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Changes in self-perceived economic satisfaction and mortality at old ages: Evidence from a survey of middle-aged and elderly adults in Taiwan

Miaw-Chwen Lee [a, *], Nicole Huang [b]

[a] Department of Social Welfare, National Chung-Cheng University, No.168, Sec. 1, University Rd., Min-Hsiung Township, Chia-yi 621, Taiwan
[b] Institute of Hospital and Health Care Administration, School of Medicine, National Yang Ming University, Room 101, The Medical Building II, No.155, Section 2, Li-Nong Street, Taipei 112, Taiwan

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ABSTRACT

Experiencing a low socioeconomic status (SES) throughout the life course has been reported to be correlated with poor health outcomes. Several studies have suggested that income, wealth, and perceptions of economic status are associated with increased risk of death among elderly people. Few studies have investigated the association between lifetime SES and mortality among elderly adults. The analysis in this study was based on 2310 elderly adults for whom SES data from the four phases of the longitudinal survey of Health and Living Status of the Elderly in Taiwan (1989, 1993, 1996, and 1999) were available, and who were alive in 1999. The SES measures included in the analysis were annual income, the household wealth, and the self-perceived economic satisfaction. A group-based trajectory modelling approach was employed to create SES trajectories. Cox proportional hazard models were employed to examine the association between SES trajectories and 8-year all-cause mortality (1999–2007). Irrespective of whether income, wealth, or self-perceived economic satisfaction was used, the elderly adults with consistently low SES trajectory throughout early old age were independently and significantly associated with higher hazards of mortality than were those in a consistently high SES trajectory. Downward or upward mobility of income and wealth were associated with increased hazard of mortality. However, decreased self-perceived economic satisfaction was not significantly associated with increased hazard of mortality. According to the results, the strong distinction between trajectory patterns of income, wealth, and self-perceived economic satisfaction among elderly adults indicate that neither should be overlooked when investigating the role of SES mobility in mortality. Retirement policies or strategies for maintaining and promoting favorable SES in early old age may benefit the health of elderly adults later in life.

1. Introduction

Experiencing a low socioeconomic status (SES) throughout the life course has been reported to be correlated with poor health outcomes (Ben-Shlomo and Kuh, 2002); examples include takinh sick leave from work during adulthood (Lallukka et al., 2013), cardiovascular disease mortality during adulthood (Johnson-Lawrence et al., 2013), and physiological function (Gruenewald et al., 2012). There is a growing interest in how variations or pattern changes in SES throughout life influence the health of elderly adults (Davey Smith et al., 1997; Hallqvist et al., 2004; Næss et al., 2006). However, evidence of the relationships between SES trajectories and health in old age is scarce, and only two studies have been widely acknowledged (Næss et al., 2006; Nicholson et al., 2005). Because the populations in numerous societies are aging rapidly, the health and welfare of elderly adults, particularly those with a low SES, have become a major focus of policymakers. The relationship between SES trajectories and health in early old age may be a crucial empirical reference for policymakers planning retirement policies or welfare programs targeting the elderly population.

A life course approach to socioeconomic inequalities in health proposes several hypotheses on how socially patterned exposures to advantages or adversity throughout the life course influence late health outcomes (Ben-Shlomo and Kuh, 2002; Davey Smith et al.,

* Corresponding author.
E-mail address: mclee137@ccu.edu.tw (M.-C. Lee).

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1997; Hallqvist et al., 2004). The proposed mechanisms can be summarized in four hypotheses. First, the critical period model hypothesizes that exposures to advantages or adversity during a specific period has lasting or lifelong effects on subsequent health. Second, because adversity and advantages may lead to one another, the chain of risk model describes how a sequence of linked exposures increases risks of morbidity and mortality. Third, the risk accumulation model suggests that different types of exposures gradually accumulate throughout the life course, increasing the risks of morbidity and mortality. Fourth, the social mobility model suggests that in contemporary society, several types of social mobility such as downward or upward social mobility are crucial to late health and mortality. The risk accumulation model could explain the dose–response relationship between cumulated quantities of social adversity and mortality, whereas the social mobility model takes into account the temporal sequence of adversity influences. That is, analysis of social trajectory allows to identifying, in detail, stages in the life course that have a detrimental impact. Social trajectory analysis incorporating SES at three or more time periods provides informative trajectories to understand SES processes or pathways of mortality inequality, particularly at old age.

Although SES is a multidimensional social and economic concept (Elo, 2009; Mackenbach, 2012), numerous researchers have used only a single SES indicator or a single dimension of indicators when analyzing the influence SES exerts on health inequalities (Pollitt et al., 2005). Commonly used indicators include income and wealth. However, in addition to these measures, increasing studies have emphasized the psychosocial effects of SES on health outcome (Nobles et al., 2013). In other words, the sense of economic adequacy or a person's perception of his or her SES might play a crucial role in mediating or moderating the relationship between material resources and health outcome (Demakakos et al., 2008; Nobles et al., 2013; Schnittker and McLeod, 2005). Relevant measures include the social status ladder (Adler et al., 2008; Demakakos et al., 2008; Hu et al., 2005; Kopp et al., 2004; Nobles et al., 2013), self-perceived financial well-being (Arber et al., 2014), and subjective perception of income inadequacy (Litwin and Sapir, 2009). Researchers have suggested that self-perceived economic well-being is a robust indicator of economic capacity among elderly adults, and that its role in the health of elderly adults should not be overlooked (Angel et al., 2003; Litwin and Sapir, 2009; Wada et al., 2002; Zimmerman and Katon, 2005).

Self-perceived economic well-being can affect health through two main psychosocial mechanisms. First, people with lower satisfaction are more likely to perceive economic strain, inadequacy, and financial insecurity regarding the future (Demakakos et al., 2008). These unfavorable perceptions may increase anxiety and the sense of vulnerability, leading to adverse health consequences (Ferraro and Su, 1999; Kahn and Pearlin, 2006; Singh-Manoux et al., 2003). Second, according to the mechanism of the reference group theory, by comparing themselves with others, people feel that their economic resources are insufficient for participation in the lifestyles or norms (e.g., healthy lifestyles or behaviors) of their community or peer group; and consequently, their health is affected (Whelan and Maître, 2013). However, previous studies have focused mainly on the trajectory of income or wealth rather than considering self-perceived economic satisfaction. Few studies have measured changes in self-perceived economic satisfaction over time among elderly adults. Therefore, examining the association between changes in economic satisfaction and mortality among elderly adults is crucial.

In addition, it is important to compare the relationship of SES trajectory and mortality among elderly adults in different societies because self-perceived economic satisfaction likely varies according to local social and economic context (Whelan and Maître, 2013). In Taiwan, some elderly people live with and receive financial support from their children. Therefore, the economic satisfaction of elderly people may vary according to their dependence on other people such as their children; the effect of economic satisfaction on health therefore extends beyond the consequence of absolute material deprivation (Hsu, 2010). The elderly people in Taiwan commonly assesses their economic satisfaction by comparing their material recourses and financial support or security they receive from their adult children with those of their reference group. This reflects filial piety attitudes of Confucian tradition (Whyte, 2004) and is culturally accepted and expected practice in Taiwan (Lee et al., 1994; Yeh and Bedford, 2003; Yeh et al., 2013). Therefore, the findings from the present study can serve as critical empirical references for policymakers who distribute health and social welfare resources among elderly adults, and are particularly relevant to Asian societies. Our study contributed to the limited empirical literature examining the social mobility model that is based on the patterning and variability of SES throughout the life course and that predicts mortality among elderly adults. The objective of this paper was to examine the relationship between changes in self-perceived economic satisfaction and mortality in later life by using nationally representative data in Taiwan and adjusting for trajectories of income and wealth.

2. Methods

2.1. Study sample

This study used data from the Survey of Health and Living Status of the Elderly in Taiwan. The survey was initiated in 1989 and was designed to collect socioenvironmental, behavioral, living, and health data from men and women aged 60 years and older (Zimmer et al., 2005). A three-stage stratified systematic sampling framework was used in the first phase (1989) to obtain a nationally representative sample. In 1989, 4412 individuals were contacted, and 4049 individuals were successfully interviewed with a response rate of 91.8%. The survey sample was nationally representative of the population aged 60 years and older in Taiwan. The response rate for the second (1993), third (1996), and fourth (1999) phases were 91.0%, 88.9%, and 90.1%, respectively. The present study sample comprised 2310 elderly adults for whom SES data from the four phases (1989, 1993, 1996, and 1999) were available and who were alive in 1999. The National Cheng Kung University Human Research Ethics Committee reviewed and approved the present study.

2.2. Measurements

The primary outcome of interest was the 8-year all-cause mortality, a time (years)-to-death (or censoring) data indicating the survival years between 1999 and 2007. Information regarding deaths occurring during the study period was extracted from the death registration data collected by Taiwan's Ministry of the Interior.

SES measures included the annual household income, household wealth, and self-perceived economic satisfaction of the respondents. The SES measures observed at four time points (1989, 1993, 1996, and 1999) were used to construct trajectories. At each survey phase, the household income of the previous year was reported. The annual household income was then divided into quintiles. The household wealth included three wealth indicators: (1) possession of investments such as stocks, bonds, mutual funds, retirement investments, or other investments by the participant or his or her family (yes, no); (2) possession of a family home by the