Towards Implementation of Context-specific Integrated District Mental Health Care Plans: A Situation Analysis of Mental Health Services in Five Districts in Ghana

Benedict Weobong (✉ bweobong@ug.edu.gh)

Department of Social and Behavioural Sciences, College of Health Sciences, University of Ghana, Accra, Ghana

Kenneth A. Ae-Ngibise

Ghana Somubi Dwumadie (Ghana Participation Programme), PMB 6, 6 Asoyi Crescent, East Legon, Accra Ghana

Lionel Sakyi

Ghana Somubi Dwumadie (Ghana Participation Programme), PMB 6, 6 Asoyi Crescent, East Legon, Accra Ghana

Crick Lund

Centre for Global Mental Health, Health Service and Population Research Department, Institute of Psychiatry, Psychology and Neuroscience, King's Global Health Institute, King's College London

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Abstract

Background: Access to quality mental health services in Ghana remains poor, yet little is known about the extent of integrated mental health service provision in districts in Ghana. The purpose of the study was to conduct a situation analysis of integrated mental health service provision in five districts, to inform the development and implementation of tailored district mental healthcare plans in Ghana.

Methods: A cross-sectional situation analysis was conducted using a standardised tool to collect secondary routine healthcare data supplemented with interviews with key informants across five purposively selected districts in Ghana. The PRIME (Programme for Improving Mental health care) situation analysis tool was adapted to the Ghanaian context and used for data collection.

Results: The districts are predominantly rural; more than eight out of ten people in each selected districts live in rural areas. Mental Neurological and Substance use (MNS) conditions were not routinely reported in the top 10 causes of OPD attendance. Across all districts there are severe challenges with the provision of mental health care, primarily because of the slow enforcement of the mental health Act 2012 (Act 846). There are no mental health care plans, supervision of the few mental health professionals is weak and unstructured, access to regular supply of psychotropic medications is a major challenge, and psychological treatments are extremely limited given the lack of trained clinical psychologists. Data on treatment coverage was unavailable but we estimate this to be <0.5% for depression, schizophrenia, and epilepsy across districts. Nonetheless, opportunities for mental health systems strengthening were noted. These included commitment and willingness of leadership, the existence of a district health information management system, well-established network of community volunteers and some collaboration with traditional and faith-based mental health service providers.

Conclusion: The baseline data from this situation analysis confirms the widely reported poor mental health infrastructure across Ghana and other Low and Middle-Income Countries. There are opportunities for strengthening mental health systems through interventions at the organisation/policy level, health facility, and community levels. A standardised situation analysis tool is useful to inform district level mental health care planning in low resource settings in Ghana and potentially other sub-Saharan African countries.

Introduction

The World Health Organisation (WHO) recognises that people with mental health conditions and disabilities have the right to equitable access to high quality treatment and support(1). This is because mental health conditions are major contributors to the increasing burden of disease worldwide; they are the seventh leading cause of disability, contributing 4.9% of total Disability Adjusted Life Years (DALYs)(2). Three-quarters of this burden is spread among low and middle-income countries (LMICs)(3). In these settings, most people with mental health conditions go untreated. This is largely due to access challenges, and in Ghana, this has led to a treatment gap of between 95-98%(4). Poor access to mental health services can be addressed and there is evidence of effective innovations to improve access through integrated care models such as the WHO Mental Health Gap Action Programme (mhGAP)(5) and the Programme for Improving Mental health care (PRIME)(6). These innovations have been largely successful, but there is still a need to understand how to effectively scale up mental health services through integrating mental health in primary health care (PHC)(7).

Cohen's work highlights how previous attempts to integrate mental health care into PHC in LMICs have been fraught with challenges faced on the ground, particularly with respect to implementation and sustainability(8). PRIME has demonstrated ways to tackle these challenges and the enormous impact such interventions have on patient outcomes (9-12). The PRIME studies individually and collectively highlighted the need for research to enhance our understanding of the primary healthcare system and opportunities for integrating mental health and disability services before implementation and scale up of services can commence. Ghana Somubi Dwumadie (Ghana Participation Programme) is a UK Aid-funded four-year programme (2020-2024) designed to help contribute the needed research evidence for the scale up of high quality and accessible mental health services in Ghana(13). The Programme adopts a systematic approach that includes the conduct of baseline situation analysis. A similar situation analysis was conducted previously in Ghana but the analysis did not include the broader community and health service context(14).

Situation analysis is a useful approach to documenting a clear, detailed and realistic picture of the opportunities, resources, challenges and barriers, particularly when planning the integration of mental health into primary care. A situation analysis method and related instrument was developed as part of PRIME in five LMICs (Ethiopia, India, Nepal, South Africa and Uganda)(15). However, little is known about how a standardised situation analysis can be conducted across diverse districts in Ghana, and how this might inform the scale-up of mental health services in Ghana. The lessons from this process are transferable and can inform other African countries who may wish to conduct situation analyses to scale up mental health services.

The primary objective of this situation analysis was to inform the development of district mental healthcare plans based on the unique characteristics of district demonstration sites in Ghana, as part of the Ghana Somubi Dwumadie. This paper presents an analysis of mental health infrastructure and services in five districts in Ghana in order to understand the primary healthcare system and opportunities for integrating mental health and disability services.

Methods

Design: The study was a cross-sectional situation analysis that drew on secondary routine healthcare data supplemented with interviews with key informants.

Setting: The study was conducted in five districts selected by key mental health stakeholders in Ghana as potential demonstration sites for the implementation of mental health care plans as part of the Ghana Somubi Dwumadie. These districts are Anloga in the Volta Region; Ahanta West in the Western Region; Asunafo North in the Ahafo Region; Tolon in Northern Region; and Bongo in the Upper East Region (Figure 1). There are 16 administrative regions in Ghana, and these are subdivided into 216 districts to ensure equitable resource allocation and efficient, effective administration at the local level.

The selection of the demonstration districts was guided by a set of criteria outlined in Ghana Somubi Dwumadie’s framework for implementing district mental healthcare plans, ratified in 2020 in a high-level stakeholder engagement meeting in Accra, Ghana. Thirty-three (33) participants attended the meeting, made up of Regional Health Directors, leadership of Ghana Health Service Mental Health Department, Department of Social Welfare, Mental Health Authority, Christian Health Association of Ghana, Ministry of Health, Ghana Education Service School Health Programme, and Ministry of Gender, Children and Social Protection. The criteria for district selection were finalised and approved at a meeting with key stakeholders from the Mental Health Authority of Ghana and the Ghana Health Service and were drawn from lessons from PRIME. The criteria included: Geo-political equity (each of the five districts with health facilities should spread across the three zones of Ghana: Southern, Middle Belt, and Savannah); representativeness (i.e. the districts should not be over-resourced, but also not under-resourced, particularly in relation to human resources so that lessons could be generalised to inform scale up in other districts); an appropriate level of prevailing mental health activity (i.e. there should be no existing sites for mental health research or previous/ or on-going district mental health plans or national academic centres for mental health should exist as this would create an unrealistic environment which is not representative of other districts; and willingness of district leadership to engage.

Participants: Target respondents across the districts included: district health directors, health administrators, health information officers, public health nurses and district mental health focal persons.

Ethical approval for the study was obtained from the Ghana Health Service Ethics Review Committee (GHS-ERC025/08/20) and King’s College London Research Ethics Committee (LRS-20/21-20866).

Measures: The PRIME situation analysis tool(15) was adapted to the Ghanaian context and used for data collection. This is a semi-structured tool used to collect key data on the context, challenges and opportunities in providing mental health services. The adaptations were fairly minimal and involved adapting key variables to the Ghanaian service delivery context, including the Community Health Planning Services (CHPS) compounds as a type of health facility in Ghana. Details of the tool are provided elsewhere in the main report by Hanlon and colleagues referred to above, but in summary the tool comprises six sections with 156 items. The sections include: Relevant context; Mental health politics, policies and plans; Mental health treatment coverage; District level health services; Community; and Monitoring and evaluation. These sections are completed using primary data from respondent interviews or secondary data from government reports or research publications. The situation analysis tool was completed by an experienced local researcher (LR) familiar with the local context. Training on the tool and its administration was conducted by an author of the PRIME situation analysis tool who is also an investigator in this study (CL). Data were recorded directly on the relevant sections of the tool, checked for accuracy, and thereafter entered on an excel sheet for data management and analysis.

The challenges posed by Covid-19 were mitigated by ensuring strict observance of Covid-19 containment protocols (handwashing, use of face masks, maintaining a safe physical distance) for all in-person interviews.

Data analysis: Narrative data from personal communication were analysed thematically, and quantitative data were reported as numbers, frequencies or proportions, and disaggregated where such data was available. The analysis also included comparing the findings between districts. The comparison was useful in identifying opportunities and constraints in integrating mental health services into PHC in the districts. Following completion of analysis, a one-day online report validation workshop was convened with representatives from all five districts, including district health directors, health administrators, health information officers, public health nurses and district mental health focal persons to review and ascertain the accuracy of the findings in the report.

Results

Situation analysis conduct

A variety of sources contributed data for the situation analysis and the compilation of this report. These include: annual health reports of each district covering 2019 and 2020; mental health service delivery statistics reported in the District Health Information Management System (DHIMS) for 2020; medium-term development plans of the districts; the 2010 Population and Housing Census (Ghana has a more recent 2020 census but this was not available at the time of data collection for this study); and District Analytical Reports. These were supplemented with personal communication with the target respondents. Data collection took place between November 2020 and March 2021, and all target respondents in each district provided data for the study.

District contexts

Sociodemographic and economic context

Table 1 presents information on residence, literacy, fertility, household size, religion, and utilities in the five districts. Overall, the districts are predominantly rural with more than eight out of ten people living in the rural areas of the districts. Literacy levels varied across the districts; relatively high (more than two-thirds of the population) and similar in three districts (Tolon, Asunafo North, and Anloga), and low in the other two districts (Range: 32.2% to 50.6%). Fertility rate is similar across the districts (average: 3.7; range: 3.2-4) though the district with the lowest fertility rate (Tolon) also has the highest average household size of 9. Christianity is the dominant religion across the districts, except Tolon and Bongo districts that have predominantly Muslim and Traditional religious faiths respectively. We observe a diverse range of infrastructure in terms of access to electricity (range of access: 11.5% to 93.1%) and sanitation (latrines and clean water; range of access: 10.5% to 57%) across districts, though the two districts in the middle (Asunafo) and southern (Ahanta West) belt of Ghana have relatively better indicators with more than two-thirds of households connected to the national electricity grid.

Table 1: Selected socio-demographic characteristics by situation analysis district

Indicator	Tolon	Bongo	Ahanta West	Asunafo North	Anloga*
District population (2020 projection)	92,072	105,206	141,344	157,732	99,996
% rural	88.4%	99.9%	70.5%	60.0%	46.7%
Women in fertility age (WIFA)	21,645 (46.5%)	25,249 (24.0%)	35,302 (25.0%)	38,980 (24.7%)	24,004 (23.0%)
Fertility rate	3.2	4.0	3.9	3.9	3.8
Sex ratio (female: male)	100:99	100:90	100:92	100:102	100:87
Average household size	9	5.5	4	4.6	3.8
Ethnic diversity	1 major (98.2%)	2 major (94.3%)	1 major	1 major (79.0%)	1 major (98.7%)
Religious diversity					
Christianity	3.7%	28.3%	78.6%	77.8%	59.9%
Islam	94.1%	6.4%	3.2%	14.9%	1%
Traditional	1.5%	53.6%	1.6%	0.7%	25.4%
No religion	0.5%	11.7%	15.9%	5.9%	12.9%
Literacy (% who can read and write English and Ghanaian language only)	73.8%	33.2%	50.6%	70.8%	75.1%
% of households with electricity	32.9%	11.5%	70.9%	93.1%	41.8%
% of households with a functioning latrine	10.5%	20%	20.3%	38.6%	57.0%
% of households with clean water supply	49.0%	70%	60.1%	72.7%	79.6%

* Except population projection and WIFA all other information is based on that of Keta Municipal since Anloga District was created in 2019 from Keta and there is limited information on the district.

Health profile

The provision of general primary health care (PHC) services is overseen by the District Health Management Team (DHMT), headed by a Health Director in each district. PHC services are delivered at the district level through district hospitals; sub-district level through health centres; and community level through Community Health Planning and Services (CHPS) compounds. Each sub-district is served by at least one health centre, with the exception of Tolon (where only four out of the six sub-districts have a health centre), and all districts have CHPS compounds. All districts have functional district hospitals (except Anloga), and only Bongo and Ahanta West districts have medical officers at post in these hospitals. As shown in Table 2, the districts have a wide range of health professionals, including health promotion officers, nurses, midwives, physician assistants, and medical officers. The numbers are below the recommended Sustainable Development Goals index value of 4.45 skilled health workers per 1000 population, or the global average of approximately 6.2 health workers per 1000 population(16).

An examination of the top five causes of outpatient department (OPD) attendance shows that the top two causes of OPD attendance in Tolon, Bongo and Ahanta West districts were similar. Malaria accounted for the most (range across districts: 32% to 56%) OPD attendance in all the districts. Mental Neurological and Substance use (MNS) conditions did not feature in the top ten causes of OPD attendance in any of the districts.

Table 2: Distribution of health facilities, human resources, and common diseases by situation analysis district

Indicator	Tolon	Bongo	Ahanta West	Asunafo North	Anloga
Number and type of health facilities					
Hospital	1 (just commissioned not functional)	1	1	4 (1 Govt1; 1 CHAG; 2 Private)	0
Clinic/community clinic with a medical officer	2 (1 private; 1 UDS)	0	2	0	0
Health centres	4 Govt	7 (6 Govt, 1 CHAG)	5 Govt	11 (1 CHAG, 7 Govt and 3 Private)	6 Govt
CHPS with compounds	14	22	36	11	4
Outreach points	120	69	110	78	Not provided
Others	0	62	0	0	0
Hard to reach areas for health service delivery	Yes (36 communities)	Yes (3 communities)	None	Yes (13 communities)	None
Human resources for health (general health workers)					
Medical officers	0	2	5	8	0
Public health nurse	1	1	1	2	0
Midwives	20	46	50	91	13
Community Health Nurse	40	111	98	67	27
Staff/enrolled nurses (degree, diploma & certificate)	135	253	128	134	54
Physician Assistants (medical)	2	11	6	8	3
Physician Assistants (anaesthetics)	0	3	0	0	0
Health information officers	2	4	3	6	1
Disease control officers (TO/FT)	5	8	3	10	3
Nutrition officers	5	5	1		1
Health promotion officers	2	2	2	0	1
Accountant	2	2	2	2	1
Ophthalmic nurse	1	2	0	0	1
Staff Total	215	450	299	328	105
Top five reasons for outpatient visits					
	Malaria (all categories)	Malaria (all categories)	Malaria (all categories)	Malaria (all categories)	Malaria (all categories)
	URTI	URTI	URTI	Diarrhea diseases	Rheumatism / other Joint pains / arthritis
	Diarrhoea diseases	Diarrhoea diseases	Anaemia	URTI	Anaemia
	Rheumatism / other joint pains / arthritis	Typhoid fever	Diarrhoea diseases	Anaemia	URTI
	Acute urinary tract infection	Septicaemia	Intestinal worms	Intestinal worms	Intestinal worms
MNS disorders in top 10 outpatient visits	No	No	No	No	No

Govt=Government; CHAG=Christian Health Association of Ghana; UDS=University for Development Studies; TO/FT: Technical Officer/Field Technician; URTI=Urinary and reproductive tract infections; MNS=Mental, Neurological and Substance use disorders

Mental health service provision

Mental health services organisation

Ghana has a Mental Health Act 2012 (Act 846)(17) that clearly outlines the establishment of the Mental Health Authority (MHA), whose core mandate is regulatory and policy formulation. Mental health services are thus, according to policy and legislation provided at all levels of the health care delivery system in Ghana. The services are jointly provided by the MHA and the Ghana Health Service (GHS). In addition to its regulatory role, the MHA is also directly responsible for all tertiary mental health services in the three psychiatric hospitals in Ghana. These psychiatric hospitals are in the southern zone of Ghana. The GHS on the other hand is mainly responsible for mental health service delivery at the secondary and primary care tiers, coordinated by a directorate within the mental health unit of the GHS.

There were no district mental healthcare plans across the five districts in this study. This notwithstanding, mental health services exist and are coordinated by the District Mental Health Focal Person (1 per district; usually a registered mental health nurse rank) with the assistance of sub-district coordinators. The focal person's role is a temporary arrangement (pending the official appointment of district mental health coordinators as stipulated in the Mental Health Act 2012 (Act 846)) put in place by the Mental Health Authority of Ghana through its regional mental health coordinators, to support the organisation of mental health activities at the district level. The focal person, who is a mental health professional, is based at the District Health Directorate (DHD) as part of the District Health Management Team (DHMT) or at the district hospitals with a specific focus on providing clinical services. Across the 5 districts, the focal person's role is quite diverse with implications for effective coordination of mental health services – sometimes in a management/coordinating role, sometimes mainly clinical. Only in the Bongo district does the focal person play both a coordinating and clinical role.

Human resources for mental health services provision

Table 3 shows the existing human resources for mental health services provision in the five districts. Community mental health care is largely provided by community mental health workers, and there are four main types of these cadre of mental health professionals across all districts in Ghana(18). These include: community mental health officers (12 months full-time training), community psychiatric nurses (36 months full-time training; community-based), registered mental health nurses (36 months full-time training), and clinical psychiatric officers (24 months full-time training plus 1-3 months 'internship' in specialist hospitals). Across all five districts, there is evidence of limited availability of mental health professionals, including the fact that there are no clinical psychologists or occupational therapists. There is wide variation in human resource availability for mental health across the districts. For example, in the Tolon district, 1 Mental Health Professional serves a population of 18,414, in Bongo it is 1 to 892 and 1 to 14,895 in Anloga. The workload is therefore high, particularly in some districts, and workers are not able to reach most parts of the districts. The situation is also compounded with the limited opportunities for in-service training to enhance the knowledge and skills of these workers and to train non-MHPs to support mental health service delivery.

Availability of mental health services

With the available human resources, mental health services are provided at the district hospitals (except Anloga), health centres, and CHPS compounds (Table 3). Services are predominantly on outpatient (OPD) basis, and these are offered at the health centre level and in the district hospital (only in Bongo, Ahanta West and Asunafo North). The outpatient service provision at the district hospital and health centre levels are usually led by mental health professionals. Whilst it is a generally accepted practice for primary care physicians and other prescribers to diagnose mental health conditions and prescribe psychotropic medication, the evidence from this study suggests that this is not being done and suspected cases are asked to directly consult the mental health professionals. At the health centre and sub-district levels, suspected cases are usually referred first to the mental health nurses at the sub-district level and subsequently to the district mental health focal person. There is some evidence of integrated mental health care. For example, in the Tolon and Bongo districts, midwives provide depression (both antenatal and postnatal) screening and services and community health nurses support with health education. Furthermore, in all districts, mental health service users go through the general OPD just like everybody does for routine consultation with general physicians (including examination for physical health conditions) before referral for specialist mental health services. Routine recorded data on psychosocial services is quite patchy. What is available suggests these services are varied across districts as mental health nurses are able to provide supportive counselling, including the use of other psychological therapies such as cognitive behavioural therapy, and motivation enhancing therapy. Approximately, in the most recent year (2020), 40 patients in Bongo are offered an average of two sessions per year; 50 patients in Tolon have 8 sessions; 56 patients in Asunafo-North have 3 sessions; 17 patients in Anloga have 2 sessions; and 50 patients in Ahanta-West have 2 sessions. There are however competency challenges because of lack of supervision and opportunities for continuous training. There are also no mental health rehabilitation services in the districts. In terms of other support systems for mental health care, there are no mental health detection screening tools or approved training manuals on mental health conditions.

Table 3: Organisation of mental health services, mental health professionals and type of mental health services by situation analysis district

	Tolon	Bongo	Ahanta West	Asunafo North	Anloga
Mental health service organisation					
District mental health plan or implementation of national mental health plan	No district mental health plan Implementation based on routine service and activities determined and funded nationally Some mental health activities added to annual plans of the District Health Directorate				
Budget for mental health (% of district health budget)	No specific district budget allocated to mental health Activity budgets from regional through national and MHA				
Mental health coordinator	Yes, but known as district mental health focal persons based at district and sub-district levels The district mental health focal person is usually part of the District Health Management Team.				
Mental health is part of PHC basic packages	Yes implementation not comprehensive	Yes good progress with implementation. E.g. some staff trained in mhGAP	Yes limited to facilities that have Mental Health Professionals (MHPs)	Yes limited to the facilities that have MHPs	Yes limited to facilities with MHPs
Screening tools for MNS disorders	Available Midwives and some CHNs have tool for depression screening	Available Depression screening tool	Not available MHP usually go to the internet to search	Not available Use what was learnt in school	Available, but limited, not enough
Personnel type					
Neurologist	0	0	0	0	0
Psychiatrist	0	0	0	0	0
Clinical Psychiatric Officer	1	1	0	0	0
Psychiatric Nurse	4	0	10	9	3
Community Mental Health Officers	2 (on study leave)	5	0	1	1
Clinical Psychologists	0	0	0	0	0
Occupational Therapists	0	0	0	0	0
Community Psychiatric Nurse	0	0	0	0	3
Counsellor	0	0	0	0	0
Registered Mental Health Nurse	0	7	0	8	0
Others	0	0	0	0	0
In-service training on mental health	24 CHN and 3 midwives trained in depression management 12 staff trained in mental health reporting	7 staff trained (can't remember content)	None in the last 2 years	5 days mhGAP training (7 staff)	No training in the last 2 years

	Tolon	Bongo	Ahanta West	Asunafo North	Anloga
Availability/type of mental health services					
Outpatient mental health facilities	All health centres provide basic diagnosis and treatment of minor cases. Three health centres with MHPs provide more detailed services.	Six health centres and district hospital provide diagnosis and treatment of minor cases.	Basic diagnosis and treatment provided in District hospital and all subdistricts	District hospital and six out of 11 health centres with MHPs provide basic diagnosis and treatment of cases	Only two health centres provide mental health services
Psychosocial interventions	Across districts, psychosocial interventions offered include: supportive counselling; behaviour activation, cognitive behaviour, motivation enhancing therapies				
Alcohol detoxification	Yes (if institutionalisation is not required)			Yes (able to hospitalise for 2 to 3 days if no improvement then refer)	Yes (if institutionalisation is not required)
Mental health rehabilitation	Not offered	Not offered	Not offered	Not offered	Not offered
Inpatient services in the district	No inpatient services	Yes (no dedicated beds)			No inpatient services
Nearest mental health inpatient facility	Tamale Teaching Hospital (22km away)	Regional Hospital (15km); Private facility in the regional capital (15km); Tamale Teaching Hospital (175km away);	Ankaful Psychiatric Hospital (about 160km away)	Sunyani Regional Hospital (84km away)	Accra Psychiatric (165kms) or Pantang Psychiatric (172kms) Hospitals
Specialist inpatient for alcohol detoxification	Accra or Pantang Psychiatric Hospitals		Ankaful Psychiatric Hospital		Accra or Pantang Psychiatric Hospitals
Outreach services for patients with severe mental illness (SMI)	SMI treated at home with the support of families. Families educated to take care of them so that they don't get leave home. Community volunteers trained under the "WHO fight against epilepsy" support the families	SMI treated at home with the support of families. Families educated to take care of them so that they don't get lost.	SMI are treated at home and on OPD basis. Families educated to keep them at home. Many lost to follow-up because of few follow-up visits. MHPs use their own money for transport when going for visit. A lot of SMI relapse when medication is used up and they are unable to afford	Stabilise at hospital and treatment continued at home. Family counselled on importance of family support. Outreach services are generally limited in district because of lack of logistics and funding for mental health activities. The few outreach services are provided by MHPs at the subdistrict level	SMI are treated at home. They may come in for OPD services once in a while. Families counselled to help keep them at home

Mental health services uptake and coverage

Data on treatment coverage (proportion of people with MNS disorders in the districts accessing care) was challenging to assess. As shown in table 4, what is available but quite unreliable is the actual and population standardised number of newly registered patients with mental health conditions presenting at health facilities in each of the five districts in the most recent year (2020). Overall, the most commonly diagnosed mental health conditions at OPD are epilepsy, schizophrenia, and depression. In Asunafo North district however, non-specified mental health conditions were more frequently reported. All the districts recorded mental disorders due to alcohol use except in Tolon. The high Muslim population in Tolon could have contributed to this as Islam prohibits the consumption of alcohol.

Table 5 provides a summary of the population prevalence of these conditions in the most recent year, compared with the prevalence estimates for Ghana from the Global Burden of Disease study. Given the importance of the treatment coverage indicator, we were only able to extrapolate using prevalence estimates for Ghana from the Global Burden of Disease study (Schizophrenia: 0.2%; Depression: 3.71%; Epilepsy: 0.43%), the population of the district, and the total number of registered patients with mental health conditions. Based on this, table 5 shows the treatment coverage for depression, schizophrenia, and epilepsy across districts is quite low at <0.5% (overall: 0.32% ;Anloga: 0.15%; Bongo: 0.55%; Asunafo-North: 0.09; Ahanta-West: 0.21; Tolon: 0.58).

Table 4: Actual and population standardised newly registered patients in the most recent year (2020) by situation analysis district.

MNS	Tolon		Bongo		Ahanta West		Asunafo North		Anloga	
	New cases	Per 100,000 population	New cases	Per 100,000 population	New cases	Per 100,000 population	New cases	Per 100,000 population	New cases	Per 100,000 population
Schizophrenia	07	<0.1	79	0.25	19	<0.1	10	<0.1	69	0.23
Depression	02	<0.1	36	0.11	12	<0.1	08	<0.1	03	<0.1
Epilepsy	43	0.15	80	0.25	29	<0.1	28	<0.1	50	0.16
Bipolar	0	<0.1	02	<0.1	0	<0.1	08	<0.1	03	<0.1
Mental disorders due to alcohol use	0	<0.1	20	<0.1	16	<0.1	08	<0.1	07	<0.1
Mental disorders due to substance use	0	<0.1	16	<0.1	06	<0.1	04	<0.1	11	<0.1
Delirium	0	<0.1	04	<0.1	0	<0.1	36	<0.1	01	<0.1
Dementia	0	<0.1	01	<0.1	05	<0.1	09	<0.1	03	<0.1
GAD	0	<0.1	09	<0.1	05	<0.1	04	<0.1	03	<0.1
Intellectual impairment	0	<0.1	05	<0.1	01	<0.1	10	<0.1	01	<0.1
Other mental disorders	0	<0.1	06	<0.1	26	<0.1	67	0.14	06	<0.1

GAD: Generalised Anxiety Disorder

Table 5: Estimated prevalence and treatment coverage for top-3 mental health conditions by situation analysis district in the most recent year 2020

MNS	Tolon		Bongo		Ahanta West		Asunafo North		Anloga	
	Popn Prevalence (%)	Treatment coverage (%)	Popn Prevalence	Treatment coverage	Popn Prevalence	Treatment coverage	Popn Prevalence	Treatment coverage	Popn Prevalence	Treatment coverage
Schizophrenia	0.13	0.69	0.2	1.03	0.08	0.38	0.03	0.16	0.07	0.34
Depression	<0.01	<0.01	0.11	0.03	0.03	<0.01	0.01	<0.01	<0.01	<0.01
Epilepsy	0.45	1.04	0.25	0.58	0.09	0.23	0.05	0.12	0.05	0.12
Overall coverage		0.58		0.55		0.21		0.09		0.15

Availability and sources of psychotropic medication

Table 6 shows type of psychotropic medications for service users in the district. Access to regular supply of psychotropic medications is a major challenge across all districts. Access to antiepileptics is however not a challenge as it is readily available in all districts. Generally, psychotropic medications are supplied by the Ghana Health Service from the national medical stores. These are received at the regional medical stores for onward distribution to the district via the district hospitals. As reported by one of the respondents, medication is a challenge as one cannot be certain of its availability at any given time, even in the tertiary psychiatric hospitals. Also, because of delays in the medication supply chain, most of the medications that eventually reach the district hospitals are usually near expiration. The analysis further found many instances where mental health service users have had to buy their medications from outside sources. In terms of financing, the assessment found that all the antidepressants, mood-stabilisers and antiepileptics are fully covered by Ghana's National Health Insurance Scheme (NHIS), however they must be prescribed by a medical officer. Based on our estimation (using the proportion of the district population with active health insurance), only one in two people in the general population in Tolon, Bongo and Anloga will have access to mental health medication because of their active NHIS status if they were to become mentally ill. Comparatively, the proportions are much lower in Ahanta West and Asunafo North. These estimates compare closely (except for Ahanta West) with estimates from a recent study that reported active/current membership of 50% of the population in the Kassena-Nankana East and West districts of Ghana(19). The implications are that at least half the population in each of these five districts who develop mental health conditions requiring medications may not have access. These challenges notwithstanding, the districts have developed various strategies to help improve supply chains. For example, in some of the districts with committed leadership, medications are procured by the district hospital from the open market. In other instances, mental health officers pre-finance access to medications for clients from private pharmacies.

Table 6: Commonly used psychotropic medication availability by district

Antipsychotic group	Usual medications used	Tolon	Bongo	Ahanta West	Asunafo North	Anloga	Monitoring and evaluation
Antipsychotics (po)	Risperidone	Yes	Yes	No	No	Yes	Monitoring and evaluating the quality of mental health services provision is a major challenge in all the districts. The analysis showed that apart from routine data on events captured on the district health information management system (DHIMS) used to track progress, support for supervision of mental health professionals is weak and unstructured. The information on the DHIMS is based on data from mental health registers that collect information on: a) mental health client status: this collects data on a range of 33 variables on the status of in/out-patients at the facility, disaggregated by sex; b) mental health
	Olanzapine	No	No	Yes	No	Yes	
	Quetiapine	No	No	No	No	No	
Antipsychotic depot	Fluphenazine decanoate	No	Yes	No	No	Yes	
	Haloperidol decanoate	No	No	No	No	Yes	
Antidepressants	Fluoxetine	No	No	No	No	Yes	
	Amitriptyline	No	Yes	Yes	Yes	Yes	
Anxiolytics	Diazepam	No	No	Yes	Yes	No	
Mood-stabilisers	Carbamazepine	No	Yes	Yes	No	Yes	
Antiepileptics	Carbamazepine	No	Yes	Yes	Yes	Yes	
	Phenobarbitone	Yes	Yes	Yes	Yes	Yes	

community report: this is designed to record information on the various mental health activities completed by the mental health teams at the various facilities that provide mental health services; and c) mental health report: this entails all the major psychopathologies. The key indicators commonly reported from these three forms are summarized in table 7. Apart from these, there are many other indicators available on the DHIMS. For example, the community mental health report form reports on outreach programmes, home-visits, visits to traditional and faith-based centres, number of patients found in shackles/chains, among others. Challenges with data quality in terms of completeness and accuracy were noted in the analysis.

Table 7: Commonly reported mental health indicators the district health information management system (DHIMS)

Type of form	Reported indicators	Reporting frequency
Mental health client status	<ul style="list-style-type: none"> % of mentally ill with active NHIS membership by sex % of attempted suicide cases by sex % of suicide by sex 	Monthly
Mental health community report	<ul style="list-style-type: none"> % of traditional and faith-based centres chaining mentally ill persons 	Monthly
Mental health report	<ul style="list-style-type: none"> Per Capita OPD attendance for Mental Health 	Monthly

Referral systems

In terms of referrals, districts have in place a referral system that caters for both In (mental health patients from other adjoining districts) and Out referrals (for services of specialists beyond primary health care facilities in the district). For example referrals at end of 2020 for each district were: Asunafo-North (In referral: 07; Out referral: 13 (3.6% of total cases)); Bongo (In referral: 07; Out referral: 12 (1.5% of total cases)); Tolon (In referral: 9; Out referral: 5 (0.7% of total cases)); Ahanta-West (In referral: 9; Out referral: 1 (0.8% of total cases)); and Anloga (In referral: 1; Out referral: 4 (1.8% of total cases)). In addition, within districts, referrals are made by non-mental health professionals for patients to consult mental health professionals within or across health facilities in the district. There are systems for back referrals but there is limited contact between district level and specialist referral centres.

Community support systems

The analysis confirmed the existence of traditional and faith-based healers (TFBH) as the first port of call for persons seeking mental health care across all districts (Table 8). Help-seeking from TFBH, however, appears to vary across the districts; from less than 10% in three districts (Tolon, Bongo, Asunafo-North), to relatively higher patient base in Anloga district (25% of patients) and Ahanta West (15% of patients) districts. With these levels of patient base, the analysis showed some attempts at collaborating with mental health professionals in the districts. However, it is only in Tolon and Bongo that this collaboration has been successful in establishing a referral system that ensures patients have access to specialist care.

Table 8: Community support systems for mental health by district

Indicator	Tolon	Bongo	Ahanta West	Asunafo North	Anloga
Community volunteers	72 serving 172 communities with general health activities, including mental health.	246 serving 143 communities with general health activities, including mental health.	90 serving 123 communities with general health activities, including mental health.	170 serving 189 communities with general health activities, including mental health.	35 serving 99 communities with general health activities, including mental health.
Mental health Support groups/ self help groups	Yes. They meet regularly and invite mental health professionals to provide education		No self-help groups		
Help seeking for mental health	Most go to TFBH first	Health facilities are now the first port of call.	TFBHs are usually the first port of call (about 90%)	Information unavailable	Clients visit TFBH centres before clinics
Traditional and faith-based healing sites	11 TFBH centres. Work collaboratively with mental health professionals to ensure client safety and provide psychotropics.	15 TFBH centres, working closely with mental health professionals	67 TFBH centres. Poor interaction with the MHPs. Some attempts have been made to work with TFBHs but there is lack of interest.	3 TFBH centres. MHP working with only two. The others are not cooperative.	4 TFBH centres in district. Limited interaction with mental health professionals.
Estimated % / number of mental health clients seen by traditional and faith-based healers	About 8% all registrants in the most recent year	Sees less than 1% of all registrants in the most recent year	About 15% of all registrants in the most recent year access services of TFBH	About 5% of all registrants in the most recent year access services of TFBH The two TFBH sites currently have eight clients.	25% of all registrants in the most recent year access services of TFBH
Family burden	Family burden is high. Families are generally poor and unable to afford psychotropic medications.				

Two of the districts (Tolon and Bongo) also have active mental health/self-help support groups. The analysis also showed evidence of support for persons with mental health conditions from existing social interventions from the government, but only in Bongo and Tolon districts. For example, the district directorate of health services has been able to collaborate with the Department of Social Welfare to get some of the people with mental health conditions and their families enrolled on the Government of Ghana unconditional cash transfer programme (Livelihood Empowerment Against Poverty – LEAP(20, 21)) and to be registered on NHIS (0.2% in Tolon; 5% in Bongo) for free. In terms of opportunities for awareness-raising and mental health literacy, all districts have well-established community volunteer systems that support community mental health nurses in conducting outreach programmes. One of the districts (Tolon) has established school mental health clubs.

Discussion

This paper describes the conduct of a standardised situation analysis of mental health infrastructure and services in five districts in Ghana in order to understand the primary healthcare system and opportunities for integrating mental health and disability services. The findings confirm an unmet need for mental health services (<0.5% have access) amidst poorly developed mental health systems and infrastructure. Across all districts, key information for estimating treatment coverage is unavailable, supervision of the few mental health professionals is weak and unstructured, access to a regular supply of psychotropic medications is a major challenge, and psychological treatments are extremely limited given the lack of trained clinical psychologists. Community support systems appear encouraging with evidence of a well-established network of community volunteers and some collaboration with traditional and faith-based mental health service providers.

Ours is one of few studies of this nature in LMICs but we do observe our findings compare closely with the PRIME situational analysis across five LMICs (South Africa, Uganda, Ethiopia, Nepal, and India)(15). To illustrate, similar infrastructural deficits in terms of poor mental health staffing, weak supervision systems, and irregular psychotropic medication supply chains were observed in the five PRIME countries. The Ghana data however shows a slightly encouraging community mental health support system, which did not strongly feature in all the PRIME countries. These similar findings confirm reports regarding the poor mental health infrastructure in LMICs(22), including lack of quality mental health data for planning purposes(23). The following section highlights some of the challenges impeding mental health delivery, but also opportunities and lessons for improved mental health service delivery in Ghana.

Key challenges across districts

Across the five districts, we observe two key broad challenges in the provision of mental health services: responsiveness of policy and legislative framework; and weak health systems for mental health and disability. We focus on these two challenge areas because of the central role they play in the provision of quality mental health services.

Policy and legislative framework

Ghana is one of a small number of countries in Africa (less than 50% of countries in Africa(24)) with a mental health law. Ghana's Mental Health Act 2012 (Act 846) is endorsed by the World Health Organization (WHO) as an example of best practice in mental health legislation, but its implementation has been slow, affecting governance and organisation of mental health services. Whilst the Act has facilitated the establishment of the Mental Health Authority (MHA) to govern mental health care in Ghana, essential drivers key to the promotion of primary mental health care are yet to come on board. For example, in the

provisions of the Act (Article 21), the MHA is supposed to establish District Mental Health Sub-Committees who shall appoint district mental health coordinators to be responsible for leading the implementation of mental health policy and activities; none of these were in place in the five districts in our study and indeed the entire Ghana(25). Poor governance is a barrier to effective integration of mental healthcare within primary healthcare settings(7, 22). As noted in the PRIME study, these governance structures are important for local level district planning of services that are responsive to local needs. There are challenges associated with the implementation of policy and legislation, generally, and in the case of Ghana's Mental Health Act, these were predicted at inception(26). Implementation research would have been useful to help guide the process and ensure important bottlenecks are addressed before scale-up.

Health systems for mental health

The challenge with policy and legislation has direct implications on mental health systems in the five districts studied. Similar to the findings from the PRIME situational analysis, mental health structures and systems were poorly developed; no functional mental health care plan, no dedicated budget, inadequate human resource capacity, training, and supervision, unreliable supplies of medications, and potential lack of competence in use of psychological treatments. Others include challenges with responsive mental health information systems – evident in large gaps in available routine mental health service data. These form an essential part of a comprehensive mental health care plan.

Across all five districts, there is evidence of limited availability of mental health professionals, including the fact that there are no clinical psychologists or occupational therapists. The numbers are below the recommendations from major regulatory bodies such as the Canadian Psychiatric Association and the the Royal Australian and New Zealand College of Psychiatrists. For example, Canadian Psychiatric Association recommends a ratio of 1 psychiatrist to 8,000 population(27). Whilst such recommendations are useful for practice, it is worth noting that such recommendations are challenging to arrive at and may not be universally applicable because of important normative considerations such as context, needs and local resources. Nonetheless, these human resource shortages are already known and reported in previous studies(15, 28). Human resource challenges have consistently been found to impede the sustainable integration of adequate quality mental health care into PHC(29-31).

In terms of deficiencies in the mental health information systems, Ghana is one of very few countries in Africa that has incorporated mental health data as part of the routine data collection even at the district health information system level branded as DHIS(32). A Mental Health Information System is a system for collecting, processing, analysing, disseminating and using information about a mental health service and the mental health needs of the population it serves. The current data processes suggest there is no real-time data entry on the district health information management system platform and the mode of collection (via paper/improvised notebooks) and movement (from one facility to the other), poses significant challenges with data quality issues in terms of the key parameters of accuracy and completeness. For example, the 'non-specified mental health conditions' category would need to be reviewed to ensure accuracy in reporting. Beyond the issue of data accuracy, information on contact coverage for MNS conditions in the five districts was challenging to access and report. Key variables required to estimate this important service utilisation statistic (i.e. prevalence of mental health conditions, and help-seeking behaviour) were not available. This finding is consistent with the findings from the PRIME situational analysis in other countries. Targeted interventions to improve the scope of mental health information system to report service utilisation and mental health needs more accurately at the community level is needed, and the role of future research in this area is encouraged.

Opportunities for improved mental health services

The data from the situation analysis shows there are several opportunities across the five districts for improved mental health services. As discussed, the challenges are undoubtedly considerable, but what is also palpable from the routine data and interviews with key respondents, is a resilient and robust district-level health system. We observe four key opportunities. Firstly, committed leadership at the district level shows it is possible to ensure regular supply of psychotropic medications. Secondly, a supportive policy environment should ensure sustained committed leadership. We note the recently launched twelve-year mental health policy(33) and on-going national dissemination and hope this will provide the needed impetus at the district level to develop mental health care plans. Thirdly, our study revealed some 'best practices' with implications for integrated mental health care at the district level; all districts showed it is possible to include mental health services in maternal perinatal health care programmes. Others also demonstrated the same with HIV programmes. These can be strengthened by leveraging existing guidelines from the Mental Health Authority of Ghana. Fourthly, the elaborate district health management information system presents a useful opportunity to build on and position it to collect accurate and complete data on a core set of mental health indicators for local and national planning. The use of standard mental health registers to collect data (particularly at the community level health facilities) and report at the unit level (as opposed to the current aggregate reporting) would be useful. This should help unpack the present categorisation of psychopathology as 'non-specified mental health conditions'. Fifthly, the role of community support systems such as self-help groups and community-based volunteers in mental health care featured strongly across all districts. These together with the considerable collaborations with traditional and faith-based services, presents unique platforms to explore modalities for community reintegration and rehabilitation services, and thus address the social determinants of mental health. This aligns with growing initiatives in global mental health that recognise the central role of community support systems in tackling these social determinants. Ghana runs a relatively successful conditional and unconditional cash transfer programme- the Livelihoods Empowerment Against Poverty (LEAP)(20, 21, 34).The Government also mandates all districts to dedicate a percentage of funds (now 3%) allocated to the district to support persons with disability(35, 36). These are both practical ways to support persons with mental health conditions, and strong community support systems can act as important catalyst in this regard.

Building on previous situation analysis, our study employed a relatively more rigorous methodology; we improved on the scope of a previous situation analysis in Ghana by adapting the comprehensive PRIME situation analysis tool that allows for the collection of additional important data on community support systems; we conducted a validation of the findings through a workshop with key respondents; and the data collection was done by an independent experienced consultant. The Ghana Somubi Dwumadie approach had some challenges: first, our data sources were problematic because of the difficulties with the accuracy and completeness of routine data. We dealt with this challenge through the report validation workshop where participants provided critical

clarification on the veracity of the data and sources. Secondly, we recognize constraints with generalizing our findings to other districts in Ghana, given that only five districts were involved. We believe however that our rigorous selection process that ensured we selected districts to represent the three geo-political zones of Ghana enhances the generalizability of our findings.

Conclusion

Across all districts, a picture emerges of considerable challenges with the delivery of quality primary mental health services. This is characterised by clear deficits in information for estimating treatment coverage, weak and unstructured supervision of the few mental health professionals, poor access to regular supply of psychotropic medications, and limited access to evidence-based psychological treatments. These findings confirm the observation by Eaton and colleagues⁽³⁷⁾ that there is still an urgent need to scale up services for mental health, despite some modest progress in implementing recommendations from global mental health researchers on scaling up mental health interventions in low and middle-income countries. One practical way to achieve this is the urgent but careful implementation of comprehensive district mental healthcare plans. This vehicle of integration is particularly encouraged given that only about a third of all countries on the 2020 WHO Atlas data have been able to integrate mental health into primary health care. As further observed by Eaton and colleagues, the huge mental health service deficit (due to the lack of mental health professionals) could be tackled by providing PHC workers with training and support to identify and treat mental health conditions. This has inspired Ghana Somubi Dwumadie, and the data from this situation analysis has been useful in selecting three priority demonstration districts (Bongo, Asunafo North, and Anloga) reflecting a geographical balance, to design, implement, and evaluate district mental healthcare plans in the next phase of this study.

Abbreviations

Acronym	Description
BW	Benedict Weobong
CL	Crick Lund
CHPS	Community Health Planning Services
DALYs	Disability Adjusted Life Years
DHD	District Health Directorate
DHIMS	District Health Information Management System
DHIS	District Health Information System
DHMT	District Health Management Team
GHS	Ghana Health Service
HIV	Human ImmunoDeficiency Virus
HMIS	Health Management Information System
KA	Kenneth Ae-Ngibise
LEAP	Livelihood Empowerment Against Poverty
LMIC	Low and Middle-Income Country
LR	Lutuf Rahman
LS	Lionel Sakyi
MHA	Mental Health Authority
MHCP	Mental Health Care Plan
mhGAP	Mental Health Gap Action Programme
MHP	Mental Health Professionals
MNS	Mental Neurological and Substance use
NHIS	National Health Insurance Scheme
OPD	Out Patient Department
PHC	Primary Health Care
PRIME	Programme for Improving Mental Health Care
TFBH	Traditional and Faith-Based Healers
UK	United Kingdom
WHO	World Health Organisation
WIFA	Women In Fertility Age

Declarations

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Authors' contributions

Conceptualization: BW, CL. Data acquisition: BW, KA, LS. Data analysis: BW, KA, LS. Data interpretation: BW, KA, LS, CL. Drafting: BW. Critical revision: BW, KA, LS, CL. All authors read and approved the final manuscript.

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Availability of data and materials

The data will be made available at King's College London Open Research Data System. Data will be available upon reasonable request, by completing an 'Expression of Interest form'. The data collection instrument used for this study is also available on the Open Research Data System.

Ethics approval and consent to participate

Ethical approval for the study was obtained from the Ghana Health Service Ethics Review Committee (GHS-ERC025/08/20) and King's College London Research Ethics Committee (LRS-20/21-20866).

All participants who offered personal communication provided written informed consent by signing a study consent form. Consent was also obtained for use of secondary data.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

Author details

¹ Department of Social and Behavioural Sciences, College of Health Sciences, University of Ghana, Accra, Ghana.

² Ghana Somubi Dwumadie (Ghana Participation Programme), PMB 6, 6 Asoyi Crescent, East Legon, Accra Ghana

³ Kintampo Health Research Centre, Research and Development Division, Ghana Health Service, Kintampo North Municipality, Bono East Region, Ghana

⁴ Centre for Global Mental Health, Health Service and Population Research Department, Institute of Psychiatry, Psychology and Neuroscience, King's Global Health Institute, King's College London

⁵ Alan J Flisher Centre for Public Mental Health, Department of Psychiatry and Mental Health, University of Cape Town

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Figures

Map of Ghana Showing Five Districts

Figure 1

Map of Ghana showing the 5 situation analysis districts

Supplementary Files

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