Health inequalities among older adults in Vietnam: Evidence from the 2011 Vietnam National Aging Survey

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ABSTRACT

Vietnam's economic development, change in health infrastructure, demographic and epidemiological transitions, and projected rapid population aging point to the need for understanding issues related to the wellbeing of older adults. Few recent studies that examine old-age health among specific Vietnamese populations notwithstanding, a national profile of older adults' health, particularly health inequalities among the aged, is still lacking for Vietnam. To address this gap, we analyze nationally representative data from Vietnam's first national survey of older adults to examine socioeconomic gradients in health at older ages in urban and rural Vietnam. Our specific research questions include: how are various measures of socioeconomic status (education, occupation, household assets) associated with health outcomes (self-rated health, ADL limitations, functional health, and psychological health)? How do these relationships vary across rural and urban areas of Vietnam? Which SES indicators are better able to determine health status of older Vietnamese populations?

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Specific aims: In this paper, we analyze Vietnam's first national survey of older adults to examine socioeconomic gradients in health at older ages in urban and rural Vietnam. More specifically, using nationally representative data from the Vietnam National Aging Survey, we address the following research questions: how are various measures of socioeconomic status (SES) (e.g., education, occupation, household assets) associated with health outcomes (e.g., self-rated health, ADL limitations, functional health, and psychological health)? How do these relationships vary across rural and urban areas of Vietnam? Which SES indicators are better able to determine health status of older Vietnamese populations?

Background: The association between socioeconomic status (SES) and later-life health is relatively well established in Western developed countries. Despite the presumption that SES exerts less influence at very old age (Elo & Preston, 1995), evidence suggests that there is a life-long cumulative impact of SES on health and that older persons with lower SES experience greater likelihood of numerous ill health conditions (Grundy & Sloggett, 2003; Lynch et al., 1997; Ross & Wu, 1996). A broad set of mechanisms have been attributed to explain SES differences in older adults' health, including living and working conditions, exposure to stress, social support, feeling of self-efficacy, health-related knowledge and behaviors, and healthcare utilization (Williams, 2005). How generalizable these findings are to developing societies that have different epidemiological trajectories and different cultural norms and values remains questionable.

The underlying pathways of SES-health gradients at older ages are likely to differ across a country's stage of economic development as well as to vary with social and cultural factors. As standards of living improve, variations across individuals in exposure to health-enhancing factors can also increase (Smith & Goldman, 2007). The magnitude of resulting health inequalities will depend on social welfare policies and cultural context, such as health insurance, the availability of familial and other forms of social protection. SES disparities in health will also be shaped by health-related behaviors (e.g., diet, exercise, smoking, and drinking), which are likely to change over the course of economic development (Popkin & Gordon-Larsen, 2004).

Over the last decade or so, research in a pocket of non-Western developing countries on SES differentials in older adults' health has been emerging (e.g., Smith & Goldman 2007; Zimmer & Amornsirisomboon, 2001; Zimmer & Kwong, 2004; Zimmer, 2008). While these studies offer numerous insights, the literature remains largely fragmented, particularly among countries where successful economic development within a relatively short period has not only improved the national standards of living but also led to burgeoning income inequalities and where issues related to health becomes more important due to rapid population aging (Smith & Majmundar, 2012).

The Vietnam context: Vietnam is a particularly compelling case for examining associations between SES and old-age health. As a result of its shift from a redistributive to a market economy in 1986, Vietnam's gross national income per capita (PPP) increased from $610 in 1990 to $3,060 in 2010 (World Bank, 2012). While the new economic regime managed to lift millions of the Vietnamese out of poverty, the country has observed economic and social inequality growing at an unprecedented rate (Glewwe, Agrawal, &

Dollar, 2004). A case in point was health-sector reforms that affected patterns of healthcare access and utilization by increasingly shifting the burden of healthcare finance to households (Lieberman & Wagstaff, 2009). Change in health infrastructure may have implications for old-age health. Few recent studies that examine old-age health among specific populations notwithstanding (e.g., Teerawichitchainan & Korinek's 2012 study of the long-term impact of war involvement on northern Vietnamese men and women), a national profile of older adults' health, particularly health inequalities among the aged, is still lacking for Vietnam.

Accompanying the improvement in living standards is the increase in life expectancy at birth, which rose from 65 years in 1990 to 75 in 2010, and the epidemiological transition whereby causes of death have become more concentrated within non-communicable degenerative diseases (WHO, 2012). Given a swift decline in fertility and continuous increase in life expectancy, the share of population age 60 and older among the total population is estimated to grow from 8 percent in 2010 to 17 percent in 2030 and 31 percent in 2050 (UNFPA, 2011). By 2050, the number of Vietnamese persons age 60 and older will increase by 336 percent (Knodel, 2012). The challenges created by this type of age structure change can impose added pressures on the health infrastructure and increasing healthcare costs.

Data source for this study is the Vietnam National Aging Survey (VNAS) conducted in October and November 2011 by the Institute of Social and Medical Studies and Indochina Research & Consulting. The VNAS data are drawn from a multi-stage stratified random probability sample of 4,007 adults age 50 and older in 200 communes throughout Vietnam. The survey provides a unique resource for addressing relationships between SES and health status at later adulthood. It contained information on self-assessed health status, self-reported illnesses, severity of illnesses, utilization of health services, and out-of-pocket expenditure. Further, the VNAS collected data that will permit an assessment of older adults' psychological wellbeing and functional health (including difficulties in activities of daily living). Further, it also contained information about respondents' lifestyles and health risk behaviors as well as various demographic and socioeconomic variables, including age, gender, education, occupation, employment status, health insurance status, and household assets.

Measurement of dependent variables: We examine a variety of indicators of health status at older ages. The first measure is self-rated health. Respondents were asked to rate their health as excellent, very good, good, fair, and poor. In both developed and developing settings, self-rated health has been shown to be a strong indicator of mortality and morbidity (Idler & Benyamini, 1997). Other health measures include self-reported chronic illnesses, functional limitations, and depressive symptoms. Our measure of functional limitations is constructed based on respondents' self-reported difficulty with the following activities: walking up and down a set of stairs, walking 200-300 meters, getting up from a chair after sitting for long periods, crouching/squatting, lifting objects weighing over 5 kg., and using fingers to grasp or hold things. Additionally, the surveys asked if respondents could dress themselves, eat, bathe, toilet, and getting dressed. Respondents who reported difficulties with any of these tasks were considered to have Activities of Daily Living (ADL) difficulties. Further, we plan to construct an index of depressive symptoms by aggregating answers to six questions, including the extent to which, during the 4 weeks prior to the surveys, respondents felt full of pep; a lot of energy; happy; tired; downhearted and blue; and "so down in the dumps that nothing can cheer you up." Possible answers ranged from 1 (none of the time), 2 (a little of the time), 3 (some of the time), 4 (most of the time), to 5 (all the time).

Measurement of independent variables: We incorporate various SES indicators that relate to both individual and household level socioeconomic standing, including education, main lifetime occupation, savings, and household amenity scores. Education is generally considered the best indicator of SES at older ages because it is typically completed early in life and is a key factor determining subsequent occupation and income, and can be easily measured. We also include whether the respondent had any savings. We construct a household amenity score, which is computed based on whether the respondent reside in a household with a series of modern household assets (e.g., television, motorbike, car, fridge, telephone, modern toilet, washing machine).

Other variables: All multivariate analyses consider the following demographic and lifestyle choice variables previously shown to be related to SES and health, including age, sex, marital status, household size, and presence of children in the household. In analyses not included here, we take into account respondents' health-related behaviors (e.g., alcohol consumption, physical exercise) and their access to healthcare, including whether the respondent had a health insurance and what type of health insurance he/she had.

Analytical approach: We utilize multiple regression models to estimate the net associations between SES variables and each health-related outcome separately for urban and rural samples. We control for the demographic and lifestyle choice variables as well as health access variables that may confound the SES-health relationship. The nature of regression model varies across outcome variables. For example, ordinal logit regression will be used for self-rated health. We plan 1) to estimate the effect of each SES indicator separately and 2) to include all SES variables in the same model to examine the effects of each SES indicator net of the others. To examine variations in the SES-health associations by age and sex for the urban and rural samples, we will include interaction terms between age/sex and a given SES variable. Likelihood ratio tests will be used to determine the joint significance of the set of interaction terms for a given SES measure.

When interpreting results, we are mindful that this study relies primarily on self-related measures of health and functioning and that the study's reliance on cross-sectional data precludes any definitive interpretation of causal relations between SES and health. Additionally, we are aware that we are limited in our choices of health measures and SES indicators. Nevertheless, we anticipate this proposed study to provide various insights into the extent to which SES are related to a range of health measures among older adults in a developing country setting.

References cited

Knodel, J. (2012). Consequences of demographic transition and aging in ASEAN countries. Paper presented at the Asian Population Association meeting, August 29, 2012, Bangkok, Thailand.

Lieberman, S. & Wagstaff, A. (2009). *Health financing and delivery in Vietnam: Looking forward*. Washington, DC: The World Bank.

Ministry of Health. (2004). *National Health Account, 2001-2002*. Hanoi: Department of Finance, Ministry of Health

Ross, C. & Wu, C. (1996). Education, age, and the cumulative advantage in health. *Journal of Health and Social Behavior*, 37, 104-120.

Smith, J.P. & M. Majmundar (Eds). (2012). *Aging in Asia: Findings from new and emerging data initiatives*. Washington, DC: The National Academy Pres.

Teerawichitchainan, B., & Korinek, K.M. (2012). The long-term impact of war on health in northern Vietnam: Some glimpses from a recent survey. *Social Science & Medicine*, 74(12), 1995-2004

UNFPA. (2011). *The aging population in Vietnam: Current status, prognosis, and possible policy responses*. Hanoi: Vietnam.

WHO. (2012). Vietnam: Health profile. http://www.who.int/gho/countries/vnm.pdf.

Williams, D. (2005). Patterns and causes of disparities in health. In D. Mechanic, L.B. Rogut, & D.C. Colby (Eds), *Policy challenges in modern health care* (pp. 115-134). New Brunswick, NJ: Rutgers University Press.

World Bank. (2012). *World development indicators*. http://data.worldbank.org/country/vietnam

Zimmer, Z. & Amornsirisomboon (2001). Socioeconomic status and health among older adults in Thailand: an examination using multiple indicators. S*ocial Science & Medicine*. 52, 1297-1311.

Zimmer, Z., & Kwong, J. (2004). Socioeconomic status and health among older adults in rural and urban China. *Journal of Aging and Health*, 16 (1), 44-70.

Zimmer, Z. (2008). Poverty, wealth inequality and health among older adults in rural Cambodia. *Social Science & Medicine*. 66, 57-71.

Table 1. Descriptive statistics for older adults in Vietnam, VNAS 2011.

Variable	All (N=4,007)	Urban (N=1,060)	Rural (N=2,947)
Dependent variables			
Negative self-rated health (%)	56	48	60
Difficulty with 1+ ADL (%)	30	25	32
Mean number of functional limitations	2.25	2.00	2.37
(range: 0-7)			
Mean index score for depressive symptoms	8.08	7.62	8.31
(range: 5-15)			
Independent variables			
Educational attainment (%)			
No schooling	13	8	16
Incomplete primary	26	18	30
Primary	16	13	18
Lower secondary	25	26	25
Upper secondary and higher	20	35	12
Total	(100)	(100)	(100)
Main lifetime occupation			
Own account worker in the farm sector	52	20	68
Own account worker in the nonfarm sector	24	37	18
Wage worker	24	44	14
Total	(100)	(100)	(100)
Having savings (%)	12	16	9
Mean household amenity score	7.85	9.16	7.19
(range: 0-12)			
Control variables			
Male (%)	42	43	42
Age			
50-59	46	50	44
60-69	24	23	24
70-79	18	16	19
80+	12	11	13
Total	(100)	(100)	(100)
Currently married (%)	71	73	71
Mean household size	4.08	4.64	3.79
Living with 1+ offspring (%)	70	79	65
Urban residence (%)	34	100	0

For the analyses of self-reported health and mental health status, we exclude xx cases that used proxy interviews

Source: Vietnam National Aging Survey 2011.

Table 2a. Bivariate associations between socioeconomic status and health indicators, VNAS 2011 (percentages with a given characteristics are reported)

	Education					Occupation		
	No education	Incomplete primary	Primary	Lower Secondary	Upper secondary and over	Own account, farm	Own account, nonfarm	Wage worker
Urban								
% Negative self-rated health	69.9	68.4	58.7	40.4	35.0	65.6	49.2	39.9
% Difficulty with 1+ ADL	34.5	33.6	27.4	15.2	24.4	38.5	17.3	25.0
Mean number of functional limitations	2.50	3.01	2.32	1.58	1.55	2.45	1.68	2.07
Mean index score for depressive symptoms	8.52	8.33	8.51	7.12	7.14	8.36	7.51	7.39
Rural								
% Negative self-rated health	79.1	7.1	62.3	43.9	39.2	63.7	54.6	49.5
% Difficulty with 1+ ADL	43.3	38.7	33.0	22.9	17.3	36.0	24.2	22.7
Mean number of functional limitations	3.29	2.95	2.26	1.60	1.55	2.49	2.27	1.95
Mean index score for depressive symptoms	9.39	8.95	8.30	7.47	7.25	8.47	8.28	7.61

Source: Vietnam National Aging Survey 2011.

Table 2b. Bivariate associations between socioeconomic status and health indicators, VNAS 2011 (percentages with a given characteristics are reported)

	Savings		Household amenity scores		
	No savings	Have savings	0-6	7-9	10-12
Urban					
% Negative self-rated health	50.6	36.5	68.3	48.3	39.6
% Difficulty with 1+ ADL	22.2	39.2	43.2	24.9	22
Mean number of functional limitations	1.94	2.33	2.84	2.00	1.76
Mean index score for depressive symptoms	7.64	7.49	9.22	7.62	7.05
Rural					
% Negative self-rated health	60.6	55.4	71.8	58.6	37.2
% Difficulty with 1+ ADL	32.4	27.2	37.4	31.7	19.8
Mean number of functional limitations	2.42	1.95	2.88	2.23	1.68
Mean index score for depressive symptoms	8.36	7.87	9.19	8.09	7.11

Source: Vietnam National Aging Survey 2011.