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Social phobia among long-term internally displaced persons: An epidemiological study of adults in two internally displaced person settlements in Sudan

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Abstract

Background: Despite the high worldwide prevalence and association with other mental disorders and disability, only few studies are available on social phobia in low-income countries.

Aims: This study aims to assess the prevalence, socio-demographic correlates and comorbidity of social phobia and its association with disability among long-term internally displaced persons (IDPs) in one urban and one rural area in Central Sudan.

Methods: This cross-sectional study was implemented in two IDP areas in Central Sudan. Data were collected during face-to-face interviews using structured questionnaires to assess socio-demographic factors and the Mini International Neuropsychiatric Interview (MINI) to determine psychiatric diagnoses. A total of 1,876 adults were enrolled from both study areas.

Results: The overall lifetime prevalence of social phobia was 14.2%, with higher rates among IDPs in the rural area and among those who were less educated. Social phobia was associated with other mental disorders in both study areas. Disability and prolonged displacement increased the risk of having social phobia in the rural area.

Conclusion: Further work needs to be done to improve our understanding and to establish proper interventions in dealing with social phobia, other common mental disorders and disability among long-term IDPs in these impoverished areas.

Keywords

Social phobia, long-term internally displaced persons, urban and rural

Introduction

Social phobia is considered to be among the most common anxiety disorders, and it has been recognized in recent years as a considerable public health concern (Furmark, 2002). Epidemiological studies on social phobia have found lifetime prevalence ranging from 2.4% to 16% (Weiller, Bisserbe, Boyer, Lepine, & Lecrubier, 1996). Research on social phobia revealed that it is strongly associated with other anxiety disorders, substance abuse and affective disorders in both clinical and community samples (Merikangas & Angst, 1995). Lifetime comorbidity of social phobia with other disorders, such as major depression, is the rule rather than the exception (El-Tantawy, Raya, Al-Yahya, & Zaki, 2010). Social phobia in adulthood rarely presents in its 'pure' form and 70%–80% of patients have at least one other psychiatric disorder, most commonly depression (Lecrubier et al., 2000). Social phobia is also associated with extensive disability and reduced quality of life (Stein & Kean, 2000). Despite the high worldwide prevalence and association with other common mental disorders and disability, only few studies are available on social phobia in low-income countries.

The Ontario Health Survey Mental Health Supplement reported that persons with social phobia were impaired on a broad spectrum of measures, ranging from dropping out of school to experiencing disability in one's main activity (Stein & Kean, 2000).

Most internally displaced persons (IDPs) live in low-income countries, and their mental health has not been

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well addressed (Thapa & Hauff, 2005). IDPs are often neglected when displacement is prolonged, with adverse social, cultural, economic and health impacts, and the continuation of conflict in the area of origin has been found to be associated with poorer mental health outcomes in those displaced (Siriwardhana et al., 2013).

The sub-Saharan region in Africa is expected to sustain the highest rate of urban growth in the world for several decades due to the movement of people uprooted by drought, famine, ethnic conflicts, civil strife and war (The United Nations Population Fund (UNFPA) State of World Population, 2007). The paucity of research on the situation of displaced people living in urban areas of sub-Saharan Africa is frequently discussed in refugee studies, and it reflects a wider dearth of surveys of populations affected by conflict (Kagee & Garcia del Soto, 2003).

Sudan has experienced one of the worst population displacements in the world as a result of the world's longest-running civil war (Internal Displacement Monitoring Centre (IDMC), 2009). During the war, the cities have doubled in size due to a huge influx from rural areas. In the capital Khartoum alone, an estimated 2 million persons have fled the southern part of the country during the civil war, and recently, more have fled during the ongoing conflict in Darfur (US Committee for Refugees, 2004). The IDMC states that the pattern of displacement into Khartoum arises from the combination of conflict, drought and famine that has afflicted the south and west of Sudan since the 1980s and most of the IDPs in Khartoum live outside officially designated camps and formal resettlement areas (IDMC, 2010). Although Khartoum had enjoyed strong economic growth in recent years, the impact of the growth has been uneven, and areas with internally displaced populations generally offer poor living conditions, few sustainable livelihood opportunities or basic services (IDMC, 2010).

Throughout the history of long-term displacement of Sudanese IDPs and their squatter settlements in both rural and urban settings, the mental health problems and needs of those IDPs have not been properly addressed. There is a scarcity of data on social phobia among Sudanese IDPs, and no study on social phobia was found among IDPs in Central Sudan.

This article reports data on the prevalence, socio-demographic correlates and comorbidity of social phobia and its association with disability among long-term IDPs in one urban and one rural area in Central Sudan. In this article, we use data from the Sudan Mental Health Project Study (Salah et al., 2013) to address the following research questions:

> What is the prevalence of social phobia in two distinct IDP areas in Central Sudan, the urban Mayo IDP area in Khartoum and the rural Mobi IDP area in Gezira State?
> What is the association between social phobia and socio-demographic characteristics in the rural and urban IDP populations and how do they compare?
> What is the prevalence of comorbidity of social phobia with other common mental health disorders and with disability in these two IDP areas in Central Sudan?

Methods

Participants

The sample frame was two IDP settlement areas, one rural and one urban, which were selected at random from all nine IDP settlement areas in Central Sudan. These were IDPs in 'Mayo', an urban area in the outskirts of the Sudanese capital Khartoum, and 'Mobi', a rural area in Gezira in Central Sudan. The target population included all adults aged 18 years and above living in these areas. The IDPs in both study areas are impoverished people from different regions of Sudan who left their areas of origin for different reasons during the last 30 years after the civil war started in Sudan in 1983. Housing in both areas consists of temporary shelters built from cardboard, tin, sacks and mud. Near the urban Mayo area in Khartoum, there is a local hospital and a health center, where a medical assistant manages patients. This is in contrast to the rural area (Mobi) belonging to the Gezira agricultural scheme in the central region of Sudan, 150 km south of the capital city Khartoum, where there is only a small health center. There are two traditional healing centers, one in each study area, and the traditional healing practice includes reciting the Islamic holy book Quran and prescribing herbal medicine and is conducted by religious leaders in the study areas.

Measures

The research questionnaires included socio-demographic data (age, sex, and area of origin in Sudan, education, marital status, family size, employment and income), history of migration, exposure to trauma, subjective health, somatic illness and the use of traditional healers and public health services. The instrument used to determine the lifetime psychiatric diagnoses was the Mini International Neuropsychiatric Interview (MINI). The MINI is a short, structured diagnostic interview, and studies have shown that the MINI is a valid and reliable diagnostic tool, and it has been widely used in different cultural settings (Sheehan et al., 1998). Disability was measured using the Washington Group Short Measurement Set on Disability, which is an activity-based scale derived from the International Classification of Disability, Functioning and Health (ICF). It covers six functional domains – seeing, hearing, walking, cognition, self-care and communication with responses from 'no difficulty' to 'inability' to do the activity (World

Health Organization (WHO), 2001). This question set has been used for cross-cultural comparison of most commonly occurring disability domains after field trials and studies in several countries (Washington Group on Disability Statistics (WG), 2009), including Zambia (Loeb, Eide, & Mont, 2008) and South Sudan (Ayazi et al., 2013).

Procedures

This study is the baseline part of the Sudan Mental Health Project, a longitudinal community-based study collecting interview-based mental health data before and after the implementation of a primary health-care personnel training and health education program. Baseline data were collected from October to December in 2008 and were used for the current analysis. A pilot study was carried out among 100 university students in Khartoum city to test the applicability of the instruments, and the resulting suggestions regarding clarity of language used and logistics required were taken into account. Data were collected in face-to-face interviews using a structured questionnaire by qualified psychologists under the supervision of a research team from the University of Oslo and the University of Khartoum. All members of the research team underwent a 1-week intensive training program in research interview techniques. All households in the study areas were contacted with the help of the local contacts, and the list of houses and names of adult residents were checked and compared with the local registry lists obtained from each settlement to ensure all households were selected. The research team asked all individuals over 18 years in all houses in the study areas to participate in the study, and if anyone was absent at the time of the first visit, the household was revisited at an arranged time when he or she was available. Written informed consent was obtained from all participants, and persons with severe intellectual disabilities or who did not speak Arabic were excluded. The response rate was 97%, and a total of 1,876 adults from Mayo–Khartoum and Mobi–Gezira IDP areas were included. Individuals identified in need of special mental health services were informed about available health services in the area, and those who were in need of urgent psychiatric help were referred immediately to the emergency psychiatric units in both areas. The Regional Committee for Medical and Health Research Ethics in Norway and the Medical Research Ethical Committee in Sudan approved the research protocol.

Statistical analyses

All data analyses were conducted using SPSS (PASW), version 18.0. Descriptive statistics are reported as frequencies and percentages, and the data were stratified first by having or not having a social phobia (MINI) diagnosis. Bivariate associations with socio-demographic factors and comorbidity with other mental disorders and disability were estimated using the chi-square test for independence. Then data were stratified by research area and analyzed further in order to assess probable urban–rural differences among social phobic (MINI) diagnosed IDPs. Then data were analyzed further with hierarchical regression analyses in order to assess the relationship between independent variables and social phobia using a two-step regression model with two blocks of independent variables. In the first step, socio-demographic variables were entered into the model, and lengths of displacement were entered in the second step, which allowed the examination of the significance of the length of displacement in predicting social phobia, while controlling for socio-demographic variables.

Results

A total of 991 (52.8%) of the respondents were from the urban area and 885 (47.2%) from the rural area. Overall, 55.7% of the total were women, 69.5% were married and the age of the study subjects ranged between 18 and 85 years, with a median of 35 years, 53.6% had only up to 6 years of school education and only 2.3% had a university degree. Over half (53.4%) were unemployed and only 15.1% had permanent jobs, and 47.7% of those who were employed had an income of less than US$100 per month (2,000 Sudanese Pounds (SP)). The proportion of respondents who fulfilled the diagnostic criteria of MINI for social phobia was 14.2%. Compared with the urban area, people from the rural area had a higher prevalence rate of social phobia and unemployment, and lower education level and household income (Table 1).

The overall prevalence of social phobia was 16% among females and 12% among males, 19% in the rural study area and 10% in the urban study area. Few people with social phobia used formal health services (5% in Gezira and 4% in Khartoum), while 12% of social phobic persons from Gezira and 14% from Khartoum visited traditional healers. Overall, prevalence rates of social phobia were highest among those with the middle household income level (18%), those with elementary school education (17%), housewives (16%) and among those in the age group 30–39 years (16%), while prevalence rate of social phobia was 10% among those over 60 years and only 6% among students. There were higher prevalence rates of social phobia in the rural than the urban area for most of the socio-demographic characteristics except for those with the highest household income (Table 2).

All those with social phobia diagnoses in both research areas met the diagnostic criteria for at least one other mental disorder diagnosed by the MINI. Social phobia is strongly associated with generalized anxiety disorders, depression and post-traumatic stress disorder (PTSD) in both research areas, and it is associated with hypomania in

Table 1. Socio-demographic characteristics of adults in two IDP areas in Central Sudan.

Socio-demographic (*N* = 1,876)	Research area			χ^2	*df*	*p*-value
	Urban, Khartoum	Rural Gezira	Total			
	n (%)	*n* (%)	*N* (%)			
Gender						
Male	423 (42.7%)	408 (46.1%)	831 (44.3%)	2.21	1	.137
Female	568 (57.3%)	477 (53.9%)	1,045 (55.7%)			
Age groups						
18–29 years	458 (46.2%)	343 (38.8%)	801 (42.7%)	16.56	4	.002
30–39 years	244 (24.6%)	213 (24.1%)	457 (24.4%)			
40–49 years	134 (13.5%)	138 (15.6%)	272 (14.5%)			
50–59 years	82 (8.3%)	104 (11.8%)	186 (9.9%)			
≥60 years	73 (7.4%)	87 (9.8%)	160 (8.5%)			
Marital status						
Single	208 (21%)	203 (22.9%)	411 (21.9%)	10.66	3	.014
Married	*714 (72%)*	*590 (66.7%)*	*1,304 (69.5%)*			
Divorced	29 (2.9%)	30 (3.4%)	59 (3.1%)			
Widowed	40 (4%)	62 (7%)	102 (5.4%)			
Education						
None	181 (18.3%)	225 (25.4%)	406 (21.6%)	27.81	4	<.001
Religious	284 (28.7%)	195 (22%)	479 (25.5%)			
Elementary	342 (34.5%)	342 (38.6%)	684 (36.5%)			
Secondary	156 (15.7%)	107 (12.1%)	263 (14%)			
University or above	28 (2.8%)	16 (1.8%)	44 (2.3%)			
Employment						
None	85 (8.6%)	148 (16.7%)	233 (12.4%)	53.68	5	<.001
Temporal	207 (20.9%)	236 (26.7%)	443 (23.6%)			
Permanent	147 (14.8%)	137 (15.5%)	284 (15.1%)			
Housewife	471 (47.5%)	299 (33.8%)	770 (41%)			
Student	65 (6.6%)	53 (6%)	118 (6.3%)			
Retired	16 (1.6%)	12 (1.4%)	28 (1.5%)			
Household income						
<200 SP	442 (44.6%)	452 (51.1%)	894 (47.7%)	40.38	3	<.001
200–1,000 SP	506 (51.1%)	381 (43.1%)	65 (47.3%)			
1,001–2,000 SP	21 (2.1%)	50 (5.6%)	71 (3.8%)			
>2,000 SP	22 (2.2%)	2 (0.2%)	24 (1.3%)			
Disability	79 (8.0%)	95 (10.7%)	174 (9.3%)	4.24	1	.39
Social phobia (MINI-diagnosis)	97 (9.8%)	170 (19.2%)	267 (14.2%)	33.99	1	<.001

IDP: internally displaced person; SP: Sudanese Pounds; MINI: Mini International Neuropsychiatric Interview.

Khartoum urban area and with disability in Gezira rural area (Table 3).

Table 4 shows the odds ratios for the various variables in the hierarchical logistic regression analysis used to assess the relationships between social phobia and socio-demographic characteristics in the first step and further with the lengths of displacement in the second step. This table shows that having low education level in Gezira rural area is significantly associated with having social phobia. In addition, being displaced for longer times increased the likelihood of having social phobia in Gezira rural area (Table 4).

Discussion

This study is the first epidemiological study on social phobia among long-term IDPs in Central Sudan. The study results revealed high prevalence rates of social phobia among IDPs living in two IDP resettlement areas of Sudan. A total of 14.2% of the respondents in the study areas fulfilled the diagnostic criteria of the MINI for social phobia. There is no published comparable study from Sudan; however, the prevalence of social phobia in our research areas was similar to the average prevalence reported in the US National Comorbidity Survey (Kessler,

Table 2. Socio-demographics characteristics of adults with lifetime prevalence rates of social phobia (MINI-diagnosis) by location in two IDP areas in Central Sudan.

Socio-demographic (N = 1,876)	Social phobia (MINI-diagnoses)			χ^2	*df*	*p*-value
	Urban, Khartoum	Rural, Gezira	Total			
	n (%)	*n* (%)	*N* (%)			
Gender						
Male	39 (9.2%)	61 (15%)	100 (12%)	5.90	1	.01
Female	58 (10.2%)	109 (22.9 %)	167 (16%)			
Age groups						
18–29 years	44 (9.6%)	69 (20.1%)	113 (14.1%)	4.69	4	.32
30–39 years	28 (11.5%)	48 (22.5%)	76 (16.6%)			
40–49 years	13 (9.7%)	24 (17.4%)	37 (13.6%)			
50–59 years	6 (7.3%)	19 (18.3%)	25 (13.4%)			
≥**60 years**	6 (8.2%)	10 (11.5%)	16 (10%)			
Marital status						
Single	15 (7.2%)	38 (18.7%)	53 (12.9%)	3.07	3	.38
Married	78 (10.9%)	118 (20%)	196 (15%)			
Divorced	1 (3.4%)	4 (13.3%)	5 (8.5%)			
Widowed	3 (7.5%)	10 (16.1%)	13 (12.7%)			
Education						
None	18 (9.9%)	30 (13.3%)	48 (11.8%)	12.19	4	.01
Religious	28 (9.9%)	43 (22.1%)	71 (14.8%)			
Elementary	40 (11.7%)	78 (22.8%)	118 (17.3%)			
Secondary	10 (6.4%)	16 (15%)	26 (9.9%)			
University or above	1 (3.6%)	3 (18.8%)	4 (9.1%)			
Employment						
None	9 (10.6%)	25 (16.9%)	34 (14.6%)	10.48	5	.06
Temporal	18 (8.7%)	37 (15.7%)	55 (12.4%)			
Permanent	16 (10.9%)	26 (19%)	42 (14.8%)			
Housewife	49 (10.4%)	76 (25.4%)	125 (16.2%)			
Student	3 (4.6%)	4 (7.5%)	7 (5.9%)			
Retired	2 (12.5%)	2 (16.7%)	4 (14.3%)			
Household income						
<200 SP	37 (8.4%)	89 (19.7%)	126 (14.1%)	1.05	3	.78
200–1,000 SP	56 (11.1%)	69 (18.1%)	125 (14.1%)			
1,001–2,000 SP	1 (4.8%)	12 (24%)	13 (18.3%)			
>2,000 SP	3 (13.6%)	0	3 (12.5%)			

MINI: Mini International Neuropsychiatric Interview; IDP: internally displaced person; SP: Sudanese Pounds.

Table 3. Other mental disorders and disability of adults with social phobia (MINI-diagnosis) in two IDP areas in Central Sudan.

Mental disorder	Social phobia in urban (Khartoum)			Social phobia in rural (Gezira)		
	n (%)	χ^2 (*df* = 1)	*p*-value	*n* (%)	χ^2 (*df* = 1)	*p*-value
Depression	57 (58.8%)	66.95	<.001	78 (45.9%)	56.30	<.001
Hypomania	12 (12.4%)	19.28	<.001	3 (1.8%)	0.76	.384
PTSD	22 (22.7%)	7.08	.008	32 (18.8%)	15.47	<.001
Generalized anxiety disorder	53 (54.6%)	50.74	<.001	76 (44.7%)	62.10	<.001
Disability	7 (7.2%)	0.08	.772	10 (5.9%)	5.17	.023

MINI: Mini International Neuropsychiatric Interview; IDP: internally displaced person; PTSD: post-traumatic stress disorder.

Table 4. Results of hierarchical regression analysis with demographic factors and length of displacement as independent variables and social phobia as the dependent variable.

Socio-demographic	Step 1: Socio-demographic variables of adults with social phobia.	Step 2: Socio-demographic variables of adults with social phobia and length of displacement.
Urban (Khartoum) (n = 991)		
Gender		
Male	1	1
Female	1.17 (0.62–2.22)	1.17 (0.62–2.22)
Age groups		
18–29 years	1	1
30–39 years	1.192 (0.69–2.07)	1.13 (0.65–1.98)
40–49 years	0.74 (0.35–1.53)	0.69 (0.33–1.45)
50–59 years	0.59 (0.21–1.59)	0.51 (0.18–1.44)
≥60 years	0.52 (0.18–1.80)	0.46 (0.15–1.42)
Marital status		
Single	1	1
Married	1.75 (0.80–3.81)	1.75 (0.80–3.80)
Divorced	0.46 (0.05–3.95)	0.46 (0.05–3.96)
Widowed	1.31 (0.28–6.14)	1.34 (0.29–6.29)
Education		
None	1	1
Religious	0.91 (0.47–1.74)	0.90 (0.47–1.74)
Elementary	1.15 (0.61–2.169)	1.14 (0.61–2.15)
Secondary	0.67 (0.27–1.69)	0.69 (0.27–1.73)
University or above	0.54 (0.06–4.80)	0.52 (0.06–4.67)
Employment		
None	1	1
Temporal	0.72 (0.28–1.85)	0.70 (0.27–1.80)
Permanent	0.99 (0.37–2.63)	0.95 (0.35–2.54)
Housewife	0.51 (0.20–1.27)	0.50 (0.20–1.23)
Student	0.51 (0.12–2.25)	0.49 (0.11–2.15)
Retired	0.92 (0.147–5.75)	0.79 (0.12–5.10)
Household income		
<200 SP	1	1
200–1,000 SP	1.363 (0.86–2.15)	1.35 (0.85–2.13)
1,001–2,000 SP	0.46 (0.06–3.77)	0.46 (0.06–3.74)
>2,000 SP	3.08 (0.73–12.94)	3.05 (0.73–12.85)
Lengths of displacement	–	1.01 (0.99–1.04)
Rural (Gezira) (n = 885)		
Gender		
Male	1	1
Female	1.55 (0.95–2.54)	1.52 (0.93–2.49)
Age groups		
18–29 years	1	1
30–39 years	1.06 (0.67–1.69)	0.99 (0.61–1.58)
40–49 years	0.77 (0.43–1.37)	0.70 (0.39–1.25)
50–59 years	0.99 (0.51–1.92)	0.84 (0.42–1.67)
≥60 years	0.56 (0.25–1.27)	0.47 (0.21–1.10)
Marital status		
Single	1	1
Married	0.67 (0.39–1.16)	0.65 (0.37–1.13)
Divorced	0.34 (0.10–1.13)	0.34 (0.10–1.18)
Widowed	0.76 (0.29–1.97)	0.76 (0.29–1.99)
Education		
None	1	1
Religious	1.95 (1.12–3.39)*	1.89 (1.09–3.30)*

Table 4. (Continued)

Socio-demographic	Step 1: Socio-demographic variables of adults with social phobia.	Step 2: Socio-demographic variables of adults with social phobia and length of displacement.
Elementary	1.85 (1.13–3.04)*	1.79 (1.09–2.94)*
Secondary	1.30 (0.63–2.67)	1.25 (0.61–2.59)
University or above	1.44 (0.34–6.07)	1.27 (0.29–5.51)
Employment		
None	1	1
Temporal	1.23 (0.67–2.29)	1.34 (0.71–2.49)
Permanent	1.69 (0.84–3.38)	1.66 (0.82–3.33)
Housewife	1.60 (0.89–2.90)	1.69 (0.93–3.07)
Student	0.39 (0.12–1.24)	0.40 (0.13–1.289)
Retired	1.80 (0.34–9.51)	1.85 (0.35–9.84)
Household income		
<200 SP	1	1
200–1,000 SP	0.78 (0.53–1.14)	0.77 (0.53–1.13)
1,001–2,000 SP	1.13 (0.54–2.36)	1.06 (0.50–2.23)
>2,000 SP	000, 000	000, 000
Lengths of displacement	–	1.02 (1.00–1.04)*

SP: Sudanese Pounds.
*$p < .05$.

Stang, Wittchen, Stein, & Walters, 1999) but higher than those prevalence rates reported in other African countries and the middle east: 2.3% in South Africa (Stein et al., 2008), 0.3% in Nigeria (Gureje, Lasebikan, Kola, & Makanjuola, 2006), 1.1% in Lebanon (Karam et al., 2006) and 5.6% in Saudi Arabia (El-Tantawy et al., 2010). Also our reported prevalence rate of social phobia was higher than that reported by a review of a range of European epidemiological surveys which found a median lifetime prevalence rate of 6.6% (Fehm, Pelissolo, Furmark, & Wittchen, 2005). These great variations are consistent with the results of a systematic review of the literature published between 1987 and 2008 on the prevalence of social phobia in the general population that reported lifetime prevalence rate variations between 0.53% and 45.6%. Such variations in prevalence rates can be due to methodological and transcultural differences across different contexts and countries (Pietrini, Lelli, Lo Sauro, & Faravelli, 2009).

The prevalence of social phobia was higher among females and those with elementary school education, which is consistent with the US Epidemiologic Catchment Area (ECA) Study among more than 13,000 adults reporting highest rates of social phobia among women and persons who were less educated (Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992). But our study reported higher rates among housewives, those in the age group 30–39 years and those with the middle household income level, while the US ECA Study reported higher rates among persons who were younger (age 18–29 years), single and of lower socioeconomic class (Schneier et al., 1992). Our findings are also comparable to the study done in the general population of Iran which reported lower prevalence rates of social phobia in general with higher rates in females and younger age groups, but those rates were not related to educational level and residential area (Mohammadi, Ghanizadeh, Mohammadi, & Mesgarpour, 2006). Those from the study area in Gezira had higher prevalence rate of social phobia, which may indicate the nature of the rural and somewhat isolated life in Gezira compared to the open life in the urban area near the capital Khartoum. This finding of higher prevalence rate in the rural area is similar to results of the study that reported higher prevalence rate of social phobia in the rural population of Udmurtia in Russia compared to the general Russian population (Pakriev, Vasar, Aluoja, & Shlik, 2000) and in contrast to the epidemiological figures for a western rural region of Norway showing that lifetime prevalence rates of mental disorders were considerably lower than figures obtained in studies from the capital of Norway (Kringlen, Torgersen, & Cramer, 2001).

It is important to note that all those with social phobia diagnoses in both research areas met diagnostic criteria for at least one of the other mental disorders diagnosed by MINI, consistent with other studies reporting that comorbidity in social phobia is the rule rather than the exception (El-Tantawy et al., 2010). Social phobia was strongly associated with generalized anxiety disorders, depression, hypomania and PTSD. These findings confirm the strong association between social phobia and other mental disorders that has been seen in the study that reviewed evidence from clinical, epidemiologic and family studies which reported that social phobia is strongly associated with other anxiety disorders and affective disorders in both clinical and community samples with an average of 80% of social phobic patients identified in community samples meeting diagnostic criteria for another lifetime condition (Merikangas & Angst, 1995). Social phobia was found to be associated with disability in the Gezira study area as was also reported from the epidemiologic surveys conducted across Europe indicating that individuals with social phobia had significant functional impairment, notably in the areas of educational and work achievement (Lecrubier et al., 2000). Another study found that more than half of all social phobic patients reported at least moderate impairment at some time in their lives and were rated more impaired than normal controls on nearly all items on the Disability Profile and the Liebowitz Self-Rated Disability Scale (Schneier et al., 1994). Those findings were also consistent with the study on social phobia in the primary care medical setting revealing that social phobic patients reported significantly more impairments in all functional domains of the *Diagnostic and Statistical Manual of Mental Disorders*–IV (DSM-IV) than primary care patients without mental disorders (Stein, McQuaid, Laffaye & McCahill, 1999). Social phobia was reported to be undertreated in spite of the availability of general primary health-care services in the local hospital of the urban study area and the health center of the rural study area. Possible explanations for the lower rates of the use of health services may be the stigma related to seeking mental health treatment or due to poverty and lack of insurance coverage and sufficient funds to use the private psychiatric clinics in the capital city Khartoum because local district specialist services were not available in both study areas. Specific expertise and capacity to treat nonpsychotic disorders such as social phobia was limited and additional training may be needed to improve the skills of primary health-care workers to recognize and treat social phobia in both study areas. We also found that being displaced for longer times increased the likelihood of having social phobia in Gezira rural area. Previous studies reported that psychiatric distress may be present days, months or even years after the initial flight phase, and that IDPs and refugees may suffer from longer term mental health disorders associated with individual difficulties relating to adjustment and adaptive coping mechanisms (Sabin, Lopes Cardozo, Nackerud, Kaiser, & Varese, 2003; Salama, Spiegel, & Brennan, 2001; Steel, Silove, Phan, & Bauman, 2002; Stein, McQuaid, Laffaye, & McCahill, 1999). However, we do not know to what extent the social phobia was present before the flight, or what types of life events might have precipitated it.

Strengths and limitations

The strengths of this study were that it adopted a full psychiatric diagnostic assessment of IDP populations from various regions in Sudan while other studies have just assessed distress symptomatology of IDPs, as in the camps. All households were visited in the sample frames, and all consenting adults were interviewed with a very high response rate (97%). Thus, this is a census rather than a sample survey and we managed to minimize the nonsampling errors by revisiting households to check that all adult residents were included compared with the local registry lists obtained from each settlement. The study was conducted by qualified and well-trained psychologists under the supervision of expert psychiatrists from University of Oslo and University of Khartoum and used a valid and reliable psychiatry interview questionnaire (MINI). The cross-sectional data yield restrictions with regard to going beyond associations in the interpretation of the results. Another limitation of the study is that the research was conducted in two IDP areas in Central Sudan only. Thus, our findings cannot be generalized to all IDPs or host populations in other regions of Sudan; however, the results reported from those two IDP areas may also be valid for other disadvantaged settlements of forced migrants in other areas of Sudan. It is likely that the prevalence rates of the nonmigrant Sudanese population may be different from the rates reported for the two IDP areas in our study, but this necessitates a representative epidemiological study of the prevalence rates of mental disorders in the Sudanese population.

Conclusion

This article provides valuable knowledge about the prevalence of social phobia and its associations with sociodemographic characteristics, disability and other mental health disorders among long-term IDPs in a low-income country. The study revealed higher prevalence rates of social phobia among IDPs in the rural area and among those who were less educated. Social phobia was also associated with disability and other mental disorders in both study areas, and prolonged displacement increased the risk of having social phobia in the rural area. Thus, this disorder represents a major clinical challenge for a mental health-care system with limited resources. On the basis of the present data, further qualitative exploration will play an important role in increasing the understanding of social phobia and its associations. Further work needs to be done to improve our understanding of social phobia among these under-researched risk groups and to establish proper interventions in dealing with social phobia and other common mental disorders and disability among long-term IDPs in these impoverished areas.

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