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Gender, self-rated health and functional decline among community-dwelling older adults

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ABSTRACT

Objective: This paper examines the association between self-rated health (SRH) and functional decline (FD) in older Ghanaian cohorts and investigates whether the effect differs by gender and also modified by marital status.
Methods: The study used cross-sectional survey data (N = 1200) from an Aging, Health, Psychological Wellbeing and Health-seeking Behavior Study (AHPWHB) study conducted in between August 2016 and January 2017. A four-level gendered-stratified logit modeling estimated the SRH-FD association and the interaction terms.
Results: Overall, 23% of male respondents and 34% of women revealed significant FD ($p < 0.001$). The fully-adjusted model showed that SRH status was a strong predictor of FD across genders but the effect was most pronounced among men. Compared with excellent/very good SRH, fair and poor SRH ($\beta = 0.160$; $p < 0.05$) and ($\beta = 1.700$; $p < 0.001$) for women and ($\beta = 2.202$; $p < 0.001$) and ($\beta = 2.356$; $p < 0.001$) for men respectively were significantly associated with increased FD. However, good ($\beta = -1.760$; $p < 0.001$), fair ($\beta = -2.800$; $p < 0.001$) and poor SRH ($\beta = -2.088$; $p < 0.001$) decreased FD if an older woman was married compared with unmarried women with excellent/very good SRH.
Conclusion: The strength of SRH-FDs association largely differed with gender and also moderated by marital status for women. Improving the SRH and marital quality could be protective of functional abilities, independence and quality of life for older people.

1. Introduction

Life expectancy at birth worldwide has increased by more than 30 years over the last 9 decades and there has been a rapid growth in numbers of people aged 60 years or older (United Nations, 2015; Phillips & Feng, 2018). Disproportionately, low- and middle-income countries (LAMICs) are the home for more than 67% of older cohorts and this proportion will increase to about 85% by 2050 (United Nations DESA Population Division (UNDESA, 2017). Ghana, as an example of LAMICs, has one of the largest and fastest growing older populations in the sub-Saharan African region. Whilst a great achievement, demographic aging can perhaps compromise health and wellbeing particularly in the context of LAMICs where aging occurs almost always some way ahead of social and economic development and especially health- and social-care services. Older people in LAMICs tend to suffer from a wide range of health challenges, infectious and chronic conditions, including functional declines (FD) and cognitive impairment often with gendered dimensions.

Estimates show that about 40% of non-institutionalized older people globally report difficulty with some physical functions and/or have disabilities (UNDESA, 2017). Increases in old age poverty through difficulty in carrying out basic and instrumental activities of daily living may also increase dependence in poorer countries, with multiple negative effects on health and safety and the need for support and family care (Jin et al., 2017; Hajek, Brettschneider, Mallon, Van Der Leeden, & Mamone, 2017; La Fleur & Salthouse, 2017). These, in turn, may increase psychological distress, poorer quality of life and the associated higher healthcare demand, sometimes leading to institutionalization, higher rates of morbidity and also mortality (Chou, Hwang, & Wu, 2012). A clear understanding of strong predictors of FD among older persons in LAMICs could provide important guidance for policymakers and health services development towards improving functional independence and quality of life in late life.

As a reliable subjective indicator of health through a single psychometric or clinical item, SRH broadly captures not only the overall current health status but also historical and future hospital records especially old age health outcomes (Nielsen, 2015). SRH generally reflects the physical, emotional and personal components of health and frequently been adopted in national level surveys globally. A growing number of cross-sectional and longitudinal studies especially among

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older people have linked SRH to many health outcomes including functional limitations (Shinkai et al., 2013; Fujiwara et al., 2008), mental/cognitive impairments (Lachytova, Katreniakova, Mikula, Jendrichovsky, & Nagyova, 2017; La Fleur & Salthouse, 2017), chronic non-communicable conditions (Chan et al., 2015), mortality (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006; Falconer, Quesnel-Vallée, & Taylor, 2015) and overall quality of life (OECD, 2014). More specifically, studies in more advanced settings have found that respondents with poor SRH have functional ability risks many times greater than those with better SRH (Idler, Russell, & Davis, 1992; Tomioka, Kurumatani, & Hosoi, 2017). In this regard, our major expectation, therefore, is that a poorer self-perceived health status will lead to FD among older persons.

Although there is a distinct contextual framework within which traditional socio-cultural structures interpret the meaning of health and healthcare in sub-Saharan Africa (Gyasi, Buor, Adu-Gyamfi, Adjei, & Amoah, 2018), only very limited evidence exists in this context regarding the relationships between SRH and FD in later life (Debpuur, Welaga, Wak, & Hodgson, 2010). Moreover, some studies in richer countries have historically established associations between SRH and instrumental activities of daily living (Debpuur et al., 2010; Idler et al., 1992), these studies unfortunately have generally failed to isolate SRH as the major explanatory variable in order to measure its precise effect. Previous studies on this topic have, therefore, provided somewhat mixed results and the evidence is often confounding (Shinkai et al., 2013). More importantly, most studies also fail to account for the important role of respondent characteristics such as gender differences and marital status in the relationship between SRH and FD for a more critical conclusion. Indeed, very few studies have moved beyond examining the direct effects of, or relationships of, SRH and FD of older people.

Our study contributes to the understanding of these relationships between SRH and FD among community-residing older persons in a lower middle-income country, Ghana, and suggests their implications for policy and public health planning in several ways. First, we introduce specificity in the relationship between SRH and FD by controlling for important respondents' sociodemographic and health-related conditions rather than treating SRH as a component of the potential predictors. Second, previous studies do suggest that older persons' perceived health status and their health outcomes may be influenced by gender (DeSalvo et al., 2006; Tomioka et al., 2017). This may be subject to stimulus-response and health-illness perception differentials between the gendered sub-groups (Gyasi et al., 2018). Providing gendered-stratification in the SRH-FD analysis may improve existing understanding. Moreover, although sparse evidence exists (Bulanda, Brown, & Yamashita, 2016; Zhang & Hayward, 2006), the effect of marital status on physical health is experienced by men and women differently especially in later life, when marital dissolution and various forms of marital destruction often prevail, including widowhood, divorce and prolonged separation. Therefore, this paper provides gender-based evidence to evaluate potential gender differences in the effect of SRH on FD. In addition, studies underscore that marital status has a robust buffering effect on deteriorating health and wellbeing of the general population but especially in late life (Liu, 2012; Whisman, Robustelli, & Sbarra, 2016; Zhang & Hayward, 2006). Marital disruption (i.e. divorce, separation and widowhood) has strongly been linked to an increased risk for multiple health challenges including FD and mortality (Shor, Roelfs, Bugyi, & Schwartz, 2012; Sbarra & Law, 2011). However, older persons who are continuously or currently married have a greater chance of reporting better status (Dupre, George, Liu, & Peterson, 2015). Based on the review of previous studies, we were particularly interested in investigating the moderating role of marital status in the association between SRH and FD in later life.

2. Methods

2.1. Sample and data

The empirical analysis of the present study used data from an Ageing, Health, Psychological Wellbeing and Health-seeking Behavior Study (AHPWHB). It involved a retrospective population-based, cross-sectional survey conducted between August 2016 and January 2017. The study was designed to investigate general health and health services use among community-dwelling household older persons aged 50 years and older. One thousand two-hundred participants were randomly selected and interviewed from individuals nested in 6 districts in the Ashanti region of Ghana through a multi-stage stratified sampling procedure. In the initial sampling stage, three sub-regional areas were defined as primary sampling units based on their distinctive demographic, sociocultural and geographic characteristics. Two districts in each sub-region were randomly selected, with equal chances of selection given to all districts. Urban and rural sectors of each selected district were identified based on the classification of Ghana Statistical Service (GSS, 2012). Data were collected through successful household interviews with the eligible participants. The survey questionnaire was developed in English and translated into Twi (the major local dialect) following WHO translation guidelines for assessment of instruments (Üstun et al., 2005). Sampling weights for the individual older persons were generated to account for the survey design employed and to allow representativeness and generalizability of the findings to the eligible population (Moussavi et al., 2007).

This study was approved by the Committee on Human Research Publication and Ethics (CHRPE), School of Medical Sciences, Kwame Nkrumah University of Science and Technology and Komfo Anokye Teaching Hospital, Kumasi, Ghana (Ref: CHRPE/AP/507/16). Ethics approval was also granted by the Research Ethics Sub-Committee of Lingnan University, Hong Kong. Study participants were fully briefed on the research and they provided written and/or oral informed consent based on their preferences.

2.2. Measures

2.2.1. Functional decline (FD)

Self-report of difficulty in conducting activities of daily living (ADL) and instrumental activities in daily living (IADL) among older persons were obtained and used as proxies for FD. Difficulty with ADL and IADLs are commonly used to gauge older people's daily performance (WHODAS-II; WHO, 2012). ADLs were measured on a nine-item scale that reflected performance at four levels: (1) not limited at all (2) less limited (3) somewhat limited and (4) much limited: eating, dressing and/or undressing, grooming, getting in and out of bed, bathing, moving tables/chairs, washing, lifting/carrying groceries and walking more than a kilometer. The total score ranged from 9 to 36 and was divided into two groups: 9–18 was considered 1 = "not declined" and 19–36 as 2 = "declined". IADLs were addressed based on seven items relevant to the local circumstances: using the telephone/mobile phone, using public transport, shopping, preparing meals/kitchen chores, washing of clothes/doing laundry, taking medicine and management of finances. The overall score ranged from 7 to 21 with 7–14 representing 1 = "not impaired" and 15–21 representing 2 = "impaired".

2.2.2. Self-rated health (SRH)

The key independent variable is SRH and studies propose that it is a sensitive and reliable indicator of an individual's current health status (Wu & Schimmele, 2006). SRH was determined by the item "In general, how would you rate your overall health at the present time?" This was assessed via five-response categories: "excellent", "very good", "good", "fair" and "poor" (Rand health, 2007). As we obtained a small proportion (fewer than 2%) of the total sample in the "excellent" category, "excellent" and "very good" were combined and used as the reference