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The relationship between causal beliefs and desire for social distance towards people with schizophrenia and depression: Results from a survey of young Ghanaian adults

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ABSTRACT

This study examines attitudes of the young Ghanaian population regarding the relationship between causal beliefs and desire for social distance from people with symptoms of schizophrenia and depression. Respondents (n = 507) were presented with depression and schizophrenia symptoms using unlabeled case vignettes. A factor analysis examined three factors for causal beliefs, and multiple linear regression analysis on the desire for social distance was conducted.

The desire for social distance was higher when symptoms in both case-vignettes were attributed to childhood adversities and overall lower when respondents lived in northern regions of Ghana. Only, for vignettes depicting schizophrenia, mental illness attribution was associated with more desire for social distance. Significant gender effects were found for depression vignettes only: female respondents reported significantly more desire for social distance, whereas female gendered vignettes were associated with less desire for social distance by respondents of both genders.

1. Introduction

According to the World Health Organization (WHO), 13% of the global burden of diseases are mental, neurological or substance use disorders (World Health Organization, 2013). Around 450 million people are affected by mental health disorders. Many of them are living in developing countries where access to psychiatric care and treatment options are limited (Whiteford et al., 2010; World Health Organization, 2013). Facilities of the public mental health care system in Ghana are mainly located in the southern part of the country (Asare, 2012; Dixon, 2012) and in the context of a lack of mental health care facilities in Northern Ghana, there is a higher reliance on traditional healers (Ewusi-Mensah, 2001; Read, 2012). A study including an urban public convenience sample in Ghana found a high level of stigma towards people with mental illness and further prevailing authoritarian and socially restrictive views (Barke et al., 2011).

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Additionally, a sample of patients with mental illness within this study reported experiencing high levels of stigmatization on the perceived stigma and discrimination scale and also physical abuse. Not surprisingly, more than 70% of patients agreed to conceal their mental illness (Barke et al., 2011). A study conducted in rural Nigeria reported predominantly negative views on mental illness (Audu et al., 2011). In agreement with a majority of public attitude studies, a population survey in South Africa found that the level of stigmatization varies depending on the presented diagnostic labeled case vignettes depicting various mental illnesses (Sorsdahl and Stein, 2010). Moreover, people who have posttraumatic stress disorder or substance abuse were more stigmatized than those suffering from depression (Sorsdahl et al., 2010).

Understanding stigmatization and discrimination are crucial to decipher public attitudes toward mental illness and their implications for the desire for social distance in different social and cultural contexts (Girma et al., 2013; Gureje et al., 2006; Jorm and Oh, 2009; Littlewood et al., 2007). A commonly measured component of public stigmatization of people with mental illness is *the desire for social distance*, which is frequently quantified using the *Social Distance Scale* (Link et al., 1987). Furthermore, causal beliefs have repeatedly been elicited and shown to influence the desire for social distance and the process of stigmatization (Adewuya and Makanjuola, 2008a; Dietrich et al., 2004; Nakane et al., 2005; Schomerus et al., 2006). Research, especially in western countries, has therefore tried to disentangle the relationship between public attitudes about mental illnesses, social distance and causal beliefs (Adewuya and Makanjuola, 2008b; Angermeyer et al., 2015; Reavley and Jorm, 2012; World Health Organization, 2001). Aims of this study are to explore, for the first time, how causal explanations were associated with the desire of social distance within a methodological framework based on well-established research (Angermeyer et al., 2015; Schomerus et al., 2014).

2. Methods

2.1. Participants

Young adults from the age of 15–29 (M = 21,23; SD = 3,232) were recruited between November and December 2013 in Ghana through house-to-house visits but mostly through educational institutions (Universities, Secondary Schools, and technical training colleges) in different regions of Ghana. Despite recruiting in five of the ten regions in Ghana, participants were asked about the region of their origin to ensure the inclusion of participants from all ten provinces. The five recruitment regions covered northern, middle and southern Ghana: Central Region, Greater Accra, Western Region, Ashanti Region, and Northern Region. A convenience sample of younger respondents was recruited according to gender, the region of origin and age, according to a Census in Ghana (2010), retrieved from the official Ghana statistical service (Ghana Statistical Service, 2013). Respondents received written information about the study design and signed an informed consent sheet. Respondents received no financial compensation. In total 507 respondents agreed to participate and returned a completed questionnaire free of systematic errors, yielding a response rate of 72.4%. Before starting the recruitment, the study was approved by an Institutional Ethics Committee of the University of Winneba, Ghana.

Table 1 presents the socio-demographic and regional characteristics of the population sample, following the latest Ghanaian census (2010), the strata of the survey quota sample were selected for gender, age, religion and region of origin in Ghana.

2.2. Questionnaire

Questionnaires started by presenting a written unlabeled case vignette, describing a person with typical behavior and symptoms of either schizophrenia or depression according to ICD-10 and DSM-IV diagnostic criteria. Using unlabeled case vignettes avoids the specific use of medical or diagnostic terms and potentially reduces label related prejudices (Angermeyer et al., 2011; Carta et al., 2013). The gender of the individual and the mental illness described in the vignette was systematically balanced and altered. Therefore, each participant responded to either a male with depression (25.2%), a female with depression (24.9%), a male with schizophrenia (25.0%) or female with schizophrenia (24.9%) case vignette. After reading the case vignette, each participant responded to items concerning causal beliefs and social distance. Validated vignettes used in earlier research work (Angermeyer and Matschinger, 2003; Angermeyer et al., 2014a, 2014b; Schomerus et al., 2013) were translated and retranslated and verified for English language and adapted by native Ghanaians living in Germany to ensure comprehensibility with Ghanaian English.

Table 1
Distribution of socio-demographic and regional characteristics (in percent) in the survey sample compared to the official census for the age group 15–29 years.

Socio-demographic variables	Survey Sample (2013)(n = 507)	Population Ghana (2010)[a](n = 6,983,591)
Gender [%]		
Male	51.5	48.0
Female	48.5	52.0
Age (range) [%]		
15–18	31.6	31.2
19–21	21.9	21.2
22–25	27.0	26.3
26–29	19.5	21.3
Religion [%]		
Christianity	80.0	75.1
Islam	16.2	18.6
Other	4.7	6.3
Region of origin [%]		
Northern Ghana (Upper East, Upper West, Northern)	19.2	17.2
Middle Ghana (Ashanti, Eastern, Brong Ahafo)	37.0	39.4
Southern Ghana (Greater Accra, Central, Western, Volta)	43.7	43.7

[a] Data from the statistical office of Ghana according to the Census 2010.

2.3. Attribution to mental illness

After presenting the case vignette, respondents were asked if they assume that the described person had a mental illness in a medical sense. Response options included the following categories: 'yes', 'no' and 'don't know.

2.4. Causal beliefs

Beliefs about possible causal explanations for the behaviors described in the vignette were elicited using a list of eight possible causes. Respondents rated their agreement on causal explanations for the behavior outlined in the vignette on a five-point Likert scale (1 = 'definitely a cause' and 5 = 'definitely not a cause').

2.5. Desire for social distance

Respondents indicated how willingly they would accept the person described in the vignette in various social situations by using the Social Distance Scale (Link et al., 1987). This scale encompasses seven social conditions: offer a room to rent, accept as a colleague, accept as a neighbor, take care of their children, marry into their family, introduce

to friends and recommend for a job. Respondents rated the extent to which they were willing to engage in the proposed relationship using a five-point Likert scale. Sum scores of all seven items were included for multiple regression analyses with the range of 7–35. Higher scores indicate a greater desire for social distance, therefore less social acceptance. Responses to the Social Distance Scale in this survey showed high reliability (Cronbach's $\alpha = 0.831$).

2.6. Statistical analysis

An explorative principal-component factor analysis including the eight items of causal beliefs using principal factor extraction and varimax rotation was conducted to define underlying groups. Only factors with an eigenvalue higher than one were extracted. Individual factor scores for each participant were saved as Anderson–Rubin variables. To examine the relationship between the three uncorrelated factors for causal beliefs and sum score of the Social Distance Scale (higher scores indicating more desire for social distance) multiple linear regression analyses were calculated for each vignette condition. Therefore association of the three factors representing causal beliefs with the sum score of the Social Distance Scale, for schizophrenia and depression vignettes, was derived. Also, attribution to mental illness, the region of origin of the respondents (reference category: Southern Ghana), age, the gender of the participants (reference category: male) and gender of the case vignette (reference category: male) were included to the multiple regression analyses. Categorical Variables were dummy coded. A standardized regression coefficient >0 indicates more desire for social distance. The level of significance was set at $p < 0.05$. All analyses were performed using SPSS 22 for Windows 10.

3. Results

3.1. Factor extraction for causal beliefs

Items loading on the first factor: 'grew up in a broken home,' 'unkind treatment at home' and 'poverty at home' were combined under the term *childhood adversities*. Items loading on the second factor: 'metabolic disorder of the brain' and 'disease of the brain' were coined in the term *brain disorder*. The third factor comprised following items 'an unconscious conflict,' 'shock caused by a dramatic event in life' and 'stress or trouble in partnership and family.' Since a previous survey has shown that the psychoanalytically derived explanatory model of 'an unconscious conflict' was mainly perceived as a current stressor (Schomerus et al., 2008), the third factor was labeled *reaction to stress*. The resulting three-factor model of causal beliefs is in line with an earlier study from Germany (Schomerus et al., 2014). The derived factor model accounted for a cumulative variance of 53.7%. The Kaiser–Meyer–Olkin (KMO) criteria were met and verified sampling adequacy for the analysis, KMO = 0.634 which is above of the acceptable limit of 0.5 (Field, 2013). Barlett's test of sphericity χ^2 (28) = 284,538, $p < 0.001$, indicated that correlations between items were sufficient to conduct a principal component analysis. Table 2 displays factor loadings after rotation.

3.2. Relationship between causal beliefs and desire for social distance

Results for both case vignettes are presented in Table 3, Table 4 and elaborated below.

3.2.1. Results of regression analyses for schizophrenia case vignettes

Childhood adversities were associated with significantly more desire of social distance ($\beta = 0.145$, $p = 0.021$). Attributions of the person´s vignette presentation as a mental illness was associated with significantly more desire for social distance ($\beta = 0.181$, $p = 0.007$). Regarding the region of origin, respondents from the northern areas of Ghana were associated with a significantly less desire for social distance in contrast to respondents from southern regions ($\beta = -0.163$, $p = 0.015$).

3.2.2. Results of regression analyses for depression case vignettes

In line with findings of schizophrenia vignettes, *childhood adversities* were associated with significantly more desire for social distance ($\beta = 0.128$, $p = 0.037$). Respondents who originated from northern regions of Ghana were associated with less desire for social distance compared to respondents from the south of Ghana ($\beta = 0.145$, $p = 0.031$). Being female was associated with significantly more desire for social distance than being male ($\beta = 0.203$, $p = 0.003$). Additionally, female-gendered vignettes were associated with lower levels of social distance, than male gendered vignettes ($\beta = 0.159$, $p = 0.010$).

4. Discussion

Childhood adversities were associated with more desire for social distance, for both vignette conditions. This finding may be interpreted within the social context of Ghana, considering that the upbringing of children in Ghana differs from western countries (Laird, 2002; Waterhouse et al., 2016). Physical punishment is common in daily domestic life and at school (Agbenyega, 2006). These behaviors are based on the belief that it facilitates learning among schoolchildren and helps to raise them to become suitable adults (Agbenyega, 2006). Also, children from families struggling to meet basic survival needs constitute a vital domestic and financial resource (Frimpong-Manso, 2014; Laird, 2002). Therefore, having a difficult childhood is widespread in Ghana and is used as an educational strategy to become a suitable adult (Frimpong-Manso, 2014; Laird, 2002; Waterhouse et al., 2016). Since physical punishment and poverty at home are widespread, *childhood adversities* may elicit less empathy and in consequence less social acceptance especially as an explanatory model for schizophrenia or depression in Ghana. Neither *brain disorder* nor *a reaction to stress* was

Table 2
Factor loading, eigenvalues and explained variances of principal component analysis with items assessing causal beliefs for both vignettes (varimax rotation); factor loadings >0.5 in bold.

Items of causal beliefs	Factor "childhood adversities"	Factor "brain disorder"	Factor "reaction to stress"
1. Grew up in a broken home	**0.746**	−0.014	0.034
2. Unkind treatment at home	**0.662**	0.026	0.176
3. Poverty at home	**0.611**	0.073	0,079
4. Metabolic brain disorder	−0.005	**0.839**	0.091
5. Disease of the brain	0.082	**0.838**	0.004
6. Unconscious conflict	−0.140	0.076	**0.768**
7. Shock caused by a dramatic event in life	0.245	0.075	**0.643**
8. Stress or trouble in family or partnership	0.294	−0.042	**0.531**
Eigenvalues	1.541	1.424	1.331
% of variance	19.3	17.8	16.6

Table 3
Multiple linear regression analysis of elicited factors influencing desire for social distance for schizophrenia and depression case vignettes (significant results are bold).

Factors	Schizophrenia vignettes				Depression vignettes			
	b	*ß*	*CI*	*p*	*b*	*ß*	*CI*	*p*
Causal beliefs								
Childhood adversities	−0.624	0.145	[0.146;1.761]	= **0.021**	0.778	0.128	[0.047;1.508]	= **0.037**
Brain disorder	−0.200	−0.090	[−1.527;0.278]	= 0.174	−0.696	−0.118	[−1.428;0.036]	= 0.062
Reaction to stress	0.954	−0.027	[−1.119;0.719]	= 0.669	0.066	−0.012	[−0.589;0.721]	= 0.842
Mental illness attribution	3.091	0.181	[0.862;5.319]	= **0.007**	−1.030	−0.079	[- 2.652;0.591]	= 0.212
Regions of origin in Ghana								
Middle vs. Southern	0.573	0.042	[−1.256;2.402]	= 0.538	−0.133	−0.010	[−1.797;1.530]	= 0.875
Northern vs. Southern	−2.717	−0.163	[−4.906; −0.527]	= **0.015**	−2.330	−0.145	[−4.451; −0.209]	= **0.031**
Gender								
Female respondent	0.683	0.053	[−1.068;2.435]	= 0.443	2.477	0.203	[0.835;4.119]	= **0.003**
Female vignette	0.021	0.002	[−1.560;1.602]	= 0.979	−1.939	0.159	[−3.404; −0.474]	= **0.010**
Age	0.147	0.880	[−0.083;0.377]	= 0.210	0.129	0.075	[−0.098;0.357]	= 0.357
R^2	0.107			= 0.001	0.134			< 0.001

b = non-standardized regression coefficient; *ß* = standardized regression coefficient; *CI* = confidence interval (95%), *p* = significance, R^2 = coefficient of determination.

Table 4
Distribution of agreement (in percent) and mean sum score of Social Distance Scale items for schizophrenia and depression case vignettes.

Items of the Social Distance Scale	Schizophrenia vignettes (*n* = 237)	Depression vignettes (*n* = 243)	*p*
Mean sum score (*SD*)	21.90 (0.41)	19.50 (0.40)	< 0.001
Female participants	22.34 (6.35)	20.87 (5.98)	
Male participants	21.50 (6.78)	18.20 (6.28)	
1. Accept as a neighbor [%]	51.6	63.3	< 0.01
Female participants	49.2	54.6	
Male participants	53.8	71.3	
2. Introduce to friends [%]	48.8	57.4	< 0.05
Female participants	46.2	51.2	
Male participants	51.2	63.1	
3. Offer a room [%]	47.4	55.9	< 0.001
Female participants	44.6	53.8	
Male participants	50.0	61.4	
4. Accept as a colleague [%]	41.9	53.1	< 0.01
Female participants	37.2	44.6	
Male participants	47.3	63.3	
5. Recommend for a job [%]	28.7	42.4	< 0.001
Female participants	27.1	37.1	
Male participants	30.2	47.2	
6. Marry into family [%]	23.0	30.4	< 0.05
Female participants	26.1	28.1	
Male participants	20.2	32.6	
7. Taking care of my children [%]	19.2	24.4	n.s.
Female participants	19.8	23.1	
Male participants	18.6	25.6	

p = significance (ANOVA, $\alpha < 0.05$), n. s. = not significant, *SD* = standard deviation.

significantly associated with the desire for social distance for both vignette conditions. While in a study from Germany biogenetic causal attribution was associated with more desire for social distance, other studies reported no evident effects (Angermeyer et al., 2011; Corrigan and Watson, 2004; Schomerus et al., 2013).

Surprisingly just symptoms of schizophrenia presented in the case vignette were more frequently attributed to mental illness and were associated with significantly more desire for social distance. Research conducted in Ghana and Nigeria report that desire for social distance and stigmatization of mental illnesses is evident in African countries (Asara, 2012; Barke et al., 2011; Dixon, 2012; Quinn, 2007; Wilson and Somhlaba, 2017).

Both vignette conditions are significantly associated with less desire for social distance when participants originated from Northern regions. In line with the presented data, Quinn (2007) reported that in northern and rural areas of Ghana, spiritual causal attributions for mental illness and help-seeking with traditional healers were more common and associated with less stigmatization. Quinn (2007) concludes that a greater reliance on culturally specific explanations of mental illness in rural areas is associated with higher levels of social acceptance.

Vignettes depicting depression, the gender of respondents and the gender of the person described in the vignette were significantly associated with more desire for social distance. To our knowledge, no study has reported gender differences regarding the desire for social distance to mental disorders in Ghana. It remains unclear whether these effects are specific for depression or if more severe behavioral disturbances as described in the schizophrenia vignette overshadow possible gender effects. Remarkably responses to the female gendered depression case vignettes were significantly associated with less desire for social distance by male and female respondents alike. Considering the depression vignette describes a person not performing well at work, an association with underperformance at work and family support roles might conflict with the traditional social role-understanding of men in Ghana. Possibly multiple maternal roles of family duties, childbearing and economic work are interpreted with current symptoms of depression and thus may be more socially accepted in Ghanaian societies (Waterhouse et al., 2016).

Furthermore, women are generally underrepresented in psychiatric hospitals in Ghana (Forster, 1972) and those who have a mental illness, particularly depression, often remain untreated or seek help in churches and shrines (Read and Doku, 2012). Possibly women suffering from depression may be more tolerated in the Ghanaian society, as they are considered the "weaker sex" (Ofori-Atta et al., 2010). In any case, cultural influence on phenomena concerning mental illnesses should be explored and considered more carefully in future research.

When interpreting the results, the limitations of this study should be taken into account. The data presented in this study is based on a convenience sample recruited in rural and urban areas in five of the ten regions in Ghana. The full sample is dominated by people still undergoing secondary or tertiary education, leading to an overall high education level of respondents. Additionally, English as the official language in Ghana needed to be understood and read fluently for consideration as a respondent. By interpreting results from the regression analysis, it should be considered that some predictors are likely related to the desire for social distance through its bivariate association. Importantly, questionnaire and case vignettes are measures that were first introduced to western populations and describe symptoms according to a universal classification approach in the ICD-10. Last, young

Ghanaian respondents might have a different understanding of mental illness compared to that prevalent in western cultures, that may be elicited with qualitative research methods in future studies.

To conclude, association of causal beliefs, regional and socio-demographic variables with the desire for social distance were presented from a young population sample in Ghana (15–29 years). Results reveal that three reported factors, *childhood adversities, brain disorder* and *reaction to stress* are relevant in Ghana. Less desire for social distance if respondents originated from northern regions of *Ghana* was found, independent of vignette conditions. A possible relation to non-existing larger psychiatric facilities in these areas, and in contrast to larger cities in the south should be further explored and might have significant implication for stigma research. Moreover, attribution to childhood adversities was associated with more desire for social distance for depression and schizophrenia vignettes.

Furthermore, the gender of respondents and vignette gender moderated desire for social distance in the depression case vignette: female respondents exhibited more desire for social distance towards the described person, while the desire for social distance was less towards female gendered vignettes when depicting depression. Thus, gender effects should be considered when investigating common psychiatric disorders. With more representative and mixed method in-depth research, concerning the effect of gender and regional differences and the role of explanatory models concerning the desire for the social distance of people with mental illness, essential insights valuable for mental health policies may be obtained.

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