Research Article

Depression and Its Correlates in South Africa and Ghana among People Aged 50 and Above: Findings from the WHO Study on Global Ageing and Adult Health

Suraj Bahadur Thapa[1,2*], Priscilla Martinez[1] and Thomas Clausen[1]

[1]Norwegian Center for Addiction Research, University of Oslo, Norway

[2]Mental Health and Addiction Clinic, Oslo University Hospital, Oslo, Norway

*Corresponding author: Suraj Bahadur Thapa, Norwegian Center for Addiction Research, University of Oslo, Norway, Tel: 4722855050; E-mail: thapasuraj@hotmail.com

Abstract

Objective: The growth of the older adult population in Africa demands more knowledge about their chronic health problems, such as depression. The aim of this paper is to estimate depression prevalence and identify correlates of depression among older adults in Ghana and South Africa.

Method: The WHO Study on global AGEing and adult health (SAGE study) was conducted in Ghana and South Africa from 2007 to 2009 by the World Health Organization, using a standardized questionnaire among an adult population. Our analyses included 4289 adults aged 50 and above in Ghana and 3668 in South Africa. Depression was measured using self-reported symptoms over the last 12 months according to ICD-10 criteria.

Results: The prevalence of mild depression was 6.7% and 2.7% in Ghana and South Africa, respectively (p<0.001), with a gender difference only in Ghana. Factors independently associated with depression among women in Ghana were migration and lack of current work. . Similarly, higher age, lack of current work and lower quality of life were independently associated with depression among women in South Africa, whereas higher age and lower quality of life were associated with depression among men in South Africa.

Conclusions: Ghana had a higher depression rate than South Africa and we identified different factors associated with depression among men and women in these two countries. Our finding underscores the need for culture- and gender-sensitive approaches for the prevention and management of depression among the older adult population in Ghana and South Africa.

Keywords: Depression; Ghana; South Africa; Older adults

Introduction

Despite setbacks in life expectancy due largely to the HIV epidemic, the median age of some African state populations is increasing due to improvements in food security and health care [1,2]. Although the percent increase in people aged 60 and above in Africa in the coming decades will be relatively modest, the absolute numbers of these individuals is projected to rise from 48 million in 2005 to 207 million in 2050.3 Depression is a common mental health problem and an increasingly common cause for morbidity and disability in lower income countries, including those in Africa [4-6]. Depression is common among middle aged and older adults [7], and can increase the likelihood of negative outcomes when concurrent with other mental and somatic disorders [8-10]. Moreover, depression can adversely affect social roles and daily functioning [11, 12].

Little data exist on rates of depression and its correlates specifically among older adults in Africa. Among older populations in Western countries, 1-3% percent of the elderly suffer from major depression, and 8-16% has clinically significant depressive symptoms [13,14]. In a systematic review and meta-analysis among elderly community subjects, risk factors for depression were disability, new medical illness, poor health status, prior depression, female gender, sleep disturbances, poor self-perceived health, and bereavement [15]. The population-based World Mental Health Survey Initiative (WMHS) carried out in Nigeria reported lifetime and 12 month major depression at 3.1% and 1.1%, respectively. Furthermore, depression was identified as a risk factor for mental and physical comorbidity as well as disability among the general population of Nigerians [16]. The majority of the data on depression in Africa is often from younger or special populations, such as persons living with HIV, and is not generalizable to older, community-based adults [6,17]. The growth of the older adult population in Africa requires more knowledge about their burden of mental illness, in particular depressive disorders as these are likely to emerge as an important public health challenge [18].

It is well established that depression is more common among women than in men [19-22]. Similarly, some of the correlates of depression are also different between men and women [8,20] such differences can also vary from country to country [23]. A study in rural Uganda reported a 29.3% prevalence of probable major depressive disorder, and common factors independently associated with depression among both men and women were district, higher age, indices of poverty and deprivation, while the death of a father for women and the death of a mother for men were also associated with

an increased risk of depression [24]. Gender is thus an important factor to consider when investigating depression in all contexts.

The lack of data on the prevalence and correlates of depression among older adults in Africa, coupled with a growing proportion of middle-aged and older adults calls for reliable and current information. Such data will be useful in the allocation of resources and development of interventions for depression. The WHO Survey on Global Ageing and Adult Health (SAGE) included both South Africa and Ghana and provides the opportunity to estimate and compare depression and its correlates in an African context. The aim of this paper is to estimate the prevalence of depression and identify correlates of depression among older adults in Ghana and South Africa.

Method

Subjects

This paper used data collected through Wave I of the Survey on Global Ageing and Adult Health (SAGE) version 1.1.0, developed and implemented by the World Health Organization and conducted in 2007-2009 in six countries, including Ghana and South Africa. The Survey used a standardized questionnaire to collect household and individual data from nationally representative samples, approaching respondents aged 18+ years and oversampling among those aged 50 and above. All persons aged 50+ in a household designated as "older" were invited to participate. The total sample of 50+ subjects in Ghana and South Africa were 4289 and 3668, respectively. SAGE was supported by the US National Institute on Aging, Division of Behavioral and Social Research through an Inter-Agency Agreement. The SAGE Survey is described in detail elsewhere [25].

Instruments

The survey questionnaire consisted of questions on socio-demographic characteristics, self-reported health status, depressive symptoms, quality of life and alcohol measures.

Self-reported depressive symptoms based on items from the World Mental Health Survey version of the Composite International Diagnostic Interview were used to measure depression. The depression diagnosis was based on criteria from the International Classification of Diseases tenth revision (ICD-10) for depressive episodes. The algorithm used to construct the depression variable also included self-reported symptoms of depression over the previous 12 months. Mild depression (here onwards 'depression') was computed according to ICD-10 criteria.

Self-reported health was based on the question "In general, how would you rate your health today?", with response options of very good, good, moderate, bad and very bad. We constructed a dichotomous variable with the following categories: very good/good vs. moderate/bad/very bad. Quality of life was measured by the 8-item WHO Quality of life scale, which has been widely used and validated in various settings [26-28]. Each question had answers based on a Likert scale from 1 to 5 where the lower the score, the lower the quality of life. We calculated the sum score (range 8-72, mean 21.7, SD 5.5) and used this continuous measure in all analyses. Alcohol consumption was measured using a diary of the number of standard drinks consumed on each of the previous 7 days. Based on this diary we created a "harmful use" variable defined as those who drank at least 5 drinks in one day or 15 or more drinks in total for men, and at least 4

drinks in one day or 8 or more in total for women. These criteria follow guidelines for adult alcohol consumption by the National Institute on Alcohol Abuse and Alcoholism [29].

Statistical Analysis

All data were weighted, with post-stratification adjustments for age and gender based on UN population estimates. Due to expected differences in depression rates between men and women, analyses were stratified by gender. Chi-square tests and students t-tests were used to make comparisons between countries and gender for categorical and continuous variables, respectively. Odds ratios (OR) were first computed in bivariate logistic regression analyses with depression as the outcome variable. Multivariate logistic regression analyses were run by including relevant explanatory variables separately for men and women in Ghana and South Africa. We report two-tailed test values, and the level of significance for all analyses was set at .05. Data were analyzed in STATA for Windows, version 16.0.

Results

Ghana and South Africa were similar in terms of age, general self-reported health, and migration while they differed significantly in regard to education, urban setting, marital status, depression, quality of life, smoking and harmful alcohol use as shown in Table 1. Differences were also observed between genders.

	Ghana			South Africa			
	Women n=2052	Men n=2237	Total n=4289	Women n=2109	Men n=1559	Total n=3668	p-value between country totals
Age, mean (SE)	64. 3 (0.28)	64 (0.35)	64.3 (0.25)	62.0 (0.34)	61.2 (0.44)	61.6 (0.30)	0.431
Married/ cohabitating	30.6	84.7†	58.9	36.1	79.5†	55.2	0.047
Ever schooled	34.5	56.7†	46.1	73.3	78.4‡	75.3	0
Urban setting	41.5	40.6	41	64.2	66.6	65.2	0
Ever migrated	68.5	63.7	66.0‡	69.6	65.2	67.8	0.439
Currently working	66.3	73.5†	70.1	27.5	43.9†	35	0
General self-reported health							
Good/very good	35.6	46.4†	41.2	34.9	41.9‡	37.9	0.09
Depression	8.5†	5.1	6.7	2.9	2.4	2.7	0
Quality of life score, mean (SE)	25.6	27.2	26.4†	26.9	27.7‡	27.2	0.001
Current smoker	5.4	15.6†	10.7	20.4	28.1	23.8	0
Harmful alcohol use	4.2	9.6	7.0†	3.3	5.9	4.4‡	0.001

Table 1: Weighted proportions (%) of sociodemographics, depression and health measures among men and women aged 50 and above in

Ghana and South Africa, p-value<0.0001; ‡p-value<0.05; these p-values are for tests between genders within the countries.

Prevalence of Depression

There were 287 (6.7%) and 99 (2.7%) subjects who met the criteria for mild depression in the last 12 months in Ghana and South Africa, respectively. The rates of depression were statistically significantly different between men and women in Ghana (5.1% vs. 8.5%, p<0.05), but not in South Africa (2.4% vs. 2.9%).

Factors Associated with Depression in Ghana

In bivariate analyses, higher age, living without a partner, never having been to school, living in an urban setting, migration, not currently working, moderate to very bad general self-reported health, lower quality of life and harmful use of alcohol were associated with depression among women in Ghana. On the other hand, reporting a lower quality of life and current smoking were associated with depression among men in Ghana. In multivariate analyses, factors independently associated with depression among women in Ghana were lack of current employment and migration, whereas only smoking was associated with depression among men in Ghana.

	Ghana				South Africa			
	Women		Men		Women		Men	
	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age (years)								
65+ (vs 50-64)	1.91 (1.28,2.83)	1.14 (0.70,1.87)	1.32 (0.83,2.10)	1.13 (0.65,1.94)	0.60 (0.16,2.30)	0.16 (0.04,0.58)	1.06 (0.24,4.77)	0.16 (0.04,0.73)
Married	0.51 (0.32,0.80)	0.69 (0.42,1.12)	0.82 (0.42,1.60)	0.92 (0.45,1.87)	0.58 (0.28,1.20)	0.71 (0.29,1.69)	1.85 (0.61,5.63)	3.23 (0.80,13.01)
Ever schooled	0.54 (0.36,0.81)	0.69 (0.43,1.12)	0.66 (0.23,1.01)	0.83 (0.51,1.33)	1.39 (0.61,3.15)	0.99 (0.37,2.63)	1.47 (0.41,5.29)	0.95 (0.26,3.42)
Urban setting	1.11 (0.67,1.84)	1.28 (0.74,2.22)	0.74 (0.42,1.30)	0.90 (0.51,1.59)	0.67 (0.26,1.72)	0.76 (0.30,1.88)	0.46 (0.13,1.59)	0.35 (0.10,1.21)
Migration ever	2.41 (1.45,3.98)	2.20 (1.32,3.67)	1.56 (0.94,2.60)	1.57 (0.90,2.76)	0.59 (0.25,1.37)	0.45 (0.20,1.03)	0.40 (0.11,1.40)	0.28 (0.07,1.18)
Currently working	0.46 (0.31,0.69)	0.62 (0.40,0.97)	0.78 (0.47, 1.29)	0.87 (0.48,1.58)	0.10 (0.02,0.43)	0.06 (0.01,0.43)	0.38 (0.11,1.27)	0.51 (0.12,2.11)
General health good	0.54 (0.36,0.81)	0.77 (0.46,1.30)	0.78 (0.47,1.31)	0.93 (0.44,1.95)	0.14 (0.05,0.37)	0.36 (0.11,1.20)	0.09 (0.03,0.29)	0.31 (0.06,1.72)
Quality of Life score	0.94 (0.92,0.97)	0.98 (0.94,1.02)	0.96 (0.92,0.99)	0.97 (0.91,1.03)	0.83 (0.76,0.91)	0.90 (0.81,0.99)	0.84 (0.79,0.89)	0.80 (0.72,0.89)
Harmful alcohol use	0.27 (0.08,0.90)	0.34 (0.11,1.10)	1.27 (0.67,2.40)	1.30 (0.65,2.60)	1.12 (0.29,4.27)	1.30 (0.29,5.85)	0.95 (0.29,3.11)	0.49 (0.04,5.64)
Current smoker	1.52 (0.81,2.84)	1.36 (0.69,2.67)	2.00 (1.19,3.36)	1.82 (1.05,3.17)	1.6 (0.70,3.94)	1.90 (0.78,4.62)	0.69 (0.25,1.94)	0.72 (0.23,2.24)

Table 2: Adjusted and unadjusted odds ratios for depression among older adults in Ghana and South Africa by gender

Factors Associated with Depression in South Africa

In bivariate analyses among women in South Africa, a lack of current work, moderate to very bad general self-reported health, and lower quality of life were associated with depression. Similarly, lower quality of health and moderate to very bad general health were associated with depression among men. In multivariate analyses, lower age, lack of current work and lower quality of life were associated with depression among women, where as lower quality of life and lower age were associated with depression among men in South Africa.

Discussion

Ghana had overall higher depression prevalence than South Africa, and rates of depression differed significantly between male and female subjects in Ghana but not in South Africa. The depression rate of 6.7% in Ghana is consistent with studies among older persons from Botswana and Nigeria, which reported rates of 7% for depressive symptoms and 7.1% for 12 month prevalence of a depressive episode, respectively [9,30]. A depression prevalence of 2.7% among South African older adults is low compared to older adults in Ghana, and other population-based studies in South Africa. Lin et al reported a

prevalence of major depression of 4.5% among participants with no arthritis and 7.6% among those with arthritis [31]. Similarly, Tomlinson reported a prevalence of major depression within the previous 12 months at 4.9% in the South African Stress and Health Study [32]. Our finding of a notably lower rate of depression among older adults may suggest a decline in depression with ageing in South Africa. Consistent with this, Tomlinson also observed the highest rate of a lifetime episode of major depression among 40-49 year olds, who were 1.71 times more likely to have experienced lifetime depression than other age groups. Rates of depression at the population level are known to differ worldwide, and variable rates of depression among older adults have been observed within regions [33,34]. Differences in prevalence have been attributed to substantive factors (i.e. genetic, environmental) and methodological approaches (i.e. different diagnostic criteria, sampling techniques, etc.) [33]. The difference we observed between Ghana and South Africa is likely influenced by both. Ghana and South Africa exhibit different economic, cultural and historical environments, and while the application of the same diagnostic criteria permits immediate comparability; it may also reduce local validity of the construct being measured. Additionally, country-specific differences in response patterns to surveys on mental health, for example due to different perceived stigma, may contribute to the variability.

The higher prevalence of depression among women in Ghana is consistent with previous findings among both the general population and older adult samples [34]. The lack of an observed association between gender and depression in South Africa may be due to a gender differential in the reporting of symptoms due to stigma, artifacts of the depression measurement or the small sample of those identified with depression. Indeed, Tomlinson et al and Bromet et al. observed a gender difference in the expected direction among men and women in South Africa examining population-based data from the South African Stress and Health Study and World Mental Health Surveys, respectively [32,33]. Our finding should thus be interpreted in consideration of this recent data.

We have reported variation in the correlates of depression between Ghana and South Africa for men and women separately. A lower quality of life was associated with depression among older adults in South Africa, not in Ghana. Quality of life has been associated with depression in previous studies from both resource-poor and resource-rich countries [35,36]. Lack of work appeared as a correlate of depression among women in both Ghana and South Africa. An association between lack of work and depression is also consistent with other international studies and also with a study among African women presenting for psychological care at a general hospital setting [20,37]. This consistent factor for depression among women between Ghana and South Africa may be related to the generally lower social position of women and potentially represents a mechanism by which gender inequality can increase the risk of depression among African women. The association between employment and depression can also help providers identify and offer interventions to a group vulnerable to depression, namely unemployed older women. Migration was also identified as a possible risk factor for depression, though only among women in Ghana and South Africa. This supports the hypothesis that migration or displacement can be a risk factor for depression, and is consistent with several other studies where displacement is a risk factor for depression [38]. This finding also suggests women may be particularly vulnerable to the risk of migration on depression in an African setting.

The lack of an observed association between harmful alcohol use and depression in adjusted analysis may be due to several reasons. First, the measure of harmful use was based on a quantity-frequency measure over the last 7 days and did not include a dimension for problems due to alcohol or a diagnosis of an alcohol use disorder, both of which are often co-morbid with depression. Further, the measure of depression was for a mild depressive disorder and over the last 12 months, so that the differing time frames and measurement of milder symptoms for both alcohol and depression may have precluded an association. Secondly, differential reporting bias of alcohol use in this sample due to stigma could also influence the ability to observe an association. Thirdly, there is evidence showing a variable association between alcohol use and depression, so it may be that depression is not as strongly associated with potentially risky alcohol use in these samples as we observe in other settings. Among older adults in Korea, problem drinking was not associated with a significant risk for a major depressive episode, and a study in the US among adults aged 50 and above controlling for several factors did not observe a direct effect of drinking on psychological distress [39,40].

This study has some limitations. The study was a cross sectional quantitative household survey and we can hence not infer casual associations between depression and risk factors. Also, other affective disorders and cultural and contextual components were not examined in this survey, which likely impact the expression of depressive symptoms and the relationship to associated factors. Moreover, cross-cultural validity of international diagnostic criteria in low and high income countries may vary, and no means of controlling for this variation are available in this data. Therefore, it is important to bear in mind that people from differing cultural backgrounds within Africa may well perceive depression and possible explanations for depression differently [19].

Our findings can have several implications. Reporting of variable rates of depression and its correlates in Ghana and South Africa indicates that mental health problems are present, associated with a variety of factors and likely to be a growing public health challenge in Africa consistent with previous literature [41,42]. At the population level, depression is associated with further decrements in health when co-morbid with somatic illnesses, which is particularly relevant to an aging population with increased risk of physical ailments and cognitive decline [43]. Also, the mental health care systems in many African countries are grossly underfunded and generally lacking, providing little in the way of screening and treatment [44]. As increases in the proportion of both older adults and the general population who experience depression and other mental health disorders are anticipated, strain on the current systems will also increase [41,44] Given that resource allocation and the development of mental health care provision will take time, primary care providers and local health authorities may be appropriate to screen for need and provide low threshold treatment such as counseling and psycho-education to at-risk groups [45]. Health planners and policy makers need to be aware of the increasing numbers of older persons with non-communicable disorders, many of which will be mental disorders like depression. [42,46].

Conclusion

Depression was found at variable rates among older adults between Ghana and South Africa. Different factors associated with depression among men and women in Ghana and South Africa were identified and underscore the need for culture- and gender-sensitive approaches

for the prevention and management of depression among the older adult population. Depression is a relevant mental health concern for Africa, and more studies should assess depression and other mental health parameters in growing older adult populations.

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