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Knowledge of Depression and Self-Reported Capacity to Recognize and Manage DepressionAmong Primary Healthcare Workers in Osun State, Nigeria: A Cross-Sectional Study

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Abstract

Background

Depression is a leading cause of disability worldwide, yet it remains substantially under-recognized and under-treated in primary healthcare settings, particularly in low- and middle-income countries. Primary healthcare workers (PHCWs) are often the first point of contact for individuals with mental health needs, and their knowledge, attitudes, and self-reported capacity are central determinants of the quality-of-care patients with depression receive. This study assessed the knowledge of depression and the self-reported capacity of PHCWs to recognize and manage depression in Osun State, Nigeria, and identified factors associated with this capacity.

Methods

A descriptive cross-sectional study was conducted among 389 PHCWs selected from four local government areas in Osun State using a multi-stage sampling technique. Data were collected with a pre-tested, structured, self-administered questionnaire covering socio-demographic characteristics, knowledge of depression, attitudes (using the Revised Depression Attitude Questionnaire, R-DAQ), and self-reported capacity to recognize and manage depression. Knowledge and attitude scores were dichotomized around the mean as good/poor and positive/negative respectively, while self-reported capacity was categorized into not confident, moderately confident, and highly confident using percentile cut-offs. Associations between categorical variables were tested using the Pearson chi-square test, with statistical significance set at $p < 0.05$.

Results

The mean age of respondents was 35.3 years, and 91.5% were female. Most respondents (91.0%) had heard of depression, and 60.7% demonstrated good overall knowledge of depression; however, only 13.9% were aware of a standardized tool for classifying depression, and 17.5% still attributed depression to witchcraft, charms, or evil spirits. Overall, 55.3% of respondents held a negative attitude towards depression, although professional confidence (71.5% positive) and generalist perspective (63.8% positive) sub-scales were more favourable than therapeutic optimism (51.4% positive). Regarding self-reported capacity, 34.7% of PHCWs were not confident, 33.4% were moderately confident, and 31.9% were highly confident in recognizing and managing depression. Age, gender, marital status, duration of practice, profession, highest level of education, years of mental health training received, and overall attitude were all significantly associated with self-reported capacity ($p < 0.05$).

Conclusion

While a majority of PHCWs in Osun State demonstrated good baseline knowledge of depression, negative attitudes and limited confidence in recognizing and managing depression remain widespread, particularly among younger, less experienced, and less trained cadres. Targeted, competency-based training that integrates knowledge enhancement with attitude change is needed to strengthen the capacity of primary healthcare workers to close the depression treatment gap in Nigeria.

1. INTRODUCTION

Mental health is integral to overall wellbeing, encompassing the ability of individuals to realize their potential, cope with the normal stresses of life, work productively, and contribute meaningfully to their communities.[1] Depression, described by the World Health Organization (WHO) as a common but serious disorder affecting mood, cognition, and daily functioning, arises from a complex interplay of genetic, biochemical, environmental, and psychosocial factors.[2,3] It is now recognized as one of the leading causes of disability worldwide, ranking among the top contributors to the global burden of disease.[4,5]

Despite the availability of effective pharmacological and psychotherapeutic interventions, fewer than 25% of people with depression globally receive adequate treatment, with this figure falling below 10% in some low-resource settings.[6] This treatment gap is especially pronounced in low- and middle-income countries (LMICs), where specialist mental health workforce density is critically low.[7] In Nigeria, a country of over 190 million people, fewer than 300 psychiatrists are available, most of whom practice in urban centres, leaving the burden of first-contact mental healthcare to primary healthcare workers (PHCWs) who frequently have little or no formal mental health training.[8,9]

Global mental health strategy has therefore emphasized task-sharing by integrating mental health care into primary health systems and expanding the role of non-specialist health workers in detection and first-line management of common mental disorders such as depression.[10,11] Primary health care, by virtue of being the first point of contact and operating within communities, is well placed to close this gap, provided its workforce possesses adequate knowledge, favourable attitudes, and confidence in their own capacity to recognize and manage depression.[12,13]

However, existing evidence suggests that these prerequisites are frequently lacking. Studies from Cameroon, India, China, Sudan, and Ethiopia have documented substantial gaps in PHCWs' knowledge of depressive symptomatology, diagnostic tools, and evidence-based treatment, alongside stigmatizing attitudes and low confidence in managing affected patients.[14,19] In Nigeria specifically, up to 15–25% of mental disorders presenting in primary care are estimated to go unrecognized by providers, a gap attributed to inadequate mental health training, high patient loads, and pervasive stigma even among healthcare workers themselves.[20,21] With the lifetime prevalence of major depressive episodes among Nigerian adults estimated at 3.1–9.8%, and rural prevalence exceeding urban rates,[22, 23] the burden falling on an under-prepared primary care workforce is considerable.

Self-reported capacity is the confidence health workers have in their own ability to recognize and manage a condition, it is a key precursor to actual clinical performance and has been linked to knowledge, training exposure, and attitudes in prior research.[24,25] Yet, data on the self-reported capacity of PHCWs to recognize and manage depression in Nigeria, and the factors that shape it, remain limited, particularly outside the major urban centres. This study therefore assessed the knowledge, attitudes, and self-reported capacity of PHCWs in Osun State, South-West Nigeria, regarding depression, and examined the socio-demographic and attitudinal factors associated with self-reported capacity. Findings are intended to inform the design of targeted training interventions to strengthen the integration of mental health care into primary health services in Nigeria.

2. MATERIALS AND METHODS

2.1 Study design and setting

This was a descriptive cross-sectional study conducted among PHCWs in Osun State, South-West Nigeria. Osun State has an estimated population of 4.7 million, is divided into three federal senatorial districts, and is served by three teaching hospitals, six state hospitals, five general hospitals, thirty-two comprehensive health centres, and 610 primary health centres.[26] Primary health care in the state is delivered predominantly by community health officers, community health extension workers, and nurses, with physician oversight concentrated at secondary and tertiary levels.

2.2 Study population and sampling

The study population comprised PHCWs who attend directly to patients in primary health centres across the state. The minimum sample size was calculated using the Cochran formula for cross-sectional studies, with a proportion (p) of 56.2% derived from a prior Nigerian study on correct diagnosis of depression by physicians,[27] a precision of 5%, and a 95% confidence level, yielding a minimum requirement of 378, inflated by 10% for non-response to a target of 416.

A multi-stage sampling technique was employed. In stage one, four local government areas (LGAs): Ede South, Osogbo, Ife East, and Ayedaade were selected using simple random sampling via balloting. In stage two, wards within each LGA were selected, followed by selection of primary health facilities in stage three. In the final stage, respondents were selected from within these facilities, with the number of respondents per LGA allocated proportionate to facility density (Osogbo n = 150, Ede South n = 100, Ife East n = 89, Ayedaade n = 50).

2.3 Data collection instrument

Data were collected using a structured, self-administered questionnaire comprising four sections: (A) socio-demographic characteristics; (B) knowledge of the signs, symptoms, and treatment of depression, adapted from previously validated instruments;[15, 28] (C) attitudes towards depression, assessed using the Revised Depression Attitude Questionnaire (R-DAQ), a validated 21-item, five-point Likert-scale tool

with good internal consistency that yields three sub-scales — professional confidence, therapeutic optimism, and generalist perspective;[29] and (D) a 17-item scale assessing self-reported capacity to recognize and manage depression, adapted from prior validated measures,[24, 30] scored on a 3-point Likert scale (1 = not confident, 2 = moderately confident, 3 = highly confident).

The questionnaire was pre-tested among 10 PHCWs in Olorunda LGA, Osun State, and revised for clarity prior to the main study. Five trained research assistants, fluent in English and Yoruba, administered the questionnaire following a structured three-day training and a refresher session after pre-testing.

2.4 Data analysis

For knowledge items, correct responses were coded 1 and incorrect responses 0; scores above the mean were classified as good knowledge and those below as poor knowledge. For attitude items, responses were re-coded as positive or negative attitude according to the direction of each item, summed, and dichotomized around the mean into positive or negative overall attitude. For self-reported capacity, item scores were summed into a total score, and respondents were categorized into not confident, moderately confident, and highly confident using tertile (33rd and 66th percentile) cut-offs. Data were analysed using IBM SPSS Statistics version 26. Descriptive statistics were summarized as frequencies and percentages, and the Pearson chi-square test was used to assess associations between socio-demographic and attitudinal variables and self-reported capacity, with statistical significance set at $p < 0.05$.

2.5 Ethical considerations

Ethical approval was obtained from the Health Research and Ethics Committee (HREC) of the Osun State Ministry of Health (Ref: OSHREC/PRS/569T/460). Administrative approval was obtained from the Osun State Primary Health Care Board and the medical officers of health of participating LGAs. Written informed consent was obtained from all participants after the purpose, procedures, benefits, and voluntary nature of the study were explained. Confidentiality was maintained by anonymizing all questionnaires.

3. RESULTS

Of 416 questionnaires administered, 389 were completed accurately, giving a response rate of 93.5%.

3.1 Socio-demographic characteristics

The mean age of respondents was 35.3 years, with the largest proportion (27.0%) aged 18–25 years. Female respondents predominated (91.5%), and most were married (71.5%). Community health officers formed the largest professional group (33.7%), and educational attainment ranged from certificate level to master's degree, with a national diploma being most common (23.4%). Nearly half of respondents (45.8%) reported having received no formal mental health training, while 47.8% had received 1–5 years of such training (Table 1).

Table 1
Socio-demographic characteristics of respondents (N = 389)

Variable	Category	n	%
Age (years)	18–25	105	27.0
	26–30	70	18.0
	31–35	33	8.5
	36–40	36	9.3
	41–45	65	16.7
	45–59	80	20.6
Gender	Male	33	8.5
	Female	356	91.5
Marital status	Single	102	26.2
	Married	278	71.5
Duration of practice (years)	1–5	153	39.3
	6–10	62	15.9
	11–15	50	12.9
	16–30	62	15.9
Profession	Community health officer	131	33.7
	Senior CHEW	91	23.4
	Junior CHEW	56	14.4
	Nurse	35	9.0
	Public health practitioner	18	4.6
Highest education	Bachelor's degree	96	24.7
	National diploma	91	23.4
	Higher national diploma	71	18.3
	Certificate	56	14.4
	Master's degree	25	6.4
Mental health training (years)	0	178	45.8
	1–5	186	47.8
	6–10	6	1.5

Variable	Category	n	%
	≥ 11	19	4.9

3.2 knowledge of depression

Most respondents (91.0%) had heard of depression, and 89.7% recognized it as a health problem. A large majority acknowledged its link to suicide risk (87.4%) and the possibility of breakdown at any time (90.2%), and 79.7% correctly identified pharmacotherapy and psychotherapy as appropriate treatments. However, 17.5% still attributed depression to witchcraft, charms, or evil spirits, and only 13.9% were aware of a validated tool for classifying depression. Overall, 60.7% of respondents demonstrated good knowledge of depression, while 39.3% had poor knowledge (Table 2).

Table 2
Knowledge of depression among primary healthcare workers

Item	Correct/Positive response, n (%)
Ever heard of depression	354 (91.0)
Depression is a health problem	349 (89.7)
Depression can lead to suicide/suicide attempts	340 (87.4)
Patients with depression can break down at any time	351 (90.2)
Patients with depression may be dangerous to self/others (perceived)	330 (84.8)
Depression can be treated with pharmacotherapy and psychotherapy	310 (79.7)
Disagreed depression is caused by witchcraft/charms/evil spirit	321 (82.5)
Disagreed traditional remedies work better than orthodox treatment	355 (91.3)
Aware of a tool used to classify depressed patients	54 (13.9)
Overall good knowledge of depression	236 (60.7)

3.3. Attitudes towards depression

Using the R-DAQ, professional confidence was the most favourably rated sub-scale, with 71.5% of respondents expressing positive professional confidence in working with depressed patients. A generalist perspective viewing depression as comparable to other chronic conditions and a core competency for all health professionals was positive among 63.8% of respondents. Therapeutic optimism was more equivocal, with only 51.4% expressing a positive outlook; notably, 30.1–15.9% agreed or strongly agreed that depression is a normal part of adolescence, and 38.8% were unsure

whether depression is a natural part of aging. Overall, 55.3% of respondents held a negative attitude towards depression, while 44.7% held a positive attitude (Table 3).

Table 3
Attitudes towards depression: R-DAQ sub-scales and overall attitude

R-DAQ component	Positive attitude n (%)	Negative attitude n (%)
Professional confidence	278 (71.5)	111 (28.5)
Generalist perspective	248 (63.8)	141 (36.2)
Therapeutic optimism	200 (51.4)	189 (48.6)
Overall attitude	174 (44.7)	215 (55.3)

3.4 self-reported capacity to recognize and manage depression

For recognition of depression, 49.9% of respondents reported not being confident, 20.8% were moderately confident, and 29.3% were highly confident. For management of depression, 46.8% were not confident, 23.9% were moderately confident, and 29.3% were highly confident. Confidence was lowest for providing pharmacological treatment (41.1% not confident) and developing a clinical management plan (35.0% not confident), and comparatively higher for informing and educating patients and families about depression (38.6% highly confident). Overall, combining both domains, 34.7% of PHCWs were not confident, 33.4% were moderately confident, and 31.9% were highly confident in their capacity to recognize and manage depression (Table 4).

Table 4
Self-reported capacity to recognize and manage depression

Domain	Not confident n (%)	Moderately confident n (%)	Highly confident n (%)
Recognition of depression	194 (49.9)	81 (20.8)	114 (29.3)
Management of depression	182 (46.8)	93 (23.9)	114 (29.3)
Overall self-reported capacity	135 (34.7)	130 (33.4)	124 (31.9)

3.5 factors associated with self-reported capacity

On bivariate analysis, overall self-reported capacity was significantly associated with age (χ^2=130.0, $p < 0.0001$), gender (χ^2=11.0, $p = 0.004$), marital status (χ^2=15.4, $p < 0.0001$), duration of practice (χ^2=56.2, $p < 0.0001$), profession (χ^2=135.0, $p < 0.0001$), highest level of education (χ^2=91.2, $p < 0.0001$), and years of mental health training received (χ^2=25.4, $p < 0.0001$). Respondents aged 45 years and above, those with 6–10 years of practice, and those with postgraduate qualifications reported the highest confidence

levels. Overall attitude was also significantly associated with self-reported capacity (χ^2=126.4, p < 0.0001): among respondents with a positive attitude, 55.7% were highly confident, compared with only 12.6% of those with a negative attitude (Table 5).

Table 5
Association between selected characteristics and overall self-reported capacity

Variable	χ^2	p-value
Age	130.041	< 0.0001
Gender	10.970	0.004
Marital status	15.428	< 0.0001
Duration of practice	56.160	< 0.0001
Profession	134.958	< 0.0001
Highest level of education	91.211	< 0.0001
Years of mental health training received	25.440	< 0.0001
Overall attitude towards depression	126.389	< 0.0001

4. DISCUSSION

This study found that, although a majority of PHCWs in Osun State demonstrated good general knowledge of depression, substantial gaps persist in specific clinical competencies, attitudes remain predominantly negative, and self-reported confidence in recognizing and managing depression is limited for roughly one in three respondents.

The proportion of respondents with good overall knowledge (60.7%) was considerably higher than reported among healthcare workers in Thailand,[31] but comparable to findings from Tunisia.[11] Awareness of depression itself was high (91.0%), consistent with prior Nigerian and Cameroonian data, yet awareness of a standardized diagnostic or classification tool remained very low (13.9%), mirroring the 1.8% reported in Cameroon.[15] Broad conceptual awareness of depression alongside minimal familiarity with structured diagnostic instruments suggests that PHCWs recognize depression as a general health concern without possessing the specific clinical tools needed for systematic screening, a gap that likely contributes to under-detection in routine primary care encounters.[20,21] aattribution of depression to witchcraft or evil spirits by 17.5% of respondents, while a minority view, underscores the continued influence of supernatural causal models on some healthcare workers' understanding, consistent with broader patterns of belief documented across Nigerian communities.[32,33]

The finding that a majority of respondents (55.3%) held negative attitudes towards depression, despite good general knowledge, echoes a broader trajectory in the literature in which knowledge and attitude do

not necessarily move in tandem.[16,34] Notably, professional confidence was the most favourably endorsed R-DAQ sub-scale (71.5% positive), while therapeutic optimism was the weakest (51.4% positive) a result also observed among physicians in Sudan and rural providers in China, where confidence in one's professional role coexisted with pessimism about treatment outcomes and ambivalence about the nature of depression itself.[17,18] This divergence reflect that confidence in one's professional standing does not automatically translate into optimism about clinical outcomes, particularly where training in evidence-based management is limited.

Self-reported capacity findings similarly point to a workforce with variable and often limited confidence: only 29.3% were highly confident in both recognizing and managing depression, notably lower than confidence levels reported among palliative care nurses in a comparator study.[24] Confidence was particularly low for pharmacological management (23.4% highly confident) and clinical plan development, both of which require structured training rather than general awareness, reinforcing calls for skills-based rather than purely didactic training approaches.[35,36]

The significant association between self-reported capacity and age, with older respondents reporting greater confidence, is consistent with prior work suggesting that accumulated clinical experience and emotional resilience with age enhance perceived competence in managing complex presentations such as depression.[37] Similarly, the association with duration of practice and years of mental health training aligns with evidence from rural India showing that structured mental health training measurably improves health worker confidence and practical competence.[38]

Importantly, overall attitude was strongly associated with self-reported capacity, with PHCWs holding positive attitudes towards depression more than four times as likely to report high confidence compared with those holding negative attitudes. This finding, consistent with a Thai study of perinatal depression detection,[31] suggests that interventions aiming to strengthen PHCWs' capacity to recognize and manage depression should not focus on knowledge transfer alone but should explicitly address stigma and attitudinal barriers, which appear to shape confidence independently of technical knowledge.

4.1 Strengths and limitations

This study benefits from a relatively large, multi-facility sample selected through a systematic multi-stage sampling approach, and the use of a validated attitude instrument (R-DAQ). However, findings are based on self-reported data collected via a self-administered questionnaire, which is be subject to social desirability bias, particularly for attitude and confidence items. The cross-sectional design precludes causal inference regarding the direction of association between attitude and self-reported capacity. Additionally, self-reported capacity is a proxy for, rather than a direct measure of, actual clinical performance, and future studies should consider triangulating self-report with observed clinical practice or standardized patient assessments.

5. CONCLUSION AND RECOMMENDATIONS

Primary healthcare workers in Osun State demonstrated generally good baseline knowledge of depression, but this was not matched by favourable attitudes or high self-reported confidence in recognizing and managing the condition, particularly among younger, less experienced, and less trained cadres. Given the central role of primary health care in closing Nigeria's substantial mental health treatment gap, these findings support several actionable recommendations: (i) development and implementation of comprehensive, competency-based training programmes that combine knowledge transfer with structured, skills-based practice in screening, diagnosis, and pharmacological and non-pharmacological management of depression; (ii) integration of validated screening tools, such as the Patient Health Questionnaire, into routine primary care workflows, accompanied by training in their use; (iii) targeted interventions to reduce stigma and improve therapeutic optimism among PHCWs, alongside knowledge-focused training; (iv) regular continuing education to sustain and update competencies over time; and (v) strengthened multidisciplinary collaboration between primary healthcare workers and specialist mental health services to support referral pathways and mentorship. Future research should evaluate the effectiveness of such interventions using pre–post and controlled study designs, and should explore observed clinical performance alongside self-reported capacity.

Declarations

Ethics approval and consent to participate:

Ethical approval was obtained from the Health Research and Ethics Committee of the Osun State Ministry of Health (Ref: OSHREC/PRS/569T/460). Written informed consent was obtained from all participants prior to enrolment. All methods were carried out in accordance with the relevant ethical guidelines and regulations, including the principles of the Declaration of Helsinki.

Consent for publication:

Not applicable.

Competing interests:

The authors declare that they have no competing interests.

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Author Contribution

AR conceived and designed the study, collected and analysed the data, and drafted the manuscriptOP supervised the study design and data analysis and critically reviewed the manuscript. Both authors read and approved the final manuscript.

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Data Availability

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

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