate analyses to describe the crude associations between social support and depressive symptoms. Multivariate analysis was employed to determine the association between social support and depressive symptoms, accounting for other confounding factors.

Ethical consideration

Ethical approval was obtained from the Ethical Committee of the University of Tokyo. Ethical approval in Thai Binh, Vietnam was received from the Thai Binh University of Medicine and Pharmacy. Written informed consent was achieved from all respondents in the survey before the interviews. The interviewed participants were well informed that their identities would remain anonymous to protect their confidentiality and privacy. Interviews could be stopped at any time at the request of the participant without penalty. Any perceived risks from the interview as well as research were carefully examined and minimized through a series of consultations with experts and research counterparts before conducting the field study. The collected data were used only for research purposes.

RESULTS

Table 1. Characteristics of the participants

Variables		n	%
Age	≤ 70	390	47.1
	> 70	438	52.9
Marital status	Single	39	4.7
	Married	693	83.7
	Separated	10	1.2
	Widower	86	10.2
Education level	Primary school	200	24.2
	Secondary school	438	52.9
	High school	114	13.8
	Bachelor or higher	76	9.2

Current work status	No	602	72.7
	Yes	226	27.3
Income/month	< 47.6 USD	310	37.4
	47.6 ≤ 95.2 USD	291	35.1
	95.2 ≤ 142.8 USD	121	14.6
	> 142.8 USD	106	12.8
Chronic disease	No	135	16.3
	Yes	693	83.7
Wound in war history	No	625	75.5
	Yes	203	24.5
Loss of relative/friend	No	513	62.0
	Yes	315	38.0
ADL	Low ability	205	24.8
	Middle ability	325	39.3
	High ability	298	36.0
IADL	Low ability	414	50.0
	High ability	414	50.0
Depressive symptoms (Mean, SD)	15.4 (9.2)		

n, number; USD, US Dollar; ADL, Activity of Daily Living; IADL, Instrumental Activity of Daily Living

Table 1 summarizes the characteristics of the participants. Of 828 participants, 438 (52.9%) were 70 years old or older, 693 (83.7%) were married, and 226 (27.3%) were still working during the survey period. Of total, 203 (24.5%) were wounded during the war, and 693 (83.7%) had chronic diseases such as hypertension, pulmonary disease and rheumatoid arthritis. Regarding their disability status, 205 (24.8%) had low ability to do ADL and 414 (50.0%) had low ability to do IADL.

Table 2. Multivariate linear regression analysis to examine social support in association with depressive symptoms

Type of support (score)	n	CES-D		p-value
		Mean	SD	
Total social support				
Low support (0-13)	416	50.2	19.1	
High support (14-24)	412	49.8	11.7	<0.01
Family support				
Low support (0-5)	398	18.6	9.0	
High support (6-8)	430	12.5	8.4	<0.01
Friend support				
Low support (0-3)	374	18.0	10.6	
High support (4-8)	454	13.2	7.2	<0.01
Significant other support				
Low support (0-4)	389	18.6	9.7	
High support (5-8)	439	13.5	8.3	<0.01

n, number; CES-D, Center for Epidemiological Studies Depression Scale; SD, Standard Deviation

Table 2 shows the crude association between social support and depressive symptoms. Respondents who had higher level of total social support reported lower score of depressive symptoms compared to those who had lower level of total social support ($p<0.01$). Respondents who had higher levels of specific sources (family, friends and significant other) of support also reported lower scores of depressive symptoms compared to those who had lower levels of each kind of these support ($p<0.01$).

Table 3. Adjusted association between social support and depressive symptoms

Variables		β	SE	p-value
Age	≤70			
	>70	- 0.06	0.60	0.07
Marital status	Non-married			
	Married	0.03	0.87	0.33

Education level	Primary school			
	Secondary school	0.00	0,70	0.99
	High school	-0.06	0.96	0.10
	Bachelor or higher	0.04	1.10	0.31
Current work status	No			
	Yes	-0.02	0.62	0.44
Income	> 142.8 USD			
	< 47.6 USD	-0.18	0.67	<0.01
	47.6 USD to < 95.2 USD	-0.22	0.87	<0.01
	95.2 USD to ≤ 142.8 USD	-0.31	1.01	<0.01
Chronic disease	No			
	Yes	0.10	0.78	<0.01
Wound in war history	No			
	Yes	0.12	0.67	0.01
Loss of relative/friend	No			
	Yes	-0.00	0.55	0.97
ADL	Low ability			
	Middle ability	-0.22	0.72	<0.01
	High ability	-0.17	0.99	<0.01
IADL	Low ability			
	High ability	-0.16	0.64	<0.01
Total social support	Low support			
	High support	-0.31	0.64	<0.01

β, Standardized regression coefficient; SE, Standard error; USD, US Dollar; ADL, Activity of Daily Living; IADL, Instrumental Activity of Daily Living.

Table 4. Adjusted association between social support (family, friend, significant other) and depressive symptoms

Variables		β	SE	p-value
Age	≤70			
	>70	-0.03	0.61	0.31
Marital status	Non-married			
	Married	0.05	0.90	0.09
Education level	Primary school			
	Secondary school	0.00	0.71	0.96
	High school	-0.05	0.97	0.15
	Bachelor or higher	0.05	1.12	0.15
Current work status	No			
	Yes	-0.02	0.63	0.45
Income	> 142.8 USD			
	< 47.6 USD	-0.16	0.70	<0.01
	47.6 USD to < 95.2 USD	-0.21	0.89	<0.01
	95.2 USD to ≤ 142.8 USD	-0.31	1.02	<0.01
Chronic disease	No			
	Yes	0.10	0.80	<0.01
Wound in war history	No			
	Yes	0.13	0.68	<0.01
Loss of relative/friend	No			
	Yes	0.01	0.56	0.56
ADL	Low ability			
	Middle ability	-0.22	0.73	<0.01
	High ability	-0.17	1.01	<0.01
IADL	Low ability			
	High ability	-0.15	0.65	<0.01
Family support	Low support			
	High support	-0.21	0.69	<0.01
Friend support	Low support			
	High support	-0.15	0.71	<0.01
Significant other support	Low support			
	High support	-0.03	0.68	0.34

β, Standardized regression coefficient; SE, Standard error; USD, US Dollar; ADL, Activity of Daily Living; IADL, Instrumental Activity of Daily Living

The results of multiple linear regression analyses predicting depressive symptoms are shown in table 3 and 4. First, we treated social support as one independent variable as shown in table 3. As a result, those who had higher social support were less likely to have depressive symptoms (β = -0.31, p<0.01). In table 4, we treated family support, friend support and significant other support separately because we focused on their different characteristics for deeper interpretation. Among three variables, family support and friends support were found

as significant factors while significant other support was not significantly associated with depressive symptoms. Those who had high family support (β = -0.21, $p<0.01$) or high friend support (β = -0.15, $p<0.01$) were less likely to have depressive symptoms. Regarding other variables, depressive symptoms were more prevalent among those who gained less than 47.6 USD ($p<0.01$), who had chronic disease ($p<0.01$), who were wounded in war ($p<0.01$) and who had low ability to do ADL ($p<0.01$) and IADL ($p< 0.01$).

DISCUSSION

In this study, we detected a significant association between social support and depressive symptoms among elderly veterans. Victims of traumatic events cope with psychological difficulties by two main ways: processing the recollections of the events and avoidance. Social support is linked to both processing and avoidance. There are many aspects to assessing social support such as network size, frequency of contact, density, intimacy and reciprocity. However, social network may not be necessarily equivalent to social support. Assessing multiple levels of support such as emotional, tangible and guiding through many domains may be unnecessarily cumbersome and may still yield an incomplete assessment of the experience of support[1]. A subjective measure of perceived social support has a built-in mechanism to capture the presence of negative social interaction, unequal social exchanges and dissatisfaction with absent or inadequate support. In addition, previous studies indicated that what individuals expect from friends, family and confidants in term of support is not uniform but varies. Taking these reasons into consideration, this study focused on the veteran's subjective perception of being supported rather than on an objective analysis of actual incidences of supportive behaviour. Social support generally refers to help given by family and friend. However, elderly veterans may also need support from a significant other, which may include a nurse, a doctor, or a counselor; he or she is anyone other than family or friends to whom they may rely on when dealing with difficulties which result from their unique characteristics of the health issues.

Social support has been shown as an important protecting factor for depressive symptoms among elderly people in general populations[6,7]. In this study, those who had high social support were less likely to suffer from depressive symptoms among elderly veterans in Vietnam. This result is consistent with the previous studies which showed the inverse association between high social support and depressive symptoms among general elderly people and elderly veterans in other countries[6]. Among the group of the elderly veterans, social support had the important role in post-war adjustment. Social support was a predictor of depressive symptoms at later life among veterans of the World War II and the Korean War[17].

Regarding the source of social support, family and friends might be more influential than significant others. As shown in table 4, those who had higher social support from family or friends were less likely to have depressive symptoms. In Vietnamese society, family is one of the core values and emphasis on extended families is common. Living arrangements of the elderly and their households indicate that family relationships remain strong in Vietnam despite substantial changes in social and economic conditions. In this study, the majority of veterans (88%) were living with their family members (wife and/or adult children). This unique family structure and culture in Vietnam

therefore must have facilitated social support to the married veterans. A previous study also indicates that support from family has a role in helping them adapt to civilian life and sometimes to come to terms with the long-term effects of wounds[6]. In addition, veterans may find the support from their friends outside the household. Friend support is a valuable resource when discussing war experiences and dealing with the emotional content of traumatic recollections[6]. Friends especially who share battle experiences and life-threatening situations often become more cohesive[6]. Veterans may receive social support by means of helping with the processing of traumatic recollections. When friend support is needed, it may have some impacts on their depressive symptoms. On the other hand, no association was detected between support from significant others and depressive symptoms. This could be explained by the traditional custom in Vietnam. Family relationships remain strong and friend support is a resource when discussing war experiences. At the later life, support from significant others were less important compared to the support from family members or close friends to the elderly.

Other factors associated with depressive symptoms were gained less than 47.6 USD, having chronic disease, being wounded and low ability to do ADL and IADL. With the historical accumulation of depression studies, various risk factors of depression were found such as being younger[5], loneliness[10], unemployment[10], low salary[18] and physical disability[19]. Our study indicates that some of these might be also risk factors even among elderly veterans in Vietnam. This is the first study in Vietnam on the association between depressive symptoms and social support among elderly veterans. The results indicate the important role of social support to this population who experienced war stressors which were known to have long-term effects on their mental health. There are a number of limitations to this study. First, this was a cross-sectional study. Therefore, it is difficult to conclude a cause-effect relationship between depressive symptoms and social support. For example, low social support may result in depression among veterans. In contrast, low perceived social support may also be a consequence of depression. Second, other possible variables that may have influenced the depressive symptoms of veterans were not covered in this study. This includes substance use, as previously suggested, but was not explored in the present study. However, because of the different characteristics between veterans in Vietnam and veterans coming from other countries involved in the Vietnam War, substance use was not prevalent among veterans in Vietnam as among Vietnam War veterans of other nationalities. The previous history of depression was also not mentioned in the study. However, previous study indicated that depression in the past was not prevalent among elderly people, as there is an association between depression and mortality which reduce the number of elderly people who were depressed in the past.

CONCLUSIONS

Those who received high social support were less likely to suffer from depressive symptoms among Vietnamese elderly veterans. In particular, support from family members and friends can play important roles in supporting elderly veterans' mental health in Vietnam. Vietnamese veterans are now in their 70's and 80's. In order to liberate the rest of their life from depressive symptoms the possibility of enhancing social support should be readdressed.

ACKNOWLEDGEMENTS

We thank all the veterans who participated in this study. We also thank the interviewers and recruiters, who gave their full cooperation so that this study could be carried out.

DECLARATION OF CONFLICTING INTERESTS

The authors declare that they have no competing interest.

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