ORIGINAL RESEARCH

# Knowledge and attitude towards mental disorders among adults in an urban community in south-west Nigeria

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## Abstract

**Background**

Mental disorders are one of the most ignored public health issues worldwide. However, the burden associated with mental disorders is ever increasing and poses a major threat to health, social interactions and the economy of both developed and developing countries.

**Aim**

To assess the knowledge of adults residing in an urban local government area in Lagos, south-west Nigeria, with regards to mental health and investigate their attitudes towards this condition.

**Methods**

This was a descriptive cross-sectional study. Multi-stage sampling was used to select 242 adults who were subsequently interviewed with a structured questionnaire. Data was collected and analysed using Epi Info statistical software version 7. Associations between socio-demographic variables and the knowledge and attitudes of subjects with regards to mental disorders were assessed using chi-square tests at a significance level of 0.05.

**Results**

Almost all respondents (95.5%) in this study were aware of mental disorders while 31.0% were related to someone with a mental disorder. Approximately half of the respondents (51.2%) had poor knowledge of mental disorders while the majority (90.0%) had positive attitudes. There was a significant and positive association between having a relative with a mental disorder and the level of knowledge (P=0.010).

**Conclusion**

Analyses identified knowledge gaps in the community in terms of mental disorders in the community. We recommend that health workers should develop ways to educate the community with regards to the causes, symptoms, effects and treatment options for mental disorders.

**Key Words:** Mental disorders, knowledge, attitude, community, public health, Nigeria

## Introduction

Mental disorders are some of the most commonly ignored public health issues worldwide. The burden associated with these conditions is ever increasing and poses a major threat to health, social interactions, and the economy of both developed and developing countries. According to existing literature, a mental disorder is 'a clinically significant behavioural or psychological syndrome or pattern that occurs in an individual and is associated with present distress or disability or with a significantly increased risk of suffering, death, pain, disability, or an important loss of freedom'[1].

There are several different types of mental disorder with varying presentations. These are characterized mainly by a combination of abnormal thoughts, perceptions, emotions, behaviours and relationship with others[2]. The term 'mental disorders' is an umbrella term that is used to decribe a wide range of illnesses, including anxiety disorders, intellectual and developmental disabilities, including autism, depression, schizophrenia, psychosis, post-traumatic stress disorders and dementia.

In Africa, mental disorders account for approximately 5% of all reported illnesses and around 1 in 5 inhabitants are reported to suffer with a mental disorder[3]. Furthermore, it is estimated that 200 million Africans may become afflicted by a mental disorder at some point in their lifetime[4]. The prevalence of mental disorders in Nigeria is estimated to be approximately 20%; in other words, around 64 million Nigerians[5]. In Lagos state, the location of the present study, approximately 14.1% of residents (around 2.5 million) are suffering from a mental disorder[6].

There are various means of preventing and treating mental disorders and many ways in which we can relieve the suffering these disorders cause. Previous studies have shown that the beliefs and perceptions towards the causes of mental disorders tend to hinder the efficacy of treatment in those that need it, thus exacerbating the severity of the disease[7]. If we are to successfully manage mental disorders, it is vital that we provide appropriate education relating to the causes, prevention and treatment of mental disorders.

The increasing burden of mental disorders in Nigeria, the increasing number of people with mental disorders on the streets, and the potential danger that such people might bring to society, have drawn significant attention and measures are being put in place by the government and private organizations to address these problems. For instance, the federal government has formulated a national policy to ensure that all Nigerians have the right to access good quality mental health services[8]. Significant efforts have also been made to build research capacity to investigate the mental health of children and adolescents[9]. However,

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people with mental disorders, along with their relatives, still have negative beliefs relating to the causes of their illness. Consequently, it is important that we address this ignorance by providing alternative sources of care and increasing the availability of mental health services[3]. The extent to which patients can benefit from mental health services is known to be affected by the quality and availability of services as well as their knowledge and belief[7].

This study aimed to investigate the knowledge of adults residing in an urban local government area in Lagos, south-west Nigeria, with regards to mental health and investigate their attitudes towards this condition. By addressing these key questions, it may be possible for us to determine the factors that prevent most of the people affected from seeking medical assistance and therefore develop appropriate measures to address these problems.

## Methods

### *Study location*

This study was conducted in Kosofe, one of the 16 urban local government areas (LGAs) in Lagos State, south-west Nigeria. Kosofe is located in the northern part of Lagos State and features two local council development areas and seven wards. According to the 2006 National Population Census, Kosofe LGA had a population of 682,772, although the 2015 population was projected to be approximately 1,240,936 residents[10,11]. Kosofe has 279 streets with a variety of markets, schools, 3 primary health care facilities, and a number of churches and mosques[12].

### *Study design and the study population*

This was a descriptive, cross-sectional study that was carried out between April and August 2016. The study participants were adult residents of Kosofe. Residents were included if they were aged 18 years or over and a resident of Kosofe for at least 6 months prior to the study. Any resident that did not fit into these broad criteria were excluded from the study.

### *Sample size estimation*

The minimum sample size was calculated using the Cochran formula[13], as shown in Equation (1).

$$N = z^2pq/d^2 \quad (1)$$

In this equation, $N$ represents the minimum sample size required, $z$ represents the standard deviation with 95% confidence intervals, $p$ represents the proportion of respondents in a similar study with positive attitude towards mental disorders (82.7%)[14], and $d$ represents the acceptable error margin. By applying a non-response rate of 10%, we calculated that a sample size of 242 residents was required.

### *Sampling methodology*

Sampling was carried out in five stages. First, two wards were selected from the seven wards in Kosofe Local Government by simple random sampling (balloting). One of the wards has 37 streets while the second has 42 streets. Second, 10 streets were selected from each of the wards by balloting. Third, we identified 12 houses per street and determined the houses that were habitable. Because the streets were so small, we then selected houses consecutively. Houses without an eligible respondent were omitted and the next house was selected. Fourth, when there were multiple households in a single house, we selected a single household by balloting. Finally, one eligible respondent was selected per household. Balloting was used where more than one eligible respondent was present.

### *Data collection and analysis*

The study proposal was approved by the Health Research and Ethics Committee of the Lagos University Teaching Hospital (LUTH) with approval number: ADM/DCST/HREC/APP/057. The data collection tool was a structured, interviewer- based questionnaire that was developed from similar studies in the existing literature[1,15-19]. The questionnaire, which contained three sections covering the socio-demographic characteristics of respondents, their knowledge, and their attitude towards mental disorders, was pre-tested on 20 respondents in a similar community. The outcomes of the pre-testing phase were then used to restructure the questionnaire.

Trained interviewers (five medical students) conducted face-to-face interviews over a period of 5 days in June 2016. On average, each interview lasted 20 minutes and was carried out in the homes of the respondents after having previously obtained written informed consent. All respondents participated voluntarily. Confidentiality was maintained by not using identifiers on the questionnaires.

Data was analysed by Epi Info statistical software version 7 (Centers for Disease Control and Prevention, Atlanta, USA). The chi-square test was used to test for associations between variables. Associations were considered to be statistically significant if the $P$-value was less than 0.05.

The 10 knowledge-based questions (5 of which permitted multiple responses) and the 15 attitude-based statements were scored and used to compute overall scores related to knowledge and attitude. For each respondent, we scored knowledge level using scores ranging from 0 to 32. Each correct answer was awarded 1 mark and each incorrect/don't know answer was awarded a score of 0. Scores in the range of 0–11 (≤33.3%) were categorized as poor knowledge, 12–22 (33.3–66.6%) as fair knowledge, and 23-32 (≥66.6%) as good knowledge.

The attitude of respondents was scored using a five-point Likert scale (options included 'strongly agree', 'agree', 'undecided', 'disagree' and 'strongly disagree'); the most positive option was given a score of 5 and the least positive option was given a score of 1. The maximum score was 75 and using a cut-off of 50%, scores less than 38 were classified as negative attitude and scores between 39 and 75 were classified as positive attitude.

## Results

A total of 242 questionnaires were given to residents; the response rate was 100%.

### *Socio-demographic profile*

The mean age of the respondents was 33.1±11.6 years and the modal age range was 21–30 years (38.4%). The majority of the respondents were male (52.9%), married (52.1%), Yoruba (63.6%) and Christian (76.9%). Most respondents had attained a tertiary level of education (45.9%) and 33.9% of respondents were semi-skilled workers. Only 31.0% of the respondents knew people with mental disorders (Table 1). The majority of the respondents (95.5%) had heard about mental disorders prior to the study. The sources of information relating to mental disorders were neighbours (42.7%), family members (28%), friends (25.3%), colleagues at work (2%), and church members (1.3%).

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**Table 1. Socio-demographic characteristics of respondents and their awareness of people with mental disorders**

| Variables | Proportion (%) |
|---|---|
| Age (years) | |
| Less than 20 | 31 (12.8) |
| 21–30 | 85 (35.1) |
| 31–40 | 70 (28.9) |
| 41–50 | 39 (16.1) |
| 51–60 | 11 (4.6) |
| 61–70 | 4 (1.7) |
| More than 70 | 2 (0.8) |
| Sex | |
| Female | 114 (47.1) |
| Male | 128 (52.9) |
| Marital Status | |
| Single | 112 (48.3) |
| Married | 126 (52.1) |
| Divorced | 2 (0.8) |
| Widowed | 2 (0.8) |
| Ethnicity | |
| Yoruba | 154 (63.6) |
| Igbo | 62 (25.6) |
| Hausa | 10 (4.1) |
| Delta | 3 (1.2) |
| Edo | 10 (4.1) |
| Others | 3 (1.2) |
| Highest level of education | |
| No formal education | 7 (2.9) |
| Primary school | 11 (4.6) |
| Junior secondary school | 18 (7.4) |
| Senior secondary school | 95 (39.3) |
| Tertiary | 111 (45.9) |
| Religion | |
| Christianity | 186 (76.9) |
| Islam | 56 (23.1) |
| Occupation of employed (n=182) | |
| Senior professional | 19 (7.9) |
| Intermediate professional | 32 (13.2) |
| Junior professional | 44 (18.2) |
| Semi-skilled | 82 (33.9) |
| Unskilled | 5 (2.1) |
| Knows anybody with a mental disorder | |
| Yes | 75 (31.0) |
| No | 167 (69.0) |

**Table 2. Knowledge of causes, genetic transmission, when mental disorders begin and those most prone to mental disorders**

| Variables | Proportion (%) |
|---|---|
| Known causes/risk factors of mental disorders[a] | |
| Drug/alcohol misuse | 177 (73.1) |
| Stress | 89 (36.8) |
| Infection | 22 (9.1) |
| Trauma | 53 (21.9) |
| Diseases of the brain | 57 (23.6) |
| Poverty | 29 (12.0) |
| Genetic inheritance | 51 (21.1) |
| Possession by evil spirit | 81 (33.5) |
| God's punishment | 19 (7.9) |
| Witchcraft | 62 (25.6) |
| Intimate partner violence | 23 (9.5) |
| Illness | 1 (0.4) |
| Loneliness | 1 (0.4) |
| Don't know | 11 (4.6) |
| Transmission of mental disorders from one generation to another | 101 (43.7) |
| Yes | 91 (39.4) |
| No | 39 (16.9) |
| Don't know | |
| Beginning of mental disorders | 16 (6.9) |
| Childhood | 64 (27.7) |
| Adolescence | 71 (30.7) |
| Early adulthood | 10 (4.3) |
| Late adulthood | 6 (2.6) |
| | 64 (27.7) |
| More prone to developing mental disorders | 119 (51.5) |
| Adults | 46 (19.9) |
| Adolescents | 6 (2.6) |
| Children | 7 (3.0) |

[a]Multiple responses allowed.

## *Knowledge about mental disorders*

Most of the respondents that had heard of mental disorders identified drug/alcohol misuse (73.1%) as the main cause of mental disorders; this was followed by stress (36.8%) and then possession by an evil spirit (33.5%). A higher proportion of respondents (43.7%) knew that mental disorders can be transmitted from one generation to another. Less than half of the respondents (34.6%) correctly identified either

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**Table 3. Knowledge of symptoms, effects, suicidal tendencies and the treatment of mental disorders**

| Variables | Proportion (%) |
|---|---|
| Known symptoms of mental disorders[a] | |
| Violence | 70 (28.9) |
| Loss of contact with reality | 63 (26.0) |
| Irrational acts | 125 (51.7) |
| Inappropriate behaviour | 159 (65.7) |
| Shamelessness | 46 (19.0) |
| Change in sleeping habit | 35 (14.5) |
| Change in eating habit | 41 (16.9) |
| Loss of interests | 29 (12.0) |
| Guilt | 7 (2.9) |
| Headaches | 22 (9.1) |
| Suicidal thoughts | 42 (17.4) |
| Seeing/hearing strange things | 73 (30.2) |
| Don't know | 13 (5.37) |
| Effects of mental disorders[a] | |
| Impairment of family function | 89 (36.8) |
| Impairment of mental and physical capacity | 125 (51.7) |
| Increased level of poverty | 85 (35.1) |
| Increased tendency to engage in substance abuse | 94 (38.8) |
| Premature death | 81 (33.5) |
| Increased risk of chronic illness | 66 (27.3) |
| Don't know | 38 (15.7) |
| Mental disorders can be treated | |
| Yes | 224 (97.0) |
| No | 2 (0.9) |
| Don't know | 5 (2.1) |
| Persons who should treat mental disorders | |
| Psychiatrist | 174 (75.3) |
| Any medical personnel | 14 (6.1) |
| Religious heads | 12 (5.2) |
| Traditional healers | 15 (6.5) |
| Don't know | 16 (6.9) |
| Treatment methods[a] | |
| Incantations | 11 (4.6) |
| Fasting and prayer | 99 (40.9) |
| Psychotherapy | 106 (43.8) |
| Use of medication | 136 (56.2) |
| Rituals | 20 (8.3) |
| Deliverance | 91 (37.6) |
| Use of herbs | 3 (1.3) |
| Don't know | 17 (7.0) |

[a]Multiple responses allowed.

childhood or adolescence as the period when most mental disorders begin while 51.5% of respondents knew that adults are more prone to developing mental disorders (Table 2).

The majority of respondents identified inappropriate behaviour (65.7%) as a symptom of mental disorders while only 2.9% identified guilt as a symptom. Half of the respondents (51.7%) identified impairment of mental capacity as an effect of mental disorders while 15.7% could not identify any effect relating to mental disorder. Most of the respondents (62.8%) knew that people with mental disorders are at higher risks of committing suicide. Almost all respondents (97.0%) knew that mental disorders could be treated; the majority knew that psychiatrists (75.3%) should carry out treatments, although 5.2% chose religious heads. The most preferred method of treatment for mental disorders was the use of medication (56.2%), followed by psychotherapy (43.8%); only 1.3% of respondents identified the use of herbs as the most preferred treatment option (Table 3).

### *Attitude towards mental disorders*

Almost a third of the respondents (30.3%) disagreed that a mental disorder is like any other disease, 37.2% agreed that anybody can have a mental disorder, 58.0% strongly agreed to advise someone with a mental disorder to visit a psychiatrist, 37.7% agreed that they would advise someone with a mental disorder to visit a religious leader while 24.2% disagreed that they would advise someone with a mental disorder to visit a traditional healer. Almost half of the respondents strongly disagreed with the statement that 'doctors that treat people with mental disorders end up having mental disorders.' Most of the respondents (32.9%) agreed they could be friends with someone that has a mental disorder while 58.4% strongly disagreed that they could marry someone with a mental disorder (Table 4). A higher proportion of the respondents (40.3%) disagreed that they would be ashamed to mention someone in their family that has a mental disorder, 67.1% would not share their house/office with someone that has a mental disorder while 34.6% of respondents agreed that they should not be given any responsibility. Although a large percentage of respondents (75.3%) strongly disagreed that people with mental disorders should be killed or left to die and almost half (49.4%) of respondents agreed that people with mental disorders should be allowed to live a normal life, 34.6% agreed that they should be isolated from the rest of the community while 38.5% agreed that they were violent and should be avoided (Table 4).

### *Overall knowledge and attitude towards mental disorders*

The mean knowledge score was 11.7±6.8 out of a possible score of 32. Half of the respondents (51.2%) had poor knowledge, 43.0% had fair knowledge while very few (5.8%) had good knowledge of mental disorders.

The mean attitude score was 50.8±11.4 out of a possible score of 75. Almost all of the respondents (90.0%) had a positive attitude towards mental disorders while few (10%) had negative attitude towards mental disorders (Table 5).

There was a statistically significant association between knowing a person with a mental disorder and the knowledge level of the respondents as more of the respondents who knew someone with mental disorders had good knowledge (9.3%) and fair knowledge (53.3%) compared to respondents who did not know someone (4.2% and 38.3% respectively).

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**Table 4. Attitude of respondents towards mental disorders (*n*=231)**

| Variable | SA (%) | A (%) | U (%) | D (%) | SD (%) |
|---|---|---|---|---|---|
| A mental disorder is like any other disease. | 27 (11.7) | 55 (23.8) | 13 (5.63) | 70 (30.3) | 66 (28.6) |
| Anybody can have a mental disorder. | 63 (27.3) | 86 (37.2) | 14 (6.1) | 47 (20.4) | 21 (9.1) |
| You would advise anybody with a mental disorder to visit a psychiatrist. | 134 (58.0) | 70 (30.3) | 12 (5.2) | 6 (2.6) | 9 (3.9) |
| You would advise anybody with a mental disorder to visit a traditional healer. | 35 (15.2) | 51 (22.1) | 38 (16.5) | 56 (24.2) | 51 (22.1) |
| You would advise anybody with a mental disorder to visit a pastor/imam | 76 (32.9) | 87 (37.7) | 26 (11.3) | 23 (10.0) | 19 (8.2) |
| Doctors that treat people with mental disorders end up having mental disorders. | 3 (1.3) | 18 (7.8) | 24 (10.4) | 71 (30.7) | 115 (49.8) |
| You could be friends with someone with a mental disorder. | 29 (12.6) | 76 (32.9) | 30 (13.0) | 44 (19.1) | 52 (22.5) |
| You can marry someone with a mental disorder. | 6 (2.6) | 11 (4.8) | 28 (12.1) | 51 (22.1) | 135 (58.4) |
| You would be ashamed to mention someone in your family that has a mental disorder. | 34 (14.7) | 41 (17.8) | 29 (12.6) | 93 (40.3) | 34 (14.7) |
| You would share your office/house with someone that has a mental disorder | 7 (3.0) | 47 (20.4) | 22 (9.5) | 78 (33.8) | 77 (33.3) |
| People with mental disorders should not be given any responsibility. | 39 (16.9) | 80 (34.6) | 14 (6.1) | 61 (26.4) | 37 (16.0) |
| People with mental disorders should be isolated from the rest of the community. | 22 (9.5) | 61 (26.4) | 21 (9.1) | 80 (34.6) | 27 (20.4) |
| People with mental disorders are violent and should be avoided. | 29 (12.6) | 89 (38.5) | 25 (10.8) | 70 (30.3) | 18 (7.8) |
| People with mental disorders should be allowed to live a normal life. | 44 (19.1) | 114 (49.4) | 21 (9.1) | 38 (16.5) | 14 (6.1) |
| People with mental disorders should be killed/left to die. | 6 (2.6) | 6 (2.6) | 5 (2.2) | 40 (17.3) | 174 (75.3) |

SA, A, U, D and SD represent strongly agree, agree, undecided, disagree and strongly disagree, respectively.

**Table 5. Overall knowledge and attitude score of respondents**

| Variables | Proportion (%) |
|---|---|
| Knowledge score | |
| Good | 14 (5.8) |
| Fair | 104 (43.0) |
| Poor | 124 (51.2) |
| Mean±SD | 11.7±6.8 |
| Attitude score | |
| Positive | 208 (90.0) |
| Negative | 23 (10.0) |
| Mean±SD | 50.8±11.4 |

(Table 6). However, there was no statistically significant association between socio-demographic variables and the overall attitude of the respondents.

**Table 6: Association between socio-demographic variables and overall knowledge level**

| Socio-demographic variables | Overall knowledge | | | $\chi^2$ | df | *P*-value |
|---|---|---|---|---|---|---|
| | Poor | Fair | Good | | | |
| | Prop. (%) | Prop. (%) | Prop. (%) | | | |
| **Age group (years)** | | | | | | |
| ≤20 | 15 (48.4) | 14 (45.2) | 2 (6.5) | | | |
| 21–30 | 52 (61.2) | 27 (31.8) | 6 (7.1) | | | |
| 31–40 | 31 (44.3) | 37 (52.9) | 2 (2.9) | | | |
| 41–50 | 18 (46.2) | 18 (46.2) | 3 (7.7) | 15.78 | 12 | 0.202 |
| 51–60 | 4 (36.4) | 6 (54.6) | 1 (9.1) | | | |
| 61–70 | 4 (100.0) | 0 (0.0) | 0 (0.0) | | | |
| >70 | 0 (0.0) | 2 (100.0) | 0 (0.0) | | | |
| **Sex** | | | | | | |
| Male | 59 (46.1) | 62 (48.4) | 7 (5.5) | 3.34 | 2 | 0.189 |
| Female | 65 (57.0) | 42 (36.8) | 7 (6.1) | | | |

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## Table 6 Cont....

| | | | | | | |
|---|---|---|---|---|---|---|
| Marital status | | | | | | |
| Single | 60 (53.6) | 43 (38.4) | 9 (8.0) | | | |
| Married | 61 (48.4) | 60 (47.6) | 5 (4.0) | | | |
| Divorced | 2 (100.0) | 0 (0.0) | 0 (0.0) | | | |
| Widowed | 1 (50.0) | 1 (50.0) | 0 (0.0) | 5.24 | 6 | 0.514 |
| Ethnicity | | | | | | |
| Yoruba | 82 (53.3) | 65 (42.2) | 7 (4.6) | | | |
| Igbo | 27 (43.6) | 29 (46.8) | 6 (9.7) | | | |
| Hausa | 5 (50.0) | 4 (40.0) | 1 (10.0) | | | |
| Delta | 2 (66.7) | 1 (33.3) | 0 (0.0) | | | |
| Edo | 7 (70.0) | 3 (30.0) | 0 (0.0) | | | |
| Others | 1 (33.3) | 2 (66.7) | 0 (0.0) | 3.19 | 4 | 0.527 |
| Highest level of education | | | | | | |
| No formal education | 4 (57.1) | 3 (42.8) | 0 (0.0) | | | |
| Primary school | 2 (18.2) | 9 (81.9) | 0 (0.0) | | | |
| Junior secondary school | 12 (66.7) | 4 (22.2) | 2 (11.1) | | | |
| Senior secondary school | 55 (57.9) | 3 (37.9) | 4 (4.2) | | | |
| Tertiary education | 51 (46.0) | 52 (46.9) | 8 (7.2) | 14.00 | 8 | 0.082 |
| Religion | | | | | | |
| Christianity | 91 (48.9) | 83 (44.6) | 12 (6.5) | | | |
| Islam | 33 (58.9) | 21 (37.5) | 2 (3.6) | 1.97 | 2 | 0.374 |
| Occupation of the employed | | | | | | |
| Senior professional | 6 (31.6) | 12 (63.2) | 1 (5.3) | | | |
| Intermediate professional | 13 (40.6) | 17 (53.1) | 2 (6.3) | | | |
| Junior professional | 23 (52.3) | 20 (45.5) | 1 (2.3) | | | |
| Semi-skilled | 50 (61.0) | 30 (36.6) | 2 (2.4) | | | |
| Unskilled | 4 (80.0) | 1 (20.0) | 0 (0.0) | 9.72 | 8 | 0.286 |
| Knows anybody with a mental disorder | | | | | | |
| Yes | 28 (37.3) | 40 (53.3) | 7 (9.3) | | | |
| No | 96 (57.5) | 64 (38.3) | 7 (4.2) | 9.18 | 2 | 0.010 |

## Discussion

In this study, the commonest causes of mental disorders identified by respondents that had heard of mental disorders were drug/alcohol misuse (73.1%), stress (36.8%) and possession by evil spirits (33.5%). Our data were similar to those arising from a previous study in Pakistan where drug/alcohol misuse (72.9%) and stress (51%) were identified as the predominant causes of mental disorders.[20] Our data were also similar to those arising from a study conducted in Malawi where almost all respondents (95%) attributed causes of mental disorders to drug and alcohol misuse. However, a large number of respondents (82.8%) in this previous study attributed the cause to possession by evil spirits[16]; this finding was very different from our current study. Other studies, also performed in Nigeria, indicated that drug and alcohol misuse were major causes of mental disorders[14,21].

Most of the respondents in this study knew that mental disorders could be transmitted from one generation to another (43.7%), including schizophrenia, bipolar disorder and depression. This finding was similar to a study performed in Zambia, where most respondents knew that mental disorders could be transmitted[22]. Unlike this study, a previous study performed in Kaduna State, Nigeria, showed that most of the respondents (89.2%) did not know that mental disorders can be transmitted genetically[18]. Results from the present study have, therefore, demonstrated that there has been a clear improvement in knowledge relating to the transmission of mental disorders.

In this study, 27.7% and 6.9% of respondents knew that mental disorders usually begin in adolescence or childhood, respectively. This is consistent with a previous study performed in Dang, Nepal, where 27.3% of respondents knew that mental disorders begin in adolescents[23]. The potential danger of not being aware of mental disorders in adolescence and childhood can bring about a delay in seeking medical attention, thereby worsening the prognosis of such disorders. This can also increase the risk of stigmatization by peers and therefore expose such people to a higher risk of committing suicide.

Almost all the respondents in this study (94.6%) could identify at least one symptom associated with mental disorders. This result demonstrates an improvement in knowledge relating to the symptoms of mental disorders compared to studies performed in Southern India and Cameroon where 60% and 51.9% of respondents, respectively, successfully identified causes of mental disorders[24,25]. This proves that more people can identify the manifestations of a mental disorder and seek help, thereby reducing the burden associated with mental disorders in Nigeria.

Our study showed that 62.8% of respondents knew that people with mental disorders are at higher risk of committing suicide. A previous study, carried out in Nepal, also showed similar results with 58.0% of respondents identifying impairment of mental and physical capacity, impairment of family function, or exacerbation of poverty, as effects of mental disorders; moreover, 48.9% of respondents knew that people with mental disorders are at high risk of engaging in substance abuse[23]. In this same study, 69.3% of respondents correctly identified that people with mental disorders are at higher risks of committing suicide[23].

Almost all of the respondents in the present study (97.0%) knew that mental disorders could be treated and the majority of respondents chose psychiatrists (75.3%) as the most appropriate form of initial treatment. A study conducted in Southern India showed that 42% of respondents knew about the treatment of mental disorders[24] while another study conducted in north-east India showed that psychiatrists (57.4%) were the most preferred treatment option for

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mental disorders[26]. Another study, conducted in Nepal, also reported similar results, with 86% of respondents choosing psychiatrists as the most preferred treatment option for mental disorders; 7% chose general practitioners and 1% chose local faith healers[27]. Unlike this study, a study performed in Delta State, Nigeria, in 2009, showed that 87.2% of respondents thought that mental disorders could not be treated[21]. Consequently, our present study demonstrates a clear improvement in knowledge relating to the treatment of mental disorders.

Almost all respondents (93.0%) could identify at least one treatment method. The most commonly identified treatment methods were the use of drugs (56.2%) and psychotherapy (43.8%). These findings are similar to a study performed in Saudi Arabia where 72.9% of respondents identified the use of drugs as the most preferred treatment option[28]. Unlike the present study, those performed previously in southern India, Cameroon and south-western Nigeria showed that respondents had poor knowledge of treatment methods as only 42%, 30.4% and 29%, respectively, could correctly identify methods for treating mental disorders.[24,25,29.] Our present study shows there has been drastic improvement in knowledge relating to the treatment of mental disorders, thus showing that general awareness of this condition has increased markedly. This will further help to reduce the burden and threat that mental disorders pose on individuals and the society at large.

Most respondents (58.9%) disagreed that a mental disorder is like any other disease, although the majority of respondents (64.5%) agreed that anybody can have a mental disorder. These findings are similar to those of a previous study conducted in Malaysia where 78.1% of respondents disagreed that a mental disorder is like any other disease[30]. A study conducted in Hong Kong showed that 79% of respondents agreed that anybody could develop a mental disorder[31]. Another study, carried out in Saudi Arabia, reported that 55% of respondents agreed that anyone could develop a mental disorder[28]; these previous findings differ from the results obtained in this study.

In this study, almost all of the respondents (90%) had a positive attitude towards mental disorders. Similar findings were reported by previous studies carried out in China (70–80%)[32], Pakistan[20], Nepal (urban, 69.3%; rural, 63.5%)[19] and Malawi (91.9%)[16]. However, different findings were reported by previous studies performed in Ethiopia[33], Zambia[22], and several other states of Nigeria[14,18,21,34] in which most of the respondents had negative attitudes.

From a general point of view, many people are now coming to realize that a mental disorder is a medical condition that needs to be treated just like every other physical ailment. Our data showed that this was also reflected in their attitudes as more people had positive attitudes. This means that there has been a reduction in stigmatization. We believe that such stigmatization can be totally eradicated if medical workers provide appropriate educational strategies to improve awareness.

Previous studies have shown that people who have had contact with the mentally ill tend to have more knowledge, as well as a better attitude, towards those with mental disorders[26,32]. This correlates with our current findings as most of the respondents with good knowledge about mental disorders knew someone that had a mental disorder, although this had no correlation with their attitude towards them.

This study had some limitations that need to be considered. Firstly, the questionnaire, although pre-tested and revised to avoid ambiguity and confusion, was not subjected to further validation. Secondly, the sample size was small compared to the that of the community; this may have compromised the generalizability of the results within the study area.

### Conclusion

Our study showed that almost half of our respondents (48.8%) had fair to good knowledge of mental disorders. However, there were some gaps in knowledge, as only a few of our respondents could correctly identify the causes, symptoms, effects and treatment modalities of mental disorders. Most respondents (90.0%) had a positive attitude towards mental disorders as most agreed that mental disorders are like other diseases and that anybody can develop a mental disorder. It is recommended that health workers should educate the community on the causes, symptoms, effects and appropriate treatment options for mental disorders.

## Conflict of interest

None of the authors have any conflicts of interest to declare.

## Authors' contribution

Iyanuoluwa Mojiminiyi and Mobolanle Balogun participated in study conceptualization, methodology, formal analysis and writing of original draft. Babatunde Ogunnowo participated in the methodology and critical review and editing of original draft.

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