

Prevalence of Mental Disorders in Tuti Island, Khartoum

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انتشار الاضطرابات النفسية في جزيرة توتي: دراسة في مجتمع ريفي في عاصمة السودان

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Abstract

B **ackground:** The current study uses a cross-sectional stratified sample survey to assess the prevalence of mental disorders in Tuti Island - a rural community outside Khartoum. **Method:** N=886 participants (656 men, 230 women) were assessed via the Mini International Neuropsychiatric Interview (M.I.N.I.) by 75 medical students from Omdurman Islamic University. **Results:** Prevalence rates for mood disorders were highest with an estimated 5.3% for current depressive episodes. Rates for other conditions varied from 0.7% for psychotic disorder to 2.6% for posttraumatic stress disorder. Other diagnoses included alcohol dependence (0.5%), antisocial personality disorder (0.6%), current suicidality (2.5%), anorexia nervosa (0.1%), and bulimia nervosa (0.7%). **Conclusion:** Given the high prevalence of mental disorders among participants, particularly depression. A national representative study is needed to estimate different types of mental health conditions within the country.

Keywords: depression, mood disorders, psychosis, anxiety disorders, Obsessive-Compulsive Disorder

Declaration of interest: None

Introduction

Psychiatric services in Sudan were established in the 1950s pioneered by Professor Al-Tigani Al-Mahi. It remains the case that little is known regarding prevalence of psychiatric disorders in Sudan and no national prevalence studies have been conducted. This is needed for better understanding of current mental health difficulties and how to plan for appropriate services and interventions.¹

Conceptualizing and measuring mental disorders were one of the main difficulties of scientific research in psychiatry. Development of psychiatric epidemiology has been evident since 1970s when the operational diagnostic criteria for mental disorders was introduced and subsequently incorporated into the Diagnostic and Statistical Manual of Mental Disorders (DSM) nomenclature. Since then, researchers in the field of mental health have been able to provide estimates of discrete mental disorders by using multi-diagnostic assessments across various clinical conditions, including mood, anxiety, substance use disorders or for common mental disorder more broadly.² Several tools have been developed for more accurate detection and assessment of mental disorders. One of these is the Mini International Neuropsychiatric Interview (M.I.N.I.), which is a brief

but highly structured interview of the main categories of mental disorders of the DSM-IV and the International Classification of Diseases (ICD-10). The M.I.N.I. was developed in France and United States. The interview has several versions, and it has been translated into 33 different languages.³

The M.I.N.I. interview requires approximately 15 minutes to be completed. It provides accurate structured psychiatric assessment to be used in multicenter clinical trials as well as for epidemiology studies. It can also be used as an outcome tracking measure in clinical settings.⁴

Sudan's capital region is composed of three urban centers, Khartoum, Khartoum North, and Omdurman with a population of 2.9 million of which two million are thought to be refugees. Tuti Island lies in the middle of this urban conurbation where the White Nile and Blue Nile merge to form the main Nile River.

Its population is mainly comprised of Sudanese Nubians who struggled with extremely high floods through their history particularly in 1878, 1924, 1946 and 1988.⁵

Aim and methods

The current study is a cross-sectional stratified sample survey which aimed to estimate the prevalence of mental disorders in Tuti Island in Sudan.

Participants

Participants were above the age of 18 years and were randomly selected from the population of Tuti Island. There were no gender restrictions. All participants were current residents of Tuti Island who consented to the study.

Ethics and consent

All procedures were in accordance with the ethical standards of the Sudan Medical Specialization Board (SMSB) and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all participants included in the study.

Instruments

The Mini International Neuropsychiatric Interview M.I.N.I. was used. It is a structured validated interview for both DSM-IV and ICD-10 diagnostic criteria. The instrument was developed jointly by psychiatrists from USA and France. Administration time for the interview is approximately 15 minutes.

Widely used in multicenter clinical trials as well as in epidemiological studies, the M.I.N.I. covers 17 common diagnosable mental disorders according to DSM III-R. The questionnaire validity was tested against the Structured Clinical Interview for DSM-III-R (SCID), and the Compositive International Diagnostic Interview (CIDI) for ICD-10. Both tests were used extensively by World Health Organization (WHO) and other research centers. Studies have shown high validity and reliability scores. The M.I.N.I. was developed and structured to be

Study design

Using a stratified design, the frame of all selected households was obtained from popular administration units (PAU) based on the 2008 Sudan Population and Housing Census, which is the fifth Population and Housing Census conducted in Sudan.

For the current study, all households chosen were to be representative of the general population's psychological, social, and other characteristics with the lowest cost and effort. This information was based on a social survey from 2015 (Zaki & Yousif, 2015), which established that there are five PAUs all of which are nearly equal in size. Accordingly, the sample size is distributed equally (and so proportionally) as between the PAUs, taking 50 households from each PAU. The 50 households in each PAU were selected randomly using systematic sample (five strata/five PAU).

used by non-specialized interviewers. It focuses on current existing mental disorders.

Training

For the current study, 75 medical students – men and women - from Omdurman Islamic University were trained through the Tuti Primary Health Center (TPHC). Most had completed their psychiatric clerkship and had gained theoretical and practical skills for a variety of common mental disorders. An Arabic translation of the M.I.N.I. is available for the DSM-IV; however, no translation is available for DSM-5. Since the study was conducted before the availability of a DSM-5 Arabic translation, a version translated from the DSM-IV was used. Theoretical training consisted of lectures and small group discussion. Clinical training student-patient contact.

Results

The M.I.N.I. was administered to 886 participants: 656 (74%) men and 230 (26%) women. The results of current and lifetime prevalence of different mental disorders are shown in Table 1. For major depression, our results showed presence of current depressive episode (past two weeks) in 5.3% of participants and recurrent depressive episodes in 1.7%. Prevalence of current episode of mania was 1.8% and past manic episode was reported by 1.6%. Hypomanic episodes had a current prevalence of 0.6% and past manic episodes occurred in 1% of participants.

Regarding psychotic disorders, prevalence of current psychotic disorder was identical to the lifetime prevalence of psychotic disorder (0.7% of participants). Mood disorder with psychotic features had a prevalence of 0.5% for current episode and lifetime prevalence was 0.3%.

Results of different types of anxiety disorders have shown prevalence of 1.6% for current panic disorder (past month), 2.4% for current diagnosis of agoraphobia, 1.7% for current (past month) diagnosis of social phobia

and 1.5% for current (past six months) diagnosis of generalized anxiety disorder. Prevalence of current (past month) diagnosis of Obsessive-Compulsive Disorder (OCD) was 2.8% and current (past month) diagnosis of Posttraumatic Stress Disorder (PTSD) was present in 2.6%.

The M.I.N.I. investigates alcohol and substance use and dependency. Diagnosis of current (past 12 month) dependence on alcohol was identified in 0.5% and current (past 12 month) diagnosis of alcohol use was present with the same prevalence (0.5%). None of the participants met the criteria for substance use disorder or diagnosis.

Table 1. Prevalence of psychiatric disorders in Tuti Island via the M.I.N.I.

Mental Disorder	Frequency	%
Major depressive episode, current (past two weeks)	47	5.3
Major depressive episode, recurrent	15	1.7
Manic episode, current	16	1.8
Manic episode, past	14	1.6
Hypomanic episode, current	5	0.6
Hypomanic episode, past	9	1.0
Panic disorder, current (past month)	14	1.6
Agoraphobia, current	21	2.4
Social phobia, current (past month)	15	1.7
OCD, current (past month)	25	2.8
PTSD, current (past month)	23	2.6
Generalized anxiety disorder, current (past six months)	13	1.5
Alcohol dependence (past 12 months)	4	0.5
Alcohol use (past 12 months)	4	0.5
Substance dependence (non-alcohol), past 12 months	0	0
Substance use (non-alcohol), past 12 months	0	0
Psychotic disorder, current	6	0.7
Psychotic disorder, lifetime	6	0.7
Mood disorder with psychotic features, current	4	0.5
Mood disorder with psychotic features, lifetime	3	0.3
Suicidality, current (past month)	22	2.5
Suicidality risk:		
-Low	15	68.2
-Moderate	06	27.3
-High	01	04.5
Anorexia nervosa, current (past three months)	1	0.1
Bulimia nervosa, current (past three months)	6	0.7
Antisocial personality disorder, lifetime	5	0.6

Lifetime antisocial personality disorder was identified in 0.6% percent of participants. Twenty-two (2.5%) reported current (past month) suicidality. Current suicidal risk as rated by the M.I.N.I. (for the 22 participants who expressed suicidality), identified 4.5% at high risk, six participants (27.3%) at moderate risk and 15 (68.2%) who were at low risk.

Eating disorders were also investigated via the M.I.N.I. and have shown prevalence of 0.1% for current diagnosis of anorexia nervosa in the past three months and 0.7% for current diagnosis of bulimia nervosa in the past three months.

Discussion

The most prevalent mental disorder in the current study was major depression. Most participants suffered from current episode of depression during the two weeks preceding the M.I.N.I. interview. The second most common diagnoses were OCD, agoraphobia, and PTSD with little variation in prevalence rates between the three conditions. Comparing the findings with similar studies in Sudan is, of course, difficult since a national prevalence study has yet to be conducted in the country. However, mental disorders and needs of specific groups have been published in several articles. Examples of such studies include school children, perinatal care, internally displaced persons, out-patients, and community catchment areas.⁶

Examples include an epidemiological survey conducted among Sudanese girls between 12 to 19 years of age. The prevalence rate of major depressive disorder was investigated using the Beck Depression Inventory (BDI), which was administered to 1,107 girls from three elementary and three secondary schools in Khartoum. The estimated prevalence of major depressive disorder was 4.2%.⁷ The rate of depression in this group is slightly lower than our sample of the general population.

Comparing our findings with studies on prevalence of mental disorders among specific groups in Sudan indicate higher rates of such disorders among refugees and internally displaced people. These were estimated at 53% for all mental disorders, 24.3% for major depressive disorder, 23.6 % for generalized anxiety disorder, 14. 2% for social phobia, and 12.3% for PTSD. Psychotic disorders were reported in 1.5% of the country's refugee and internally displaced population. The rate of each mentioned disorder is higher than its corresponding disorder among our participants.^{8,9,10,11}

It is also evident that both perinatal and postnatal studies reported higher rates of mental disorders in Sudan. One study on perinatal psychiatric disorders, which were conducted in primary care settings in Khartoum, suggested a prevalence rate of 23% for all mental disorders.¹² A previous study, which was validated using the Edinburgh Postnatal Depression Scale (EPDS) with Sudanese women in Khartoum, estimated a 9.2% prevalence of postnatal depression at a cut-off point of ≥ 12 .¹³

Another study on prevalence among specific population groups in the country was one that investigated depression in elderly Sudanese. The cross-sectional survey, conducted in Khartoum, estimated the prevalence

of depression at 47.5% and was more commonly reported among elderly retired and those with social problems and medical comorbidities (specifically urine incontinence).¹⁴

Comparing the current findings with international prevalence studies suggests that the prevalence of mood disorders (including major depression and manic episodes) in our study is like its prevalence globally. The global prevalence of common mental disorders between 1980-2013 was investigated in a recent systematic review and meta-analysis which estimated a pooled period prevalence of mood disorder at 5.4% (4.9-6.0%) across 148 studies and a pooled lifetime prevalence of 9.6% (8.5-10.7%) across 83 studies. Global period prevalence of substance use disorders was 3.8% (3.4-4.3%) and their lifetime prevalence estimated at 3.4%.² The latter findings indicate that our results on prevalence of substance use disorders are lower than global prevalence studies.

There were no accounts of using substances other than alcohol among the current study population. Despite this, it is recognized that alcohol and cannabis are the two main substances linked to misuse, particularly by young Sudanese adults. There has also been a surge in the use of other substances among young people, particularly university students. However, there are no reliable data reflecting the extent of the problem.¹⁵

Solvent misuse is an evolving problem, particularly among poor children, adolescents, and young adults. This problem is associated with fatal outcomes at times and merits further study.¹⁶ Use of local types of alcohol is also common in Sudan. This includes Araqi, which is a date-liquor distilled illegally in Sudan. It is commonly used by men aged between 20 to 49 years who were admitted to psychiatric hospital.¹⁷

Studies of substance use among psychiatric patients in Sudan indicate that 27.6% had a history of cannabis use and that all were men. This finding might suggest that cannabis use may be more prevalent among people with mental health difficulties in Sudan.¹⁸

Finally, a review of anxiety disorder epidemiology has shown that the pooled period prevalence of anxiety disorders was 6.7% (6.0-7.6%). Its lifetime prevalence was 12.9% (11.3-14.7%).¹⁹ The latter findings are slightly lower than prevalence estimates of anxiety disorders.

Conclusion

Results of the current study suggest that mental disorders were highly prevalent among a group of participants from Tuti Island in Sudan, particularly depression. A national representative study is needed to estimate different types of mental health conditions within the country. Essential measures can be taken to provide

planned psychiatric services based on accurate estimates of existing problems, according to current findings.

Data availability statement

The data that support the findings of the current study are available from the authors upon reasonable request.

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المخلص

هدفت الدراسة الحالية إلى تقدير انتشار الاضطرابات النفسية في جزيرة توتي، والتي يمثل سكانها مجتمعا ريفيا في عاصمة السودان، وذلك باستخدام المقابلة الدولية المصغرة للطب النفسي العصبي (M.I.N.I.). من قبل 75 طالب طب من جامعة أم درمان الإسلامية.

بلغ العدد الإجمالي للمشاركين 886 منهم 656 ذكور (74%) و230 إناث. تم تقدير اضطرابات المزاج كمايلي: نسبة 5.3% لنوبات الاكتئاب الحالية (الأسبوعين الماضيين)، و1.7% لنوبات الاكتئاب المتكررة في، و1.8% للحلقة الحالية من الهوس، و1.6% لنوبات الهوس السابقة. بلغ معدل انتشار الاضطراب الذهاني على مدى الحياة 0.7%.

التشخيص الحالي لأنواع اضطرابات القلق المختلفة شمل اضطراب الهلع (1.6%)، رهاب الساحة (2.4%)، الرهاب الاجتماعي (1.7%) وتشخيص اضطراب القلق العام (1.5%)، الوسواس القهري (2.8%) وما بعد- اضطراب الإجهاد الرضي (2.6%).

تشمل التشخيصات الأخرى الاعتماد على الكحول (0.5%)، واضطراب الشخصية المعادية للمجتمع (0.6%)، والانتحار الحالي (2.5%)، وفقدان الشهية العصبي (0.1%)، والنهام العصبي (0.7%).

الاستنتاج: كشفت النتائج عن ارتفاع معدل انتشار الاضطرابات النفسية بين المشاركين، وخاصة الاكتئاب. نحتاج الى عينة أكبر مستقبلا لدراسة نسب انتشار الأنواع العديدة من الاضطرابات النفسية في البلد.

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