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Geographical Differences in Perceived Health Status Among Older Adults in Ghana: Do Gender and Educational Status Matter?

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Abstract

Studies have constantly reported mixed evidence on the associations between rural/urban differences and self-rated health (SRH) status among older populations. More importantly, the roles of other relevant sociodemographic characteristics such as gender and educational levels in these associations are mostly overlooked. The current study examines the geographical differences in SRH of older cohorts in Kumasi Metropolis and Bosomtwe District of Ghana. Data from a Spatial Health and Healthcare Study (SHHS) were analyzed using chi-square test and ordinal logistic regression models. Although the study discovered a statistically significant difference in SRH between the rural and urban samples, the multivariate analysis found insignificant effect in SRH between urban and rural samples after adjusting for theoretically relevant covariates. However, the interactions indicated that this association significantly strengthens for rural dwellers who were highly educated. Moreover, age, average monthly income, reporting sickness in the past 90 days, and not noticing any change in health status in retrospective to 12 months were independent predictors of SRH. Effective interventions through collaborative efforts by the Ghanaian sociopolitical structure and micro-level dynamics are needed to ensure holistic improvements in health outcomes among vulnerable older persons.

Keywords

gerontology, Ghana, older persons, self-rated health, geographical differences

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Introduction

Demographic aging has become a global phenomenon over the past few decades (Fernandez-Martinez et al., 2012). This is as a result of the interplay between declining fertility and mortality rates, leading to a higher life expectancy at birth among both richer and low- and middle-income countries (LMICs) (United Nations, Department of Economic and Social Affairs [UNDESA], 2017; United Nations, Department of Economic and Social Affairs, Population Division, 2015; World Health Organization [WHO], 2015b). In Ghana, for example, the proportion of older people aged 60 years or older increased from 4.6 to 6.7% between 1960 and 2010 which has been reckoned as one of the greatest growth in the sub-Saharan African region. This is also expected to reach about 12% by 2050 indicating serious implications for health and health care (Ghana Statistical Service [GSS], 2013; WHO, 2015b).

Specifically, disease burden, deterioration of health, and poor health conditions have been reported as key

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correlates of aging (McCracken & Phillips, 2017), especially in LMICs due to the physiological vulnerabilities and higher levels of psychological distress as well as cognitive declines (WHO, 2015a). These circumstances may threaten the achievement of the active aging paradigm in these contexts (Bousquet et al., 2014). Multilevel perspective of improving health status of vulnerable older cohort may lead to their well-being and functional independence (Gyasi & Phillips, 2018).

Self-rated health (SRH), one of the key determinants of general health, functionality, and mortality, especially among older adults is a complex measure that "represents a summary statement about the way in which numerous aspects of health, both subjective and objective, are combined within the perceptual framework of the individual respondent" (Tissue, 1972, p. 93). Previous studies contend SRH as an effective, valid, and reliable indicator for predicting mortality and health of older adults (Caetano, Silva, & Vettore, 2013; Campos et al., 2015), due to its adherence to the principle of subjectivity. Often linked with factors such as sociodemographic characteristics, chronic diseases and functional status (Gyasi & Phillips, 2018), social relationships (Ang, 2018) and neighborhood environment (Roh et al., 2011; Utomo, Mcdonald, Utomo, Cahyadi, & Sparrow, 2018) of older adults, SRH is evaluated with a single item where individuals assess their overall health on a scale ranging from poor to excellent (Machón, Vergara, Dorronsoro, Vrotsou, & Larrañaga, 2016) which could be subject to the cultural and socioeconomic context of people including rural/urban differences.

Increasingly, rural-urban differences have been isolated to relate to SRH among older populations providing very contrasting evidence (Baernholdt, Yan, Hinton, Rose, & Mattos, 2012; Evandrou, Falkingham, Feng, & Vlachantoni, 2014). Against the contrasting evidence in diverse rural–urban settings and the most rapidly aging population globally, understanding the relationship between geographical differences and SRH may contribute to health outcomes among older people in sub-Saharan African context. It may also present a key to ramifications for future patterns of health in later life. This article investigates the rural–urban characteristics and its associations with self-perceived health among older people, and the role of gender and education in this relationship. The study hypothesized that there is no statistical significant difference in SRH between the rural and urban samples.

Geographical Differences and SRH: An Empirical Review

Geographical differences present significant variations in health outcomes among older adults. In both medical and social science literature, in developed and LMICs, growing evidence suggests that although older adults' health differs between rural and urban dwellers (Burholt & Dobbs, 2012), the findings have remained largely mixed and confounding. Specifically, the "degree of rurality" and/or urban adjacency of individuals contribute to health and mortality of older adults over and above their personal characteristics (Farmer, Philip, King, Farrington, & MacLeod, 2010). Whereas Kivett (1985) cautioned against using rural–urban generalizations in addressing the health status of the older persons, in both LMICs (Fonta, Nonvignon, Aikins, Nwosu, & Aryeetey, 2017) and developed countries (Farmer et al., 2010; Monnat & Pickett, 2011), limitations in health care facilities, endemic poverty, higher rates of unemployment, lower educational attainment, lack of physicians, remoteness from and difficulty traveling to urban health centers, and the inadequacy of health promoting infrastructure in rural areas impact negatively on the SRH of older adults (McCracken & Phillips, 2017; Monnat & Pickett, 2011). In the advanced (Farmer et al., 2010; International Institute for Population Sciences & WHO, 2012) emerging economies (Jose, 2014; Lee, Park, & Kim, 2015) and LMICs (Udofia, Yawson, Aduful, & Bwambale, 2014), rural older adults in general and rural older women in particular (Singh, Arokiasamy, Singh, & Rai, 2013) report poorer health outcomes than urban dwellers.

Meanwhile, whereas Lee et al. (2015) contended that urban older adults report better SRH than rural residents, Cau, Falcão, and Arnaldo (2016) explained that urban older adults have poor SRH due to the sedentary lifestyle of most urban dwellers (Hosseinpoor et al., 2012). In spite of these contrasting arguments, Duboz, BoeÈtsch, Gueye, and Macia (2017) reiterated that determinants of SRH differ significantly between rural and urban older adults, stressing on the need to identify and understand the geographic variations in SRH between rural and urban older adults as an important correlate of health among aging populations (Annear et al., 2014). Given the circumstances surrounding this topic, it is important to ascertain the SRH status among rural/urban community-dwelling older people in the context of sub-Saharan Africa where older vulnerabilities are palpable within limited scientific investigations. The findings may provide a baseline evidence and also contribute to achieving the health-related sustainable development goals (SDGs) in the context where aging is projected to outstrip socioeconomic development (WHO, 2014).

Method

Data and Sample

This article draws on data from a Spatial Health and Healthcare Study (SHHS), a regional cross-sectional survey of Ghanaian older population conducted between May 2016 and February 2017. The overarching objective was to characterize the spatiotemporal dynamics of health and health care status of community-dwelling Ghanaian population aged 50 years or older nested in rural and urban community areas. Moreover, SHHS project aimed at identifying and characterizing the determinants of health and health care patterns among older cohorts.

The chronological time has little or no relevance in conceptualizing old age in many parts of sub-Saharan Africa (Gyasi & Phillips, 2018; Kowal et al., 2010) based on the view that average life expectancy in LMICs is 60 years for men and 63 years for women while, in Ghana, life expectancy at birth is 62 years and healthy life expectancy at birth is 54 years (WHO, 2015a). A critical consideration should therefore be made in regard to changes in social roles as well as the functional abilities of individuals when defining older person in these contexts. With reference to these circumstances as well as health status data, individuals aged 50 years or older were defined as "older persons" in this study.

Multistage cluster sampling approach was employed. Clustering of rural/urban communities in the Ashanti Region was initially undertaken to identify the eligible rural/urban communities based on the categorization of the GSS (2012). Simple random sampling technique was adopted to select one political and administrative district from each geographical zone. Two communities were chosen from each study district with an onward selection of households for this study. Four selected study communities included Atonsu and Bantama (from urban Kumasi Metropolis) and Aduman and Oyoko (from rural Bosomtwe District). A systematic random sample of 160 eligible respondents were sampled for this analysis. Interviewer-administered questionnaire was used to obtain relevant data with trained research assistants to help improve response rates. Interviews were conducted in Asante Twi (the main local dialect of the study area) and lasted 30 on the average.

Variables and Measures

SRH. Our dependent variable was SRH, measured with a single item which inquired about general health and was adopted from the Medical Outcomes Study (MOS) 36-item short form survey instrument (Rand Health, 2007; Ware & Sherbourne, 1992). Older persons gauged their current general SRH by the question: "In general, how would rate your health?" with a 5-point response scale ranging from (1) *excellent*, (2) *very good*, (3) *good*, (4) *fair* and (5) *poor*."

Rural/urban differences. The official geographical registration system by the GSS (2012) based on the legal division of rural and urban populations since 1980 was adopted. We used respondents' report of current residential status to classify them as rural or urban dwellers. For respondents who had temporarily migrated between rural and urban settings within few months preceding the survey, the origin of drift was used to describe their residency.

Covariates

Sociodemographic variables included age of respondents (50-59, 60-69, 70-79, 80-89 and 90+ years), gender (male/female), educational status (never-being-to school/basic/secondary/tertiary), marital status (married/widowed/never married/divorced/separated), work status (retired/in active service) and average monthly income (GH₵ 200-300/GH₵ 400-500/GH₵ 600-700/above GH₵ 700). The health-related variables included the following: have you been ill in the past 90 days (yes/no), current health status compared with 12 months ago (better/same/worse), spent a whole week in bed at home in the past 1 year (yes/no), forms of disability (hearing/visual/locomotion/speech/no disability), diagnosis of chronic noncommunicable diseases (arthritis/insomnia//hypertension/asthma/respiratory diseases/cancer/stroke/chronic kidney disease/disorders of joint and bones/mental disorder), and complaint about your health status recently (yes/no).

Ethical Consideration

Appropriate approvals were granted by relevant institutions including Kumasi Metropolitan Assembly. Informed written and verbal consents were sought from all research participants. Participants were requested to sign or thumbprint a written informed consent form. Oral consent was sought from those who felt uncomfortable with either the thumbprinting or signing. Participants were assured of strict confidentiality and anonymity of the responses they provided. No participant was coerced and so participation was entirely voluntary.

Data Management and Analysis

All statistical analyses were performed using Predictive Analytics SoftWare (PASW) version 17.0. Descriptive statistics were conducted to describe the demographic characteristics. Differences in frequencies between rural and urban areas were assessed using chi-square tests. To assess rural/urban differences with SRH as the dependent variable, we used multivariate ordinal logistic regression (given the ordinal nature of SRH, from 1 = very good to 4 = poor due to nonresponse for excellent) to calculate odds ratios (ORs) with 95% lower and upper bounds (confidence interval [CI]). We conducted different ordinal logistic regression models to study which sets of variables could explain the geographical difference in SRH in later life. In Model 1, only rural/urban variable was entered into the model as the independent variable to estimate the crude OR. In Model 2, we included a set of sociodemographic variables into the model to test whether the rural/urban differences in these variables would explain the geographical disparities in SRH entirely. Also, in Model 3 a set of health-related variables were entered into the model to test their significance in assessing geographical differences in SRH. Finally, to estimate the role of gender and educational level in the association between rural/urban differences in SRH, we introduced two product terms (rural/urban × gender) and (rural/urban × educational level) into the Full Model. We undertook Pearson's goodness-of-fit measure for the ordinal logistic regression models. The level of significance was set at $p < .05$.

Result

Descriptive and Bivariate Findings

Majority of the respondents were females (53%), in the 50-59 age cohort (47%), currently married (53%), and were formally uneducated (29%) (Table 1). Also, most of them were economically employed (65%) and were farmers (49%) and received an estimated monthly income of GH₵ 400 to GH₵ 500 (30%). As regards respondents' health history, more than half (54%) had been ill in the past 90 days, about 61% reported no change in their health status in retrospective to 12 months ago and 59% had no form of disability. About 25% were hypertensive and some 51% had recently complained about their health status. Besides education, occupation and diagnosis of chronic noncommunicable diseases ($p < .03$), there were no statistically significant differences in sociodemographic characteristics between the rural/urban sample ($p > .05$). Whereas 35% of the sample rated their health as good, some 31% fairly appraised their health status. The study discovered a statistically significant difference in SRH between the rural and urban samples ($p < .05$; Table 2).

Rural/Urban Differences in SRH

In Table 3, the ordinal logistic regression results showed insignificant effect in SRH between the rural and urban samples across the three models. In Model 1, though the rural and urban samples were more likely to fall in one of the higher categories of SRH as opposed to the lower categories (OR = 1.293, 95% CI [–0.305, 0.820]), this was insignificant. Adjusting for sociodemographic variables in Model 2, growing older (OR = 0.641, 95% CI [–0.884, –0.004]) and earning higher average monthly income (OR = 1.331, 95% CI [0.017, 0.554]) had higher odds of falling in one of the higher categories of SRH, indicating that age and income status are *functions* of SRH more than rural/urban disparities. In Model 3, whereas respondents who reported sickness in the past 90 days (OR = 3.881, 95% CI [0.297, 2.414]) were more likely to fall in one of the higher categories of SRH, respondents who had not noticed any change in their health status in the last 12 months (OR = 0.153, 95% CI [–2.722, –1.034]) were less likely to fall in the higher categories of SRH as opposed to the lower categories. We found a significant interaction effect between educational level and geographical location in SRH (OR = 1.256, 95% CI [0.050, 0.406]), suggesting that rural dwellers with higher education had a higher likelihood to report better SRH compared with urban counterparts with low/without education.

Discussion

The current study examined the effect of geographical location in SRH status of older adults in Ghana in the context of gender and educational dimensions. Consistent with previous studies (Falk et al., 2017; Fernandez-Martinez et al., 2012; Jose, 2014), the current study discovered a statistically significant difference in SRH between the rural and urban samples. Specifically, rural older adults reported better (very good/good) SRH outcomes in comparison to their urban counterparts even though most Ghanaian rural communities generally lack adequate health care facilities. This is inconsistent with a recent Chinese study where urban older adults had good SRH (Chen, Liu, Zhu, & Li, 2017). Perhaps, the traditional lifestyle and economic activity (predominantly farming) engaged in by rural older adults, which in itself is a moderate physical activity, makes them more likely to report better health status (Fantahun, Berhane, Hogberg, Wall, & Byass, 2009), as compared with urban older adults who mostly have sedentary lifestyles (Hosseinpoor et al., 2012). That notwithstanding, the study findings ought to be upheld and tendered with other variables due to the tendency of individuals to overrate their health so as not to appear weak and/or dependent (Phaswana-Mafuya et al., 2013a).

The multivariate analysis revealed that respondents' geographical location does not significantly predict their SRH. This finding could be attributed to the cultural context (Pfarr, Schmid, & Schneider, 2012), and recent growth in health care facilities in rural Bosomtwe District, which provides variant health care access opportunities to rural residents in comparison to their urban counterparts. Our study found that older persons' age and average monthly income, reporting sickness in the past 90 days, and not noticing any change in current health status in retrospective to 12 months had higher odds of reporting better SRH. The findings revealed that respondents sociodemographic variables; average monthly income (Borim, Neri, Francisco, & Barros, 2014) and participants' age (Fernandez-Martinez et al., 2012; Mwanyangala et al., 2010), and health-related variables (Machón et al., 2016), innately alters the SRH of older adults. The stark difference between our study findings and the aforementioned studies could be as a result of the analytical technique used and the inherent characteristics of the study participants in the respective studies.

The significant impact of respondents' average monthly income on SRH in the current study needs to be considered with caution given the study setting. This is because respondents in low- and middle- income countries or LMICs often are biased in reporting their monthly income in hope of receiving financial aid (Doocy & Burnham, 2006). As regards the finding on aging, the biological process of aging, which is associated with increased vulnerability to sickness and decline in mobility and physical health conditions, increases the likelihood of young-older adults to have a poor SRH as compared with the oldest-old (Fonta et al., 2017; Liang et al., 2005).

Although in Ghana, research has shown that diagnosis of chronic noncommunicable diseases often cause a

Table 1. Biodata and Health History of Respondents by Geographical Location.

Categories	Urban (*n* = 80) *n* (%)	Rural (*n* = 80) *n* (%)	Total (*N* = 160) *n* (%)	*p* value
Age of respondents				
50-59 years	37 (46.3)	39 (48.8)	76 (47.5)	.918
60-69 years	27 (33.7)	23 (28.7)	50 (31.3)	
70-79 years	14 (17.5)	16 (20)	30 (18.7)	
80-89 years	2 (2.5)	2 (2.5)	4 (2.5)	
90+ years	0 (0)	0 (0)	0 (0)	
Gender				
Male	36 (45)	39 (48.7)	75 (46.9)	.635
Female	44 (55)	41 (51.2)	85 (53.1)	
Marital status				
Married	41 (51.2)	44 (55)	85 (53.1)	.964
Widowed	25 (31.2)	24 (30.0)	49 (30.6)	
Never married	7 (8.7)	6 (7.5)	13 (8.1)	
Divorced/separated	7 (8.7)	6 (7.5)	13 (8.1)	
Education				
No formal education	21 (26.2)	26 (32.5)	47 (29.4)	.000*
Basic education	27 (33.7)	46 (57.5)	33 (20.6)	
Secondary	12 (15.0)	5 (6.2)	17 (10.6)	
Tertiary	20 (25.0)	3 (3.7)	23 (14.4)	
Occupation				
Farming	21 (26.2)	58 (72.5)	79 (49.4)	.000*
Civil/public servant	26 (32.5)	10 (12.5)	36 (22.5)	
Artisan work	30 (37.5)	10 (12.5)	40 (25.0)	
Industrial work	3 (3.7)	2 (92.5)	5 (3.1)	
Work status				
Retired	29 (36.2)	27 (33.7)	56 (35.0)	.740
Not retired	51 (63.7)	53 (66.2)	104 (65.0)	
Average monthly				
GHS 200-300	17 (27.0)	17 (25.4)	34 (26.1)	.675
GHS 400-500	21 (33.3)	18 (26.9)	39 (30.0)	
GHS 600-700	7 (11.1)	12 (17.9)	19 (14.6)	
Above GHS 700	18 (28.6)	20 (29.8)	38 (29.2)	
Economic status				
Dependent	27 (35.1)	26 (32.9)	53 (34.0)	.241
Not dependent	22 (28.6)	32 (40.5)	54 (34.6)	
Partially dependent	28 (36.4)	21 (26.6)	49 (31.4)	
Illness in the past 90 days				
Yes	42 (52.5)	44 (55)	86 (53.7)	.751
No	38 (47.5)	36 (45)	74 (46.2)	
Current health status compared with 12 months ago				
Better	20 (25)	13 (16.2)	33 (20.6)	.391
Same	46 (57.5)	51 (63.7)	97 (60.6)	
Worse	14 (17.5)	16 (20)	30 (18.7)	
Spent a whole week in bed at home in the past 1 year				
Yes	28 (35)	32 (40)	60 (37.5)	.514
No	52 (65)	48 (60)	100 (62.5)	
Forms of disability				
Hearing	7 (8.7)	7 (8.7)	14 (8.7)	.237
Visual	20 (25)	11 (13.7)	31 (19.4)	
Locomotion	9 (11.2)	5 (6.2)	14 (8.7)	
Speech	1 (1.2)	1 (1.2)	2 (1.2)	
No disability	41 (51.2)	54 (67.5)	95 (59.4)	
Diagnosis of chronic noncommunicable diseases				
Arthritis	0 (0)	2 (2.5)	2 (1.2)	.030*
Insomnia	0 (0)	7 (8.7)	7 (4.4)	
Diabetes	12 (15)	7 (8.7)	19 (11.9)	
Hypertension (high blood pressure)	22 (27.5)	18 (22.5)	40 (25)	
Asthma	8 (10)	4 (5)	12 (7.5)	
Respiratory diseases	1 (1.2)	0 (0)	1 (0.6)	
Stroke	0 (0)	1 (1.2)	1 (0.6)	
Disorders of joint and bones	6 (7.5)	12 (15)	18 (11.2)	
Mental disorders	0 (0)	1 (1.2)	1 (0.6)	
Complaint about your health status recently				
Yes	39 (48.7)	43 (53.7)	82 (51.2)	.527
No	41 (51.2)	37 (46.2)	78 (48.7)	

*$p<0.05$.

disruption in family/social relationships (Kowal, Wolfson, & Dowd, 2000; de-Graft Aikins, 2003), and such forms of disruption affects the health of older adults due to their vulnerability during the later stages of life (Mavaddat, Valderas, van der Linde, Kay Tee, & Kinmonth, 2014), the current study found that diagnosis

Table 2. Geographical Location by SRH Among Study Participants.

	SRH				
	Poor	Fair	Good	Very good	
Rural/urban	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*p* value
Urban	17 (21.2)	26 (32.5)	34 (42.5)	3 (3.7)	
Rural	18 (22.5)	24 (30)	22 (27.5)	16 (20)	.009*
Total	35 (21.9)	50 (31.2)	56 (35)	19 (11.9)	

Note. SRH = self-rated health.
* $p<0.05$.

Table 3. Multiple Ordinal Logit Regression Analysis of Rural/Urban Differences in SRH Among Older Adults in Ghana.

	Model 1		Model 2		Model 3	
Variables	OR	95% CI	OR	95% CI	OR	95% CI
Rural/urban	1.293	[−0.305, 0.820]	1.367	[−0.268, 0.894]	1.833	[−0.287, 1.500]
Age of respondents			0.641*	[−0.884, –0.004]	0.773	[−0.902, 0.388]
Gender			0.682	[−0.992, 0.225]	0.520	[−1.559, 0.254]
Marital status			0.757	[−0.600, 0.043]	0.693	[−0.833, 0.101]
Work status			1.159	[−0.639, 0.935]	0.576	[−1.704, 0.603]
Average monthly income			1.331*	[0.017, 0.554]	1.374	[−0.095, 0.730]
Educational level			0.972	[−0.395, 0.339]		
Illness in the past 90 days					3.881*	[0.297, 2.414]
Health status in comparison to 12 months ago					0.153*	[−2.722, –1.034]
Spent a whole week in bed in the past 1 year					1.634	[−0.538, 1.520]
Diagnosis of any chronic noncommunicable disease					1.062	[−0.101, 0.220]
Any form of disability					1.175	[−0.132, 0.454]
Complain about your health status					1.808	[−0.481, 1.665]
Interaction term						
Geographical Location × Gender					0.837	[−0.511, 0.155]
Geographical Location × Educational Level					1.256*	[0.050, 0.406]
Goodness of fit test						
Pearson		0.005		0.093		0.277
−2 log likelihood ratio		36.683		356.249		183.112
Test of parallel lines		0.003		0.143		0.610

Note. OR = odds ratio; CI = confidence interval.
*$p < .05$.

of chronic noncommunicable diseases does not impact on the SRH of older adults (Sander, 2002). The contradiction highlights the need to continue health intervention programs for older adults diagnosed with chronic noncommunicable diseases, a common disease associated with aging, as a deliberate measure to maintain the current finding (Phaswana-Mafuya et al., 2013b). For instance, Fonta et al. (2017) emphasized on the need to adopt health promotion activities, public health policies, disease prevention programs, and social intervention measures which would help to reduce the onset of noncommunicable diseases among older adults in Ghana. The findings identified significant interaction between rural/urban and educational level in older age. We observed a higher likelihood of rural respondents to fall in the higher categories of SRH as opposed to the lower categories if they were highly educated. This means that rural dwellers with higher education are more likely to report better SRH than their urban counterparts with low or without education. However, the interaction between geographical location and gender in SRH found no significant effect.

Our study is notably imperiled with some limitations; therefore, the findings should be considered with caution. One limitation of this study is the cross-sectional nature of its design. This may restrict the findings to discussion of relationships, as it does not allow causality and directionality analyses. Moreover, data on SRH in particular were retrospective and collected through self-reporting, which may be influenced by recall, reporting, and social/subjectivity biases. However, self-reporting is generally held to be the best and certainly most

convenient method to obtain participants' subjective viewpoints, especially in multimode systems where formal records of health outcomes are not available. More importantly, the use of small sample size from a relatively limited geographic area of two districts should be acknowledged as this may have implications for the generalizability of findings. Future studies could deepen the understanding of the rural/urban disparities in SRH in later life by employing larger samples from a regional-wide or nation-wide perspectives. Nevertheless, this study provides a baseline insights about geography and health status in Ghana.

Conclusion

Although insignificant relationships were observed between rural/urban differences and SRH among older Ghanaian persons, aging, average monthly income, reporting sickness in the past 90 days, and not noticing any change in current health status in retrospective to 12 months independently predicted older age SRH in this sample. A holistic and multilevel approaches by the Government of Ghana, stakeholders and micro-level dynamics should be employed to improve the health outcomes of older persons in the country. Also, future studies should focus on a wider geographical area taking into consideration other regions in Ghana.

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Reference

Ang, S. (2018). Social participation and health over the adult life course: Does the association strengthen with age? *Social Science & Medicine*, *206*, 51-59. doi:10.1016/j.socscimed.2018.03.042

Annear, M., Keeling, S., Wilkinson, T., Cushman, G., Gidlow, B., & Hopkins, H. (2014). Environmental influences on healthy and active ageing: A systematic review. *Ageing & Society*, *34*, 590-622.

Baernholdt, M., Yan, G., Hinton, I., Rose, K., & Mattos, M. (2012). Quality of life in rural and urban adults 65 years and older: Findings from the National Health and Nutrition Examination Survey. *The Journal of Rural Health*, *28*, 339-347. doi:10.1111/j.1748-0361.2011.00403.x

Borim, F. S. A., Neri, A. L., Francisco, P. M. S. B., & Barros, M. B. D. (2014). Dimensions of self- rated health in older adults. *Revista de SaúdePública*, *48*, 714-722. doi:10.1590/S0034-8910.2014048005243

Bousquet, J., Michel, J., Strandberg, T., Crooks, G., Iakovidis, I., & Iglesia, M. (2014). The European innovation partnership on active and healthy ageing: The European geriatric medicine introduces the EIP on AHA column. *European Geriatric Medicine*, *5*, 361-362.

Burholt, V., & Dobbs, C. (2012). Research on rural ageing: Where have we got to and where are we going in Europe? *Journal of Rural Studies*, *28*,432-446.

Caetano, S. C., Silva, C. M., & Vettore, M. V. (2013). Gender differences in the association of perceived social support and social network with self-rated health status among older adults: A population-based study in Brazil. *Bio Medical Central Geriatrics*, *13*, Article 122.

Campos, A. C. V., Albala, C., Lera, L., Sánchez, H., Vargas, A. M. D., & Ferreira, E. F. (2015). Gender differences in predictors of self-rated health among older adults in Brazil and Chile. *BMC Public Health*, *15*, Article 365. doi:10.1186/s12889-015-1666-9

Cau, B. M., Falcão, J., & Arnaldo, C. (2016). Determinants of poor self-rated health among adults in urban Mozambique. *BMC Public Health*, *16*, Article 856. doi:10.1186/s12889-016-3552-5

Chen, H., Liu, Y., Zhu, Z., & Li, Z. (2017). Does where you live matter to your health? Investigating factors that influence the self-rated health of urban and rural Chinese residents: Evidence drawn from Chinese General Social Survey data. *Health and Quality of Life Outcomes*, *15*, Article 78. doi:10.1186/s12955-017-0658-0

de-Graft Aikins, A. (2003). Living with diabetes in rural and urban Ghana: a critical social psychological examination of illness action and scope for intervention. *Journal of Health Psychology*, *8*(5), 557-572.

Doocy, S., & Burnham, G. (2006). Assessment of socio-economic status in the context of food insecurity: Implications for field research. *World Health & Population*, *8*(3), 32-42.

Duboz, P., BoeÈtsch, G., Gueye, L., & Macia, E. (2017). Self-rated health in Senegal: A comparison between urban and rural areas. *PLoS ONE*, *12*(9), e0184416. doi:10.1371/journal.pone.0184416

Evandrou, M., Falkingham, J., Feng, Z., & Vlachantoni, A. (2014). Individual and province inequalities in health among older people in China: Evidence and policy implications. *Health & Place*, *30*, 134-144.

Falk, H., Skoog, I., Johansson, L., Guerchet, M., Mayston, R., Hörder, H., & Prina, A. M. (2017). Self-rated health and its association with mortality in older adults in China, India and Latin America—A 10/66 Dementia Research Group study. *Age and Ageing*, *46*, 932-939.

Fantahun, M., Berhane, Y., Hogberg, U., Wall, S., & Byass, P. (2009). Ageing of a rural Ethiopian population: Who are the survivors? *Public Health*, *123*, 326-330. doi:10.1016/j.puhe.2008.10.019

Farmer, J., Philip, L., King, G., Farrington, J., & MacLeod, M. (2010). Territorial tensions: misaligned management and community perspectives on health services for older people in remote rural areas. *Health & Place*, *16*, 275-283.

Fernandez-Martinez, B., Prieto-Flores, M.-E., Forjaz, M. J., Fernández-Mayoralas, G., Rojo Pérez, F., & Martínez-Martín, P. (2012). Self-perceived health status in older adults: Regional and sociodemographic inequalities in Spain. *Revista de SaúdePública*, *46*, 310-319.

Fonta, C. L., Nonvignon, J., Aikins, M., Nwosu, E., & Aryeetey, G. C. (2017). Predictors of self-reported health among the elderly in Ghana: A cross sectional study. *BMC Geriatrics*, *17*, Article 171. doi:10.1186/s12877-017-0560-y

Ghana Statistical Service. (2013). *2010 Population and Housing Census. The Elderly in Ghana*. Accra, Ghana: Ghana Statistical Service.

Ghana Statistical Service. (2012). *Population and housing census, 2010 summary of report of final results*. Accra, Ghana.

Gyasi, R. M., & Phillips, D. R. (2018). Gender, self-rated health and functional decline among community-dwelling older adults. *Archives of Gerontology and Geriatrics*, *77*, 174-183. doi:10.1016/j.archger.2018.05.010

Hosseinpoor, A., Bergen, N., Kunst, A., Harper, S., Guthold, R., Rekve, D., . . . Chatterji, S. (2012). Socioeconomic inequalities in risk factors for non communicable diseases in low income and middle-income countries: Results from the World Health Survey. *BMC Public Health*, *12*(1), Article 912.

International Institute for Population Sciences & World Health Organization. (2012). *Study on global ageing and adult health (SAGE), India, 2007*. [Draft report]. Geneva 27, Switzerland: World Health Organisation.

Jose, J. (2014). *Urban-rural differences in health status among older population in India*. Mumbai, India: International Institute for Population Sciences.

Kivett, V. R. (1985). Rural-urban differences in the physical and mental health of older adult. *Journal of Applied Gerontology*, *4*(2), 9-19.

Kowal, P., Kahn, K., Ng, N., Naidoo, N., Abdullah, S., Bawah, A., . . . Tollman, S. M. (2010). Ageing and adult health status in eight lower-income countries: The INDEPTH WHO-SAGE collaboration. *Global Health Action*, *3*(1), Article 5302. doi:10.3402/gha.v3i0.5302

Kowal, P. R., Wolfson, L. J., & Dowd, J. E. (2000). Creating a Minimum Data Set on Ageing in Sub-Saharan Africa. *Southern African Journal of Gerontology*, *9*(2), 18-234.

Lee, J. A., Park, J. H., & Kim, M. (2015). Social and physical environments and self-rated health in urban and rural communities in Korea. *International Journal of Environmental Research and Public Health*, *12*, 14329-14341. doi:10.3390/ijerph121114329 PMID: 26569279

Liang, J., Shaw, B. A., Krause, N., Bennett, J. M., Kobayashi, E., Fukaya, T., & Sugihara, Y. (2005). How does self-assessed health change with age? A study of older adults in Japan. The *Journal of Gerontology, Series B: Psychological Sciences & Social Sciences*, *60*, S224-S233.

Machón, M., Vergara, I., Dorronsoro, M., Vrotsou, K., & Larrañaga, I. (2016). Self-perceived health in functionally independent older people: Associated factors. *BMC Geriatrics*, *16*, Article 66. doi:10.1186/s12877-016-0239-9

Mavaddat, N., Valderas, J., van der Linde, R., Kay Tee, K., & Kinmonth, A. (2014). Association of self-rated health with multimorbidity, chronic disease and psychosocial factors in a large middle-aged and older cohort from general practice: A cross-sectional study. *BMC Family Practice*, *15*(1), 185-195.

McCracken, K., & Phillips, D. R. (2017). *Global health: An introduction to current and future trends* (2nd ed.). London, England: Routledge.

Monnat, S. M., & Pickett, C. B. (2011). Rural/urban differences in self-rated health: Examining the roles of county size and metropolitan adjacency. *Health & Place*, *17*, 311-319. doi:10.1016/j.healthplace.2010.11.008

Mwanyangala, M. A., Mayombana, C., Urassa, H., Charles, J., Mahutanga, C., Abdullah, S., & Nathan, R. (2010). Health status and quality of life among older adults in rural Tanzania. *Global Health Action*. doi:10.3402/gha.v3i0.2142

Pfarr, C., Schmid, A., & Schneider, U. (2012). Reporting heterogeneity in self-assessed health among elderly Europeans. *Health Economic Review*, *2*, Article 21.

Phaswana-Mafuya, N., Peltzer, K., Chirinda, W., Kose, Z., Hoosain, E., Ramlagan, S., . . . Davids, A. (2013a). Self-rated health and associated factors among older South Africans: Evidence from the study on global ageing and adult health. *Global Health Action*, *6*, 1-10.

Phaswana-Mafuya, N., Peltzer, K., Chirinda, W., Musekiwa, A., Kose, Z., Hoosain, E., . . . Ramlagan, S. (2013b). Self-reported prevalence of chronic non-communicable diseases and associated factors among older adults in South Africa. *Global Health Action*, *6*, Article 20936. doi:10.3402/gha.v6i0.20936

Rand Health. (2007). 36-Item Short–Form Survey (SF-36). In *Rand Health: Medical outcomes study*. Retrieved from http://www.rand.org/health/surveys_tools/mos/mos_core_36item.html

Roh, S., Jang, Y., Chiriboga, D. A., Kwag, K. H., Cho, S., & Bernstein, K. (2011). Perceived neighborhood environment affecting physical and mental health: A study with Korean American older adults in New York City. *Journal of Immigrant and Minority Health*, *13*, 1005-1012.

Sander, G. E. (2002). High blood pressure in the geriatric population: Treatment considerations. The *American Journal of Geriatric Cardiology*, *11*, 223-232.

Singh, L., Arokiasamy, P., Singh, P. K., & Rai, R. K. (2013). Determinants of gender differences in self-rated health among older population: Evidence from India, *SAGE Open*. doi:10.1177/2158244013487914

Tissue, T. (1972). Another look at self-rated health among the elderly. *Journal of Gerontology*, *27*, 91-94.

Udofia, E. A., Yawson, A. E., Aduful, K. A., & Bwambale, F. M. (2014). Residential characteristics as correlates of occupants' health in the greater Accra region, Ghana. *BMC Public Health*, *14*(1), Article 244.

United Nations, Department of Economic and Social Affairs. (2017). *Probabilistic population projections based on the world population. Prospects: The 2017 Revision*. New York, NY: United Nations. Retrieved from https://esa.un.org/unpd/wpp/Download/Probabilistic/Population

United Nations, Department of Economic and Social Affairs, Population Division. (2015). World population ageing 2015-highlights (ST/ESA/SER.A/368). *Available* from http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf

Utomo, A., Mcdonald, P., Utomo, I., Cahyadi, N., & Sparrow, R. (2018). Social engagement and the elderly in rural Indonesia. *Social Science & Medicine*. Advance online publication. doi:10.1016/j.socscimed.2018.05.009

Ware, J. E., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36): 1. Conceptual frame-

work and item selection. *Medical Care*, *30*, 473-483. doi:10.1097/00005650-199206000-00002

World Health Organization. (2014). Ghana country assessment report on ageing and health. Geneva, Switzerland: Author. Retrieved from www.who.int/about/licensing/copyright_form/en/index.html

World Health Organization. (2015a). *Country statistics and global health estimates by WHO and UN partner*. Geneva, Switzerland: Author.

World Health Organization. (2015b). *World report on ageing and health*. Geneva, Switzerland: Author. Retrieved from http://www.who.int/ageing/events/world-report-2015-launch/en/