SYMPTOMS OF COMMON MENTAL DISORDERS AND THEIR CORRELATES AMONG WOMEN IN ACCRA, GHANA: A POPULATION-BASED SURVEY

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SUMMARY

Introduction: To comply with its new mental health bill, Ghana needs to integrate mental health within other health and social services. Mental disorders represent 9% of disease burden in Ghana. Women are more affected by common mental disorders, and are underrepresented in treatment settings. This study examines physical and social correlates of mental illness in adult women in Accra, Ghana, so as to inform general clinical practice and health policy.

Methods: The SF-36 and K6 forms and 4 psychosis questions were administered in three languages to 2,814 adult women living in Accra, as part of a larger cross-sectional population-based survey of women's health. The validity of these tools was assessed through correlations within and between measures. Risk factors for mental distress were analysed using multivariate regression. Health service use was also described using statistical frequencies.

Results: Both the SF36 and K6 appear valid in a female Ghanaian population. Low levels of education, poverty and unemployment are negatively associated with mental health. Physical ill health is also associated with mental distress. No association was found between mental distress and religion or ethnicity. Some additional risk factors were significant for one, but not both of the outcome variables. Only 0.4% of women reported seeing a mental health professional in the previous year, whereas 58.6% had visited a health centre.

Conclusion: The implications for women are that marriage is neither good nor bad for mental health, but education and employment are strong protective factors. Researchers should note that the SF36 and K6 can be used in a Ghanaian population, however more research is needed to determine the cut-off point for serious mental illness on the K6, as well as research into mental disorders in a mixed-gender population.

Keywords: Mental health disorders, women's health, depression, K-6 and SF-36 scales, psychiatric care, West Africa.

INTRODUCTION

Background

Early this year (2012), an historic new health bill was enacted in Ghana, providing progressive legislation for mental healthcare.[1] At the time of the bill's enactment, mental healthcare in Ghana is dominated by psychiatric hospitals where a short-supply of trained professionals tackles unmanageable case-loads with inadequate time to attend to their patients. As of 2006, only 4 psychiatrists, 3 neurologists, 1 psychologist and 2 social workers were employed by Ghana Health Services to serve the country's total population of 22 million, leaving most clinical care to a cadre of 568 community psychiatric nurses (CPNs).[2] Despite their title, three quarters of the community psychiatric nurses work in one of the country's three psychiatric hospitals. With an average occupancy rate of 155% in Ghana's psychiatric hospitals, not all patients have access to a bed.[3] In outpatient settings, 32% of people with mental health problems treated in polyclinics are prescribed drugs that are in shortage at the clinic.[4]

There is increasing consensus among local experts that options for community care must increase in quantity and quality to align clinical practice with national mental health policy and legislation.[3,5,6]

If mental health is to be treated at the community level, it must be understood holistically, and addressed outside of purely mental health settings, within integrated healthcare services. In order to do so, the relationship between mental and physical health, including reproductive health, must be better understood and supported by evidence.[7] In addition, the relationship between mental health and its social determinants requires further investigation.

Although it is estimated that mental disorders represent 9% of the disease burden in Ghana and 16% of the burden among adults aged 15-59[6], the actual prevalence of mental disorders has never been studied in the general population. According to hospital statistics, men and women are equally likely to experience and receive treatment for psychosis. Anecdotally, however, substance abuse is found more commonly among men[8,9]; and common mental disorders, principally depression and anxiety, are reported to affect women more prominently.[10,11] While men are more likely to be taken to psychiatric hospital for treatment, because they are perceived as a threat, women with mental health problems seek treatment more commonly at shrines, churches, or with primary care providers for somatic complaints.[12,13]

Research on Ghanaian women's health and wellbeing suggests that a complex range of factors impinge on their mental health. These include poverty[14], everyday burdens of paid work, housework and childcare[15], domestic violence[16,17], chronic illness experiences[18,19], infertility[20], and ageing-related discrimination, in particular witchcraft accusations.[13]

To understand the inter-relationship between physical health, social factors and mental health, a population-based approach is required. This paper reports on self-reported symptoms of mental distress from a large-scale study of women's health in Accra, drawing from a sample of 2,814 adult women.

METHODS
Design: The study design is population-based cross-sectional analytical survey.
Setting: six sub-metros of Accra, Ghana – Ablekuma, Ashieduketeke, Osuklottey, Kpeshie, Ayawaso and Okaikoi.
Participants and study size: 2,814 randomly-sampled adult women (aged 18 and older). The population was stratified by age and social position, so as to ensure representation across all types of people. Older women (over the age of 55) were purposively over-sampled so as to achieve statistical power.

A complete description of the sampling methods has been described elsewhere.[21]

Variables: The primary outcome was symptoms of common mental disorder, as measured by two interview-administered self-report instruments: the short-form 36 (SF36) and the Kessler 6 (K6). Secondary outcomes include an exploratory analysis of the validity of the K6, prevalence of symptoms of psychosis and use of healthcare services. The exposure variables were age, education, wealth, ethnicity, region of birth, occupation, religion, number of pregnancies, and physical health.

Measurement: The SF36 is composed of 36 questions divided across eight domains. Four of these domains are considered to relate to mental health, namely: 1) role limitations due to personal or emotional problems ("role-emotional");, 2) emotional wellbeing, 3) social functioning and 4) energy and fatigue (see appendix 1 for full list of parameters corresponding to each of the mental health sub-scales). Higher scores indicate better health on each of the sub-scales. Together, these four scores form a single mental component scale, while the other four sub-scales aggregate into a physical component scale. Full details of the scales and the psychometrics of the SF36 are presented by Ware, Snow and colleagues.[22] The tool and its scoring code book are available free of charge from the RAND Corporation (rand.org/health/surveys_tools/mos/mos_core_36item.html) making it a good tool for use in resource-constrained settings. It is also widely used in health care studies.

The K6 is a six-question abbreviated form of the K10 scale, designed in the United States to estimate the prevalence of mental distress and disorder in the general population. Scores range from 0 to 30 with higher scores indicating better outcomes. The instrument has been used in 14 countries through the WHO's World Mental Health Survey, including South Africa (n=4,315) and Nigeria (n=2,143). It is easy to administer and easy to score, requiring a simple, unweighted sum of the responses. The predictive probability of a DSM-IV diagnosed mental disorder using the K6 was found to be 0.82 in Nigeria, the country most resembling Ghana in the WHO survey, meaning that 82% of people with a mental disorder were correctly screened positive.[23] Specificity of the tool is not reported in the literature.

The K6 is not yet validated in Ghana, so no clinical threshold has been established to distinguish between mental distress and disorder.

Despite this drawback, the K6 offers the advantage of being a broader screening tool than some of the other locally validated mental health screens (eg. the PHQ-9, and the Edinburgh Postnatal Depression Rating Scale), because it is not specific to a single disorder. Since the SF36 and the K6 capture predominantly common mental disorders, four additional questions were asked about symptoms of psychosis experienced in the last month. The questions gauged the following symptoms: 1) feeling of strangeness; 2) paranoia; 3) thought control; and 4) hallucinations and are drawn from standardized instruments. Finally, epilepsy was assessed via a self-report question about seizures in the past year.

Wealth was measured by the Wealth Index, a composite scale taking into consideration household characteristics and durable goods. Physical health was captured by medication prescription, as well as by common somatic complaints of headaches and sleep disturbance.

Bias: Response bias was mitigated by choosing all-female interviewers who were native speakers of the local language. Interviews were conducted by ten women, aged between 25 and 45 years old who spoke the three main languages in Accra: Ga, Twi and Ewe. Care was taken to ensure the validity of the translation of the tool into these three languages by means of a focus group discussion with all the interviewers, all of whom were bilingual speakers of English and at least one of the local languages. The translations were then typed up as a reference document for the interviewers, while the data were entered on the original English language form. No back translation was conducted, because the translation had been done via group consensus; and group translation has been deemed more effective at identifying and addressing culturally ambiguous terms than individual translation and back translation.[24] Individual translation service was offered to speakers of Hausa.

Statistical Methods: The internal consistency of the SF36 was examined by means of a Pearson correlation between the different sub-scales. On the basis of high levels of correlation in the mental health sub-scales, a principle component analysis was performed on the four mental health domains and a composite mental health factor score was produced for each woman in the sample. The K6 was correlated with the SF36 composite mental health factor by means of a Pearson correlation.

Risk factors for the SF36 and the K6 were calculated using a multivariate linear regression with categorical correlates. The analysis was done using the SAS statistical software.

Ethics: The interview was administered in the women's homes with their signed informed consent. Ethical approval was received from Noguchi Memorial Institute for Medical Research at the University of Ghanaand the Harvard School of Public Health .

RESULTS
Descriptive Information
The median age of the sample was 37. The majority of women (59.9%) were married, but one in three (32,5% of respondents) were divorced or separated, and a further 5.3% were single. The mean number of pregnancies per woman was 3.9 with 13.4% of the population having never been pregnant. More than half of respondents (58.7%) were born in the Greater Accra region, while the second largest group were native to the Eastern Region (13.5%). The majority of the respondents in the survey were Christian (82.7%) and 12.63% were Muslim. The largest ethnic group represented in the survey was the Ga (40.5%), followed by the Akan (32.5%). One fifth of the women sampled (21.21%) had no formal education. On the sub-Metro level, the percentage of women with no education was highest in Ashiedu Keteke (27.0%) and lowest in Osu Klottey (13.8%). The predominant work status was self-employed, accounting for 51.5% of the sample. Twenty-seven per cent of respondents were unemployed and a large proportion of those in productive age reported that they were able to work.
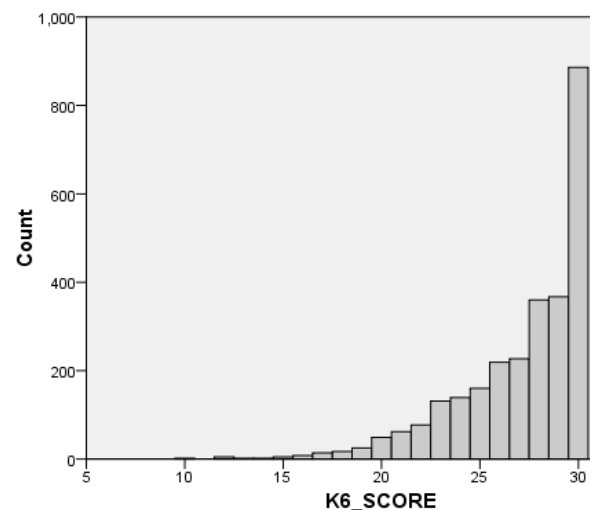

Figure 1 K6 Distribution

The K6 distribution was highly skewed towards the healthy end of the spectrum with a mean score of 27.1 out of 30 (see Figure 1).

The SF-36 mental health sub-scales were also skewed in the direction of health, although the energy/fatigue sub-scale peaked in the mid-range with scores of 51-75%. The role emotional sub-scale appeared slightly bimodal, with a small peak in the bottom range.
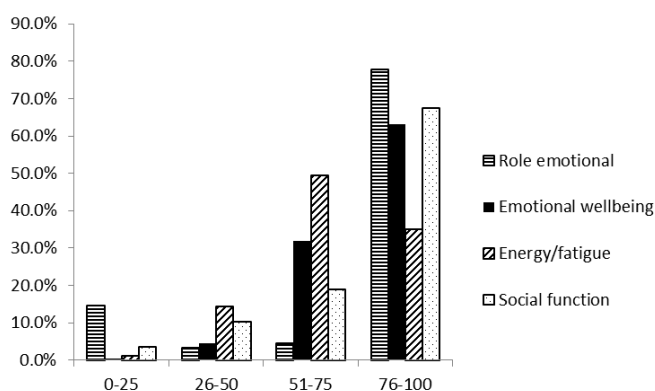

Figure 2 Distribution of SF-36 mental health sub-scale scores (0-100) by quartile

Validity of the tools in a Ghanaian population
The four mental health sub-scales of the SF36 were highly correlated between each other (see Table 1). The "role emotional" sub-scale correlated with emotional wellbeing (r= .41), energy and fatigue (r=.34) and social functioning (r=.48). The social functioning sub-scale is also highly correlated with the physical sub-

scales, because it includes questions about both physical and emotional wellbeing.

The K6 scale was highly correlated with the composite mental health factor score from the SF36 (r=0.61). The distribution of the K6 scale was asymptotic and skewed towards the higher scores (ie better mental health), suggesting a rank validity for the scale and demonstrating greater specificity in the lower, more symptomatic range (see Figure 1). In addition, individual items on the scale were correlated with one another (see Table 2).

Some items on the K6 were more frequently endorsed than others. For example, women were significantly more likely to endorse feeling depressed than they were to endorse feeling worthless or hopeless (chi square p<.0001 for both). Neither hopelessness nor worthlessness were highly correlated with feeling depressed (r=0.22 and 0.28 respectively), although the association was significant (see Table 2), and only 12% of the sample endorsed any form of hopelessness in the previous month, as compared with 35% endorsing feeling depressed.

A comparison of depression-related items between the K6 and SF36 mental wellbeing sub-scale (see Table 2) revealed high levels of correlation between the K6 question about feeling depressed and the SF36 question about feeling unhappy (r=0.64), but lower levels of correlation between feeling unhappy and feeling downhearted (r=0.38) and almost no correlation between feeling unhappy and worn-out (r=0.18).

Table 1 Correlation of the Mental Health Sub-Scales on the SF36

	Role emotional	Emotional wellbeing	Energy-fatigue	Social functioning
Role emotional	1	0.41 <.0001	0.34 <.0001	0.48 <.0001
Emotional wellbeing	0.41 <.0001	1	0.56 <.0001	0.37 <.0001
Energy-fatigue	0.34 <.0001	0.56 <.0001	1	0.47 <.0001
Social functioning	0.48 <.0001	0.37 <.0001	0.47 <.0001	1

Correlates of mental distress
The correlates of mental distress are shown in Table 3.

Social correlates
A multiple linear regression on the SF36 composite mental health factor revealed that low levels of educa-

tion, poverty and unemployment were all significantly and positively associated with mental distress. People with primary school or less education were significantly less likely than people with junior high school education to score higher on the mental health factor scale (p=0.001 and 0.02 respectively).

The same was true for people in the lowest wealth quintile as compared to those in the middle quintile. Inversely, those in the upper two wealth quintiles were significantly more likely to score higher on the composite mental health factor (p=0.02 for both). Women who were unemployed (both those able and those una-

ble to work) were also significantly less likely to score higher on the mental health factor scale than women with informal occupations (p<0.0001). There was no significant difference between women with formal and informal occupations.

Table 2 Correlation of Depression Questions on the K6 and SF36

	K6 Depressed	K6 Hopeless	K6 Everything an effort	K6 Worthless	SF36 Unhappy	SF36 Downhearted	SF36 Worn out
K6 Depressed	1	0.22 <.0001	0.31 <.0001	0.28 <.0001	0.64 <.0001	0.32 <.0001	0.13 <.0001
K6 Hopeless	0.22 <.0001	1	0.17 <.0001	0.43 <.0001	0.18 <.0001	0.25 <.0001	0.15 <.0001
K6 Everything an effort	0.31 <.0001	0.17 <.0001	1	0.25 <.0001	0.24 <.0001	0.32 <.0001	0.32 <.0001
K6 Worthless	0.28 <.0001	0.43 <.0001	0.25 <.0001	1	0.21 <.0001	0.23 <.0001	0.14 <.0001
SF36 Unhappy	0.64 <.0001	0.18 <.0001	0.24 <.0001	0.21 <.0001	1	0.38 <.0001	0.17 <.0001
SF36 Downhearted	0.32 <.0001	0.25 <.0001	0.32 <.0001	0.23 <.0001	0.38 <.0001	1	0.45 <.0001
SF36 Worn out	0.13 <.0001	0.15 <.0001	0.32 <.0001	0.14 <.0001	0.17 <.0001	0.45 <.0001	1

Physical and reproductive health correlates

In addition to these social factors, a significant association was found between mental health and physical conditions. Women who were taking any medicines or vitamins (other than birth control and diet pills), as prescribed by a doctor or pharmacist, were significantly more likely to score lower on the mental health factor scale than women who were not taking these medicines (p=0.0002). People who reported mild or no headaches in the last month were also significantly more likely to score higher on the mental health factor score, and the same was true for people reporting any form of sleep disturbance (p<0.0001 for both). Finally, women who had never been pregnant were significantly more likely to score higher on the mental health factor scale than women with 1-3 pregnancies (p=0.02), adjusting for age.

Non-correlates

No association was found between mental health scores and age, religion, ethnicity or marital status. In other words, no significant difference was found between Pentecostal/Charismatic groups and any other religious

denominations (Moslem, Catholic, other Christian, or other). There was no significant difference in outcomes between the Ga, Akan, Ewe and other ethnic groups. Being married or living together as if married is not significantly different from being unmarried. Whether or not a person migrated to Accra or was born there was also insignificant.

K6 correlates

Running the same multiple regression of potential correlates on the K6 revealed mostly the same associations with some differences. Age became significant with young people (18-25) significantly more likely to score lower than adults (35-54). Education was less significant, with only those with no education at a significant disadvantage, and no effect for those with primary school education. Wealth was only significant in the bottom quintile, but not in the top two quintiles. And neither pregnancies nor medications were significantly associated with negative K6 outcomes. All the rest of the associations held true for both the K6 and the SF36 composite mental health score.

Table 3 Regression Results: correlates of mental distress

Dependent variable	SF36 composite mental health factor				K6			
Independent varia-ble	Parameter Estimate	Standard Error	t Value	Pr > |t|	Parameter Estimate	Standard Error	t Value	Pr > |t|
Age								
18-24	0.05387	0.05402	1	0.319	-0.722	0.18616	-3.88	1E-04
25-34	0.00878	0.04998	0.18	0.861	-0.54313	0.17226	-3.15	0.002
55+	-0.07569	0.05799	-1.31	0.192	0.36588	0.20015	1.83	0.068
Education								
No education	-0.16451	0.05062	-3.25	0.001	-0.49759	0.17409	-2.86	0.004
Primary education	-0.12161	0.05424	-2.24	0.025	-0.12516	0.18687	-0.67	0.503
University +	0.0199	0.04626	0.43	0.667	-0.00951	0.16001	-0.06	0.953
Demographics								
Married	0.01936	0.03705	0.52	0.601	0.11843	0.12802	0.93	0.355
Region of birth	0.00157	0.03906	0.04	0.968	0.0193	0.13495	0.14	0.886
Ethnicity								
Akan	0.00548	0.0463	0.12	0.906	0.01757	0.16005	0.11	0.913
Ewe	-0.05082	0.05627	-0.9	0.367	-0.38482	0.19374	-1.99	0.047
Other	-0.0301	0.08133	-0.37	0.711	-0.16387	0.27749	-0.59	0.555
Wealth								
Lowest quintile	-0.10952	0.05336	-2.05	0.04	-0.46129	0.18416	-2.5	0.012
2nd quintile	-0.03912	0.05191	-0.75	0.451	-0.21592	0.17941	-1.2	0.229
4th quintile	0.11571	0.05202	2.22	0.026	0.30792	0.1786	1.72	0.085
Highest quintile	0.1259	0.05405	2.33	0.02	0.23535	0.18686	1.26	0.208
Occupation								
Formal employment	0.03788	0.06416	0.59	0.555	0.29271	0.22139	1.32	0.186
unemployed able to work	-0.19693	0.05084	-3.87	1E-04	-0.48734	0.17539	-2.78	0.006
unemployed unable	-0.49889	0.05846	-8.53	<.0001	-0.97216	0.20275	-4.79	<.0001
Pregnancies								
0	0.13494	0.0593	2.28	0.023	0.2698	0.20481	1.32	0.188
4 to 7	0.01822	0.04179	0.44	0.663	-0.1614	0.14439	-1.12	0.264
8+	0.00849	0.06201	0.14	0.891	-0.08237	0.21367	-0.39	0.7
Physical health								
Any meds	-0.13978	0.03704	-3.77	2E-04	-0.08478	0.12788	-0.66	0.507
No headache	0.38329	0.03815	10.05	<.0001	0.8193	0.1317	6.22	<.0001
Sleeps well	0.55083	0.03479	15.84	<.0001	1.87844	0.1204	15.6	<.0001
Religion								
Catholic, anglican	-0.03387	0.05779	-0.59	0.558	0.00999	0.20022	0.05	0.96
Methodist, presbyteri-an, other Christian	-0.05924	0.03997	-1.48	0.139	-0.03274	0.13806	-0.24	0.813
Muslim	-0.04913	0.07996	-0.61	0.539	0.06023	0.27344	0.22	0.826
Traditional, no reli-gion, other	-0.04479	0.08012	-0.56	0.576	-0.09262	0.27731	-0.33	0.738

Prevalence & Service Use

This study was unable to estimate the population prevalence of mental disorders, because the K6 tool, which is commonly used for this purpose, has not yet been indexed in Ghana. The mean score found on the K6 was 27.1. Only 9 women (0.3%) scored below the standard 13-point American cut-off for mental disorder, which is well below any estimates of prevalence and confirms that the US cut-off cannot be used.

Symptoms of psychosis were endorsed at rates of 7-8% (strangeness 7.2, paranoia 7.5, voices 8.1) for all of the questions except thought-control, which was endorsed at only 4%. These rates cannot in any way be used to estimate prevalence of psychosis, as in many cases the symptoms could be explained culturally. They are reported here for the purpose of future researchers, as a benchmark response rate.

Only two women in the sample of 2,814 endorsed having had a seizure in the previous year (0.07%), which is well below the estimated prevalence of 1.1%.[25] Only 12 women (0.4%) had visited a mental health professional in the previous year, such as a psychiatrist, psychologist, psychiatric nurse, social worker or counsellor. By contrast, 442 (15.7%) women had visited a herbalist, 1743 (61.9%) women had visited a pharmacist and 1650 (58.6%) women had visited a health centre. Consistent with the findings of earlier studies by Fosu and Appiah-Poku[26,27], women's use of biomedical and supporting services outweighed their use of traditional medicine services.

DISCUSSION
Limitations

The current study is exploratory in nature and faces several limitations, chief among them the challenges of self-report data. The stigma of mental disorders could have led to lower levels of endorsement of symptoms, because of a reluctance to share these matters with an impersonal interviewer. Choosing only female interviewers was one mitigating factor in this respect. The low response-rate for epilepsy, however, could be a reflection of the particular stigma surrounding that disorder, which many people in Ghana believe to be contagious.

In addition to the challenges of self-report, the study is limited by the absence of indexing and validation of the mental health outcome tools within a Ghanaian population. The absence of back-translation could mean that some questions were imperfectly understood; however the focus-group method for deriving the translations is a mitigating factor to this risk. Potential sources of bias include sampling bias, from the purposive over-sampling of elderly women, and information bias resulting from misclassification of exposure or outcome.

Implications for healthcare providers

Healthcare providers should note that there is a significant association between physical and mental symptoms of ill health. People taking any form of medication were found to have higher levels of mental distress as measured on the SF36 composite mental health score, which suggests that doctors and nurses might consider asking patients about their mental health and screen for mental disorders in consults for physical health problems.

Headaches and sleep problems were also found to be highly associated with poor mental health outcomes, so if a patient attends a clinic with a complaint of headache or sleep problem, healthcare providers may wish to explore mental health among other causes. Simple questions, such as those found in the K6 (translated in the appendix) could be used to probe people about their mental health status, although questions about feeling unhappy or depressed may be more useful than questions about hopelessness or worthlessness. Even mild levels of symptom endorsement could indicate some form of problem, since the women in this study rarely endorsed severe symptoms of mental distress.

Implications for policy makers

A salient finding of the study as relates to policy makers is that only 0.4% of women had seen any form of mental health professional in the past year. The WHO estimates that mental disorders affect 10% of the general population each year.[28] If that is the case in Ghana, then fewer than 1 in 20 (4%=0.004/0.1) women with a mental disorder in Accra is accessing specialised treatment.

This data is in the same order of magnitude as that found by Ghana's health information system. In 2005, the total cases in metropolitan Accra of the four mental disorders tracked by Ghana's Health Information System amounted to 2,668 of which 1,106 (41%) were women.[11] The population of metropolitan Accra was 2.9 million at the time of the 2000 census, so at this rate of treatment, 1% of those with a mental disorder had received clinical treatment for a mental disorder that year. These estimates could be made more accurate by tracking mental health services more fully, not only in hospitals, but also in primary care. Some improvements in this area should come into effect with Ghana's new health information system.[29]

Increasing mental healthcare would require providing further training to health professionals in the detection and management of mental disorders. Because of the

comorbidity between mental distress and physical ailments evidenced in this study, building the human resource cadre for mental health could contribute to the overall health system, especially to the infrastructure for chronic disease. Adequately addressing the mental disorders that underlie frequent somatic complaints could also alleviate burden on the healthcare system caused by misdiagnosis and repeat visits.

The other main finding of relevance to policy makers is that certain social factors – in particular education, employment and income – play an important role in the mental health of urban Ghanaian women. These social factors should be taken into consideration in both the prevention and treatment of mental disorders. If the treatment of mental disorders is contained only to clinical interventions, it is unlikely to achieve full effect. One integrated intervention model that has shown signs of effectiveness in Ghana is the Basic Needs Model for Mental Health and Development, which in 2010 provided services to 17,720 people with mental illness or epilepsy living in Accra and the three Northern regions.[30] A more integrated approach to the treatment of mental disorders includes increased involvement of service users through registered self-help groups.

Implications for Women
This study provides a few insights into gender-specific factors relating to the wellbeing of women in Accra. The finding on the SF36 of better outcomes for women without children as compared to women with 1-3 children suggests that the experience of urban child-rearing may contribute to women's mental distress in the short-to-medium term. Marriage and cohabitation were found to be neither good nor bad for mental wellbeing; instead it is likely that the quality of the relationship matters more than the relationship itself, particularly since domestic violence is a common cause of mental distress.[16,17] Finally, education matters, even controlling for wealth and employment, and constitutes a protective factor for mental wellbeing, a finding that is consistent with the literature from other low-income countries.[31]

Implications for Researchers
The present study is the first time that the SF36 and the K6 have been used to study mental disorders in a Ghanaian population. Both tools appear to be valid in terms of the correlation of items within the sub-scales and the shape of the distribution, as well as the correlation of the two tools between each other. In general, this study suggests that Ghanaian women endorse milder levels of symptoms than American, European or Australian populations; in particular, they are less likely to endorse feeling hopeless or worthless. This finding may relate to different cultural norms around expressing distress, namely a greater reticence around discussion of negative emotions, as well as higher feelings of hopefulness associated with levels of religious belief.

Future research should aim to index the K6 in the Ghanaian population so that the tool and the current data can be used to estimate population prevalence of mental disorders. An effective measure of psychosis also needs to be tested in a Ghanaian population. The preliminary findings from this study show that the symptom of thought-control is less commonly endorsed than paranoia, hallucinations and feelings of strangeness. This could either be because the latter symptoms are over-endorsed and do not indicate pathology, or that thought-control is under-endorsed, or that the difference is real and thought-control features less prominently in the profile of psychotic symptoms.

Additional research is necessary on a population of men, or a mixed population, so as to compare the symptoms and correlates of mental distress between men and women. More pressing than any of these areas, however, is research into effective ways of scaling up mental health services, including through integrated chronic disease management, to address the large treatment gap.

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