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RESEARCH ARTICLE

Assessment of the Adequacy of Manpower, Equipment and Material Resources for the Provision of Primary Mental Health Services in PHC Facilities in Rivers State, Nigeria

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Abstract

Background: To maintain the good mental health of a population, the primary healthcare delivery system must be enhanced to provide mental healthcare services (MHS). This study was thus aimed at assessing the adequacy of manpower, equipment, and material resources for providing mental healthcare services in primary healthcare (PHC) facilities in Rivers State, Nigeria. **Methods**: This study employed a descriptive cross-sectional design and was conducted in 123 Model Primary Health Care (MPHC) facilities in Rivers State, Nigeria. The heads of facilities provided responses on the availability of manpower, equipment, and material resources necessary for the provision of MHS. Data were collected using an adapted manpower, equipment, and materials checklist, after which evaluation was performed using laid-down PHC standards to determine the adequacy of the assessed resources. **Results**: Regarding the manpower working at the health facilities, it was identified that 56 (45.5%) facilities had no doctors and 38 (30.9%) had no nurses, one community health officer (CHO) in 31 (25.2%), among other workers. The various cadres of workers in the PHC facilities were also identified as grossly inadequate. An assessment of equipment and material adequacy, using a 50% cutoff to classify availability as "adequate" or "inadequate", showed that most facilities (64, 52.0%) experienced inadequacies in these equipment and materials. **Conclusion**: The manpower, equipment, and material resources required for the provision of MHS in PHC facilities in Rivers State was found to be inadequate and inequitably distributed. It was thus recommended that the relevant healthcare stakeholders in the State should work to strengthen the capacity of PHC facilities to provide quality MHS to the Rivers populace, thereby improving health outcomes.

Keywords: mental health, material resources, Rivers State, Nigeria

Abbreviations

CHO	Community Health Officer
JCHEW	Junior Community Health Extension Worker
LGA	Local Government Area
MHS	Mental Health Services
MH	Mental Health
MPHC	Model Primary Health Care
NMH	National Mental Health
PHC	Primary Health Care
RSPHCMB	Rivers State Primary Health Care Management Board
RSHMB	Rivers State Hospital Management Board
RSHREC	Rivers State Health Research Ethics Committee

1 Introduction

There can be no health without mental health (MH) as the two are interwoven, and a healthy mental wellbeing is capable of enhancing one's physical health outcomes [1]. Mental

health is a basic human right crucial for achieving personal, community and socioeconomic development [2]. MH is crucial for the overall well-being of an individual, as it influences how a person thinks, feels, and behaves on a daily basis [3]. It affects a person's ability to cope with stress, build and sustain relationships, and achieve life goals [3]. Health has been stated to be an index of economic development, and MHS alongside skilled manpower are crucial in the healthcare delivery system [1]. However, disparities in health systems have been reported to affect the delivery of mental health services with respect to structure, quality, timeliness, and financing of care [4]. Investing in mental healthcare initiatives is however able to tackle these healthcare inequalities, and contribute to community development by fostering happier and more productive individuals [2].

Neglecting MH can lead to various challenges, including mood disorders, anxiety, and decreased productivity [1, 3]. Evidence also indicates that these services are largely absent, uncoordinated or disorganized in a good number of PHC centres in communities in developing countries. A similar situation is existent in Nigeria, where young persons and adults, suffer from various mental health problems and cannot access timely care as a result of poor coordination of these services [1]. A policy on National Mental Health (NMH) was designed in the early 90's to ensure that comprehensive MHS were delivered through the PHC system to both easy and hard to reach areas [5, 6]. The implementation of this policy however faced challenges related to insufficient skilled healthcare personnel, poor awareness among healthcare workers, and the low priority of mental health services on the policy agenda in the country [5, 6].

In Rivers State, The Rivers State Ministry of Health in its Strategic Health Development Plan for 2010-2015 outlined mental health services as one of the PHC-driven services [7]. However, evidence shows that these services are mainly provided at the Neuropsychiatric Hospital in Port Harcourt, Rivers State [8], which makes access to these specialized services difficult for rural and hard-to-reach areas in the State [5,6]. The implementation of the policy as well as its impact has also not been established in the State especially at the PHC level of healthcare service delivery [5, 6]. In addition, no study has assessed the availability of mental health services in PHC facilities. Considering that MH problems are existent in the State [6, 9, 10], and that there is a need to provide comprehensive MHS at the PHC level in line with the NMH policy [5, 6], there was the need to assess the status of these services. This study thus aimed at assessing the adequacy of resources necessary for the provision of these services in terms of manpower, equipment and materials.

2 Materials and methods

This study used a descriptive cross-sectional design to assess the adequacy of manpower, equipment and material resources for providing MHS, in PHC facilities located in Rivers State, Nigeria. It was conducted at 123 Model and Comprehensive PHC facilities located in the 23 Local Government Areas (LGAs) of Rivers State, Nigeria.

Primary healthcare facilities are categorized into three types based on the services provided, and the resources available, in terms of manpower, infrastructure, medical equipment, essential drugs among others. Type 1 (health post) provides health education and promotion, outreaches, immunization services, identification and referral of pregnant women to higher facilities, amongst others. The health post is headed by a Junior Community Health Extension Worker (JCHEW). Type 2, is a primary health clinic that is headed by a midwife or a Nurse Midwife and provides more services including health education and promotion, maternal and newborn care, family planning services, immunization, prevention of mother-to-child transmission of HIV, treatment of minor illnesses, to mention but a few. Type 3 which is the MPHC, is headed by a medical officer and has more manpower (nurses, nurse midwives, community health officers, community health extension workers, JCHEWs, pharmacy technicians, records officers, support staff, etc.), renders more services including all services rendered in Type 1 and 2 PHC facilities, primary eye care services, curative treatments, deliveries, oral health, management of chronic conditions, referral services, amongst others. The MPHC is better equipped to provide these services effectively and efficiently [11]. Facility heads provided information on available resources for mental health service provision.

The instrument for collection of data was an adapted checklist, with expert input from mental health clinicians, public health physicians and stakeholders in the Rivers State Primary Health Care Management Board (RSPHCMB). This checklist was used to obtain the number of healthcare personnel providing services at the facilities. This data were then assessed and compared with the national minimum standard requirements for manpower at PHC facilities [11]. This was used to determine if the number of personnel was adequate or not. Equipment and

materials required for the provision of MHS services were also assessed for availability using a 17-item checklist. A 50% cut-off was then used to categorize the level of availability into "adequate" and "inadequate". This is a standard cut-off adopted by the Primary Health Care Management Board of Rivers State for this research, to improve primary healthcare delivery in Rivers State, Nigeria. It is also a benchmark that will be maintained for other phases of the study, as this was a baseline assessment. The performance % score was obtained by dividing the number of facilities that scored 50% and above (for each of the 17-item necessary equipment and materials checklist), by the total number of assessed facilities.

2.1 MHS scope for PHC

The mental health Gap Action Programme-Intervention Guide (mhGAP-IG), developed by WHO, is designed for use in non-specialized healthcare settings, targeting healthcare providers at first- and second-level facilities. These include general physicians, family physicians, nurses, and clinical officers in health centers or district-level hospitals. It can also be adapted for other non-specialist providers. First-level facilities are health centers offering outpatient care, staffed by general practitioners, dentists, nurses, pharmacists, and midwives. [12].

2.2 Ethics

Ethical Approval was obtained for this study from the Health Research Ethics Committee of the Rivers State Hospital Management Board (Approval number: RSHMB/RSHREC/2024/031). The research team obtained permission to conduct the evaluation from the Executive Secretary and Director, Health Planning, Research and Statistics of the RSPHCMBas well as the Medical-Officers-of-Health of the selected PHC facilities. Informed consent was obtained from all respondent before conducting the surveys. In addition, the data collection tools were anonymised to ensure protection of the privacy of respondents and confidentiality of their responses. Data were also collected electronically and securely stored on the secure servers of the KoboToolbox open-source mobile data collection platform. Data were cleaned, collated and analyzed using Microsoft Excel, expressed as frequencies/percentages and means $\pm$ SD, and presented in tables and charts.

3 Results

In total, 123 PHC facilities were assessed for the adequacy of manpower, equipment and materials that were available for the providing mental health services (MHS). In these facilities, the facility heads provided responses regarding the assessment, and it was found that they were mostly females 95 (77.2%), aged 40–49 years (70, 56.9%; mean age: 43.3$\pm$7.6 years), and earned more than 3000 Naira daily (50, 40.7%). In addition, most of the respondents were married 108 (87.8%) and had received tertiary education 122 (99.2%). There were three non-responses for income data. (see Table 1).

Table 1 Sociodemographic details of respondents

Variables	Frequency (n=123)	Percentage (%)
Sex		
Male	28	22.8
Female	95	77.2
Age category (years)		
18-29	6	4.9
30-39	26	21.1
40-49	70	56.9
50-59	21	17.1
Income (n = 120)		
$<$ 500	1	0.8
500-1000	13	10.6
1001-2000	24	19.5
2001-3000	32	26.0
$>$ 3000	50	40.7
Marital status		
Single	12	9.8
Married	108	87.8
Divorced	3	2.4
Level of education received		
Secondary	1	0.8
Tertiary	122	99.2

3.1 Manpower available for the provision of MHS

Regarding the manpower working at the primary health care facilities, it was found that 56 (45.5%) facilities had no doctors and 38 (30.9%) had no nurses, 31 (25.2%) had one community health officer (CHO), one pharmacy technician 73 (59.3%), one laboratory technician 54 (43.9%) and one records officer 51 (41.5%) working in them. Furthermore, 54 (43.9%) and 32 (26.0%) of the facilities had one doctor and one nurse respectively working in them. It was identified that together with the primary healthcare facilities having no doctor or nurse working in them, 28 (22.8%), 25 (20.3%), 14 (11.4%), and 18 (14.6%) of the facilities did not have any CHO, pharmacy technician, laboratory technician, nor records officer respectively, working in them. (see Figure 1).

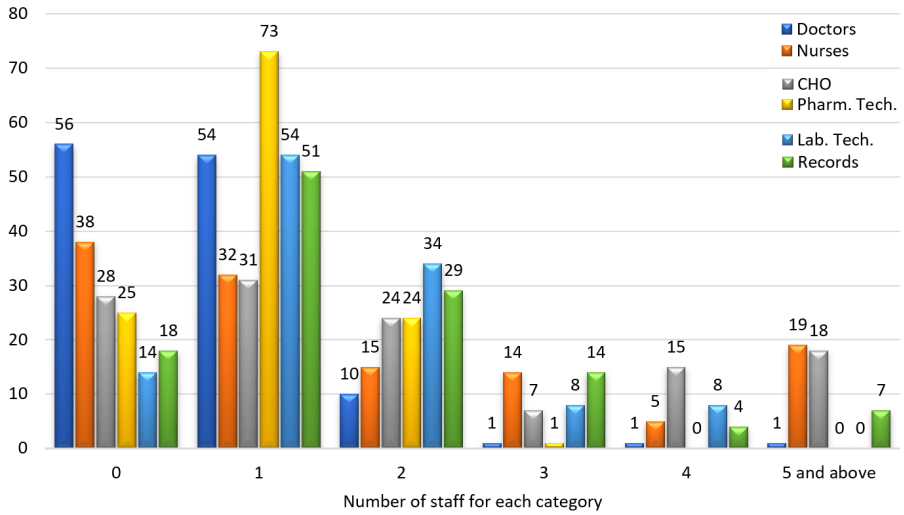

Figure 1 Distribution of the PHC workers in the various PHC facilities

The adequacy of all cadres of workers, assessed against national minimum standards requirements for manpower at PHC facilities, revealed inadequacies across all cadres; 56 (46%) facilities lacked adequate doctors and 99 (80%) lacked adequate nurses having the highest proportions of inadequacies. (see Figure 2).

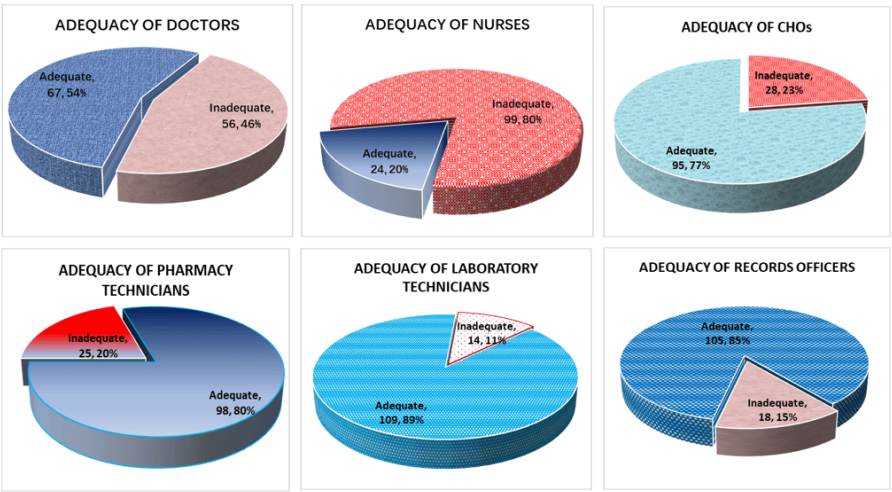

Figure 2 Adequacy of healthcare personnel for mental health service provision

3.2 Equipment and materials assessment for providing MHS

Assessment of the 17-item necessary equipment and materials available for the provision of MHS revealed that only 69 (56.1%) had wards or rooms dedicated to mental health services. In addition, 56 (45.5%) had medications for mental health care, and only 26 (21.1%) of the facilities had adequate beds for providing MHS as shown in Table 2.

Table 2 List of PHC facilities having required equipment and materials for the provision of MHS

s/n	Which of the following do you have in this facility?	No. of facilities (n = 123)	%
1.	Water supply	111	90.2
2.	Functional cellular phone	105	85.4
3.	Functional electricity supply	104	84.6
4.	Toilet facilities	104	84.6
5.	Adequate waiting area for clients and family members	104	84.6
6.	Clean working environment	98	79.7
7.	Clean and refreshing environment of wards/rooms	82	66.6
8.	Wards/rooms that can be dedicated for providing mental health services	69	56.1
9.	Internet	66	53.7
10.	Availability of drugs for mental health care services	56	45.5
11.	Adequate number of beds (12 beds and above: 6 male; 6 female)	26	21.1
12.	Adequate funding to be able to integrate/introduce mental health services	21	17.1
13.	Computer	13	10.6
14.	Medical instruments and facilities for mental health care	12	9.8
15.	Ambulance	6	4.9
16.	External functional ambulance or emergency transport	3	2.4
17.	In-service training on mental health in the last one year	2	1.6

An assessment of the adequacy of these 17-item equipment and materials required for the provision of these services at the PHC facilities using a 50% cut-off for categorization of availability into "adequate" and "inadequate" showed that 64 (52.0%) facilities had inadequate resources. (See Figure 3).

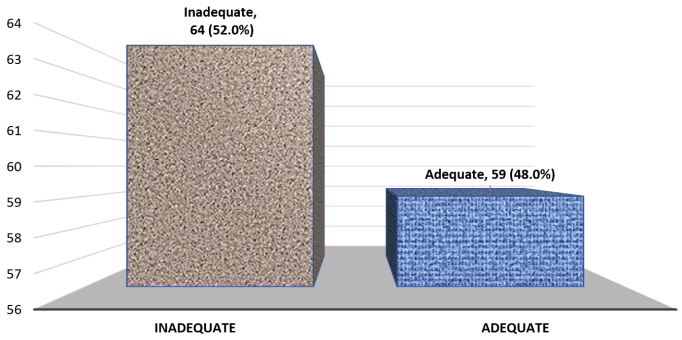

Figure 3 Adequacy of materials to provide MHS in Rivers State

Also, 34 (59.6%) facilities in Rivers East Senatorial District had the highest inadequacy levels when compared with the proportion of adequacy, while facilities within the Rivers South senatorial district had the highest levels of adequacy 25 (56.8%). (See Figure 4).

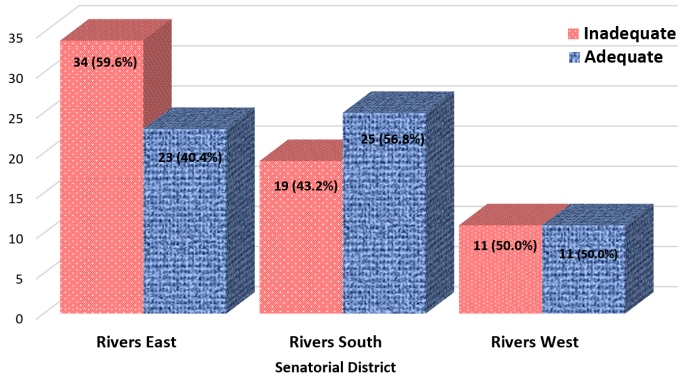

Figure 4 Level of adequacy of MHS materials categorized by senatorial districts

Tables 3 and 4 present the 20 lowest-performing and 20 best-performing facilities with respect to adequacy of equipment and materials to provide these services. Table 3 shows that the PHC facilities that had the least performing scores were MPHC Akpabu, Abuloma, Sama, Abalama, Egbeda and Bunu with 17.65%. MPHC Woji and CHC Rumuji had a performance score of 35.29%, and MPHC Ubimini, CHC Bolo, MPHC Ula-Upata, MPHC Okuru, Amadi-Ama PHC

had a performance score of 29.41% and MPHC Ozuaha, MPHC Eneka, amongst others had a score of 23.53%.

Table 3 20 least performing facilities (having highest levels of inadequacies of MHS equipment and materials)

s/n	Performance score (%)	Name of Facility	LGA
1	17.65	MPHC Akpabu	Emohua
2	17.65	MPHC Abuloma	Port-Harcourt
3	17.65	Sama MPHC	Asari-Toru
4	17.65	Abalama MPHC	Asari-Toru
5	17.65	MPHC Egbeda	Emohua
6	17.65	MPHC Bunu	Tai
7	23.53	MPHC Okwale	Khana
8	23.53	MPHC Botem	Tai
9	23.53	MPHC Korokoro	Tai
10	23.53	MPHC Nonwa	Tai
11	23.53	MPHC Orogbum	Port-Harcourt
12	23.53	MPHC Eneka	Obio-Akpor
13	23.53	MPHC Ozuaha	Obio-Akpor
14	29.41	Amadi Ama PHC	Port-Harcourt
15	29.41	Okuru MPHC	Port-Harcourt
16	29.41	MPHC Ula -Upata	Ahoada East
17	29.41	CHC Bolo	Ogu Bolo
18	29.41	MPHC Ubimini	Emohua
19	35.29	CHC Rumuji	Emohua
20	35.29	MPHC Woji	Obio-Akpor

Table 4 shows twenty PHC facilities that had the best performing scores. While MPHC Elekahia had the best score of 76.47%, MPHC Opobo had the least best performing score of 58.82%.

Table 4 20 best performing facilities (having highest levels of adequacy of MHS equipment and materials

s/n	Performance (%)	Name of Facility	LGA
1	58.82	MPHC Opobo	Opobo/Nkoro
2	58.82	MPHC Akinima	Ahoada-West
3	58.82	MPHC Umuagbai	Oyigbo
4	58.82	MPHC Obonoma	Asari-Toru
5	58.82	MPHC Omagwa	Ikwerre
6	58.82	MPHC Finima Bonny	Bonny
7	64.71	MPHC Ihugbogo	Ahoada-East
8	64.71	CHC Oyigbo	Oyigbo
9	64.71	MPHC Ahoada	Ahoada-East
10	64.71	MPHC Taabaa	Khana
11	64.71	MPHC Obuama	Degema
12	64.71	MPHC Nkoro	Opobo/Nkoro
13	64.71	MPHC Rumueprikom	Obio-Akpor
14	64.71	MPHC Oduoha	Emohua
15	64.71	MPHC Churchill	Port-Harcourt
16	70.59	MPHC Ikodi-Engenni	Ahoada-West
17	70.59	MPHC Ndele	Emohua
18	70.59	MPHC Nweol	Gokana
19	70.59	MPHC Mgbundukwu	Port Harcourt
20	76.47	MPHC Elekahia	Port Harcourt

4 Discussion

This study assessed the adequacy of key resources for primary mental health service delivery in PHC facilities in Rivers State were assessed. It was identified that most facilities lacked sufficient healthcare workers to provide primary MHS, with doctors and nurses showing the highest levels of inadequacy according to the national minimum standard requirements for manpower at PHC facilities [11]. It was more disheartening to identify that some of these primary healthcare facilities completely lacked either doctors, nurses, community health officer, among other staff, who are pertinent healthcare manpower needed to provide care at the

primary healthcare level of care [11]. These results portray the gross inadequacy in the required workforce necessary for the provision of MHS in all the LGAs of Rivers State. These findings of shortages in the PHC manpower capacity to provide MHS has also been reported in other studies [13, 14].

This severe shortage of primary healthcare workers for mental health services has major implications, particularly in low-resource settings [5]. This finding corroborates findings by Peterson and colleagues in their study carried out in South Africa [15]. This also corroborates findings in other low-resource settings [16]. Without sufficient trained personnel, early detection and treatment of mental health disorders, such as depression, anxiety, and psychosis, are significantly impaired, leading to worsening outcomes and increased morbidity [1, 5, 17]. This lack of accessible care in-turn forces individuals to seek help in over-burdened tertiary facilities [6], or turn to unregulated and often harmful alternatives [18], or seek mental healthcare as a last resort, which all exacerbate the burden on higher-level health systems. This gap widens health inequities, disproportionately affecting rural and marginalized populations with limited access to specialized care [5, 6, 14]. Moreover, untreated MH conditions can lead to a cascade of societal challenges, including reduced workforce productivity, increased suicide rates, and the breakdown of family structures [18]. Strengthening PHCs with adequate numbers of trained healthcare workers in mental health not only improves individual well-being but also alleviates systemic pressures and promotes societal resilience among members of a populace [1, 14]. Just as has been recommended by other authors, there is the need to change the focus of psychiatric care from a hospital-based care only to incorporating a multidisciplinary community-based care involving mental healthcare professionals working in tandem with community and religious elders to improve the provision of these services to the general populace [5]. There is also need for task shifting to a new cadre of less skilled but dedicated mental health workers at the community and PHC clinic tiers to provide evidence-based packages of care [15, 16].

An assessment of the adequacy of equipment and materials required for the provision of these services at the PHC facilities showed that most facilities experienced inadequacies in these resources required for effective mental health service delivery. Healthcare facilities located in various LGAs in Rivers State including Ahoada East, Tai, Emohua, Khana, Asari-Toru, Ogu-Bolo, as well as Port-Harcourt were among those in which there was gross inadequacy of these resources. These inadequacies have also been reported in other studies and are known to adversely affect the effective and appropriate provision of mental healthcare services [4, 6]. This inadequacy of equipment and material resources for the provision of MHS in PHC facilities poses significant healthcare challenges in affected areas. The availability of essential diagnostic tools, therapeutic materials, and medications is critical for the effective assessment and management of mental health conditions. Without these, early detection and intervention are compromised, leading to delayed treatment and a progression of mental health disorders, often to severe and disabling stages of MH problems [6].

The lack of tools such as depression/anxiety screening instruments, psychotherapy manuals and psychotropic medications limits the capacity of healthcare workers to deliver evidence-based care especially at the PHC level, which provides community-based care [5, 19]. Furthermore, the lack of privacy and appropriate spaces for counseling and therapy in under-equipped facilities can discourage patient engagement and trust, perpetuating stigma and the subsequent neglect of MH needs [18]. It should be noted that this shortfall in other resources not only undermines patient outcomes but also burdens higher-level healthcare facilities [5, 20], considering that individuals bypass PHCs for higher levels of healthcare which are usually more equipped [8]. Addressing these material deficiencies and strengthening the healthcare delivery systems is thus vital in ensuring equitable and effective MHS delivery at the community level. This fosters early intervention and reduces the broader social and economic costs of untreated mental illness [4, 5, 7].

5 Conclusion

This study identified that most of the comprehensive and MPHC facilities located in Rivers State, Nigeria lacked the required number of healthcare workers, as well as experienced shortages in equipment and material resources needed for the effective provision of primary MHS, resulting in delayed access and worsened morbidities. The provision of these resources was identified to be inequitably distributed within the State considering that MPHC facilities located in some LGAs of the State, were more severely affected than others. Recommendations thus included:

(1) The urgent need for interventions to be put in place by the relevant government ministries and agencies, in order to close the identified inequality gap in MHS delivery in the State.

Ways to achieve this include integrating mental health services into the PHC healthcare delivery system in Rivers State, as well as the immediate equitable distribution of resources (infrastructure, manpower, equipment, medications and so on) needed to effectively provide these services at the primary healthcare level.

(2) The quality of MHS provided in Rivers State can also be strengthened through the provision of in-service training to PHC workers of various cadres, including medical officers, nurses, CHOs, Community Health Extension Workers, JCHEWs, among others, in order to boost their capacity for the provision of quality MHS.

(3) It is important to note that with the prevailing shortages in health care manpower to adequately provide MHS, PHC workers can be trained to manage less severe and time-limited mental health disorders. Alternatively, psychiatrists can be incentivized to rotate into the PHC facilities to attend to those requiring specialist care.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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