ISSN No:-2456-2165

Prevalence and Pattern of Distribution of Mental Disorders in South East Nigeria

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Abstract:- Background: The burden of mental disorders globally is increasing. With the impact of COVID-19 pandemic, coupled with increased economic constraints, financial hardships, stretched lockdowns, (particularly in South East Nigeria), high level of insecurity, unrest and the accompanying poverty, it is reasonable to assert that a greater number of people in this environment are transitioning from mental health to mental disorder. The study objective was therefore to determine the prevalence and pattern of distribution of mental disorders among adults in Imo State South East Nigeria.

Methods: It was a community based cross sectional study conducted from January 1st to March, 31st 2022 among adults in Imo State South East Nigeria. Multistage sampling technique was used to select a total of 1012 subjects from the study. 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: In this study, a total of 974 participants completed the study with a response rate of 96.2%. The general prevalence of mental disorders in Imo State was 48.4%. Somatic symptom was the most prevalent with 258(54.8%) while the least was mania with 15 (3.2%) of participants affected.

Conclusion: this study ascertained that the prevalence of mental disorder was higher than previously estimated. Somatic symptoms, depression and anxiety disorders were the most prevalent while mania, dissociation and psychosis were the least prevalent. This calls for urgent development and implementation of strategies for prevention of mental disorders in Imo State, South East region and Nigeria.

***Keywords**:- Mental disorders, Prevalence, pattern of distribution, DSM-5 Level 1 and 2 Cross-Cutting Symptom Measures, Imo State South East Nigeria.*

I. INTRODUCTION

In 2019, the World Health Organization (WHO) verified in a research that one in every four individuals worldwide may have mental or neurological illnesses over their lifetime, amounting to at least 1.7 billion people[1]. This estimate was made before to the outbreak of COVID-19, which destroyed millions of homes, economies, and governments.

Today, over 450 million individuals worldwide suffer from mental problems, making them one of the primary causes of illness[2]. According to experts, this figure will increase by more than 100% by the conclusion of COVID-19[3]. Numerous indications show that over 60 million Nigerians suffer from some form of mental disorder, with only about 20% of those in this category exhibiting obvious manifestations, which include what the average Nigerian refers to as madness (schizophrenia) and possibly extreme cases of drug or alcohol addiction; a factor that has largely contributed to mental disorder being ignored or poorly understood in the remaining 80% or 48 million Nigerians[4].

While this picture is self-evident, few Nigerians, including some political actors, recognize the critical nature of mental health. Oftentimes, when it is discussed, an image of deranged men and women with a spectrum of behaviour that deviates from the norm is conjured up. Majority feel that the ordinary naked and filthy individual on the street who picks up useless objects and speaks to himself on a regular basis is the ideal person with mental illness. Many individuals are unaware that there are various different sorts of mental problems in Nigeria. One of the most prevalent is depression, which, according to the World Health Organization, has afflicted 7,079,815 Nigerians[2]. Numerous individuals additionally struggle with anxiety, psychosis, substance abuse, bipolar disease, dissociation, sleeping disorders, to name a few.

Despite the fact that mental illness is a serious public health problem due to the enormous number of people afflicted, it has received little attention, particularly in low- and middle-income nations such as Nigeria, where it is still widely misunderstood. With the effect of COVID-19, coupled with increased economic constraints, financial hardships, stretched lockdowns, community violence and "sit-at-

home"(particularly in South East Nigeria), and the accompanying poverty, it is not unreasonable to assert that a greater number of people in countries like Nigeria are transitioning from mental health to mental disorder. Furthermore, there are no recent studies in this region on the prevalence and pattern of distribution of mental disorders among adults in Imo State, South East Nigeria. The aim of the study was therefore to determine the pattern of distribution and determinants of mental disorders in Imo State, Nigeria.

II. 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). 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 (Imo State Government, 2010). 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' homes.

The 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[6]:

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

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 by Lasebikan et al[7] 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[8]

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, the following communities were selected: from Ihite-Uboma, (Amainyi, Ezimba, Umuoma and Umuezegwu); Ehime Mbano (Nzerem, Umualumalu, Nsu and Umuezeala); Owerri North (Amakohia, Akwakuma and Orji); Owerri West (Umuguma, Nekede and Ihiagwa) and Owerri Municipal (Owerri Urban: Ikenegbu and Owerri Nchi-Ise). In order to ensure representativeness of the sample, the principle of proportional (quota) allocation was followed putting in consideration the number of LGAs in the selected zones. Therefore, out of the total of 1012 participants who were selected 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 yhe 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 and the prevalence of the different mental disorders were examined and presented in form of frequency and percentages.

Ethical clearance was sought from the Ethical Committee of the Department of Public Health, Federal University of Technology, Owerri, Imo State, Nigeria.

III. FINDINGS

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 974 selected participants who completed the study, 584 (60.0%) were females and 390 (40.0%) were males. (Table 1). Their ages ranged from 20 – 65 years, 247 (25.4%) were between age range of 20-29, 304 (31.2%) were between the age range of 30-39 years, 202 (20.7%) were between the range of 40-49 years, while 120 (12.3%) and 101 (10.4%) were between the ages of 50-59 and ≥ 60 years respectively. In terms of religious of the participants, majority 338 (34.7%) were of the Roman Catholic denomination, followed by Pentecostal, 282 (29.0%), protestants 263 (27.0%), African traditional Religion 31 (3.2%), Islam 22 (2.3%) and others 38 (3.9%). (Table 1)

The participants were of different tribes: Igbo, 819 (84.1%), which constituted the majority. Hausa 40 (4.1%), Yoruba 57 (5.9%), and others 58 (6.0%) (Table 1)

Majority of the selected participates 365 (37.5%) had secondary level education, followed by those that had tertiary level, 227 (28.4%), primary level 227 (23.3%) while only 105 (10.5%) had no formal education. (Table 2). For the marital status of the participants, more than half of them, 526 (54.0%) were married, 278 (28.5%) were single, 72 (7.4%) were widowed, 70 (7.2%) were separated while 28 (2.9%) were divorced. (Table 1)

The occupation of participants varied from trading/ business, 263 (27.0%) to civil/public service 199 (20.4%), studying 161 (16.1%) training 152 (15.6%), Artisanship 117 (12.0%), and unemployed 82 (8.4%). (Table1). Concerning the average monthly income of the participants, majority 222 (22.8%) earn between ₦51, 000 to ₦100,000 while the least, 24 (2.5%) earn ₦501,000 and above.

- *General prevalence of Mental Disorders among Adults in Imo State, South East Nigeria.*

On the prevalence and pattern of distribution of mental disorders in Imo State, Four hundred and seventy one (471) out of the 974 participants screened positive for mental disorders given a general prevalence of 48.4% (Table 2). Most of the participants screened positive for more than one type of Mental Disorder. Somatic symptom was the most prevalent with 258 (54.8%) of the participants affected, followed by Depression, 245 (52.0%), Anxiety disorder 232 (49.3%), substance use 222 (47.1%) then sleeping disorders (Insomnia), 125 (26.5%), suicidal ideation 38 (81%), dissociation 23 (4.9%) and the least, mania with 15 (3.2%) of participants affected. (Table 3

TABLE 1. Sociodemographic Characteristics of Participants

VARIABLES	FREQUENCY	PERCENT(%)
GENDER		
MALE	390	40.0
FEMALE	584	60.0
TOTAL	974	100.0
AGE RANGE		
20-29	247	25.4
30-39	304	31.2
40-49	202	20.7
50-59	120	12.3
60 AND ABOVE	101	10.4
TOTAL	974	100.0

LGA		
OWERRI NORTH	200	20.5
OWERRI MUNICIPAL	200	20.5
OWERRI WEST	184	18.9
EHIME MBANO	200	20.5
IHITE UBOMA	190	19.5
TOTAL	974	100.0
SENATORIAL ZONE		
OWERRI	584	60.0
OKIGWE	390	40.0
TOTAL	974	100.0
LOCATION		
RURAL	390	40.0
URBAN	584	60.0
TOTAL	974	100.0
RELIGION		
ROMAN CATHOLIC	338	34.7
PENTECOSTAL	282	29.0
PROTESTANT	263	27.0
AFRICAN TRADITION	31	3.2
ISLAM	22	2.3
OTHERS	38	3.9
TOTAL	974	100.0
TRIBE		
IGBO	819	84.1
HAUSA	40	4.1
YORUBA	57	5.9
OTHERS	58	6.0
TOTAL	974	100.0
HIGHEST LEVEL OF EDUCATION		
NO FORMAL EDUCATION	105	10.8
PRIMARY	227	23.3
SECONDARY	365	37.5
TERTIARY	277	28.4
TOTAL	974	100.0
MARITAL STATUS		
SINGLE	278	28.5
MARRIED	526	54.0
SEPARATED	70	7.2
DIVORCED	28	2.9
WIDOWED	72	7.4
TOTAL	974	100.0
OCCUPATION		
UNEMPLOYED	82	8.4
STUDENTS	161	16.1
CIVIL/PUBLIC SERVANTS	199	20.4
ARTISANS	117	12.0
TRADING/BUSINESS	263	27.0
FARMER	152	15.6
TOTAL	974	100.0

AVERAGE MONTHLY INCOME		
<N18,000	101	10.4
N19,000-50,000	258	26.5
N51,000-100,000	275	28.2
N101,000-250,000	222	22.8
N251,000-500,000	94	9.6
N500,000 AND ABOVE	24	2.5
TOTAL	974	100.0

Table 2. General Prevalence of Mental Disorders among Adults in Imo State, South East Nigeria.

LGAs of PARTICIPANTS	SCREENING	RESULTS	TOTAL, N(%)
	POSITIVE, N(%)	NEGATIVE, N(%)	
OWERRI MUNICIPAL	148(74.0)	52(26.0)	200(100.0)
OWERRI WEST	120(76.1)	64(23.9)	184(100.0)
OWERRI NORTH	140(70.0)	60(30.0)	200(100.0)
EHIME MBANO	65(32.5)	135(67.5)	200(100,0)
IHITE UBOMA	38(20.0)	155(80.0)	190(100.0)
TOTAL	471(48.4)	503(51.6)	974(100.0)

TABLE 3. Prevalence of Different Mental Disorders in Imo State, South East Nigeria.

TYPE OF MENTAL DISORDER	FREQUENCY	PERCENT(%)
SOMATIC SYMPTOMS	258	54.8
DEPRESSION	245	52.0
ANXIETY	232	49.3
SUBSTANCE USE	222	47.1
INSOMNIA	125	26.5
SUICIDAL IDEATION	38	8.1
PSYCHOSIS	25	5.3
DISSOCIATION	23	4.9
MANIA	15	3.2

N.B: There were multiple responses from participants as some screened positive for more than one mental disorder.

IV. DISCUSSIONS

This study found a general prevalence of 48.4% of mental disorder among adults in Imo State, South East Nigeria. This prevalence is similar to that found from a study in Lagos State Nigeria (47.8%) by Lasebikan *et al*.[7]. The slight difference seen could be explained from the fact that theirs was hospital based while this was a community based study and expectedly, only those with severe symptoms would present to the hospital.

On the other hand the prevalence from this study is much higher than other studies carried out in conflict affected areas. A study by Vos *et al.*[9],suggests a mean global prevalence of one in 14 while a systematic review by Charlson *et al.*[10], found a prevalence of one in five persons. While the latter study was carried out in a post-conflict setting unlike this study was done in a relatively active conflicts zone. In addition, both studies by Vos *et al.*[9] and Charlson *et al.*[10] were carried out in developed settings where better attention are given to mental health.

Furthermore, while this study applied the use of screening instruments, Vos *et al.* [9] used diagnostic instruments which could have eliminated false positives with subsequent reduction in the prevalence recorded.

The high prevalence of mental disorders in Imo State Nigeria can be explained by numerous contributing factors such as community violence, high level of insecurity, harsh economic conditions in the state and impact of COVID 19 pandemic. Imo State is one of the South Eastern States affected by the advent of incessant killings of individuals by the “unknown gunmen” or sometimes by the security agents. Being a victim or experiencing community violence, killings of individuals or death of a close relative have been linked to the development of mental disorders [11,12].

The regular “sit-at-home” order witnessed in the study areas could have contributed to the high prevalence of mental disorder found in this study. Most of the selected participants were traders/businessmen and women whose businesses are

often disrupted during "sit-at-home" days leading many to untold economic hardship. Also due to the "sit-at-home" order, many people could be disconnected from their friends and relatives and this can lead to emotional detachment which has been linked to development of mental disorder[13].

Insecurity caused by the so called "herdsmen" could also be a cause of the high prevalence of mental disorder in the State especially for those in the rural areas where a good number of people are farmers. These farmers find it difficult to access their farms due to the fear of killings or harassment by the "herdsmen". Consequently, their source of income (farming) is affected and this can cause myriad of mental illnesses. Poverty and mental illness have been found to be inextricably linked[14].

The present study found somatic symptoms to be the most prevalent followed by depression, anxiety, substance use, insomnia (sleeping disorders), suicidal ideation, psychosis, dissociation and mania. This finding is similar to studies by Lasebikan *et al.*, Vos *et al.* and Charlson *et al.*, [7,9,10]. The high prevalence of somatic symptoms found in our study may be explained as a reflection of the tendency of African patients to present their psychological distress with somatic unexplained symptoms. This may also suggest a pathway to more severe mental disorders.

Psychosis and mania were found to be the least prevalent. This could be due to the fact that these are severe mental illnesses which in most cases, the affected individuals may not be in their homes. Some may have gone to seek for help in the hospitals or faith-based homes as at the time of this study, thus reducing their prevalence as noted.

V. CONCLUSION

This study ascertained that the prevalence of mental disorder was higher than previously estimated. Somatic symptoms, depression and anxiety disorders were the most prevalent while mania, dissociation and psychosis were the least prevalent. This study has shown that the impact of conflict on people's mental health is higher than previously estimated.

RECOMMENDATION

There should be formation of new strategies which should focus on improving social support systems, promoting community engagement, and reducing socioeconomic disparities. Non-Governmental Organizations (NGOs) and Faith Based Organizations should be encouraged to introduce and facilitate the teaching and training of individuals on development of personal resilience, coping strategies, and providing social supports. The newly signed mental health act in Nigeria should be actively implemented to ensure strategic interventions that focus on addressing mental health issues in the community. There is need to prioritize conflict affected States of the country for implementation of the WHO mental health action plan. This will require a focus on investment in leadership and governance for mental health and the development of integrated, responsive mental health and social care services in the community based settings.

Strategies for promotion and prevention in mental health and building and strengthening of information systems, evidence and research for mental health in conflict affected areas of the country are also needed. These services could be initiated with short term emergency funds that are often available during crises. It is recommended that longitudinal and follow-up studies to be conducted in order to overcome the foreseen limitations that emanated from our study design. A mixed study design (both hospital and community-based) with the use of diagnostic tools may be more accurate.

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