





Psychological health outcome of Sub-Saharan African migrants in Germany

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ABSTRACT

African migrants living in Europe have an increased risk of adverse psychological health outcomes compared to people without a migration background. The increased vulnerability may be due to their migration experience and possible challenges in adapting and integrating into the host community. This study explores the association between community solidarity and psychological health outcome among Sub-Saharan African (SSA) migrants in Germany.

The study used data from 518 SSA migrants in Germany collected in a cross-sectional survey across the 16 German federal states. A correlation matrix was computed to evaluate the bivariate relationship between psychological health, community solidarity, and socioeconomic, and demographic features. Furthermore, regression models were calculated to predict the effect of community solidarity on psychological health outcomes and the added predictive effects of socioeconomic and demographic characteristics.

Community solidarity shows a moderately significant positive association with psychological health ($r=.41$; $p\leq.01$). A linear regression model suggests that community solidarity, education and age explained 19% of the variance in psychological health scores for SSA migrants in Germany.

These results confirm community solidarity as a significant but multi-layered determinant of various factors that affect migrants' psychological wellbeing. It supports implementing policies that promote community solidarity to facilitate SSA migrants' wellbeing.

Keywords: psychological health, migration, socioeconomic status, African, quality of life

INTRODUCTION

Background

Migration has been identified as a determinant of life outcomes for different migrant groups [1-3]. Moving to a new territory is often linked with the expectation of a better life and achieving goals [4]. However, adapting to the new territory and improving life outcomes is often challenged by varying societal and individual features and may increase immigrants' vulnerability to mental health problems [5, 6]. Various theories and research has identified factors that facilitate migrants' integration, including community solidarity [7-9].

Community solidarity is referred to as beneficial behaviour (such as providing support, collaboration, and cooperation) that enable mutual habitation [9]. It was found that communal solidarity could be an effective mechanism for helping migrants adapt to their new social environment. This concept presupposes that connections bind people in a community to foster collaboration [10]—for example, solving mutual problems. Theoretically, solidarity is posited as a group construct rooted in social capital, different from individualism

but rather collectivism that promotes the provision of social resources and services [11-13]. Research supports community solidarity as an aid in preserving life value and is directly linked to life satisfaction [14]. Other studies identified community solidarity as necessary to meeting members' and group needs for livelihood sustenance [15]. Despite the growing body of literature on community solidarity, its peculiar role in enhancing the psychological health of the migrant population remain understudied in literature. With limited studies on this theme, this study hypothesised that community solidarity could significantly improve the mental health of migrants.

Previous reports from the international organization for migration have identified Sub-Saharan African (SSA) migrants as a unique group, different in the composition of socioeconomic features, patterns in integration [16], and the experience of migration [17]. Similarly, reports on the psychological health of this group focusing on coping strategies, the realisation of goals, emotional state, and work-life equilibrium [18, 19] suggest poor psychological health outcomes. With increasing globalisation, more and more SSAs migrate [20] therefore, increasing the need to examine the psychological health outcomes of this migrant population.

However, the psychological health of SSA migrants remains understudied. Studies on migrants' mental health have primarily focused on European migrants [21] and migrant workers [22-24]. These studies generally report that social assimilation and perceived discrimination are associated with anxiety and depression among migrants [21].

Furthermore, these results show that migrant psychological health is associated with secure attachment [25]. Factors such as financial need and family responsibility were identified as potential stressors. Similarly, sociodemographic status is significant in understanding the psychological outcomes of the migrant population [26]. More specifically, age, income, and occupation were identified as pathways to understanding migration experience and cognitive functions [27, 28]. Several studies have found that younger age among migrants correlates with better psychological health [29-30].

On the other hand, elements of sociocultural adaptation show positivity in improving the psychological health of migrants [31]. Building on these findings, the unique features of SSA migrants are assumed to contribute to psychological health and may highlight community solidarity as a mechanism for social integration and settlement [32]. In Europe, SSA migrants are at higher risk of common mental disorders or psychological distress than natives [33, 34]. However, how connectedness may predict SSA psychological health, particularly the roles of community solidarity and socioeconomic status, remain unexplored. Therefore, this study aims to explore the association between community solidarity and the psychological health of SSA migrants, thereby filling this research gap.

With the increasing number of SSA migrants in Germany [35], and the poor subjective integration [36], understanding community solidarity as a potential facilitator of psychological health is essential for efforts to improve the wellbeing of SSA migrant group. Similarly, this research will contribute to understanding how migrants' sociodemographic and economic attributes contribute to the association between community solidarity and psychological health. Therefore, the following specific objectives were set:

1. to examine the association between community solidarity and the psychological health of migrants in Germany and
2. explore the added predictive effects of age and education on the association between community solidarity and the psychological health of the migrant group.

METHOD

Study Design, Population, and Data Collection

Data from 518 SSA migrants in Germany were analysed. The data were collected in a cross-sectional survey across the 16 German federal states. Participants include SSA migrants from 49 SSA countries with formal residence status in Germany. Survey questionnaires were completed in German, English, and French. Furthermore, all participants were 18 or older and lived in one of the 16 German federal states. Further details on the survey design and methods are available in [37].

Measure

Psychological health

Psychological health was measured using the psychological domain of the WHO measure of the quality of life [18]. This construct evaluates participants' psychological health, subjective evaluation of bodily image and appearance, the occurrence of negative and positive feelings, self-esteem, spirituality, and ability to concentrate. The psychological health scale consists of six items measured on a five-point Likert scale (1- strongly disagreed to 5-strongly agreed). These questions cover a broad range of mental health symptoms. For example, "to what extent do you think your life is meaningful?", "are you able to accept your bodily appearance?", "how often do you have negative feelings, such as blue mood, despair, anxiety, and depression?" among others. A total score was computed to denote individual psychological health by adding all item scores with the raw score and then transformed using a standardised 0-100 scale score. Higher scores indicate better psychological health [19]. This measure of psychological health has shown good discriminant validity, content validity, and test-retest reliability. The internal consistency check showed an acceptable alpha value of 0.89 for the sample [38].

Community solidarity

Participant community solidarity was measured using items from the World Bank social capital scale [39]. The two items evaluate participants' perceived solidarity among people living within their immediate community. The first item asked how likely people in their community would render financial support if needed. The second question asks how likely it is that people come together to solve a problem that affects the community. These two items were ranked using a 5-point Likert-type scale ranging from "very unlikely" to "very likely", with a sum score between two and 10. A higher score suggests stronger community solidarity.

Socioeconomic and Demographic Variables

Data on participants' age, gender, marital status, and educational attainment were collected. Marital status was categorised into six categories, i.e., single, married, widowed, divorced, married but separated or in partnership but not married. Age was treated as a continuous variable, and data on gender was collected using four options (male, female, others, or prefer not to answer). Participants' education attainment was measured as the highest completed education or vocational training. The data were collected using five categories ranging from "none", meaning no formal education, to "master, technician, or equivalent certificate" (Table 1).

Data Analysis

Descriptive statistics were computed for sociodemographic, psychological health and community solidarity variables. A correlation matrix was computed to explore the bivariate associations between SSA migrants' psychological health, community solidarity, educational attainment, and age. Correlation coefficients were interpreted as small ($r \leq .30$), medium (r range between 0.31 and 0.49) or large ($r \geq .50$) [40].

Hierarchical multiple linear regression models were calculated to assess the predictive effect of community solidarity, education, and age on psychological health. Model 1 explores the relationship between community solidarity and

Table 1. Socioeconomic and demographic characteristics of SSA migrants in Germany (n=518)

Variables	Percentage (%)	
Marital status	Single	32.9
	Married	34.3
	Widowed	0.5
	Divorced	1.6
	In partnership but not married	30.8
	Married but separated	-
Education	None	1.2
	Secondary education or elementary school certificate	17.0
	Vocational school certificate	31.7
	Degree from a university	33.2
	Master, technician, or equivalent certificate	17.0

Note. Percentage of female=38.9% & Average age=32.5 years

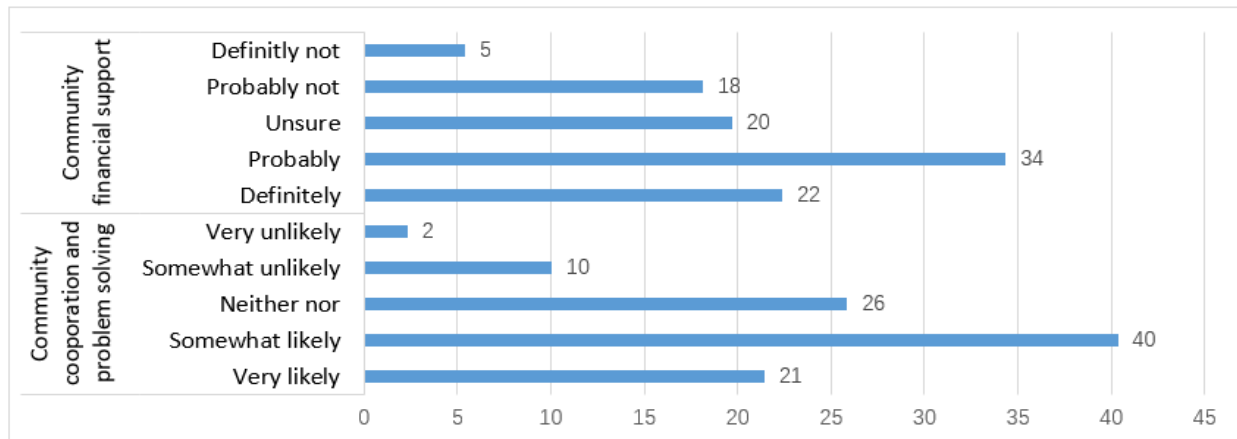


Figure 1. SSA migrant percentage distribution of community financial support and community cooperation (n=518) (Source: Authors' own elaboration)

psychological health. Model 2 explores the added predictive effect of educational attainment to the model assessing the association between community solidarity and psychological health. Finally, model 3 examines the added predictive effect on age.

Effect sizes and p-values are reported for the regression model. The overall fit of the models was evaluated by adjusted R^2 statistics [41]. R-change and F-test determined the significance of changes in model fit. To interpret the regression coefficients of the regression models (β), we used guidelines by [40]: $\beta < .3$ indicated a small, β between .3 and .49 a medium and $\beta \geq .5$ a large effect. The significance level was determined as $p < .05$ for all analyses. Analyses were computed using IBM SPSS version 26.

Ethical Considerations

The institution's review committee formally approved the study proposal. All procedures were by the ethical standards of the institutional and national research committee, and comparable ethical standards.

RESULTS

Sample Description

Analysis of data on age shows that participants' age ranges between 19 and 56 years, with an average age of 32.5 years (standard deviation [SD]=7.93). The majority of the study participants were male. A little over 60% reported being single or in an unmarried partnership as family status. Half of the

participants had completed at least a university degree (Table 1).

Community Solidarity

The current sample community solidarity score ranged between five and 14. Descriptive analysis returned a mean score of 8.86 (SD=2.19) for the total sample. Gender-specific analysis shows no statistically significant different in the mean score for male (n=317) is 8.95 (SD=2.21), and for female (n=201) is 8.73 (SD=2.14). A little over half of the participants were confident that people in their community beyond close relatives or immediate households would be willing to provide financial assistance that covers their basic needs. Similarly, about 60% believe people in their community will most likely cooperate to solve a problem, such as a problem with water supply (Figure 1).

Psychological Health

Data on psychological wellbeing shows a mean score of 69.3 (SD=14.6), with a minimum score of 33.3 and a maximum score of 100. Gender-specific analysis shows no statistically significant different in the mean score for male (n=317) is 70.26 (SD=14.14), and for female (n=201) is 67.89 (SD=15.15). The item distribution shown in Table 2 suggests that approximately 70% of the participants were satisfied with their physical appearance. On the other hand, nearly 90% of the participants reported negative feelings and distress resulting from despondency, guilt, sadness, tearfulness, despair, nervousness, anxiety, and a lack of pleasure in life. Similarly,

Table 2. SSA migrant percentage distribution of quality of life psychological health domain of quality of life (n=518)

Health domain	Very low	Low	Neither nor	High	Very high
Bodily image and appearance	1.2	6.6	22.2	43.1	27.0
Negative feeling	9.7	36.7	35.1	17.0	1.5
Positive feeling	1.2	14.5	37.3	42.5	4.6
Self-esteem	1.2	19.3	26.6	35.7	17.2
Spirituality/religion/personal belief	0.8	8.3	27.4	40.2	23.4
Concentration	3.1	18.7	42.1	32.8	3.3

Note. Psychological health (mean=69.3 & SD=14.6)

Table 3. Spearman's correlation matrix for community solidarity, psychological health, age, and socioeconomic status variables for SSA migrants in Germany (n=518)

	1	2	3	4
1 Community solidarity	1	.426**	-.226**	.292**
2 Psychological health		1	-.164**	.293**
3 Age			1	-.023
4 Educational attainment				1

Note. Correlation is significant at the 0.01 level (2-tailed)**

Table 4. Multiple regression models assessing the association between community solidarity and psychological health among SSA migrants in Germany (n=518)

	Model 1			Model 2			Model 3		
	B	β	p	B	β	p	B	β	p
Constant	93.39		<0.001	82.82		<0.001	87.45		<0.001
Community solidarity	2.71	.408	<0.001	2.38	.36	<0.001	2.24	-.336	<0.001
Education attainment				2.56	.18	<0.001	2.56	.175	<0.001
Age							-.19	-.104	.010
Model fit indices									
Adjusted R ²	.16			.18			.19		
F(df1, df2), p-value:	F(1,514)=102.76, p<0.001			F(3,514)=40.17, p<0.001			F(4,513)=32.14, p<0.001		
*Change in R ²				.02			.01		
*Change in F, p-value				7.75, p<0.001			6.71, p<0.001		

Note. Dependent variable: Quality of life psychological domain; **Model 1.** Predictors: (constant), community solidarity; **Model 2.** Predictors: (constant), community solidarity, education attainment; **Model 3.** Predictors: (constant), community solidarity, education attainment, age

close to half reported high self-esteem concerning feelings of self-efficacy.

Bivariate Analysis: Correlation Matrix

A Spearman's correlation coefficient matrix was computed to examine the association between community solidarity, psychological health, age, and educational attainment for the sample of SSA migrants in Germany. As presented in **Table 3**, community solidarity returned a moderate, significant positive association with psychological wellbeing ($r=.43$; $p\leq.01$). Similarly, data on age returned a moderate negative correlation for community solidarity ($r=-.23$; $p\leq.01$) and psychological health ($r=-.16$; $p\leq.01$). Educational attainment was also positively associated with community solidarity ($r=.29$; $p\leq.01$) and psychological health ($r=.29$; $p\leq.01$). Income shows a weak negative association with community solidarity, while occupation group correlate significantly with community solidarity and psychological health.

Regression Model

The linear regression results in model 1 (**Table 4**) suggest a significant association between community solidarity and psychological health (adjusted R²=.16) in a sample of SSA migrants in Germany. Model 2 shows that education attainment ($\beta=.18$; $p<.001$) has a significant unique contribution (change in R²=.02) to the model predicting SSA migrant's psychological health (adjusted R²=.18). Age in model 3 was also statistically significant (adjusted R²=.19), increasing

the model's predictive capacity and the percentage of variance by 1%.

Following the study [40], community solidarity, education and age have a weak predictive effect on the psychological health of SSA migrants in Germany. The regression model suggests that about 19% of the variance in psychological health is accounted for by community solidarity, education attainment and age.

DISCUSSION

The current study aimed to examine the potency of community solidarity as a predictor of the psychological wellbeing of SSA migrants as well as the added predictive effect of educational attainment and age. Community solidarity strongly correlates with psychological health outcomes in the sample of 518 migrants from 49 SSA countries. Similarly, community solidarity, education and age had a weak predictive effect on the psychological health outcome of SSA migrants in Germany. It explained about 19% of the variance in the migrants' health. These results complement other studies that explore connectedness as a determinant of psychological health outcomes.

Results from bivariate analysis confirm that SSA migrants with higher educational attainment have a statistically significant positive evaluation of community solidarity and better psychological health outcome. This connection can be explained well because the primary resources of emotional

support for many people, especially in particularly challenging life situations like such as migration and integration, are religion, family, and friends [42], which are closely linked to community solidarity [43]. People from SSA in the host country differ from other groups of immigrants in terms of their settlement patterns, the formation of social networks, and perceived barriers and experiences of systematic and racist discrimination. While social welfare in the home countries is primarily provided by the community, many people from SSA in host countries such as Germany face the individual challenge of navigating the new social, political, cultural, and economic environment with a social structure in which familiar welfare practices are largely ignored.

In Germany, many people from SSA fall back on their traditional image of the social system in which family, descent, clan, tribe, and ultimately an association of groups with common ethnic, cultural, and linguistic characteristics form the basic unit of social, economic, and inter-communal relations. Unlike other groups of immigrant people, the strong ethnic alliance of people from SSA usually leads to the association of small groups in the form of friendships, networks, or formal associations that are often closed and attract little or no attention from the outside. In addition to the different understanding of social resources and structures, arrival is made more difficult by the mostly non-transferable educational qualifications and skills, as well as insufficient or no knowledge of the language of the exiled country. In a nationally representative survey of 2,639 adult refugees from Syria, Afghanistan, Iraq, and Eritrea who arrived in Germany between 2013 and 2016, it was found that single males were at a greater risk of distress than males with nuclear families living in Germany [44]. Consistent with this finding, it was shown that the isolation (loneliness, being or feeling alone) of refugees and asylum seekers in western exile countries is associated with depressive symptoms. In a cohort study including 172 migrants from Somalia, Iran, and Afghanistan in the Netherlands, mediation analyses showed that the effect of getting a residence permit on health improvements transited through an improvement in living conditions, in particular employment and the presence of family/social support [45].

On the other hand, older SSA migrants reported significantly lower psychological health outcomes and lower community solidarity. These results are consistent with other studies where educational attainment and younger age are associated with better wellbeing among different population groups [46, 47]. In the cross-sectional and population-based secondary analysis of the 2017 wave of the IAB-BAMF-SOEP refugee survey, it was found that the prevalence of distress was particularly high for older refugees aged ≥ 55 years [44]. It was discussed that beyond common risk factors for older immigrant populations, such as physical health problems, elevated acculturation stress due to a reduced ability to adapt to a new environment might explain the age effect.

In addition, it was shown that older people or people from SSA who have lived in Germany for a long time rated their feeling of happiness or security as the lowest [48]. It was analysed 2016 and 2017 refugee samples of the German socioeconomic panel ($n=6,821$) [49]. They found that older age was negatively associated with health-related quality of life. It was pointed out, however, that the role of age in refugee and migrant mental health is a twofold story in the literature [40]: while some studies identified age as a risk factor for psychological health outcomes, numerous studies also point

to the particular vulnerability of (unaccompanied) minor migrants which is associated with a high risk for educational disadvantage and poor social integration in host communities [50].

The results of the present study further confirm educational attainment and age as solid predictors of community solidarity and psychological health, thus verifying the multi-layered influences of education and age as socioeconomic and demographic factors relevant to wellbeing. Besides identified determinants like subjective integration, age, education, and gender found by [36], current results confirm community solidarity as a predictor of SSA migrants' psychological health. These findings extend the findings of prior studies on the determinants of SSA migrants' wellbeing. For example, it was found that missing social bonds to the mainstream community and supportive structures in the host country can result in isolation and loneliness for SSA migrants living in Australia. Despite the challenges faced by many SSA migrants in Germany, evidence has shown positive outcomes, such as improved health outcomes where there are ethnic density and cooperation [51]. Similarly, support in terms of social relationships was found to help migrants to overturn depression from loneliness or isolation from living in a foreign country [52].

Against the background of these findings, numerous starting points can be derived for target-group-specific prevention and health promotion services for immigrants from SSA in Germany. To reach people from SSA, services designed for them should build a bridge between the familiar support structures within the community and the public health system. The inclusion of organisations, associations or individuals who are well networked within the communities and have access to the community, as well as cooperation with churches and clergy with whom people have a special relationship of trust due to their faith, appears relevant for this group of migrants in Germany [53].

Limitation and Strength

It is estimated that only roughly half of the SSA migrant population in Germany meets the requirement for participating in the survey. SSA migrants who are unregistered were excluded from the sample because of the uncertainty in the population size, different migration experiences, and distinct socioeconomic and political features. The exclusion of these groups and the study's cross-sectional design limit the generalisability of these findings. Similarly, the adapted measure of community solidarity needs to be tested in different groups to ascertain its effectiveness in assessing perceived community solidarity among minority population groups.

CONCLUSION

The current study provided valuable insights and new approaches for understanding SSA migrants' interaction with their host community. It highlights the subjective assessment of the psychological health of the SSA migrant group and the effectiveness of integration and inclusion policies for health promotion. These findings further emphasise the need for systematic approaches that bridge the familiar community-internal support structures and the public health system. Socioeconomic and demographic-tailored strategies to

improve community solidarity will consequentially enhance the psychological health of SSA migrants and vice versa.

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Declaration of interest: No conflict of interest is declared by authors.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the corresponding author.

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