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Research Article

ASSESSING THE RELATIONSHIP BETWEEN MENTAL DISORDER, SOCIOECONOMIC STATUS AND URBAN ENVIRONMENT IN IMO STATE SOUTH EAST NIGERIA

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ABSTRACT

Aims: The aim of this study was to compare the prevalence of mental disorders among the participants living in the urban areas and those living in the rural areas and to determine if socioeconomic status affects the prevalence of mental disorders in Imo State South East Nigeria. **Study design:** It was a community based cross sectional study **Place and duration of study:** conducted from January 1st to March, 31st 2022 among adults in Imo State South East Nigeria. **Methodology:** A multistage sampling technique was used to select a total of 1012 subjects from the study area. Nine mental disorders: depression, anxiety, somatic symptoms, substance use, mania, sleeping disorders, psychosis, suicidal ideation and dissociation were assessed using self or informant-rated measures, the DSM-5 Level 1 and 2 Cross-Cutting Symptom Measures. The collected data were analysed using SPSS version 25.0. Descriptive method was used to summarize the data demographic characteristics while the prevalence of the different mental disorders was examined and presented in form of frequency and percentages. **Results:** Out of the 1012 participants initially selected, 974(96.2%) completed the study, 584(57.7%) from the urban area and 390 (38.5%) from the rural area. One hundred and three (26.4%) and 368 (63.0%) participants screened positive for mental disorder from the rural and urban areas respectively. The difference in the prevalence of Mental Disorders in the urban and rural areas was highly significant (P <0.001). The socioeconomic statuses of the participants were measured with their type of occupation, highest level of education and average monthly income. In all, there were significant associations between mental disorders and type of Occupation (P=0.002), Highest level of education (P<0.001) and Average Monthly income (P<0.001). **Conclusion:** Mental disorder affects those in the urban areas more than those in the rural areas. Socioeconomic status was found to be strongly associated with mental disorders among the studied group.

Keywords: Mental disorders, DSM-5 Level 1 and 2 Cross-Cutting Symptom Measures, socioeconomic status, urban areas, South East Nigeria.

INTRODUCTION

Global data on mental health disorders were already depressing prior to the COVID-19 epidemic. The burdens of mental illness continue to be worrisome. According to the United for Global Mental Health [1], 'the global economy loses more than US $ 1 trillion per year as a result of depression and anxiety; mental health conditions account for 25% of years lived with disability globally; depression is the leading cause of disability, affecting 264 million people; and suicide is the second leading cause of death among young people aged 15-29, occurring every 40 seconds. More than one in five persons who live in conflict-affected areas suffer from a mental health problem, and people with severe mental problems die 10-20 years sooner than the overall population [2]. Despite the magnitude of the issues, financing is grossly insufficient.

Over the last years, more research has emerged demonstrating how socioeconomic variables influence mental health outcomes within certain populations. Unemployment, precarious employment, and working conditions continue to be routinely associated with increased psychological distress [3], even in countries with universal healthcare [4], where employer-provided health insurance is less necessary for accessing services. Employment position can also play a significant role in moderating the effects of other socioeconomic variables. Those with lower salaries and significant financial distress have poor mental health [4,5,6]. Mental health issues and socioeconomic factors are mutually reinforcing, since poor mental health can exacerbate personal decisions and impact living situations that limit chances [7]. With expanding urbanisation, an increasing number of individuals are exposed to environmental stressors, which may contribute to increased stress and deterioration of mental health [8,9]. Numerous studies have linked air pollution, which is mostly caused by traffic volume, to mental illnesses [10,11,12]. The urban environment is also characterised by noise. Recent studies have demonstrated that noise from transportation, such as road, aviation, or rail traffic, contributes to sleep disruption [13]. Recent systematic reviews and meta-analyses have also linked increased exposure to road traffic noise to depression and anxiety. The aim of this study was therefore to compare the prevalence of mental disorders among the participants living in the urban areas and those living in the rural areas and to determine if socioeconomic status affects the prevalence of mental disorders in Imo State South East Nigeria.

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MATERIALS AND METHODS

This was a community based, cross sectional study conducted from 1st January 2022 to 31st March, 2022. This study took place in two senatorial zones of Imo State (Okigwe and Owerri zones) Nigeria. Imo State is in the South East of Nigeria and it has 27 local government areas with Owerri as the state capital. The state is divided into 3 senatorial zones namely Owerri (Imo East), Okigwe (Imo North) and Orlu (Imo West) with 9, 6 and 12 local government areas respectively. Imo state is bordered by Abia State on the east, River Niger and Delta state on the west, Anambra state on the north and Rivers state on the south [14]. She occupies the area between the lower River Niger and the upper and middle River Imo. Imo State

is situated between latitude $4^0$45' N and $7^0$15'N and longitude 6^0 50'E and 7^0 25'E and makes up a total area of 5530 square kilometers[5].

The inhabitants are mostly Christians with some Moslems and traditional religious believers as well as atheists. The main tribe in Imo State is Igbo and they speak Igbo Language. Stranger elements from all other tribes in Nigeria and beyond also live in the state. The major occupations of people in the state is trading/business, civil service and skilled and unskilled artisans. Also the state is known for its retinue of hotels with a very busy weekend and night life. The state has 2 tertiary hospitals, several general hospitals, private hospitals, pharmacies and chemist stores, maternity homes and traditional birth attendants' homesThe study population were males and females aged 20 years and above, who had stayed in the selected study area for at least a year and a half in the last 2 years; and were able to complete face-to-face interviews after given their informed consent.

The minimum number of sample size required for this study was determined using single population proportion formula considering the following assumptions.

$$n=\frac{g(Z\alpha/2)^2\ P\ (1-P)}{d^2}$$

Where

- n = Minimum sample size required for the study
- z = Standard normal distribution with confidence interval of 95%, Z = 1.96
- p = Proportion of the prevalence of mental disorder conducted in Lagos [15] which was 47.8%. Hence, P = 0.478
- d = Absolute precision or tolerable margin of error. d = 5% = 0.05
- g = Design effect (D=2) was used; because of multistage sampling technique.

$$\text{Thus, } n = \frac{g\ (Z\alpha/2)^2\ P\ (1-P)}{d^2}$$

$$= \frac{(2)\ (1.96)^2 \times 0.478\ (1-\ 0.478)}{(0.05)^2}$$

$$= 767$$

Adding 20% (767 x 0.2) = 153.4 = 154 of non-respondents, the total minimum sample size calculated was 764+154 = 921.

However, a total of 1012 participants were finally recruited for the study.

A multistage sampling technique was used to select the participants from Owerri and Okigwe zones of Imo State Nigeria. Ihite-Uboma and Ehime Mbano, out of the 6 LGAs, were randomly selected from Okigwe zone while Owerri West, Owerri North and Owerri Municipal were by simple random technique, selected from Owerri zone out of its 9 LGAs. Using a simple random sampling technique and applying the principle of proportional (quota) allocation putting in consideration the number of LGAs in the selected zones, communities were selected for the study. Therefore, out of the total of 1012 participants who were recruited from the study area, 607 were from Owerri zone (Owerri North, 215; Owerri West, 187; Owerri Municipal, 205) while 405 participants were from the Okigwe zone (Ihite-Uboma, 195 and Ehime Mbano, 210 subjects).

The instruments used for data collection included the questionnaire for assessing participants demographic information; the DSM-5 level 1 Cross –Cutting Symptom Measure for assessing the 9 mental health domains including depression, mania, anxiety, somatic symptoms, suicidal ideation, psychosis, sleep problems, dissociation, and substance use; The DSM-5 Level 2 Cross-Cutting Symptom Measures was used to provide more detailed information on the symptoms associated with some of the Level 1 domains and the informed consent form.

The collected data collected were entered into Microsoft excel sheet 2010 version and analyzed using IBM-SPSS Statistics version 25.0 (SPSS Inc., Chicago, IL, USA). Descriptive method was used to summarize the data demographic characteristics. The general prevalence of mental disorders in the urban and rural areas were presented and compared while the relationship between mental disorders and socioeconomic status was illustrated.

RESULTS

A total of 1012 participants were initially selected for the study: 607(60.0%) from Owerri senatorial zone and 405(40.0%) from the Okigwe zone of Imo State out of which 38(3.8%) selected participants did not complete the study given a total of 974 (96.2%) positive response, 584 (57.7%) and 390 (38.5%) from Owerri and Okigwe zones respectively. Out of the 974 selected participants who completed the study, 584/60.0% were from Owerri senatorial zone while 390 (40.0%) were selected from Okigwe zone

Out of the 584 participants selected from the urban areas, 368 (63.0%) screened positive for Mental Disorders while it was lower in the selected rural areas where out of the 390 participants, 103 (26.4%) screened positive for mental disorders. The difference in the prevalence of Mental Disorders in the urban and rural areas was highly significant with P-value <0.001 (Table 1)

TABLE 1. Comparison of Prevalence of Mental Disorders in the Urban and Rural Locations

LOCATION	SCREENING	RESULTS	TOTAL,N(%)	P-VALUE (X^2)
	POSITIVE, N(%)	NEGATIVE, N(%)		
URBAN	368(63.0)	216(37.0)	584(100.0)	
RURAL	103(26.4)	287(73.6)	390(100.0)	<0.001
TOTAL	471(48.4)	503(51.6)	974(100.0)	

Socioeconomic Status and Mental Disorder

The socioeconomic statuses of the participants were measured with their type of occupation, highest level of education and average monthly income. In all, there were significant associations between all the socioeconomic variables: Occupation (P=0.002), Highest level of education (P<0.001), Average Monthly income (P<0.001). (Table 2)

TABLE 2. Socioeconomic Status and Mental Disorder

VARIABLE	SCREENING	RESULT	TOTAL,N(%)	P-VALUE
	POSITIVE	NEGATIVE		(X^2)
OCCUPATION				
UNEMPLOYED	55(67.1)	27(32.9)	82(100.0)	
STUDENTS	87(54.0)	74(46.0)	161(100.0)	
CIVIL/PUBLIC SERVANTS	91(45.7)	108(54.3)	199(100.0)	0.002
ARTISANS	56(47.9)	61(52.1)	117(100.0)	
TRADER/BUSINESS	121(46.0)	142(54.0)	263(100.0)	
FARMERS	61(40.1)	91(59.9)	152(100.0)	
TOTAL	471(48.4)	503(51.6)	974(100.0)	
HIGHEST LEVEL OF EDUCATION				
NO FORMAL EDUCATION	76(72.4)	29(27.6)	105(100.0)	
PRIMARY	134(59.0)	93(41.0)	227(100.0)	
SECONDARY	173(47.4)	192(52.6)	365(100.0)	<0.001
TERTIARY	88(31.8)	189(68.2)	277(100.0)	
TOTAL	471(48.4)	503(51.6)	974(100.0)	
AVERAGE MONTHLY INCOME				
<N18,000	80(79.2)	21(20.8)	101(100.0)	
N19,000-50,000	145(56.2)	113(43.8)	258(100.0)	
N51, 000-100,000	72(26.2)	203(73.8)	275(100.0)	<0.001
N101,000-250,000	107(48.2)	115(51.8)	222(100.0)	
N251,000-500,000	46(48.9)	48(51.1)	94(100.0)	
N501, 000 AND ABOVE	12(50.0)	12(50.0)	24(100,0)	
TOTAL	471(48.4)	503(51.6)	974(100.0)	

DISCUSSION:

Comparison of Prevalence in Urban and Rural Areas

This study found a significant difference in the prevalence of mental disorder between those in the urban areas versus participants in the rural areas. Those in the urban areas were more affected than those in the rural areas. This is similar to findings in other studies [16,17]. While urban living offers many advantages such as access to better healthcare, education, and job opportunities, it also presents unique challenges and stressors that can contribute to the development of mental disorders. One of the primary factors influencing mental health in urban areas may be the high population density. Living in crowded neighborhoods with limited personal space can lead to increased stress levels and feelings of social isolation. The fast-paced and competitive nature of urban life, combined with the constant exposure to noise, pollution, and traffic, can further exacerbate stress and anxiety.

Social factors may also play a significant role. Urbanization often disrupts traditional social support systems found in rural communities, leading to weakened social ties and a sense of disconnectedness. The breakdown of community cohesion and reduced social support networks can contribute to feelings of loneliness, depression, and other mental health issues. Moreover, urban areas often have higher levels of socioeconomic disparities. Income inequality, poverty, and lack of affordable housing are prevalent in many cities, which can lead to chronic stress and increase the risk of mental disorders. Limited access to quality healthcare, including mental health services, can further exacerbate the problem

Socioeconomic Status and Mental Disorder

The study confirms the high association between mental disorders and socioeconomic status of individuals. The highest prevalence was found among the unemployed, those with no formal education, primary education and participants earning very low monthly. This is similar with previous studies where poverty and mental illness have been inextricably linked [18] and lower socioeconomic positions shown to increase the chances of developing mental disorder [19]. Individuals with lower Socioeconomic status (SES) often face a range of challenges and stressors that can contribute to the onset and exacerbation of mental health conditions. Lower SES individuals may have limited access to mental health services, including therapy, medication, and other forms of treatment. This lack of access can hinder early intervention and proper management of mental health conditions.

Lower SES individuals are more likely to experience chronic stress, financial difficulties, unemployment, housing instability, and limited educational opportunities. These stressors can increase the risk of developing mental health disorders such as depression, anxiety, and post-traumatic stress disorder (PTSD). Higher SES individuals generally have greater access to social support networks, including family, friends, and community resources. Social support plays a protective role in mental health, and the lack of strong support systems among those with lower SES can contribute to increased vulnerability to mental disorders. Individuals with low SES are prone to living in disadvantaged neighborhoods with higher crime rates, limited resources, and inadequate infrastructure and these can negatively impact mental health. Exposure to violence, pollution, and other environmental stressors can increase the risk of mental health problems.

Lower educational attainment may lead to limited employment opportunities which can be associated with poorer mental health outcomes [20]. Higher SES individuals often have more access to quality education, job stability, and higher-paying occupations, which can provide a sense of purpose, self-esteem, and financial security that positively impact mental health. Socioeconomic disparities can lead to stigmatization and discrimination, which can further deteriorate mental health. Individuals facing socioeconomic challenges may experience social exclusion, prejudice, and feelings of shame and these can contribute to the development of mental health disorders.

CONCLUSION

Mental disorder affects those in the urban areas more than those in the rural areas. Socioeconomic status was found to be associated with mental disorders among the studied group.

Recommendation

Enhancing access to mental health services and integrating mental health promotion into urban planning and policy-making is crucial. Creating green spaces, providing recreational facilities, and ensuring safe and walk able neighborhoods can also contribute to improving mental well-being in urban areas. Addressing socioeconomic inequalities especially by the Government and improving access to resources and support systems can help mitigate the impact of socioeconomic status on mental health outcomes.

Competing interests

Authors have declared that no competing interests exist.

Authors' Contributions

Author 1 designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author 2 and Author 3 managed the analyses of the study. 'Author 4 managed the literature searches. All authors read and approved the final manuscript.

Consent

All authors declare that 'written or oral informed consent was obtained from the patient before participating in the study. A copy of the written consent can be made available for review by the Editorial office/Chief Editor/Editorial Board members of this journal.

Ethical approval: Ethical clearance (No:20124) was gotten from the Ethical Committee of the Department of Public Health, Federal University of Technology, Owerri, Imo State, Nigeria

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