

Adherence to Clinical Guidelines in Integration of Mental Health Services Into Primary Health Care in Mbarara, Southwestern Uganda: a Medical Record Review

Edith K Wakida (✉ ediwakida@must.ac.ug)

Mbarara University of Science and Technology <https://orcid.org/0000-0001-6949-8474>

Moses Ocan

Makerere University CHS: Makerere University College of Health Sciences

Godfrey Zari Rukundo

Mbarara University of Science and Technology

Peter Sebutinde

: Government of Uganda

Samuel Maling

Mbarara University of Science and Technology

Elialilia S Okello

MITU: Mwanza Intervention Trials Unit

Zohray M Talib

California University of Science and Medicine

Celestino Obua

Mbarara University of Science and Technology

Research

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Abstract

Background: The Ugandan Ministry of Health decentralized mental health care delivery to the district level; developed the Uganda Clinical Guidelines (UCG); and trained primary health care (PHC) providers in identification, management, and referral of individuals with common mental disorders. This was intended to promote the integration of mental health services into PHC in the country. However, the extent of integration of mental health into general health care service delivery remains unknown. This study aimed to establish the level of adherence of PHC providers to the UCG in the identification and management of mental disorders.

Methods: This was a prospective medical record review study of patient information collected in November and December 2018, and March and April 2019 at two health centers (III and IV) in southwestern Uganda. Data (health facility level; sex and age of the patient; and mental disorder diagnosis, management) was collected using a checklist. Continuous data was analyzed using means and standard deviation while categorical data was analyzed using Chi-square. Multivariable logistic regression analysis was performed to establish predictors of PHC provider adherence to the clinical guidelines on integration of mental health services into PHC. The analysis was conducted at a 95% level of significance.

Results: Of the 6093 records of patients at the study health facilities during the study period, 146 (2.4%) had a mental or neurological disorder diagnosis. The commonly diagnosed disorders were epilepsy 91 (1.5%) and bipolar 25 (0.4%). The most prescribed medications were carbamazepine 65 (44.5%), and phenobarbital 26 (17.8%). The medicines inappropriately prescribed at health center III for a mental diagnosis included chlorpromazine for epilepsy 3 (2.1%) and haloperidol for epilepsy 1 (0.7%). Female gender (aOR: 0.52, 95%CI: 0.39 -0.69) and age 61+ years (aOR: 3.02, 95%CI: 1.40 – 6.49) were predictors of a mental disorder entry into the HMIS register.

Conclusion: There was a noticeable change of practice by PHC providers in integrating mental health services in routine care as reflected by the rise in the number of mental disorders diagnosed and treated and entered into the modified paper based HMIS registers.

Background

Mental health disorders, such as depression and substance use, are highly disabling globally (1), and account for 13% of the disease burden in Uganda (1–4). In 2000, the Ugandan Ministry of Health (UMOH) decentralized mental health delivery to district level (5, 6); developed the Uganda Clinical Guidelines (UCG) as a practical tool for health workers on the management of common disorders including mental health (7, 8); and trained primary health care (PHC) providers in identification, management and referral of common mental disorders (6). Provision of mental health services begins at health center (HC) III (sub-county level) and with subsequent referrals to HC IV (county level), district hospitals, regional referral hospitals and finally to the national referral hospital (8, 9). Each health facility level (except HC III) is

expected to have general doctors (medical officers), clinical officers (Diploma level Medical Assistants), nurses and midwives, and psychiatric nurses.

In 2018, we conducted a single district study to identify the PHC providers perceived barriers to mental health integration and possible solutions. Key barriers included inadequate knowledge/training in mental health, the onerously long and dense format of the UCG, and no provision for recording mental health indicators in patient's charts (10, 11). Suggested solutions included provision of a user-friendly summarized UCG for mental disorders, in-service training, and support supervision for mental health (10). We developed, piloted, and evaluated a 3-component intervention to enhance the capacity of PHC providers in mental health integration for feasibility and acceptability. The components included: a summarized and visually focused version of the UCG on selected mental disorders (i.e., depression, bipolar, epilepsy, and alcohol dependence); modification of existing UMOH paper-based health management information systems (HMIS) registers for patient charting to include the selected mental disorders; and provision of training and support supervision (by psychiatrists) on the utilization of the UCG algorithm (i.e., diagnosis, management, referral) on the selected disorders. The study showed that the summarized UCG was perceived as user-friendly and patients were registered for mental healthcare. This was attributed to the training and support supervision they received from the psychiatrists (12).

According to the Uganda Clinical Guidelines (UCG) not all mental disorders are managed the same way at different PHC levels. There are specific instructions for HC III and HC IV levels, it is expected that empirical treatment is provided at HC III level while specific treatment at HC IV. For example, a patient with signs and symptoms of depression who presents at a HC III level should receive psychosocial support and then be referred to HC IV for further management. Similarly, treatment of bipolar disorder is limited to anti-psychotics (chlorpromazine or haloperidol) at HC III level, while mood stabilizers (carbamazepine) are to be given at HC IV level (7, 8). In the Ugandan health care system, HC III level facilities do not have general doctor, and so it is not expected that diagnosis and initiation of treatment is done at that level.

This review aimed to examine the nature of mental health care and the adherence of PHC to the UCG within primary health care in Mbarara district, southwestern Uganda. Of interest was the prevalence of mental disorders diagnosis during the intervention (presence of psychiatrists providing training and support supervision - November and December 2018) and two months after the psychiatrists training and support supervision (March and April 2019) when the PHC providers have gone back to normal practice; and the alignment of medication with the guideline recommendations for each health facility level.

Methods

Study design and setting

This was a prospective medical record review study of patient information collected in November and December 2018, and March and April 2019 at two health centers (III and IV) in Mbarara.

Study population

The study focused on the primary healthcare (PHC) providers in relation to mental health services offered at PHC level. All the PHC providers who directly assess patients at the selected health facilities were included (i.e., medical officers, clinical officers, nurses, and midwives in routine care).

Data collection

Source of data: The primary source of data was the modified Ministry of Health paper-based Health Management Information System (HMIS) registers for patient charting. The modification involved inclusion of selected mental disorders (depression, bipolar, epilepsy and substance use disorders) into the existing paper-based registers. The details of the modifications and other intervention components (can be accessed from our previous publication (Wakida et al 2019) (12). Medical records covering a period of four months (i.e., November - December 2018 during intervention when the psychiatrists were providing training and support supervision, and March - April 2019 post intervention) out of the 6-month intervention period (November 2018 to April 2019) were included in this review. The months of January and February 2019 were excluded from the review to cater for the adjustment of the PHC providers without training/support supervision from the psychiatrists and to give time for the PHCs to internalize and adapt to using the intervention materials (modified registers and summarized guidelines). The records included for review were those with a new mental disorder diagnosis. Patient records related to follow up visits or for medication refill were excluded.

Data collection procedure: All patient entries (de-identified) in the paper based HMIS registers that were recorded during the study period were transformed to an electronic version (Microsoft Access). Data was then extracted using a checklist which had the following items: health facility level; sex and age of the patient; and mental diagnosis, treatment, and management. The checklist was developed based on the intended study outcomes. Two research assistants (one social scientist and one psychiatric nurse) were trained on the data collection tool. On each data collection day, the research assistants reviewed the HMIS forms and extracted relevant data using the checklist. At the end of each data collection day, the study principal investigator (EW) reviewed extracted data from the two reviewers (PK and CA) for correctness and completeness. Instances of incomplete and/ or conflicting data were resolved through discussion and any further disagreement was settled through reanalyzing the registers. Entries into the HMIS registers that did not have the patient's meta-data were excluded.

Data management and analysis

The Microsoft Access data entry form had checks for quality control. The data was then exported to IBM SPSS ver 20 for analysis. Continuous data was analyzed using means and standard deviation while categorical data was analyzed using Chi-square. Multivariable logistic regression analysis was performed to establish predictors of PHC provider adherence to the clinical guidelines on integration of mental health services into PHC. The analysis was conducted at a 95% level of significance.

Results

Medical records and participant characteristics

A total of 6093 records 2027 (33.3%) from HC III level, and 4066 (66.7%) from HC IV were entered in the Microsoft Access data entry form. Of these 5948 (97.6%) did not have any mental health related entry. The records entered were nearly equal in number – 2977 (48.9%) during the intervention period (November to December 2018), and 3116 (51.1%) during the post-intervention period (March and April 2019).

Majority, 4259 (69.9%) of the entries were of female patients. The mean age of the patients was 30.3 ± 21 . Over half, 3517 (57.7%) of the patients were aged 19–60 years.

Table 1
Participant characteristics

Characteristics	Description	Frequency n (%)
Health Facility	HC III level	4066 (66.7)
	HC IV level	2027 (33.3)
Intervention period	During	2977 (48.9)
	Post	3116 (51.1)
Age category (years)	1–18	1956 (32.1)
	19–60	3517 (57.7)
	61+	620 (10.2)
Sex	Female	4259 (69.9)
	Male	1834 (30.1)
Mental illness	Yes	145 (2.4)
	No	5948 (97.6)
Mental diagnosis	Depression	16 (0.3)
	Epilepsy	91 (1.5)
	Bipolar	25 (0.4)
	Alcohol use	14 (0.2)

Prevalence of mental disorder diagnoses in the health facilities

Of the 6093 records reviewed at the study health facilities during the study period, 146 (2.4%) had a mental diagnosis. Out of the 146 records, 76 were recorded during the intervention when the psychiatrists

were offering training and support supervision, and 70 recorded after the intervention (in the fifth and sixth month of the study period).

Of those whose mental disorders were identified, 66/1834 (3.4%) were males compared to females 80/4259 (1.9%), 87 (2.1%) were from HC IV level, and 91 (2.6%) were 19–60 years (Table 2). Of the 146 records, 91 (62.3%) were epilepsy, 25 (17.1%) bipolar, 16 (11%) depression, and 14 (10.6%) alcohol dependence.

Table 2
Participant characteristics and Mental disorder diagnoses

Mental disorder diagnosis (n = 146)						
Characteristics	Description	Epilepsy	Bipolar	Depression	Alcohol	Total
Intervention period	During	48 (32.9%)	9 (6.1%)	8 (5.5%)	11 (7.5%)	76 (52.1%)
	Post	43 (29.4%)	16 (10.9%)	8 (5.5%)	3 (2.1%)	70 (47.9%)
Health facility level	HC III	30 (20.5%)	9 (6.1%)	13 (9%)	7 (4.8%)	59 (40.4%)
	HC IV	61 (41.8%)	16 (10.9%)	3 (2.1%)	7 (4.8%)	87 (59.6%)
Sex	Female	50 (34.2%)	14 (9.6%)	12 (8.2%)	4 (2.7%)	80 (54.8%)
	Male	41 (28.1%)	11 (7.5%)	4 (2.7%)	10 (6.9%)	66 (45.2%)
Age category	1–18	35 (24%)	4 (2.7%)	4 (2.7%)	3 (2.1%)	46 (31.5%)
	19–60	51 (34.9%)	21 (14.4%)	11 (7.5%)	9 (6.1%)	92 (63%)
	61+	5 (3.4%)	-	1 (0.7%)	2 (1.4%)	8 (5.5%)

Medication appropriateness for mental disorder diagnosis and facility level

The most prescribed medications were carbamazepine 65 (44.5%), and phenobarbital 26 (17.8%). The medicines which were prescribed but not aligned with the UCG were chlorpromazine for epilepsy 3 (2.1%) and haloperidol for epilepsy 1 (0.7%) at HCIII. One of the patients newly diagnosed with depression at HCIII was prescribed only folic acid (Table 3).

Table 3
Medications prescribed for mental disorder diagnosis

	Epilepsy	Bipolar	Depression	Alcohol	Total
Amitriptyline	-	2	13	-	15
Chlorpromazine	3	8	1	-	12
Carbamazepine	53	12	-	-	65
Haloperidol	1	3	-	-	4
Phenobarbital	26	-	-	-	26
Phenytoin	8	-	-	-	8
Counselling	-	-	1	14	15
Non psychiatric medicine*	-	-	1	-	1

*The patient was given only folic acid

Of the 15 amitriptyline prescriptions, 12 were given at HC III facility for patients newly diagnosed with depression.

Factors associated with mental disorder diagnosis in health centers III and IV

In our study, sex was significantly associated with being diagnosed with a mental illness ($p < 0.000$). The other factors assessed including health facility type, data collection period, and age category were not associated with being diagnosed with mental illness ($p > 0.05$).

In the bivariable logistical regression analysis, the factors that were significantly associated with mental illness diagnosis in the health facilities in southwestern Uganda included: Female ($p < 0.000$, 95% CI: 0.42–0.72); Age category 1-18year ($p = 0.02$, 95% CI: 1.16–4.15); and age category 61+ ($p = 0.006$, 95% CI: 1.28–4.38). Those that were not significant included: Health facility ($p = 0.057$, 95% CI: 0.99–1.70); and Follow-up period ($p = 0.19$, 95% CI: 0.63–1.09).

In the multivariable logistic regression analysis, the predictors of a healthcare worker diagnosing a mental illness included, being female (aOR:0.52, 95% CI: 0.39–0.69) and being of age 61 + years (aOR:3.02, 95% CI: 1.40–6.49) (Table 4).

Table 4

Predictors of mental disorders diagnosis

Characteristics	Description	cOR (95% CI)	aOR (95% CI)	p-value
Health Facility	HC IV	1.0	1.0	
	HC III	1.29 (0.99- 1.70)	1.25 (0.95 - 1.65)	0.107
Intervention period	During	1.0	1.0	
	Post	0.83 (0.63 – 1.09)	0.85 (0.64 – 1.12)	0.248
Age category (years)	19-60	1.0	1.0	
	1-18	2.19 (1.16 - 4.15)	2.63 (0.96 – 7.24)	0.060
	61+	2.36 (1.28 – 4.38)	3.02 (1.40 – 6.49)	0.005
Sex	Male	1.0	1.0	
	Female	0.55 (0.42 – 0.78)	0.52 (0.39 -0.69)	<0.000

Discussion

Our study examined the types of mental illness and compliance with guidelines at a primary health care facility in Western Uganda. Of interest was the prevalence of mental disorders diagnosis during the study period, the predictors of being diagnosed with a mental disorders' diagnosis, and the appropriateness of the management for the mental disorders (medication given and at what health facility level).

Prior to our intervention, there was hardly any record of mental disorder diagnosis at the selected health centers III and IV in Mbarara district. However, during the intervention, 76 patients with a mental disorder diagnosis were recorded, and 70 after the intervention. This implies that the PHC providers retained the knowledge and practice of assessing for mental disorders, a practice that was not common prior to the intervention. The intervention brought about a change in the behavior of the PHC providers in integration mental health services into routine care. Although there was noticeable change in practice of integrating mental health services into routine care by the PHC providers, the number of patients recorded was small in relation to the total number of patients seen during the study period at the health facilities. It is possible that there could be a low prevalence of mental disorders in southwestern Uganda. However, a previous study by Ovuga et al 2005 done in rural Uganda (Adjumani and Busoga) reported a prevalence of 17.4% for depression. It is therefore likely that the 2.4% mental disorder diagnoses observed in our study is not a true reflection of mental disorders in southwestern Uganda. The observed low mental disorder entries into the HMIS register could be due to insufficient adoption of the intervention amongst the PHC providers.

Despite the improvement of PHC providers in assessing for mental disorders in routine care, there was a misalignment of the practice with the UCG. According to the UCG, mental disorder diagnosis and

treatment initiation is expected to be done starting from HC IV level; however, from the records review, there were new mental disorder diagnoses made, and treatment initiation at HC III level where there is neither a medical doctor nor a mental health specialist. The correctness of the diagnosis made, and treatment initiated cannot be confirmed. It is expected that empirical treatment is provided at HC III level while specific treatment based on confirmed diagnosis at HC IV level. Additionally, it was noted that patients at HC III were given specific treatment while some at HC IV were given treatments that did not comply with the guidelines. The observed misalignment with the guidelines is a reflection of the challenges in the referral system (11). This was highlighted in our previous study in which PHC providers at HC III level noted that it was pointless for them to refer patients to HC IV to their colleagues with the same qualifications (12). Additionally, the empirical treatment of bipolar disorder at HC IV and specific treatment of depression and bipolar disorder at HC III could be attributed to the restrictiveness of the guidelines or inadequate knowledge of the medicines by the PHC providers. To improve access to mental health services, there may be a need to relax the restrictive guidelines to allow PHC providers at HC III level to diagnose and treat mental disorders. This however calls for more training and support supervision by mental health specialists.

While we observed misalignment of the practice of PHC providers in the management of mental disorders, this behavior is unlikely to significantly affect the quality and outcome of care received by the patients. One area of non-compliance was the use of carbamazepine (a mood stabilizer) in the management of bipolar disorder, and amitriptyline for depression which were both prescribed at HC III level. Interestingly, these are correct medicines for the conditions, however, they were prescribed at an inappropriate level as per the UCG. The rationale for the guidelines is likely that providers at HC III may not be able to detect and/or manage the unwanted effects of the prescribed medicines. This is potentially a challenge especially because the adverse effects of the medications used may mirror the symptoms of the mental disorders being managed. With the inadequate referral system, the patients are likely to continue receiving medicines for symptoms that are not due to the mental disorder further worsening the condition. This delay in accessing appropriate care is a common problem especially in low- and middle-income countries where the health care systems are inefficient (13).

Our study found that individuals of age 61 years and above were twice more likely to be diagnosed with a mental disorder than those in the age group 18–60 years. This finding is like those of previous studies which reported an association between mental disorder diagnosis and advancement in age (14). Older people experience dementia as well as other conditions of aging (i.e., loss, frailty, chronic pain) and are therefore more likely to be diagnosed as having a mental disorder which may explain the findings of our study. The likely misclassification of older patients with a mental disorder diagnosis could be attributed to the low level of training among the PHC providers. This means that with the current drive for integration of mental health services into routine care at PHC level, there is need for additional training and support supervision.

In relation to gender, being female reduced the likelihood of being diagnosed with a mental disorder. Furthermore, the rate of mental disorder diagnosis was higher amongst males compared to females. This

is contrary to epidemiological studies that have consistently reported higher rates of depression and anxiety disorders in women (15). Some mental symptoms may culturally be acceptable as normal part of life e.g., a woman presenting with features of depression may be considered normal given the high burden experienced by many women in the local communities. However, a man presenting with depressive symptoms may be taken seriously. Generally, gender does not seem to affect diagnosis of mental disorder. However, the prevalence of specific mental disorders differs according to gender. For example, there is high prevalence of depression and anxiety among women than men; on the other hand, men consistently show higher rates of substance and antisocial disorders (15, 16). Females are more likely to express their underlying emotional distress compared to men and seek health care. With more females seeking health care compared to males, it is likely that majority of men with undiagnosed mental health disorders are present in communities (17). This finding points to the need for the establishment of health promotion interventions targeting a wider reach of mental health services in the communities by the Ministry of Health.

Conclusion

Despite the noticeable change in practice of PHC providers in integrating mental health services in routine care as reflected by the rise in the number of mental disorders diagnosed and treated, and entered into the modified paper based HMIS registers, there was nonadherence to the UCG at HC III level. There is need for the UMOH to relax the restrictive guidelines to allow PHC providers at HC III level to diagnose and treat mental disorders. Furthermore, there is need to incorporate mental disorders into the paper based HMIS registers used at the health facilities to help act as cues for the PHC providers in assessing for mental disorders in routine care.

Abbreviations

HC: Health Center

HMIS: Health Information Management System

PHC: Primary Health Care

UCG: Uganda Clinical Guidelines

UMOH: Uganda Ministry of Health

Declarations

Ethics approval and consent to participate

The study protocol was approved by the Mbarara University Research Ethics Committee (MUREC 1/7). Data was de-identified before entry into an electronic version. Patient identifiers (e.g., name, patient file

number) were not collected. Access to the patient files during data extraction was restricted to the research assistants and the study principal investigator.

Consent for publication

Not applicable

Availability of data and materials

All data will be available upon request.

Competing interests

Authors have no competing interests.

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Authors' contributions

EW, CO, and MO designed the study. EW, GR, SM, CO, and MO reviewed the data. EW, MO, GR, and CO carried out the statistical analysis. EW drafted the manuscript. ZT, EO, PS revised and proofread the manuscript. All authors read and approved the final version of the manuscript.

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