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Psychosocial stressors among Ghanaians in rural and urban Ghana and Ghanaian migrants in Europe

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Abstract:	Psychosocial stressors have significant health and socio-economic impacts on individuals. We examined the prevalence and correlates of psychosocial stressors among non-migrant and migrant Ghanaians as there is limited research in these populations. The study was cross-sectional and quantitative in design. A majority of the study participants had experienced stress, discrimination and negative life events. Increased age, female sex, strong social support and high sense of mastery were associated with lower odds of experiencing psychosocial stressors in both populations. Interventions should be multi-level in design, focusing on the correlates which significantly influence the experience of psychosocial stressors.

Background

Psychosocial stressors have a major influence on mood and sense of well-being, and may lead to the development or aggravation of mental disorders, physical ill-health or dysfunctional behaviour (Hobfoll, 2002; Schneiderman, Ironson and Siegel, 2005; World Health Organization [WHO], 2019). Among sub-Saharan Africa populations at home and abroad, psychosocial stressors and severe mental disorders are considered a silent epidemic largely due to poverty, social exclusion and structural inequalities which present systemic barriers to prevention, detection and treatment (Monteiro, 2015; Pannetier et al., 2017; Wainberg et al., 2017).

Psychosocial stressors often have significant health, social and economic impacts on individuals as they are associated with physical morbidity and mortality, disruption of interpersonal relationships and decreased productivity (Gadalla, 2009; Fryers et al., 2005; Hamilton and Alloy, 2017). Psychosocial stressors are also associated with cardiovascular diseases, unhealthy behaviours and overall poor quality of life (Black and Garbutt, 2002; Bucciarelli et al., 2020; Heikkilä et al., 2013; Martos-Méndez et al, 2020; Wills et al., 2002).

Studies which have assessed the burden of psychosocial stressors and severe mental disorders in urban and rural settings have shown that urban residents have an increased risk of mental illness relative to rural dwellers because they are more likely to be exposed to stressors related to their environment (such as congestion, noise/air pollution and cost of living) and are also more likely to experience stressful personal events (such as residential relocation and job loss) (Chen et al., 2014). There is also evidence to show that psychosocial stressors are more prevalent in poor than in non-poor urban neighbourhoods (Srivastava, 2009).

A number of studies conducted mainly in Europe have found higher risks or rates of psychosocial stressors and mental disorders among migrants compared to the host population

and their counterparts at home (Abebe, Lien and Hjelde, 2014; Kerkenaar et al., 2013; Pannetier et al., 2017; Salinero-Fort et al., 2015). The local circumstances of migrant populations, such as opportunities for socioeconomic development and integration, and access to healthcare and preventive services may also vary considerably across countries and can influence the experience of psychosocial stressors and broadly, mental and physical health, in different ways (de-Graft Aikins et al., 2012).

Additionally, the health status of host populations, to an extent, determines the health status of migrant groups as host populations are often the reference group for health outcomes. In other words, if the host population have poor health outcomes, for example, migrant groups will most likely have similar outcomes – "the migrant pond effect" (Agyemang et al., 2016; de-Graft Aikins et al., 2012).

Generally, there is a paucity of evidence on the prevalence and correlates of psychosocial stressors in African populations at home and abroad. There are however, a few studies on psychosocial stressors and mental health in African-ancestry populations in the diaspora (such as in African Americans and in African Surinamese) (Brody et al., 2014; Nieuwenhuijsen et al., 2015; Spruill et al., 2019). Among populations of African descent in Europe, factors such as unemployment, poverty, poor housing, work stress, racial discrimination and lack of social support have been identified as drivers of poor mental health outcomes (Agyemang et al., 2009; Pannetier et al., 2017).

This study employed the use of the socio-ecological model for health, which recognizes that multi-level factors at the individual, interpersonal and structural/environmental levels have a bearing on both mental and physical illness (Jurado et al., 2017; Reupert, 2017; Song et al., 2007). These factors also work in tandem and in varied ways to either increase or mitigate the likelihood of psychosocial stressors (Kendler et al., 2003).

We assessed the rates of psychosocial stressors, specifically, stress at home/work, perceived discrimination and negative life events, using a sample of Ghanaians in Ghana (non-migrants) and Ghanaian migrants residing in Europe. We also assessed correlates of these psychosocial stressors in both geographical settings to better understand how migration and national contextual factors might influence exposure to and experience of stressors.

Methods

Data source

Data for this study were drawn from the Research on Obesity and Diabetes among African Migrants (RODAM) project. The RODAM project was a multi-site cross-sectional study involving Ghanaians in Ghana and Ghanaian migrants in Europe, specifically, in the cities of Amsterdam, London and Berlin. Protocol details of the RODAM project have been described previously (Agyemang et al., 2014).

Sampling and recruitment

A random sampling procedure was adopted to recruit individuals living in rural and urban areas of the Ashanti region of Ghana. Ghanaian migrants in Amsterdam were randomly drawn from the Amsterdam Municipal register. In London, Ghanaian migrants were drawn from the membership lists of Ghanaian organizations and the association of Ghanaian churches. In Berlin, Ghanaian migrants were randomly drawn from a list of Ghanaians provided by the immigration registration office and supplemented with contact details of members of Ghanaian organizations and churches. The adult population aged 25 to 70 years were included in the present analyses.

Study Procedure

Data were collected through a structured questionnaire, which was administrated by an interviewer, or self-administered by paper or digitally. All interviewers across the study

settings had a Ghanaian background and received standardized training on interviewing. Interviews were conducted in the preferred language of participants (mainly Twi [local Ghanaian language], English, Dutch or German). The questionnaire had information on demographics, socioeconomic status, migration history, health status, and psychosocial stressors.

Ethical considerations

Ethical approval was obtained through the respective ethics committees in Ghana, the Netherlands, Germany and United Kingdom. Additionally, informed written consent was sought from each participant before being enrolled in the study.

Measurements

Outcome variables

Stress at home/work, perceived discrimination and negative life events were used as the measures of psychosocial stressors. Stress at home/work was assessed with the tool used in the INTERHEART study (Rosengren et al., 2004). The tool assesses feelings of irritability, anxiety and difficulties in sleeping due to conditions at home or work. Stress at home/work was categorized as "never experienced stress" or "experienced periods of stress".

Perceived discrimination was assessed using an adapted version of the everyday discrimination scale (Essed, 1991; Williams et al., 1997). This scale assesses routine and often subtle experiences of unfair treatment by others in the social environment, and gives a good measure of stressors that are considered episodic or chronic. The nine-item scale asked participants to rate the frequency of experiencing daily mistreatment. The reliability coefficient (Cronbach's alpha) for the nine-item scale was 0.92. The responses to each of the questions ranged from "never" (coded 1) to "very often" (coded 5). A sum score was computed, ranging from 9 to 45 (the higher the score, the higher the level of perceived discrimination). The mean of the sum

score was determined, and the experience of discrimination was categorized as no/low discrimination (below the mean of the sum score) and frequent discrimination (above the mean of the sum score).

Negative life events were assessed with the use of an adapted version of the "List of Threatening Experiences" (LTE) measure (Brugha et al., 1985; Rosmalen et al., 2012). Study participants were asked if they experienced negative life events in the past 12 months. The negative events included the experience of a major financial crisis, dissolution of a steady relationship and serious problems with social relations. Responses were categorized as "no" (no negative life event experienced) or "yes" (experienced one or more negative events).

Explanatory variables

Sex, age, employment status, educational status, sense of mastery (individual level), perceived sense of social support (interpersonal level), location and length of stay in Europe – for migrants only (structural/environmental level) were the explanatory variables in this study. Employment status was categorized as either unemployed or employed. Education was based on the highest level completed, and was categorized as no/primary education, lower secondary, higher secondary and tertiary.

Social support was assessed using a component of the Social Support Questionnaire for Transactions (SSQT) called the "Daily Emotional Support" scale – a social-emotional scale which measures supportive interactions (Briancon et al., 1990; Suurmeijer et al., 1995; Van Sonderen, 1990). The five-item scale asked questions that relate to aspects of inter-personal relationships and support. A sum score of the five questions was computed, ranging from 5 to 20. The mean of the sum score was determined, and participants who fell below the mean of the sum score were categorized as having weak social support, and those above the mean as having strong social support.

An individual's sense of mastery (the extent of control of one's life) was assessed using an abbreviated version of Pearlin's mastery scale (Pearlin and Schooler, 1978). The scale captures challenging aspects of life that could be solved or changed by the individual. The sum score for mastery ranged from 5 to 25, with higher scores indicating a higher sense of mastery.

Data analysis

Prevalence estimates were assessed for both study populations. Logistic regression models were used to assess the differences in psychosocial stressors between non-migrants and migrants; and correlates of psychosocial stressors. All analyses were stratified by migration status. The data were analyzed with SPSS version 23.

Data Sharing Statement

Data are not publicly available. However, the data may be made available by the authors upon reasonable request and with permission from the RODAM study advisory board members.

Results

Prevalence of psychosocial stressors

Among non-migrants, 72% reported experiencing periods of stress at home/work compared to 52% in the migrant study population. 14% of non-migrants reported experiencing frequent perceived discrimination compared to 56% among migrants. In addition, 65% of non-migrants reported experiencing negative life events compared to 62% among migrants (Figure 1).

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Table 1 shows the odds of experiencing stress, perceived discrimination and negative life events among Ghanaian migrants compared with non-migrants. Migrants had lower odds of experiencing periods of stress at home/work compared to non-migrants after adjusting for individual and interpersonal level factors (AOR=0.43, 95% CI=0.34-0.45). Similarly, migrants

compared to non-migrants were less likely to experience negative life events compared to non-migrants (AOR=0.86, 95% CI=0.75-0.98). However, migrants were over nine times more likely to experience frequent discrimination compared to non-migrants (AOR=9.45, 95% CI=7.97-11.20).

"INSERT HERE" (Table 1)

Correlates of psychosocial stressors

Stress at home/work

Table 2 shows the factors associated with stress at home/work in both study populations. Among Ghanaian non-migrants, those with lower secondary, higher secondary and tertiary education had lower odds of experiencing stress (OR=0.63, 95% CI=0.50-0.80; OR=0.61, 95% CI=0.44-0.86 and OR=0.60, 95% CI=0.37-0.98 respectively) compared to those with no/primary education. However, among Ghanaian migrants, those with tertiary education had higher odds of experiencing stress compared to those with no/primary education (OR=1.50, 95% CI=1.09-2.07).

Ghanaian migrants with a strong social support had lower odds of experiencing stress at home/work (OR=0.81, 95% CI=0.66-1.01). Furthermore, in both study populations, individuals with a high sense of mastery had lower odds of experiencing periods of stress (non-migrants, OR=0.89, 95% CI=0.87-0.92; migrants, OR=0.87, 95% CI=0.85-0.89).

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Perceived discrimination

Among non-migrants, old age was associated with lower odds of experiencing frequent discrimination (OR=0.97, 95% CI=0.96-0.99). Individuals in rural Ghana were less likely to experience discrimination compared to those in urban Ghana (OR=0.41, 95% CI=0.30-0.58).

On the other hand, among migrants, females had lower odds of experiencing discrimination (OR=0.70, 95% CI=0.59-0.84) than males. Also, migrants with tertiary education were more likely to experience frequent discrimination compared to those with no education (OR=3.18, 95% CI=2.27-4.46). Migrants living in London had lower odds of experiencing frequent discrimination compared to those in Amsterdam (OR=0.67, 95% CI=0.53-0.84).

Individuals with a strong social support in both study populations were less likely to experience frequent discrimination compared to those with weak social support (non-migrants, OR=0.20, 95% CI=0.15-0.27; migrants, OR=0.67, 95% CI=0.45-0.82). Similarly, those with a high sense of mastery were less likely to experience frequent discrimination in both groups (non-migrants, OR=0.89, 95% CI=0.86-0.91; migrants, OR=0.90, 95% CI=0.88-0.92) (Table 3).

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Negative life events

In the non-migrant and migrant study populations, females were less likely to experience negative life events compared to males (OR=0.72, 95% CI=0.58-0.88 and OR=0.84, 95% CI=0.70-0.99, respectively).

Among migrants, those with a strong social support had lower odds of experiencing negative life events (OR=0.81, 95% CI=0.66-1.00) compared to those with weak social support (Table 4).

"INSERT HERE" (Table 4)

Discussion of key findings

Among non-migrants, advancement in age decreased the odds of experiencing frequent discrimination. There is evidence to show that as one ages, reporting of stressors becomes lower (Griffin and Soskolne, 2003; Shields, 2004). Overall satisfaction in life increases in

older adults, due in part to the potential for recovery, adaption and psychosocial growth (WHO, 2015). In Ghana, there is a cultural imperative to respect elders, and discrimination of the aged is discouraged. However, the reality is more complex as migration, single generation households and other contemporary challenges have led to diminishing family support and increased neglect of the elderly (de-Graft Aikins et al., 2016).

The findings also showed that women were less likely to experience frequent discrimination (in the migrant population only) and negative life events (in both populations). These findings are not consistent with results of many studies that have assessed gender differences in relation to psychosocial stressors and mental health disorders broadly. Studies have often shown that the experience of stressors is higher among women than men (De Wit et al., 2008; Levecque et al., 2009; Taloyan et al., 2008; Wittig et al., 2008). This is mainly because women are more likely to observe and report adverse life events, discrimination and chronic strains, and are also more sensitive to nuanced changes in life compared to men (Shields, 2004).

Among migrants, those with tertiary education had higher odds of experiencing stress at work or home, and a three-fold likelihood of experiencing frequent discrimination. Migrants with higher education are sometimes faced with the challenge of finding jobs which match their level of education or have perceptions of job insecurity and high job demand (Agyei et al., 2014; González-Castro and Ubillos, 2011). In a qualitative study of Ghanaian migrants in Europe, participants associated psychosocial stress with poor working conditions such as working long hours and having multiple jobs (de-Graft Aikins et al., 2019).

Among migrants, those who reported that they had strong social support had lower odds of stress, perceived discrimination and negative life events. Similarly, non-migrants with strong social support had lower odds of perceived discrimination only. It has been documented that generally, a high level of social support moderates the impact of life stressors and enhances

resilience to stress and other psychosocial states (Ozbay et al., 2007). Among migrant groups, there is evidence to show that an adequate social support can reduce stressors associated with the process of migration and improve psychological wellbeing (Chou, 2012; Gambaro et al., 2020; Pantelidou and Craig, 2006).

Ghanaian migrants in London had lower odds of experiencing discrimination compared to those in Amsterdam. While discrimination is a major challenge for African migrants in Europe (Agyemang et al, 2009), migration histories and pathways shape different experiences of discrimination. Ghanaian communities in the UK have a longer migration history compared to Ghanaian migrants in the Netherlands for example, and they also face fewer barriers with English language than their counterparts in the Netherlands do with the Dutch language (Agyemang et al, 2014).

In summary, the study's findings show that in both non-migrant and migrant Ghanaian populations, individual, interpersonal and structural level factors are manifested in the experience of stress at home/work, discrimination and adverse life events.

Among non-migrants, female sex, increased age, higher educational status, a high sense of mastery (individual level), a strong social support (interpersonal level) and living in rural Ghana (structural level) significantly mediated the experience of psychosocial stressors. In other words, the experience of psychosocial stressors among non-migrants is driven by male sex, younger ages, low educational status, low sense of mastery, weak social support and living in an urban area.

Among migrants, female sex, a high sense of mastery (individual level), a strong social support (interpersonal level) and living in London (structural level) significantly mitigated the experience of psychosocial stressors. In other words, male sex, low sense of mastery, a weak social support and living in Amsterdam significantly increased the experience of psychosocial

stressors among migrants. Additionally, a higher educational status (an individual level factor) significantly increased the odds of experiencing stress and discrimination.

Strengths and limitations

This study provides important findings on the prevalence of psychosocial stressors among Ghanaian non-migrant and migrant populations. The standardised nature of data collection made adequate comparison between migrants and non-migrants possible, which ensured that measurement biases are limited or reduced. A limitation of this study is the cross-sectional nature of the design, which does not allow for an assessment of temporal trends for psychosocial stressors, and for causal associations to be made. Self-reported data on experiences of stressors may also be subject to recall bias and socially desirable responses. Furthermore, the measurement of perceived discrimination was focused on interpersonal influences and did not fully take into consideration structural drivers, which are critical in identifying the nuanced nature of discrimination. Furthermore, we lack data on residential contextual factors in the study sites which may impact on the experience of psychosocial stressors.

Conclusion

Stress and negative life events were prevalent among Ghanaian populations at home and in Europe. Perceived discrimination was particularly prevalent among Ghanaian migrants. Strategies and interventions to minimize the experience and impact of psychosocial stressors should be multi-level. At the individual level, there should be actions to mitigate or eliminate sources of psychosocial risks inherent in different spaces (work, home or social). At the interpersonal level, specific coping strategies for dealing with interpersonal stressors, namely distancing coping (attempts to actively disrupt or dissolve a stressful relationship) and reassessing coping (efforts to change or improve stressful situations) can be adopted (Kato, 2013). At the structural level, there is a need for policy and legislative initiatives aimed at

minimizing the effects from exposure to stressors especially for vulnerable groups. This includes the ability of key stakeholders to improve psychosocial well-being of Ghanaian populations at home and abroad. Actors at the structural level may include (but not limited to) social psychologists, counselors/therapists, social workers, occupational therapists, religious leaders and institutional caregivers. In addition, other structural level solutions which encourage equity (such as fair and equitable workplace policies) can reduce exposure to stressors. Applying or implementing these multi-level strategies/interventions should not be considered as mutually exclusive.

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Declaration of conflicting interests

The authors declare that there is no competing interest.

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Table 1: Adjusted odds ratios for psychosocial stressors by migration status

	Stress at work/home		Perceived discrimination		Negative life events	
Location	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)
Non-migrants (RC)	1.00	1.00	1.00	1.00	1.00	1.00
Migrants	0.43*** (0.38-0.48)	0.39*** (0.34-0.45)	8.05*** (6.92-9.37)	9.45*** (7.97-11.20)	0.86** (0.76-0.98)	0.86** (0.75-0.98)

Model 1 adjusted for age and sex;
Model 2 adjusted for age, sex, education, social support and mastery;
Abbreviations: CI, confidence interval; OR, odds ratio; RC, reference category;
** P< 0.01; *** P< 0.001

Table 2. Factors associated with stress at home/work among Ghanaian non-migrants and migrants.

Variable	Non-migrants		Migrants	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Age	1.01 (0.99-1.014)	0.179	0.99 (0.98-1.06)	0.382
Sex				
Male (RC)	1.00		1.00	
Female	1.05 (0.84-1.31)	0.673	1.02 (0.86-1.22)	0.805
Education				
No/primary education (RC)	1.00		1.00	
Lower secondary	0.63 (0.50-0.80)	0.000	1.06 (0.78-1.28)	0.962
Higher secondary	0.61 (0.44-0.86)	0.004	1.26 (0.97-1.63)	0.086
Tertiary	0.60 (0.37-0.98)	0.040	1.50 (1.09-2.07)	0.014
Employment status				
Not working (RC)	1.00		1.00	
Has a paid job	0.96 (0.71-1.31)	0.812	0.91 (0.76-1.10)	0.337
Social support				
Weak (RC)	1.00		1.00	
Strong	0.84 (0.70-1.00)	0.050	0.81 (0.66-1.01)	0.048
Mastery	0.89 (0.87-0.92)	0.000	0.87 (0.85-0.89)	0.000
Location of residence				
Urban Ghana (RC)	1.00		-	
Rural Ghana	1.59 (1.27-1.99)	0.128	-	
Location of residence				
Amsterdam (RC)	-		1.00	
London	-		1.07 (0.85-1.34)	0.559
Berlin	-		1.08 (0.85-1.37)	0.536
Length of stay	-		1.03 (0.99-1.04)	0.630

RC, reference category; OR, odds ratio; CI, confidence interval; Sig - significance value

Table 3. Factors associated with perceived discrimination among Ghanaian non-migrants and migrants.

Variable	Non-migrants		Migrants	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Age	0.97 (0.96-0.99)	0.000	0.99 (0.98-1.06)	0.408
Sex				
Male (RC)	1.00		1.00	
Female	1.11 (0.81-1.53)	0.513	0.70 (0.59-0.84)	0.000
Education				
No/primary education (RC)	1.00		1.00	
Lower secondary	1.08 (0.79-1.47)	0.641	1.18 (0.93-1.50)	0.168
Higher secondary	0.67 (0.40-1.13)	0.136	1.27 (0.98-1.65)	0.071
Tertiary	1.01 (0.48-2.10)	0.987	3.18 (2.27-4.46)	0.000
Employment status				
Not working (RC)	1.00		1.00	
Has a paid job	1.48 (0.96-2.29)	0.076	1.16 (0.96-1.40)	0.122
Social support				
Weak (RC)	1.00		1.00	
Strong	0.20 (0.15-0.27)	0.000	0.67 (0.45-0.82)	0.000
Mastery	0.89 (0.86-0.91)	0.000	0.90 (0.88-0.92)	0.000
Location of residence				
Urban Ghana (RC)	1.00		-	
Rural Ghana	0.41 (0.30-0.58)	0.000	-	
Location of residence				
Amsterdam (RC)	-		1.00	
London	-		0.67 (0.53-0.84)	0.001
Berlin	-		1.16 (0.91-1.47)	0.238
Length of stay	-		1.00 (0.99-1.01)	0.979

RC, reference category; OR, odds ratio; CI, confidence interval; Sig - significance value

Table 4. Factors associated with negative life events among Ghanaian non-migrants and migrants.

Variable	Non-migrants		Migrants	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Age	1.01 (0.99-1.07)	0.967	0.99 (0.98-1.07)	0.483
Sex				
Male (RC)	1.00		1.00	
Female	0.72 (0.58-0.88)	0.002	0.84 (0.70-0.99)	0.049
Education				
No/primary education (RC)	1.00		1.00	
Lower secondary	0.89 (0.72-1.10)	0.263	1.10 (0.87-1.39)	0.425
Higher secondary	0.89 (0.65-1.24)	0.499	1.09 (0.84-1.40)	0.534
Tertiary	1.23 (0.76-2.01)	0.403	0.92 (0.67-1.26)	0.602
Employment status				
Not working (RC)	1.00		1.00	
Has a paid job	1.20 (0.91-1.57)	0.194	0.94 (0.78-1.13)	0.532
Social support				
Weak (RC)	1.00		1.00	
Strong	1.14 (0.95-1.39)	0.157	0.81 (0.66-1.00)	0.046
Mastery	0.99 (0.97-1.01)	0.373	0.99 (0.97-1.01)	0.497
Location of residence				
Urban Ghana (RC)	1.00		-	
Rural Ghana	0.85 (0.75-1.03)	0.102	-	
Location of residence				
Amsterdam (RC)	-		1.00	
London	-		1.18 (0.95-1.48)	0.141
Berlin	-		1.08 (0.85-1.37)	0.526
Length of stay	-		1.00 (0.99-1.01)	0.979

RC, reference category; OR, odds ratio; CI, confidence interval; Sig - significance value

Figure 1. Prevalence rates of psychosocial stressors among non-migrants and migrants