

## Integrating Mental Health into Primary Care Using a Population Based Approach: Six Years Outcome of Aro Primary Care Mental Health Programme for Ogun State, Nigeria

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### Abstract

**Introduction:** Integration of mental health services into Primary Health Care (PHC) is a proven way of reducing the treatment gap in developing countries. A major constraint to scaling up mental health services in developing countries is scarcity of mental health professionals. A practical solution is to adopt task shifting and task sharing strategies involving Primary Health Care Workers (PHW). One of the major challenges of such integrative services is their long term outcomes and sustainability. The Neuropsychiatric Hospital Aro, Abeokuta, Nigeria embarked on mental health services provision across primary health care facilities in Ogun state six (6) years ago.

**Objective:** This report describes the development, challenges of the programme and presents a post-implementation evaluation after 6 years of its commencement.

**Methods:** Applying a population based expansion of pilot- tested integration model of Aro Primary Care Mental Health Programme (APCMHP) for Ogun State, 80 PHC workers were trained using an adapted mental health Gap Action Programme (mhGAP) intervention guide to assess and treat/refer 5 priority conditions: Psychosis, Depression, Epilepsy, Alcohol and Substance abuse and Other Significant Emotional Complaints (OSEC). There was mental health service provision in 40 designated PHC centers across Ogun state. There was support and supervision of the trained health workers by field supervisors, supplementary training and re-training for skill sustenance, periodic stakeholders meeting with Local Government Service Commission, zonal consultants' review, financial and other resources commitment by the hospital, monthly programme evaluation and monitoring by the faculty members. We reviewed caseload of patients managed by trained PHC Workers since commencement of the programme in November 2011 till October 2017 (6 years period) using descriptive statistics. Appropriate ethical approval was obtained.

**Results:** During the six-year period (November 2011-October 2017), 2194 cases (average of 366 new cases yearly) were identified and treated by Trained Health Workers (THWs). About 90% of cases were Psychosis and Epilepsy. There was a steady attrition of THWs and at the end of the sixth year only 29% of the THWs remained within the programme. Treatment outcomes were fair as over 50% of patients had  $\geq 3$  follow-up visits, symptom remission of  $\geq 30\%$  and a subjective improvement in Global Ratings.

**Conclusion:** Our project has demonstrated that it is feasible, practicable and cost effective with community acceptance to scale up mental health services at primary care setting in Nigeria using adapted mhGAP-IG document. The need to understand the dynamics and econometrics of sustainable primary mental health services is indicated.

**Keywords:** Integration, Mental health, Primary care, Population based, Ogun State, Nigeria, mhGAP - Ig

### Introduction

The task of meeting the needs of the population for mental health

services in developing countries is daunting. This is particularly so in many parts of Africa. The World Health Organization (WHO) estimates that there are 0.04 psychiatrists per 100,000 in the African region compared with 9.81 per 100,000 in Europe [1, 2]. This figure is similarly dismal for other professionals within the mental health care system. In tandem with this profile, 2014 WHO estimates of mental

healthcare manpower for Nigeria, the most populous country in Africa reveals figures of 0.10/100,000 for psychiatrists, 0.70/100,000 for psychiatric nurses and 0.02/100,000 for psychologists [3]. Coupled with this, access to healthcare (including mental health) is concentrated in urban areas leaving out the crucial segment (over 60%) of the population who are rural dwellers [4]. In addition, over 45% of the population lives below poverty line and payment for health care services is largely out-of-pocket [3].

The World Mental Health Surveys of the WHO indicates that the treatment gap for severe mental disorders in Low and Middle Income Countries (LMIC) could be as large as 75% [5, 6]. Current research estimates by the WHO indicates that about 20 million Nigerians have suffered from mental health problems in their lifetime with only few (less than 2%) having received any form of effective treatment in the previous 12 months [7]. Even though Nigeria adopted mental health as the 9th element of Primary Health Care (PHC) in 1989, there appears to be no meaningful implementation of any mental health policy in Nigeria, leaving sufferers at the mercy of poor or non-existent services [8]. It is instructive to note that in concert with the laid-back posture of mental health policy implementation as well as poor funding, there exists no pragmatic legislative framework in the country to potentiate access to mental health care at the community or primary care level [9]. The existing lunacy laws of Nigeria are archaic and fraught with many limitations including overarching custodial outlook with no clear recognition of treatment within the community as an option. In addition, attempts at its revision have suffered numerous setbacks over the years [10].

The WHO has recommended that LMICs should embrace primary care as a means of delivering mental health services to their populace [11]. The rationale for the integration of mental health into primary care is mainly based on improved access to care, stigma reduction, improved social integration and human resource development in the area of mental health [12, 13]. A major limitation of this strategy has been the lack of skilled manpower to manage mental health problems in primary care settings within developing countries like Nigeria [13]. Some authors have argued the primary healthcare is already overburdened with physical illnesses and conditions (such as malaria, HIV, childhood and maternal care) with mental health not indicating sufficient priority for addition to the care load [14, 15]. However this argument is untenable for two main reasons. First, some patients with undiagnosed mental health problems are already attending primary care centers with complaints that are routinely seen as 'physical' thereby increasing the workload without appreciable improvement [12]. It's rational to reason that this load would obviously be decreased in the long term if mental disorders – frequently manifesting with somatic symptoms are properly diagnosed and treated rather than ignored. Secondly, it suffices to note that mental health ought to be key priority in any society on account of its critical impact on psychosocial functioning and economic development (16). Nigeria estimates for minor mental disorders in primary care indicate a prevalence rate of 21.3%. Interestingly, roughly 13.8% of such disorders are identified by primary care workers leaving an undetected huge balance [17]. Clearly, as in many countries of the world with similar developmental challenges, innovative and integrative approaches to mental healthcare delivery should be prioritized [8].

Against this backdrop, the Neuropsychiatric Hospital, Aro, Abeokuta, Ogun State, Nigeria developed a primary care level mental health

service model within Ogun State, Nigeria which could potentially serve as a model for the country as a whole. Nigeria has a population of about 180 million across a total of 36 states and the Federal Capital Territory. Of this population, Ogun State, in the South West, accounts for almost 4 million [18]. The interventions described in this service model were targeted at this population.

This report describes the development and state-wide delivery of a mental health Gap Action Programme (mhGAP) intervention package for five priority conditions at Primary Health Care (PHC) centers in Ogun State. It presents its post-implementation evaluation after six years of its existence. Previous reports on integration of mental health into primary health care from Nigeria had focused on manpower training, contextualization of intervention approaches, strategy recommendations and preliminary data on limited pilot testing [19-22]. This report, is the first to demonstrate a population based expansion of a pilot-tested integration model with impact data showing improvement in access as well as significant treatment outcomes.

### Methods

Ogun state is located in South-western Nigeria with a land mass of 16,409.26 km<sup>2</sup> and an estimated population of over 4 million [18]. The state comprises of 20 local government areas, grouped into four zones: Egba, Yewa, Remo and Ijebu. In 2009, the Neuropsychiatric Hospital, Aro, Abeokuta (the only tertiary psychiatric facility in the state) embarked on a programme designed to integrate mental health services into primary care. There are more than 300 PHC facilities in Ogun State, with primary care manpower ranging from 4 to 20 at each facility [23]. The primary health care system within the state is fairly compatible to what obtains in most states of the Nigerian federation. Consequently, the model developed within the setting could be generalized to other parts of the country.

### Programme Conceptualization

The conceptualization of the programme involved the formation of an integration/implementation committee which consisted of the project coordinator, and several faculty members (psychiatrists, field nurse supervisors, psychologists, pharmacists, administrative secretaries and drivers); a survey of the selected PHC structure in Ogun state, resources and service delivery mechanisms within the state as well as stakeholders meetings with representatives of the State Ministry of Health, Local Government Service Commission, Primary Care Development Agency, PHC coordinators, head nurses in the 20 Local Government Areas, community leaders, traditional rulers (Obas and Baales) and leaders of Health Groups. Furthermore, the Neuropsychiatric Hospital, Aro (the coordinating center) sought and obtained partnership with the University of Manchester/Lancashire Care NHS Foundation Trust UK under the British Council's Health-Links scheme. This involved extensive consultations with experts in primary care psychiatry at the University of Manchester.

Pilot Programme: Based on the strategic planning meetings, a pilot phase of the programme was launched in February 2010 at two health centers in a selected Local Government Council in the state. Two specially trained and experienced psychiatric nurses were deployed to each of the health centers. Their main functions included utilizing the WHO's mental health Gap Action Programme (mhGAP) intervention Guide to provide care for identified patients with mental health problems and providing public mental health enlightenment to various community groups within the council

area. In order to provide oversight for the service being deployed, consultant psychiatrist level consultations were held with referred patients every fortnight. The pilot scheme lasted for eighteen months and the findings were published in a journal of psychiatry [23].

**Training of Selected Health Workers:** Following the successful implementation of the pilot scheme and a palpable community acceptance of the programme, an expansion phase was commenced. This began with the training of PHC workers. Four PHC workers were selected for mental health training from each of the 20 Local Government Areas making a total of 80 PHC workers (Nurses, Community Health Officers and Community Health Extension Workers). The selection was based on the health workers' interest in the delivery of mental health services in their practice. The training materials were based on the WHO's mental health Gap Action Programme (mhGAP) intervention Guide, which was adapted to suit local circumstances [12]. The scope of the training was to assess and treat five priority psychiatric disorders including Psychosis, Depression, Epilepsy, Alcohol & Substance Abuse and Other Significant Emotional Complaints (OSEC). A 3-day training course was developed to equip the 80 PHC workers with the knowledge and skills to diagnose, treat and refer patients with the selected disorders. The training was delivered by faculty members from the Neuropsychiatric Hospital Aro and Lancashire Care Trust using didactic and participatory methods including lectures, video demonstrations, role plays, exercises and discussions. Four, 2-day sessions were carried out in locations within the four socio-political zones of the state with 20 PHC workers in each zone, following a one-day plenary introductory lecture on classification, causes and treatment approaches in mental disorders at the Psychiatric Hospital. The Training was conducted between September and October 2011. Written support materials, including assessment flow charts, case records, follow-up and referral sheets were developed for the primary care workers to guide their practice and keep records. The training impact was evaluated by measuring participants' attitude to mental illness and competence to diagnose (using case vignettes) both before and after the training. Findings from the training evaluation indicated that the training was quite effective and these have been published elsewhere [23]. Following the training, the Trained Health Workers (THWs) were deployed by the Ogun State Local Government Service Commission to all the forty designated PHC centers for the programme.

**Support and Supervision of Trained Health Workers:** The support and supervision framework developed for the programme was multidimensional. The PHC workers were directly supervised and supported by eight zonal supervisors who were psychiatric nurses

seconded for the purpose from the Neuropsychiatric Hospital, Aro. They conducted fortnightly field visits to each PHC centers during which they completed supervisors' records documenting their evaluation of the Trained Health Workers' activities. In addition, a referral system was set up in which monthly consultant clinics are run in each zone.

**Medication Supply:** Medication supply was achieved through a drug-revolving fund (DRF) centrally managed by the pharmacy department of the Hospital. To optimize accountability and transparency, the DRF was supervised by a sub-committee of the implementation committee. In view of the need for affordability, certain steps were taken to contain costs and ensure medication quality. Firstly, an essential drug list was derived from the mhGAP-IG. This comprised mainly relatively inexpensive drugs which were nonetheless known to be effective. Secondly, drugs were directly sourced from reputable suppliers thereby reducing the economic impact of middle-men. Third, field medication requests were made through supervisors. This effectively disallowed medication purchases from diffuse sources which would have hampered cost containment measures and prevented adequate monitoring of drug quality.

**Evaluation and Treatment Outcome Measures:** The records of patients seen and activities of the PHC workers were systematically stored using Microsoft Access. This evaluation was conducted after 72 months (i.e. Six years from November 2011 – October 2017). The evaluation measures included case load analysis, Trained Health Workers attrition, and treatment outcome measures such as follow up visits, level of symptom remission, subjective global rating of improvement, treatment continuation and number of referrals using descriptive statistics.

## Results

The expansion phase of the programme commenced in all forty centers across the four zones of the state in November 2011.

### a. Case load analysis

In the six-year period (November 2011 – October 2017) under review, 2194 cases were identified and treated by the Trained Health Workers (THWs). The annual average of new cases was 366. The first and the sixth year recorded the highest and the lowest number of cases respectively (473, 291). The diagnostic breakdown were: Psychosis, 1004 (45.76%); Depression, 183 (8.34%); Epilepsy, 954 (43.48%), Substance Use Disorder (SUD), 22 (1.00%) and Other Significant Emotional Complaints (OSEC), 31 (1.41%).

**Case load analysis (N = 2194)**

YEAR	Psychosis (n)	Depression (n)	Epilepsy (n)	S.U.D (n)	OSEC (n)	TOTAL (n)
1	217	48	181	12	15	473 (21.6%)
2	156	41	179	7	4	387 (17.6%)
3	177	33	182	0	9	401 (18.3%)
4	154	21	132	2	2	311 (14.2%)
5	152	25	154	0	0	331 (15.0%)
6	148	15	126	1	1	291 (13.3%)
	<b>1004 (45.8%)</b>	<b>183 (8.3%)</b>	<b>954 (43.5%)</b>	<b>22 (1.0%)</b>	<b>31 (1.4%)</b>	<b>2194 (100%)</b>

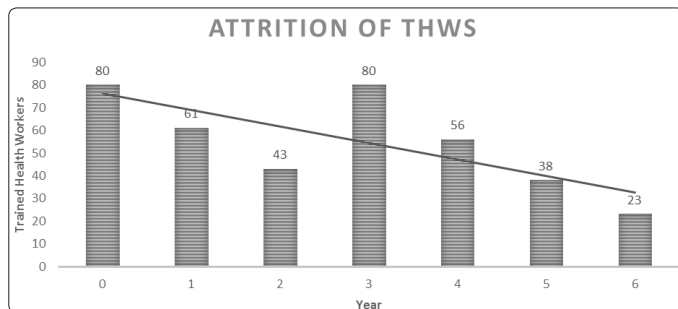
\*S.U.D. (Substance Use Disorder)

\* OSEC (Other Significant Emotional Complaints)

### b. Attrition of Trained Health Workers

Eighty THWs were trained and commenced the expansion phase of the programme. At the end of the first year, 61 THWs (75%) remained. By the end of the second year, the number had declined further to 43 THWs (54%). During the third year, a 2-day supplementary training of 37 qualified nurses and community health extension workers (CHEWs) was carried out. This was done to replace those THWs who had exited from the programme. Hence at the beginning of the fourth year, the number of THWs had risen again to 80.

However, the attrition continued and by the end of the 6th year, only 23 THWs (29%) remained. Some of the designated health centers no longer had THWs. Supervision and support involved regular visits by the field supervisors and this was fairly consistent throughout the evaluation period.



### c. Treatment Outcomes

In terms of treatment outcome, records were available for two thousand one hundred and fourteen patients (2114) representing 96.4%. Six variables were examined, namely: case load at evaluation, follow up visits, global rating of subjective improvement, number continuing in treatment as at the point of evaluation, number of referrals and mortality. One thousand two hundred and twenty seven (1227, 55.9%) of the patients had attended 3 or more follow up visits. One thousand, one hundred and forty nine (1149, 52.3%) of them had symptom remission of 30% or more in rating. Global rating of subjective improvement was done by using a visual analogue scale ranging from 1 to 10, for which 10 is the highest level of improvement. This rating showed that 47.9% of them reported improvement as measured by a change of  $\geq 2$  points on the scale. Over 57.6% of the patients were continuing with care 1 year after contact with mental health care services. Only 57 (2.6%) of cases were referred for consultant's review across all zones. The mortality rate was 0.27% during the six years under review.

#### Treatment Outcome Measures

YEAR	Case Load at Evaluation; n	Follow up Visit ( $\geq 3$ ); n	Global Rating ( $\geq 2$ PTS); n	Symptom Remission ( $\geq 30\%$ ); n	Treatment Continuation; n	Referrals; n
1	473	257	201	250	300	20
2	387	189	164	175	189	10
3	401	236	212	210	233	13
4	311	164	152	157	177	8
5	331	229	200	207	221	12
6	291	152	123	150	145	4
Total	2194	1227 (55.9%)	1052 (47.9%)	1149 (52.3%)	1265 (57.7%)	67 (3.1%)

## Discussion

### a. Improved access to mental healthcare

The Aro Primary Care Mental Health Programme (APCMHP) in attempting to give expression to the national mental health policy has recorded significant progress in the first six years of its implementation. The programme has succeeded in providing access to affordable mental healthcare for over two thousand patients within the community who might otherwise not have sought effective orthodox treatment for their mental disorders. These mental disorders were principally psychosis and epilepsy. Smaller proportion of cases was attributable to depression, 'Other Significant Emotional Complaints' (OSEC) and Substance Use Disorders (SUD). Interestingly, this pattern seems apposite to what obtains in general practice settings in Western societies where depression, anxiety and substance use disorders are more predominant (24, 25). It also contrasts with the findings of Gureje et al in a Nigerian pilot Project in which depression was the most prevalent disorder (46.9%) diagnosed by the health workers (22). First, the reported differences in the APCMHP may be driven by population variations and ascertainment procedures. Secondly, it is not impossible that cultural factors played a part in the pattern observed with carers being more eager to present the 'odd' and 'dramatic' disorders than those mainly regarded as being 'feeling'-related. The high rate of psychosis and epilepsy cases may reflect the perceived need of the communities. On the other hand, the confidence and competence of the THWs in handling such difficult cases could have fuelled their more frequent presentation.

It was probable that some of the scarcely diagnosed disorders were 'somatically disguised' at presentation and sufferers sought help for physical complaints rather than psychological distress. A previous study had shown that 25% to 50% of the THWs reported difficulties in diagnosing depression and OSEC using western diagnostic classification (26). Hence depression remains a major hidden morbidity [27, 28]. Contributing to this challenge was the reality that not all PHC workers in the designated health centers were trained or involved in the programme such that non-obvious mental disorders would not be assessed when they presented to such practitioners. This calls for routine enlightenment programmes for PHC workers who are not involved in the integration scheme. It is also beneficial to improve the quality of the mental health curriculum incorporated into the educational training of general nurses, Community Health Officers (CHOs) and Community Health Extension Workers (CHEWs) who form the bulk of caregivers at the primary level of care [17, 29]. The optimization of the involvement of CHOs and CHEWs reflect a practical confrontation with the reality of human resource constraints and is intended in the spirit of task-shifting which is an important consideration in integration approaches [30].

### b. Manpower Administration

The administration of manpower within the programme was achieved through an active collaboration between the coordinating center and the Ogun State Local Government Service Commission. While the coordinating center had direct control over the nurse supervisors, the Local Government Service Commission maintained its administrative oversight over the trained health workers with necessary input and suggestions from the coordinating center to ensure the sustainability of manpower on the programme.

It is significant to note that 75% of trained health workers remained within the programme after one year. However, the steady attrition

of THWs continued throughout the years, and at the end of the 6th year, only 23 (i.e. 20% of total THWs) remained in the programme. Several factors may explain the attrition of THWs. First the increased job turnover among PHC staff, largely due to resignation and retirement from the service of the local government. Secondly, the frequent reposting and transfers of THWs from mental health service centers to non-service centers. And thirdly, the gradual decline of interest in the management of mental illness among the THWs [31].

The attrition of THWs while significant did not markedly disrupt the service delivery. However, plans are being made by the coordinating center and the Local Government Service Commission to train all primary health care workers in the state. This measure will guarantee that trained healthcare workers are retained in the programme. In addition to pre-service training, scheduled regular in-service training will reinforce and update the knowledge, practice and attitude of the health workers to mental health issues. This perhaps underscores the importance placed by the Alma-Ata declaration on inter-sectorial collaboration for the achievement of health targets [32]. Supervisors also need to be trained and retrained so that they have a good understanding of their supervisory role and skills.

### c. Treatment Outcome Measures

With regard to treatment outcome, over 50% of the patients enrolled into the programme maintained their follow-up visits and demonstrated symptom remission of 30% or more. A similarly high proportion continued their treatment within the programme. These figures were comparable to those of Gureje et al who reported follow-up continuation of 53.1% [22]. Importantly, our measures were mainly quantitative objective outcome variables. When a subjective measure was considered (i.e. 'global rating' of 2 points or more), a more modest proportion of 5 in 10 patients showed significant improvement over multiple visits. There were referrals for specialist attention (i.e. supervising psychiatrists) in only 3.1% of cases. This was lower than the rate obtained by Gureje et al, which stood at about 14.6% (14/96) [22]. Our lower referral rate could have been on account of the fact that the primary care workers received some level of diagnostic and treatment support from the supervising mental health nurses, an interface which was peculiar to Aro primary care mental health programme. Taken together, these figures suggested that treatment delivery within the programme was effective both by subjective and objective measures with little input from experts.

### d. Challenges and Threats

This six years evaluation of a model of integration of mental health into primary care in Nigeria contributes to the evidence in support of integrative models of mental healthcare which clearly improve accessibility and affordability for the populace. Such models are effective, efficient and fairly equitable [33]. Some identified challenges and threats to the programme were: high rate of attrition of THWs due to administrative and political reasons; maintenance of skills for recognition and intervention for cases over time; securing continued commitments of the trained THWs; continued presence of socio-cultural barriers to service utilization; frequent industrial actions of health workers; conflicts between the Local Government Service Commission and Primary Care Development Board on the 'ownership' of the programme; maintenance of project vehicles and equipment that are becoming old; and frequent changes in the leadership of the Local Government authorities.

### e. Sustainability of the Programme

In spite of these constraints and manpower shortages, the sustainability of the programme during the years could be attributed to the following factors; strong and continuous institutional commitment to the programme; continuous supply of subsidized and affordable medications; increased support from the field nurse supervisors; regular engagement of the stakeholders (PHC directors, apex nurses, community leaders, religious and traditional leaders); supplementary training of additional staff to correct attrition; constructive negotiation to remove institutional barriers that arose between the Local Government and overlapping jurisdictions; monitoring, record keeping and evaluation of the programme; and continued funding for logistic support by the coordinating center (Neuropsychiatric Hospital, Aro) for support/supervision, transportation, medication supply, telecommunication, and training of PHC workers.

### Conclusion

Our project has demonstrated that it is feasible, practicable, cost effective with community acceptance to scale up mental health services at primary care setting in Nigeria using adapted mhGAP-IG document. The future success of the programme will depend on the continuous commitment of all stakeholders and successful partnerships with local, state, federal and international bodies. In addition, there is a need to correct the attrition of THWs through regular training and retraining of PHC workers. It is important to emphasize strategies to increase the recognition and treatment of depression at the primary care level, which remains a major hidden morbidity. It will also be critical to create opportunities for obtaining feedback from the service users as to their concerns and level of satisfaction with the service delivered. The need to understand the dynamics and econometrics of sustainable primary mental health services is indicated.

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