Research Article

A Study of the Diagnostic Practices for Mental Disorders in Ghana

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Abstract

Introduction: A lack of awareness of the diagnosis of mental disorders exists in the Ghanaian community due to the general misconceptions about mental health. One major challenge in diagnosing mental disorders is that no blood test or scan can be performed to confirm a particular mental disorder, unlike other medical conditions such as cancer, malaria, diabetes, and hepatitis. A stepwise progressive observation and assessment to rule out all possible medical conditions that might be associated with a mental disorder is essential to enhance the quality of diagnosis and treatment. This study focuses on describing the diagnostic practices of mental disorders to educate the public, create awareness, and to improve diagnosis in Ghana.

Objective: This paper aims to describe the current diagnostic practices used to diagnose mental disorders to understand the impact of the diagnosis of mental disorders and to provide evidence for mental health policy and planning to improve diagnostic practice in psychiatry in Ghana.

Methods: We collected and described data on the diagnosis of mental disorders from 30 mental health professionals aged 20 years and above who were purposively selected from six hospitals. We carried out in-person structured interviews with all participants at their various hospital premises.

Results: Stages of diagnosing mental disorders can be single, dual, or multiple. Proportions representing the patterns of diagnosis of the most common types of mental disorders in the population included 73.3% for mania without psychotic syndrome, and 63.3% for hebephrenic schizophrenia. Moderate depressive episodes, bipolar affective disorder with mild or moderate depression, and organic delusion (schizophrenia-like) disorder achieved the same results (56.7%). Phobic anxiety disorder and schizoid personality disorder were also reported by the same proportions (46.7%). Also, symptomatic epilepsy and epileptic syndrome was reported by (43.3%) and 40% for mood disorder due to known physiological condition with manic symptoms. Persistent delusional disorder as well as dementia with behavioral disturbance and dementia with depression and anxiety were reported by the same proportions (36.7%), and 33.3% for psychoactive substance abuse with psychoactive sub-induced anxiety disorder. The level of diagnostic quality in the psychiatric hospitals was higher than in the primary health centers (83.3% vs 63.3%). The most suitable intervention to improve diagnostic quality (40%) was associated with diagnostic education. Most participants (56.7%) assigned a moderate rating to the effectiveness of the interventions to improve diagnostic practices.

Conclusion: We plan to use our findings to solicit support from mental health stakeholders to provide comprehensive public education involving basic and specific knowledge on the diagnosis of mental disorders. We recommend that any national programme would need to have sustainable long-term policies to encourage and motivate mental health professionals to participate in diagnostic activities and to pay more attention to patients. Incorporating mental health education into the school curriculum is also important.

Keywords: Mental Disorders, Diagnosis, Intervention, Ghana

Introduction

Mental disorders, which include schizophrenia, depression, bipolar disorders, and personality disorders, are difficult to diagnose accurately, which complicates the process for health professionals of selecting appropriate treatment modalities. As noted by SANE Australia, a national mental health charity working to support four million Australians affected by complex mental health, ''there are no blood tests and brain scans to confirm a mental disorder, although these tests may be useful in finding out other possible causes of the symptoms [of a mental disorder]'' [1]. An experienced mental health professional, working with other health professionals, makes the diagnosis after observing the patient to identify symptoms associated with mental health and after considering the patient's medical history and life events. According to our survey, discussions with relatives and friends about individual behavioral changes also play a significant role in ensuring an accurate diagnosis. A stepwise progressive observation and assessment to rule out all other medical conditions that may be associated with a mental condition is essential to enhance accurate diagnosis and treatment.

Individuals with mental disorders may experience symptoms that vary in physical presentations and severity during the course of the mental illness due to several factors, including physical or

biological, social and environmental, and psychological factors, and family history. Moreover, the extent to which individuals are affected with symptoms of mental disorders can vary. According to the National Collaborating Centre for Mental Health, "an individual with schizophrenia may have a physical presentation of hallucinations which may cause anxiety and problems concentrating. Individuals with different mental illnesses will have different illness experiences, including the type of symptoms experienced" [2]. MindWise and WHO further, suggested that talking to a professional about what is being experienced, for instance, difficulty concentrating or sleeping, feelings of hopelessness, seeing imaginary figures, or having suicidal thoughts, is the first step to understanding and learning to live with and recover from mental disorders. Discussing the type of symptoms experienced 'will guide professionals in deciding on diagnosis and treatment modalities' [3, 4]. However, developing interventions to address mental disorders is challenging, and these interventions need multifactorial dimensions.

Some patients, such as those suffering from schizophrenia or bipolar disorder (manic depression), may have clusters of symptoms that allow mental health professionals to make an accurate diagnosis. Schizophrenia and bipolar disorder affect the moods and thought patterns of sufferers, making them vulnerable to losing connection with reality. These individuals may experience hallucinations, hearing sounds and voices, or tasting and smelling things that are not real. They may experience mood swings that affect their behaviour, or they may develop paranoia and beliefs that they are being persecuted. The presentation of symptoms also varies from one person to the next: 'some people will only ever experience a single "psychotic episode", while others will have recurring periods of problems, perhaps at times of particular stress in their lives' [3]. The symptoms being experienced are vital to guide the professional in diagnosis and treatment modalities to reduce harm and to increase the chances of recovery.

In some cases, a dual diagnosis may be made for psychiatric disorders, which refers to the diagnosis of mental health disorders, such as depressive disorders (depression and bipolar disorder), anxiety disorders (generalized anxiety and panic disorder), phobias, schizophrenia, and personality disorders, and substance abuse problems [5]. Suffering from a mental disorder significantly increases the risk of misusing alcohol and drugs. For example, research indicates that individuals diagnosed with schizophrenia are more likely to misuse alcohol and six times more likely to use street drugs [6, 7]. While the exact reason for these findings remains unknown, it has been established that the use of socially acceptable legal drugs such as caffeine, nicotine, and alcohol can contribute to the development of mental illness [8].

A key goal of the World Health Organization (WHO) is the development of a cross-cultural diagnostic tool for the assessment and diagnosis of mental disorders. The WHO International Classification of Diseases (ICD) has been used universally as the official diagnostic tool for diagnostic classification [9, 10]. According to the WHO (2018, para. 1), "the ICD serves the basis for finding health trends and statistics worldwide, and contains around 55 000 unique codes for injuries, diseases and causes of death" [11]. The ICD 10th Edition (ICD-10), which is currently in use and set to be replaced by the ICD 11th Edition (ICD-11) on 1 January 2022, enables health professionals worldwide to share

information through a common language, enhancing collaboration and enabling health professionals to follow common service provision protocols [12, 13, 14]. Studies conducted using the ICD-10 have presented the prevalence of diseases, clinical presentation of diseases, and diagnostic concepts related to various disorders in countries with different cultural backgrounds [15-21]. Moreover, medical professionals and researchers worldwide have suggested improvements and modification of the ICD-10 to reflect different cultures and psychiatric disorders [22-26].

For this study, we considered ICD-11, which ''provides significant improvements on previous versions'' but is still under development [27]. The ICD-11 was presented at the World Health Assembly in May 2019 for adoption by member states. According to Dr Robert Jacob, team leader for Classifications, Terminologies, and Standards at the WHO, ''a key principle in this revision was to simplify the coding structure and electronic tooling—this will allow health care professionals to more easily and completely record conditions'' [27].

Ghana faces challenges in diagnosing mental disorders, which may be associated with the lack of advanced diagnostic equipment and the inability to deliver mental health services to hard-to-reach communities. Kirmyer found that the efficiency of psychiatric doctors is influenced by their levels of professional experience and professional training, the cultural backgrounds of both patients and doctors, and in the interpretation of diagnostic results [28].

Additionally, the lack of facilities for the provision of mental health services is a barrier to providing quality diagnoses, even more so than the lack of mental health professionals. To create awareness of the diagnosis of mental disorders, the need exists to conduct a study focused on educating the population and improving diagnostic quality in Ghana. We collected sociodemographic data on the study participants (gender, professional qualification, age in years, region of work, work experience in years, and religious affiliation) and data on the number of diagnostic stages for 12 common mental disorders selected from ICD-10 clinical case studies, patterns of diagnostic practice related to mental disorders, factors influencing diagnostic quality, and interventions to improve diagnostic quality to describe the diagnosis of mental disorders.

Aims of This Study
The main aim of this study was to describe the current diagnostic practices used to diagnose mental disorders to understand the impact of the diagnosis of mental disorders and to provide evidence for mental health policy and planning to improve diagnostic practice in psychiatry in Ghana. The description of each diagnosis was based on 12 common clinical mental disorders, which were selected from a wide spectrum of psychiatric conditions from ICD-10. Our description of diagnosis also focused on the factors, which influence diagnostic quality, patterns of the diagnosis of mental disorders, interventions to improve diagnostic quality, the quality of diagnosis in the psychiatric hospital and the primary health centres, and the level of diagnostic quality.

Methods
Setting of the study
The study was carried out in six hospitals selected from six regions in Ghana. The hospitals included Accra Psychiatric Hospital (Greater Accra Region), Ankaful Psychiatric Hospital (Central Region), Koforidua Regional Hospital (Eastern Region), Sunyani

Regional Hospital (Brong Ahafo Region), Tafo Government Hospital, Kumasi (Ashanti Region), and Tamale Teaching Hospital (Northern Region). All the hospitals are funded by the government and provide mental health services under the authority of the Ministry of Health, Ghana Health Service, and the Mental Health Authority. These regions were selected because we wanted representatives from every part of Ghana to collect representative data. The selected regions all contain a mixture of urban, semi-urban and rural communities.

Except for Ankaful Psychiatric Hospital, which is in a semi-urban area, all the hospitals are in regional capital cities. However, following a referendum, on February 12, 2019, six new regions were created in Ghana, which affected two of our study regions: Brong Ahafo Region and Northern Region. Two regions, Ahafo Region and Bono East were created from Brong Ahafo Region, and Savannah and North East Regions were created from the Northern Region [29]. The creation of the new regions did not introduce limitations to this study. The geographical locations of the study regions are shown in Figure 1.
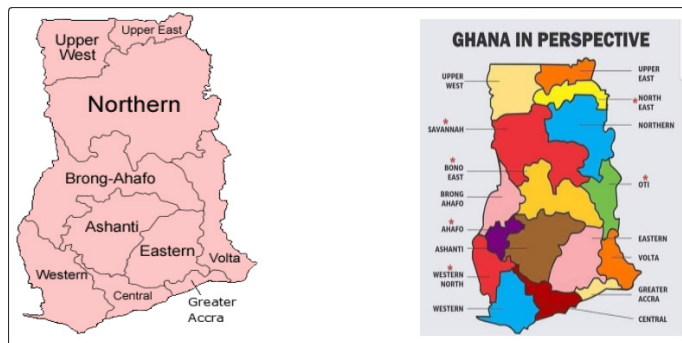

Figure 1: Old (left) and new (right) maps of Ghana showing the study regions.
Source: Ghana Statistical Services, Geographical information System (GIS) Section (2019) [30]

Study Design
We used a cross-sectional survey approach to collect and describe the data on diagnostic practices related to mental disorders. A cross-sectional survey was suitable due to time constraints and because it enabled us to report on current and specific, diagnostic practices in the mental health field in Ghana. This design further allowed us to select participants who were all mental health professionals with common characteristics and to allow respondents to share their opinions based on their professional experience with diagnosing mental disorders and the feelings and behaviours involved in the diagnostic process. We wanted the participants to provide accurate information on diagnostic patterns that showed a true reflection of their interpretation of mental disorders in Ghana. Finally, we wanted to determine participants' perceptions of the factors that influence diagnostic quality, and we wanted an overview of the common interventions, which could improve diagnostic quality.

Study participants and sampling
We used purposive sampling with the aim to select a representative sample for data collection. We carried out sampling in two stages. During the first stage, we included two psychiatric units in two hospitals from two regions in central Ghana and two psychiatric units from two hospitals in two regions in the north. We also included two psychiatric hospitals, Accra Psychiatric Hospital and Ankaful

Psychiatric Hospital, to enable us to study the samples from solely psychiatric hospitals. We selected the regions to ensure a fair representation of mental health professionals for the data collection. During the second stage of sampling, we purposively selected 30 mental health professionals, who were clinicians with diagnostic responsibilities aged 20 years and over, both male and female, from the six hospitals in six regions for interviews. They included 12 general practitioners (40.0%), four psychiatrists (13.3%), five psychologists (16.7%), and nine physician assistants (30.0%). We excluded mental health nurses because they are not allowed to diagnose mental disorders.

All the study investigators and research participants fully completed a training programme that oriented them on the aims of this study and the specific tools and methodologies employed. During the training sessions, the respondents were given detailed instructions on the administration of the questionnaire. The investigators answered questions raised by the respondents regarding the process of answering the questionnaire to show respect to and maintain the dignity of the research participants and to fulfil autonomy criteria. Each individual was then given a maximum of 14 days to confirm participation in this study. Consent forms approved by the Ghana Health Service Ethics Review Committee were distributed after 14 days and signed by each participant, confirming their participation in the study. We informed participants about their freedom to discontinue the study at any time or to fully withdraw from the study.

Confidentiality and Withdrawal
The data collected were accessed and stored only by investigators, and only for this study. Names, codes, and tags assigned during data collection remained anonymous in our analysis. Research participants were assured that any information provided would not be divulged to others without their permission. This was done to conform to informed consent. All research participants were free to make their own decisions whether to discontinue their involvement and whether to answer all questions even after signing the informed consent form. They were assured that it was not mandatory to answer questions that make them uncomfortable and that they were free to withdraw without giving a reason. They were further assured that withdrawing from the study would carry no consequences, but they were informed that any data they might have provided as part of their participation in the study would remain part of the study records and could not be removed. They were also informed that if they decided to withdraw, they should request, complete, and sign a withdrawal form and submit it to the first author.

Data collection instrument
The ICD-10 clinical case vignette was used as the tool for data collection. Case-vignettes have been used in other qualitative studies [31, 32]. During diagnosis, significant factors, for example, social contrasts of patients, the overview of patient's history and patients' nonverbal correspondences are studied. The utilization of clinical case vignettes diminished potential varieties between patients with various social foundations prompting making the social contrasts in the clinicians progressively clear. The case vignettes have basically been utilized regarding the testing dependability of various mental diagnosis in the ICD-10 and other diagnostic classifications and in the evaluation of multiaxial of ICD-10 [33-42].

Data Collection
The Ghana Health Service Ethics Review Committee and the Mental

Health Authority approved the study, and we obtained administrative approvals from the selected hospitals. We conducted the study between January 2019 and August 2019 and collected the data at the selected hospitals. The data collection team consisted of one public health physician (first author) and a trained mental health nurse from each hospital (six in total) who assisted in the collection of data. An in-person interview following a structured questionnaire was used for data collection and observations. In-person interviews ensured a high response rate and provided the closest contact with the study participants. We carried out observations during the diagnosis of mental disorders in the hospitals.

We collected demographic data, including gender, age in years, professional qualifications, and work experience in years, and religious affiliation. The interviews included questions related to the number of diagnostic stages for each of the 12 mental disorders common in Ghana, as selected from the ICD-10 clinical case studies; diagnostic patterns; level of diagnostic quality in the psychiatric hospital compared with the primary health centres; and factors influencing the quality of diagnosis in Ghana. We also obtained information on interventions, which can improve diagnostic quality.

All 30 mental health professionals with diagnostic roles involved in the in-person interviews in this study were familiar with the ICD-10 (1992) classifications of mental and behavioral disorders. All interviews lasted for an estimated duration of 90 minutes. We asked the mental health professionals to state the number of diagnostic stages for each of the mental disorders selected from the ICD-10 clinical case studies and to list the most common type of mental disorder associated with each of the 12 common mental disorders selected from the ICD-10 clinical case studies. The mental health professionals in each hospital made a psychiatric diagnosis of their patients, and each treatment team confirmed the diagnosis. We included telephone interviews as follow-up for clarification of unclear and missing information where necessary.

Data Analysis

For our analysis, mental health professionals were classified by gender, age, professional qualification, work experience, region, and religious affiliation. Further, we classified our analysis by the number of diagnostic stages (single, dual, or multiple diagnosis), patterns of diagnosis, and respondents' perceptions of factors determining diagnostic quality, level of diagnostic quality in psychiatric hospitals compared with primary health centres, and the level of interventions towards improving diagnostic quality. We used participants' diagnosis related to each mental disorder selected from the ICD-10 clinical case studies in our analysis. The number of diagnostic stages for each mental disorder selected from the clinical case studies was manually recorded and later entered into IBM SPSS Statistics 25. We used descriptive analysis in the form of frequencies (n) and proportions (percentage) to describe the socio-demographics of participants and the diagnosis for mental disorders. All analysis was performed using IBM SPSS Statistics 25.

Results

The sociodemographic information of the study participants is summarized in Table 1. The sample consisted of 30 mental health professionals with diagnostic responsibilities, with 56.7% male and 43.3% female participants, with ages ranging from 20 to 44 years. Most respondents were general practitioners (40%), with the remainder of the sample made up of physician assistants (30%), psychiatrists (13.3%), and psychologist (16.7%). Most respondents (56.7%) had six to 10 years of working experience, and 93.3% identified as Christians and 6.7% as Muslims.

Table 1: Sociodemographic information of the study participants (*n* =30)

Characteristics	Total	Gender	
		Males	**Females**
n (%)	30 (100)	17 (56.7)	13 (43.3)
Age (in years)			
25–34	21 (70.0)	12 (70.6)	9 (69.2)
35–44	9 (30.0)	5 (29.4)	4 (30.8)
Professional qualification			
General Practitioners	12 (40.0)	6 (35.3)	6 (46.2)
Psychiatrists	4 (13.3)	2 (11.8)	2 (15.4)
Psychologists	5 (16.7)	2 (11.8)	3 (23.1)
Physician Assistants	9 (30.0)	7 (41.2)	2 (15.4)
Work experience (in years)			
1–5	11 (36.7)	5 (29.4)	6 (46.2)
6–10	17 (56.7)	11 (64.7)	6 (46.2)
≥ 11	2 (6.7)	1 (5.9)	1 (7.7)
Regions			
Ashanti	5 (16.7)	3 (17.6)	2 (15.4)
Brong Ahafo	5 (16.7)	3 (17.6)	2 (15.4)
Central	5 (16.7)	4 (23.5)	1 (7.7)
Eastern	5 (16.7)	3 (17.6)	2 (15.4)

Greater Accra	5 (16.7)	1 (5.9)	4 (13.3)
Northern	5 (16.7)	3 (17.6)	2 (6.7)
Religious Affiliation			
Christianity	28 (93.3)	16 (94.1)	12 (92.3)
Muslim	2 (6.7)	1 (5.9)	1 (7.7)

Common mental disorders and their number of diagnostic stages

The common mental disorders and their numbers of diagnostic stages are presented in Table 2. Dementia (F03.9) has a single diagnostic stage, but schizophrenia (F20), depressive episodes (F32), epilepsy (G40), personality disorder (F60.9), and mood disorder (F39) have single, dual, and multiple diagnoses. Substance abuse (F19.10), anxiety (F41.9), bipolar disorder (F31.9), delusion disorder (F22.0), manic episode (F30.9), and unspecified psychosis (F29) have single and dual diagnostic stages. Schizophrenia has the largest incidence of multiple diagnosis (36.4%), whereas mood disorder (23.8%), schizophrenia (20.0%), and substance abuse (13.8%) have the largest dual diagnoses. Although the data has not been recorded, most single diagnoses (61.7%) are associated with depressive episodes, anxiety, bipolar disorder, delusion disorder, dementia, and psychosis.

Table 2: Mental disorders and the number of diagnostic stages in Ghana (n = 30)

Mental disorder with ICD-10 Codes	Number of diagnostic stages		
	Single	Dual	Multiple
Schizophrenia (F20)	15 (5.6)	11 (13.8)	4 (36.4)
Substance abuse (F19.10)	14 (5.2)	16 (20.0)	-
Depressive episodes (F32)	27 (10.0)	2 (2.5)	1 (9.1)
Anxiety (F41.9)	28 (10.4)	2 (2.5)	-
Epilepsy (G40)	24 (8.9)	5 (6.3)	1 (9.1)
Bipolar disorder (F31.9)	26 (9.7)	4 (5.0)	-
Delusion disorder (F22.0)	28 (10.4)	2 (2.5)	-
Dementia (F03.9)	30 (11.2)	-	-
Manic episode (F30.9)	18 (6.7)	12 (15.0)	-
Unspecified psychosis (F29)	27 (10.0)	3 (3.8)	-
Personality disorder (F60.9)	24 (8.9)	4 (5.0)	2 (18.2)
Mood disorder (F39)	8 (3.0)	19 (23.8)	3 (27.3)

Patterns of diagnostic practices related to mental disorders in Ghana

We present the patterns of diagnosis of the mental disorders according to gender. The patterns show the proportion of reporting the most common mental disorders in the population per case by respondents.

Table 3 shows the pattern of diagnosis for schizophrenia (F20).

Table 3: Patterns of schizophrenia (F20) diagnosis by gender (n = 30)

Schizophrenia (F20) diagnosis	n (%)	Gender	
		Male	Female
n (%)	30	17 (56.7)	13 (43.3)
Hebephrenic schizophrenia (F20.1)	19 (63.3)	11 (64.7)	8 (61.5)
Catatonic schizophrenia (F20.2)	5 (16.7)	5 (29.4)	-
Residual schizophrenia (F20.5)	2 (6.6)	1 (5.9)	1 (7.7)
Paranoid schizophrenia (F20.0)	3 (10.0)	-	3 (23.1)
Simple schizophrenia (F20.6)	1 (3.3)	-	1 (7.7)

Most respondents (63.3%) reported that hebephrenic schizophrenia is the most common type of schizophrenia in the population, with 64.7% of male and 61.5% of female respondents holding this view. In contrast, male respondents recorded low response rates for catatonic schizophrenia (29.4%) and residual schizophrenia (5.9%), while only 7.7% of female respondents identified residual schizophrenia (F20.5) and simple schizophrenia (F20.6) respectively. Table 4 shows the distribution of the patterns of diagnosis of substance abuse (F19.10) by gender.

Table 4: Patterns of substance abuse (F19.10) diagnosis by gender (*n* = 30)

Substance abuse (F19.10) diagnostic patterns	*n* (%)	Gender	
		Male	Female
n (%)	30	17 (56.7)	13 (43.3)
Psychoactive substance abuse with intoxication delirium (F19.121)	4 (13.3)	1 (5.9)	3 (23.1)
Psychoactive substance abuse with psychoactive sub-induced anxiety disorder (F19.180)	10 (33.3)	7 (41.2)	3 (23.1)
Psychoactive substance abuse (F19.19)	8 (26.7)	5 (29.4)	3 (23.1)
Alcohol abuse (F10.19)	8 (26.7)	4 (23.5)	4 (30.8)

The most common type of substance abuse reported is psychoactive substance abuse with psychoactive sub-induced anxiety disorder (F19.180), by 33.3% of respondents. While most male respondents (41.2%) shared this view, most female respondents (30.8%) reported alcohol abuse (F10.19) as the most common type of substance abuse. At 26.7% each, psychoactive substance abuse (F19.19) and alcohol abuse (F10.19) received the same overall scores. The results of the diagnostic patterns of depressive episodes (F32) are presented in Table 5.

Table 5: Patterns of diagnosis of depressive episodes (F32) by gender (*n* = 30)

Depressive episode (F32) diagnostic patterns	*n* (%)	Gender	
		Male	Female
n (%)	30	17 (56.7)	13 (43.3)
Moderate depressive episode (F32.1)	17 (56.7)	10 (58.8)	7 (53.8)
Severe depressive episode with psychotic symptoms (F32.3)	4 (13.3)	3 (17.6)	1 (7.7)
Major depressive disorder, single episode, in full remission (F32.5)	3 (10.0)	2 (11.8)	1 (7.7)
Schizoaffective disorder, depressive type (F25.1)	3 (10.0)	2 (11.8)	1 (7.7)
Mild depressive episode (F32.0)	3 (10.0)	-	3 (23.1)

Overall, 56.7% of the respondents reported that moderate depressive episode (F32.1) was the most common type of depressive disorder, with more male (58.8%) than female respondents (53.8%) reporting this. Severe depressive episode with psychotic symptoms (F32.23) was reported by 17.6% of the male respondents, which was also higher compared to the female respondents (7.7%). Among the male respondents, the same results (11.8%) were reported for major depressive disorder, single episode, in full remission (F32.5) and schizoaffective disorder, depressive type (F25.1) whereas the female respondents also reported the same results (7.7%) for severe depressive episode with psychotic symptoms (F32.3); major depressive disorder, single episode, in full remission (F32.5); and schizoaffective disorder, depressive type (F25.1). Both sets of respondents reported the same results (10.0%) for major depressive disorder, single episode, in full remission (F32.5); schizoaffective disorder, depressive type (F25.1); and mild depressive episode (F32.0).
Table 6 shows the results for anxiety disorder (F41.9).

Table 6: Patterns of diagnosis of anxiety disorder (F41.9) by gender (*n* = 30)

Anxiety disorder (F41.9) diagnostic patterns	*n* (%)	Gender	
		Male	Female
n (%)	30	17 (56.7)	13 (43.3)
Organic anxiety disorder (F06.4)	2 (6.6)	1 (5.9)	1 (7.7)
Phobic anxiety disorder (F40)	14 (46.7)	7 (41.2)	7 (43.8)
Panic disorder (episodic paroxysmal anxiety) (F41.0)	6 (20.0)	3 (17.6)	3 (23.1)
Generalized anxiety disorder (F41.1)	6 (20.0)	4 (23.5)	2 (15.4)
Mixed anxiety and depressive disorder (F41.2)	2 (6.6)	2 (11.8)	-

Phobic disorder (F40) was reported by 46.7% of the respondents as the most common disorder in the population. This result was slightly higher in female respondents (43.8%) compared with male respondents (41.2%). The same results (20.0%) were reported for panic disorder (episodic paroxysmal anxiety) (F41.0) and generalized anxiety disorder (F41.1). More female respondents (23.1%) than male respondents (17.6%) reported panic disorder (episodic paroxysmal anxiety) (F41.0), whereas more male respondents (23.5%) than female respondents (15.4%) identified generalized anxiety disorder (F41.1). The lowest reported anxiety disorder (6.6%) was organic anxiety disorder (F06.4), with only one male respondent (5.9%) reporting it.
The results of diagnostic patterns for epilepsy (G40) are presented in Table 7.

Table 7: Patterns of diagnosis of epilepsy (G40) by gender (*n* = 30)

Epilepsy (G40) diagnostic patterns	*n* (%)	Gender	
		Male	Female
n (%)	30	17 (56.7)	13 (43.3)
Idiopathic epileptic syndrome with seizures	6 (20.0)	4 (23.5)	2 (15.4)
Symptomatic epilepsy and epileptic syndrome (G40.1)	13 (43.3)	8 (47.1)	5 (38.5)
Generalized idiopathic epilepsy and epileptic syndromes (G40.03)	9 (30.0)	4 (23.5)	5 (38.5)
Other generalized epilepsy and epileptic syndromes (G40.4)	2 (6.7)	1 (5.9)	1 (7.7)

Most respondents (43.3%) identified symptomatic epilepsy and epileptic syndrome (G40.1) as the most common type of epileptic disorder in the population. This was highly reported by the male respondents compared with the female respondents (47.1% vs 41.7%). Generalized idiopathic epilepsy and epileptic syndromes (G40.03) was reported by 23.5% of male and 38.5% of female respondents. Only 5.9% of male and 8.3% of female respondents identified other generalized epilepsy and epileptic syndromes (G40.04). In Table 8, we present the results relating to the diagnosis of bipolar disorder (F31.9).

Table 8: Diagnostic patterns of bipolar disorder (F31.9) by gender (*n* = 30)

Bipolar (F31.9) diagnostics patterns	*n* (%)	Gender	
		Male	Female
n (%)	30	17 (56.7)	13 (43.3)
Bipolar affective disorders (F31)	3 (10.0)	1 (5.9)	2 (15.4)
Bipolar affective disorder with mild or moderate depression (F31.3)	17 (56.7)	10 (58.8)	7 (53.8)
Bipolar affective disorder with manic and psychotic symptoms (F31.2)	5 (16.7)	3 (17.6)	2 (15.4)
Bipolar affective disorder with mixed episode (F31.6)	4 (13.3)	3 (17.6)	1 (7.7)
Bipolar affective disorder with severe depression and psychotic symptoms (F31.5)	1 (3.3)	-	1 (7.7)

The distribution of the diagnostic patterns of bipolar disorder (57.7%) shows that bipolar affective disorder with mild or moderate depression (F31.3) is the most common type of bipolar disorder. A larger proportion of male (58.8%) than female respondents (53.8%) held this view. The male respondents reported the same results (17.6%) for bipolar affective disorder with manic and psychotic symptoms (F31.2) and bipolar affective disorder with mixed episode (F31.6). Female respondents reported the same results (7.7%) for bipolar affective disorder with mixed episode (F31.6) and bipolar affective disorder with severe depression and psychotic symptoms (F31.5). The least reported bipolar disorder (3.3%) overall is bipolar affective disorder with severe depression and psychotic symptoms (F31.5). Table 9 indicates the distribution of the pattern of diagnosis of delusional disorder (F22.0).

Table 9: Diagnostic patterns of delusional disorder (F22.0) by gender (*n* = 30)

Delusional disorder (F22.0) diagnostic patterns	*n* (%)	Gender	
		Male	Female
n (%)	30	17 (56.7)	13 (43.3)
Schizophrenia (F22.0)	8 (26.7)	4 (23.5)	4 (30.8)
Persistent delusional disorder (F23)	11 (36.7)	8 (47.1)	3 (23.1)
Acute and transient psychotic disorders (F23)	10 (33.3)	5 (29.4)	5 (38.5)
Induced delusional disorder (F24)	1 (3.3)	-	1 (7.7)

Persistent delusional disorder (F23) was identified by most respondents (36.7%; male = 47.1%, female = 23.1%) as the most common type of delusion disorder in the population, followed by acute and transient psychotic disorders (F23; 33.3%; male = 29.4%, female = 38.5%). Induced delusional disorder (F24) was identified by only one respondent (3.3%). In Table 10 the proportion of the diagnostic patterns of dementia are presented.

Table 10: Diagnostic patterns of dementia (F03.9) by gender (*n* = 30)

Dementia (F03.9) diagnostic patterns	*n* (%)	Gender	
		Male	**Female**
n (%)	30	17 (41.2)	13 (43.3)
Dementia with behavioural disturbance (F03.90)	11 (36.7)	7 (23.5)	4 (30.8)
Dementia with depression and anxiety (F43.23)	11 (36.7)	7 (41.2)	4 (30.8)
Subcortical vascular dementia (F01.2)	3 (10.0)	1 (5.9)	2 (15.4)
Dementia with bipolar affective disorder, current episode manic with psychotic symptoms (F31.2)	1 (3.3)	1 (5.9)	-
Vascular dementia (F01)	3 (10.0)	-	3 (23.1)

Dementia with behavioural disturbance (F03.90) and dementia with depression and anxiety (F43.23) were each reported by 36.7% of respondents as the most common types of dementia disorders among the population. The same proportion of female respondents (30.8%) reported dementia with behavioural disturbances (F03.90) and dementia with depression and anxiety (F43.7). In comparison, 23.5% of male respondents reported dementia with behavioural disturbance (F03.90). By gender, dementia with bipolar affective disorder, current episode manic with psychotic symptoms (F31.2) was the least reported diagnosis, with only one male (5.9%; 3.3% overall) identifying it. Table 11 shows the results for manic episodes (F30.9).

Table 11: Diagnostic patterns of manic episode (F30.9) by gender (n = 30)

Manic episode (F30.9) diagnostic patterns	*n* (%)	Gender	
		Male	**Female**
n (%)	30	17 (41.2)	13 (43.3)
Mania without psychotic symptoms (F30.10)	22 (73.3)	13 (76.5)	9 (69.2)
Mania with psychotic symptoms (F30.2)	5 (16.7)	3 (17.6)	4 (30.8)
Bipolar affective disorder, current episode mild or moderate depression (F31.3)	1 (3.3)	1 (5.9)	-
Hypomania (F30.0)	2 (6.6)	-	2 (15.4)

Most respondents (73.3%) identified mania without psychotic symptoms (F30.10), with 76.5% of male and 69.2% of female respondents agreeing with this view. More male than female respondents (17.6% vs 15.4%) reported mania with psychotic symptoms (F30.2). The least reported manic episode (3.3%) was bipolar affective disorder, current episode mild or moderate depression (F31.3).
Table 12 indicates the proportion of the patterns of diagnosis of psychosis.

Table 12: Diagnostic patterns of unspecified psychosis (F29) by gender (*n* = 30)

Unspecified psychosis (F29) diagnostic patterns	*n* (%)	Gender	
		Male	**Female**
n (%)	30	17 (41.2)	13 (43.3)
Organic hallucinosis (F06.0)	6 (20.0)	3 (17.6)	3 (23.1)
Organic delusion (schizophrenia-like) disorder (F06.2)	17 (56.7)	9 (52.9)	8 (61.5)
Organic mood (affective) disorders (F06.3)	3 (10.0)	2 (11.8)	1 (7.7)
Organic anxiety disorder (F06.4)	2 (6.7)	1 (5.9)	1 (7.7)
Mild cognitive disorder (F06.7)	2 (6.7)	2 (11.8)	-

Overall, 56.7% (male = 52.9%, female = 61.5%) of respondents reported that organic delusion (schizophrenia-like) disorder (F06.2) is the most common type of psychotic disorder in the population, followed by organic hallucinosis (F06.0; 20.0%; male = 17.6%, female = 23.1%). The least reported psychotic disorders organic anxiety disorder (F06.4) and mild cognitive disorder (F06.7), at 6.7%.
Results of the diagnostic patterns of personality disorders (F60.9) are shown in Table 13.

Table 13: Diagnostic patterns of personality disorders (F60.9) by gender (*n* = 30)

Personality disorder (F60.9) diagnostic patterns	*n* (%)	Gender	
		Male	Female
n (%)	30	17 (41.2)	13 (43.3)
Paranoid personality disorder (F60.0)	7 (23.3)	4 (23.5)	3 (23.1)
Schizoid personality disorder (F60.1)	14 (46.7)	8 (47.1)	6 (46.2)
Dissocial personality disorder (F60.2)	3 (10.0)	2 (11.8)	1 (7.7)
Emotionally unstable personality disorder (F60.3)	3 (10.0)	2 (11.8)	1 (7.7)
Histrionic personality disorder (F60.4)	3 (10.0)	1 (5.9)	2 (15.4)

At 46.7%, schizoid personality disorder (F60.1) was the most common type of personality disorder reported, with 46.2% of female and 47.1% of male respondents agreeing with this assessment. This was followed by 23.3% for paranoid personality disorder (F60.0). The same proportion of respondents (10%) identified dissocial personality disorder (F60.2), emotionally unstable personality disorder (F60.3), and histrionic personality disorder (F60.4). Table 14 presents the diagnostic patterns for mood disorders.

Table 14: Diagnostic patterns of mood disorders (F39) by gender (*n* = 30)

Mood disorder (F39) diagnostic patterns	*n* (%)	Gender	
		Male	Female
n %	30	17 (41.2)	13 (43.3)
Mood disorder with mixed anxiety and depression (F43.23)	8 (26.7)	7 (41.2)	1 (7.7)
Mood disorder due to known physiological condition with manic symptoms (F06.30)	12 (40.0)	3 (17.6)	9 (69.2)
Persistent mood disorder (F34)	7 (23.3)	5 (29.4)	2 (15.4)
Mood disorder due to hysiological conditions with epressive symptoms (F06.33)	3 (10.0)	2 (11.8)	1 (7.7)

The results show that the most common reported mood disorder (40.0%) is mood disorder due to known physiological condition with manic symptoms (F06.30). A higher proportion of female (69.2%) than male respondents (17.6%) reported this. Among the male respondents, the most common mood disorder (41.2%) reported is mood disorder with mixed anxiety and depression (F43.23), whereas among the female respondents (69.2%) the most common mood disorder reported is mood disorder due to known physiological condition with manic symptoms (F06.30). Level of Diagnostic Quality in Psychiatric Hospitals and Primary Health Centres by Gender

Level of Diagnostic Quality in Psychiatric Hospitals and Primary Health Centres by Gender
Most respondents (83.3%) assigned a *moderate* rating to the level of diagnostic quality in psychiatric hospitals; most (63.3%) ascribed the same rating to diagnostic quality in other primary health centres. Only 6.6% of participants rated diagnostic quality in psychiatric hospitals as *high*, with 10.0% rated it *low*. In comparison, 36.7% rated diagnostic quality low in other primary health centres. By gender, a larger proportion of male (88.2%) than female respondents (76.9%) rated diagnostic quality in psychiatric hospitals as *moderate*; likewise, more male (70.6%) than female respondents (53.8%) rated the diagnostic quality in primary health centres as *moderate*. The results of the diagnostic quality in both the psychiatric hospitals and the primary health centres are presented in Figure 2.
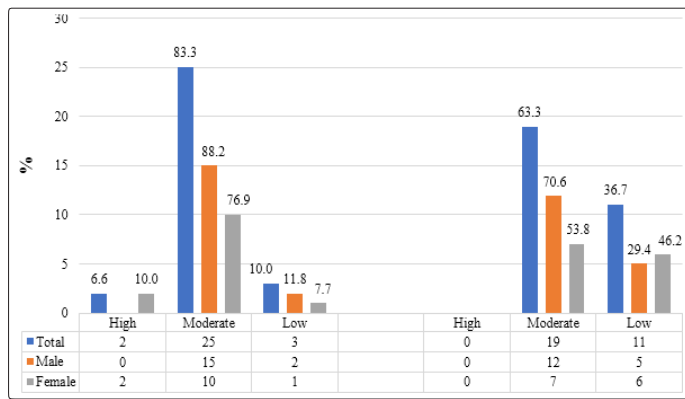
Figure 2: Level of diagnostic quality in psychiatric hospitals (Left) and primary health centres (Right) by gender
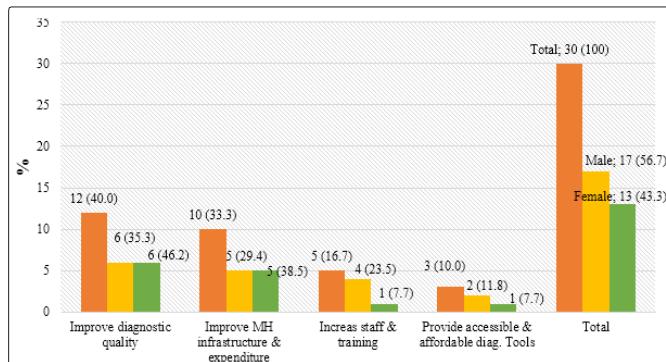
Mental Health Professionals' Perceptions of Interventions Aimed At Improving Diagnostic Quality by Gender

Figure 3 indicates interventions identified for improving diagnostic quality, as reported by the respondents. Forty percent of the respondents identified improving diagnostic education as an intervention to improve diagnostic quality, with 35.3% of male and 46.2% of female respondents supporting this view. In contrast, male respondents believed that improving mental health infrastructure and expenditure (29.4%; female = 38.5%) and increasing mental health personnel through training (23.5%) can improve diagnostic quality. Overall, the lowest scoring option is accessible and affordable diagnostic tools (10.0%).

Figure 3: Mental health professionals' perceptions of interventions aimed at improving diagnostic quality by gender

Perceptions of the Level of Interventions for Improving Diagnostic Quality

Figure 4 shows respondents' views on the level of interventions for improving diagnostic quality. The results on the perceptions of the level of interventions for improving diagnostic quality indicate that 56.7% of respondents rated the interventions for improving diagnostic quality moderately. Additionally, 52.9% of the male and 30.8% of the female respondents rated interventions low.
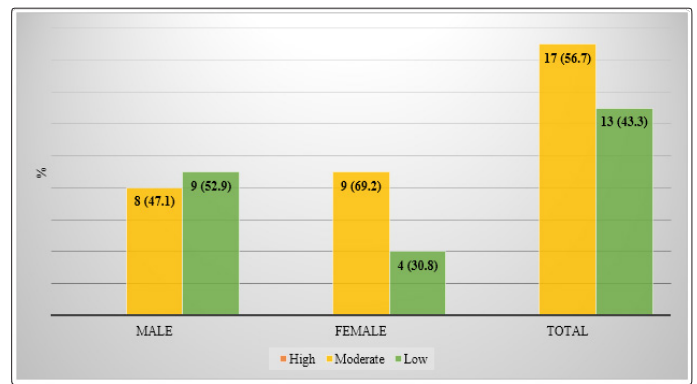
Figure 4: Perceptions of the level of interventions aimed at improving diagnostic quality

Table 15: Level of mental disorder in the population (n = 30)

Mental disorders	ICD-10 Code	Level of mental disorder		
		High	**Moderate**	**Low**
Schizophrenia	F20	29 (96.7)	1 (3.3)	-
Substance abuse	F19.10	20 (66.7)	10 (33.3)	-
Depressive episodes	F32	10 (33.3)	20 (66.7)	-
Anxiety	F41.9	2 (6.7)	15 (50.0)	13 (43.3)
Epilepsy	G40	17 (56.7)	12 (40.0)	1 (3.3)
Bipolar disorder	F31.9	6 (20.0)	14 (46.7)	10 (33.3)
Delusion disorder	F22.0	-	11 (36.7)	19 (63.3)
Dementia	F03.9	-	19 (63.3)	11 (36.7)
Manic episode	F30.9	-	19 (63.3)	11 (36.7)
Unspecified psychosis	F29	15 (53.3)	11 (36.7)	3 (10.0)
Personality disorder	F60.9	1 (3.3)	14 (46.7)	15 (50.0)
Mood disorder	F39	6 (20.0)	23 (76.7)	1 (3.3)

Table 15 shows the distribution of the level of the mental disorders in the population as reported by the respondents. The level of Schizophrenia (96.7%) reported to be the highest of all the mental disorders. Substance abuse, epilepsy, psychosis and depression were also reported to be high in the population (66.7, 56.7, 53.3 and 33.3%) respectively. Mood disorder and depression in the population were moderately reported by (76.7% and 66.7%) by the respondents whereas dementia and manic episode were reported by the same results (63.3%) in the same category.

Discussion

We conducted this descriptive study to understand the current status of diagnostic practice related to mental disorders in Ghana. Our sample consisted of mental health professionals from six hospitals in Ghana. Some participants worked in the two psychiatric hospitals included in this study—Accra Psychiatric Hospital and Ankaful Psychiatric Hospital—and the remainder worked in the psychiatric units of the selected hospitals. We excluded mental health nurses because they are not permitted to make diagnoses. Their exclusion did not introduce bias to the study. The inclusion of mental health professionals from non-psychiatric hospitals did not cause bias in the results either, because all were undertaking diagnostic activities in the hospitals. This improved data quality, which allowed for a valid description of the pattern of diagnostic practices. The first

author carried out observation of diagnosing mental disorders in the hospitals, and respondents completed the questionnaire individually.

Our results suggest that mental health professionals in Ghana use few diagnostic stages in diagnosing mental disorders. The lower number of diagnostic stages in Ghana may have contributed to the high burden of mental disorders. In the present study, 83.3% of respondents assigned a moderate rating to the quality of diagnosis of mental disorders in psychiatric hospitals compared with 63.3% assigning the same rating to the quality of diagnosis of mental disorders in primary health centres. Generally, we observed that the diagnosis of mental disorders in all the hospitals included in the study was moderately effective. This may be associated with inadequate facilities and the low level of public knowledge about the diagnosis of mental disorders, which leads to the failure of most patients to report mental disorders for treatment at hospitals.

Forty percent of respondents identified improving diagnostic education in the population to create awareness to increase the hospital attendance of people with mental disorders as the most suitable intervention to improve diagnosis. Few respondents (10%) identified accessible and affordable diagnostic tools for improving diagnostic quality; thus, this is not a major factor affecting the improvement of diagnostic quality of mental disorders in Ghana. Furthermore, 56.7% of the respondents assigned a moderate rating to the level of all the interventions focusing on improving diagnostic quality. Of the male respondents, 52.9% rated low the level of interventions for improving diagnostic quality, compared to 30.8% of female respondents.

We assessed and described the level of the mental disorders per case in the population based on the respondents' reports. At 96.7%, the level of schizophrenia appears to be the highest, although substance abuse (66.7%), epilepsy (56.7%), psychosis (53.3%), and depression (33.3%) were also reported as common. Mood disorder (76.7%) and depression (66.7%) were moderately reported, whereas dementia and manic episode achieved the same results (63.3%).

When comparing the proportions of the level of mental disorders and their diagnosis from our data with previous studies conducted in Ghana, other factors that might have contributed to any observed difference should be considered [43-51]. Regarding our study, differences such as the study population, wider geographical coverage and characteristics, knowledge of diagnosis of mental disorders in the population, participants' experiences that allowed them to provide data for the study, the period of the study, the focus of the study, and the availability of funding should be considered. Comparatively, the previous studies covered a small geographical area and focused only on policy rather than a general overview of mental disorders and diagnostic practices in Ghana.

We conducted a detailed in-person interviews to begin to understand the current status of the diagnostic practices for mental disorders in Ghana. To our knowledge, no other study has comprehensively assessed and described the diagnostic practices of mental disorders in Ghana. Therefore, it was necessary to describe the number of diagnostic stages, the patterns of diagnosis, and the level of mental disorders per case of 12 common mental disorders in Ghana selected from the ICD-10 clinical case studies. Our findings related to a lower number of diagnostic stages of mental disorders in Ghana differ from the results of Patel and Kleinman's study in which Russian clinicians used a higher number of diagnoses [52]. We observed that the lower number of diagnoses in Ghana might have increased the burden of mental disorders connected with the lack of space in psychiatric units, which would improve the working environment, especially in Tafo Government Hospital, Kumasi. It is important to conduct a further study that will attract attention from both the government and the public to come to the aid of Tafo Government Hospital in Kumasi

Patterns and Stages of Diagnosis of the Mental Disorders in Ghana

In Ghana, the diagnosis of mental disorders occurs after a thorough discussion with a mental health professional to rule out all other possible medical conditions. A further detailed discussion is held with the patient and the patient's relatives about the patient's thoughts, mood, and behaviour to allow the mental health professional to assess the mental state of the patient. Mental health professionals use questionnaires during these discussions to determine patients' mental condition, although diagnosis is not strictly based on the questionnaire alone. According to SANE Australia, a national mental health charity working to support four million Australians affected by complex mental health, "there are no blood tests and brain scans to confirm a mental disorder, although these tests may be useful in finding out other possible causes of the symptoms [of a mental disorder]" [1]. These tests are seldom available in government hospitals in Ghana.

Generally, we observed that the diagnosis of mental disorders is done in stages depending on the severity of the mental disorder. Our findings show that schizophrenia (F20), depressive episodes (F32), epilepsy (G40), personality disorders (F60.9), and mood disorders (F39) have single, dual, and multiple numbers of diagnostic stages. Substance abuse (F19.10), anxiety (F41.9), bipolar disorder (F31.9), delusion disorder (F22.0), manic episodes (F30.9), and unspecified psychosis (F29) have single and dual number of diagnostic stages, whereas dementia (F03.9) has a single diagnostic stage. Schizophrenia was reported to have the largest multiple diagnosis (36.4%), whereas mood disorder (23.8%) was reported to have the largest dual diagnosis. Ten percent of respondents reported depressive episodes, anxiety, and unspecified psychosis to have a single diagnosis, whereas 9.7%, 10.4% and 11.2% reported bipolar disorder, delusional disorder, and dementia.

Our analysis and description of the pattern of diagnosis was based on the 12 reported common mental disorders selected from the ICD-10 clinical case studies. Furthermore, we based a specific analysis on the most common types of mental disorders associated with mental disorders per case during diagnosis. The patterns of diagnosis show an inexplicable variation between the proportions of responses from male and female in reporting the diagnosis of mental disorders. The variations in proportion were determined by the level of the mental disorders per case. Overall, mental disorders associated with schizophrenia were found to be high in the population compared to other mental disorders. We described each mental disorder per case to create an accurate picture of the patterns of diagnosis of mental disorders and because this is the first study of its kind conducted in Ghana.

Schizophrenic Disorders (F20)
According to the WHO, schizophrenia is a chronic mental disorder 'characterized by distortions in thinking, perceptions, emotions,

language, sense of self, and behaviour that affects more than 21 million people worldwide [27]. 'Common experiences include hallucinations (hearing or seeing things that are not there), delusion (fixed false beliefs or suspicions not shared by others in the person's culture and that are firmly held when there is evidence to the contrary), abnormal behaviour (disorganized behaviour such as wandering aimlessly, mumbling or laughing to self, strange appearance, self-neglect or appearing unkempt), disorganized speech (incoherent or tangential speech), and emotional disturbances (marked apathy or disconnect between reportable emotion and what is determined like facial expression or body language' [27]. In the diagnosis of schizophrenia, the mental health professionals who took part in our study look for common symptoms such as hallucinations, social withdrawal, deterioration of personal hygiene, emotional disturbances, and disorganized speech. Rezvy, Øiesvold, Parniakov & Olstad, in a study involving Russian clinicians, suggested schizophrenia and schizophrenia-like diagnosis in cases that present psychotic symptoms and somatoform disorders when agoraphobia has been diagnosed. They further found that Norwegian clinicians prioritized affective aspects over psychotic symptoms in the case of schizoaffective disorder and overestimated the degree of depression [53].

We found that schizophrenia may have single, dual, and multiple diagnoses depending on the level of the symptoms. Our findings show that most (63.3% and 16.7%) schizophrenic disorders in the population are associated with hebephrenic schizophrenia (F20.1) and catatonic schizophrenia (F20.2), which affect occupational performance in the Ghanaian community. Our report is consistent with WHO data that worldwide, schizophrenia is associated with considerable disability and may affect educational and occupational performance [27]. The proportion of hebephrenic schizophrenia reported by the male respondents was slightly higher, at 64.7%, than that reported by the female respondents, at 61.5%. In contrast, 35.3% of male respondents reported catatonic schizophrenia (F20.2) and paranoid schizophrenia (F20.0), and only 7.7% of female respondents reported residual schizophrenia (F20.5) and simple schizophrenia (F20.6) as the less common schizophrenic disorders in the population. The variation in the results between the male and female respondents is not defined The WHO confirms this, noting that 'people with schizophrenia are 2–3 times more likely to die early than the general population are often due to preventable physical diseases, such as cardiovascular diseases, metabolic disease, and infections [27].

Substance Abuse (F19.10)
Substance abuse is among the leading cause of mental disorders in Ghana. ''Substance abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs. Psychoactive substance use can lead to dependence syndrome—a cluster of behavioural, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state'' [54]. Our findings on the causes of substance abuse, mainly peer pressure, enhancing performance, and preventing emotional disturbances, is consistent with the results of the American Psychiatric Association [55]. They reported that individuals take substances for pleasure, as stress relief, due to peer pressure, to feel like a 'real man', and to improve performance. The diagnosis of substance abuse

by the mental health professionals in Ghana who participated in our study is based on the most common factors affecting patients. These include constant association with alcohol, inhalants, opioids, sedatives, and tobacco over an extended period. The level of intake of these substances in the population has not been recorded, and we recommend the undertaking of a population-based study to assess the level of intake to influence population-based intervention.

More female (30.8%) than male respondents (26.7%) reported alcohol abuse as the most common type of substance abuse in the population. The explanation for this variation may be associated with the effects of alcohol abuse on women. According to our survey, women are assaulted and face various kinds of domestic violence and sexual abuse at the hands of their partners who depend on alcohol and other substances. Our report aligns with what other studies that reported similar results [56-63]. Also, substance use affects women to a greater extent than men across different countries and different settings. Pressures created by the multiple roles they must fulfil, gender discrimination, and factors associated with financial conditions, hunger, disease, overwork, violence, and statutory offenses account for the poor mental condition of women. Again, our results also showed a higher rate of psychoactive substance abuse with a psychoactive sub-induced anxiety disorder (F19.180) in the population than previous studies conducted in Ghana which included little information on these substances and the rate at which they are used [64-69].

Depressive Episodes (F32)
Studies have shown that depression is not just a temporary change in mood or a sign of weakness, but a real medical condition with emotional, physical, behavioural, and cognitive symptoms, which requires medical treatment by mental health professionals. Based on our observations, most Ghanaians are unaware of depression and associate it with other mental disorders such as mental retardation [70-72]. Those who are aware of their depressive condition feel reluctant to talk about it and to seek treatment because of stigmatization and public misconceptions about mental health. Our observations are similar to those of a study conducted in Canada, where individuals living with depression or a mental disorder are ashamed to talk to mental health professionals when they have depression and therefore suffer in silence [73].

In our study, respondents identified depression as one of the most common mental disorders in Ghana. This confirms the results of previous international studies that indicated that depression is a widespread medical condition and the leading cause of disability in the world [74, 75]. However, despite the manifestation of emotional, physical, behavioural, and cognitive symptoms, the mental health professionals in Ghana who participated in this study rely on the most common symptoms, such as prolonged experiences of loss of interest, prolonged depressed moods, feelings of worthlessness, inability to concentrate, recurrent suicidal ideations, delusion, insomnia, and feelings of doubt, to diagnose depression. We observed that most people with depression were underdiagnosed and undertreated due to the lack of diagnostic tools and the stigmatization and misconceptions attached to the condition. Our report aligns what other international studies have also reported. According to the WHO, depression is both underdiagnosed and undertreated in primary care settings. Symptoms are often overlooked and untreated because they co-occur with other problems encountered by older adults [54].

In our study, respondents identified moderate depressive episodes (F32.1) and severe depressive episodes with psychotic symptoms (F32.3) as the most common types of depressive disorders. Therefore, we attempted to determine common factors associated with the increase of depression in the Ghanaian community. Based on our observations, the increase in depression is associated with job losses, unemployment, traumatic events, and maltreatment in relationships, domestic violence, chronic diseases, neglecting or being unable to fulfil family responsibilities, divorce, and loneliness. Other studies confirm this finding, reporting a combination of factors such as traumatic events, difficult life events, increased work demands, low income, chronic illness, chemical imbalances in the brain, and a family history of depression [76]. Our survey further revealed that women are more at risk of having depression than men due to how women have been relegated to the background, have less power in decision-making, have fewer reproductive health rights, and cannot fully control matters of importance in society. Likewise, a study found that women are more likely than men to experience depression due to social and gender inequality [73].

Anxiety (F41.9)
Patients living with anxiety needs the support of the entire society to deal with the condition. ''Anxiety disorders are the most common mental disorders, and they affect nearly 30% of adults at some point in their lives, but several effective treatments are available'' The APA defined anxiety as "an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure' and as 'anticipation of a future concern is more associated with muscle tension and avoidance behaviour" [77, 78]. Information on anxiety showed that for a patient to be diagnosed, the fear or anxiety must be out of proportion to the situation and hinder the ability of the patient to function normally. The most common types of anxiety include generalized anxiety disorder, panic disorder, specific phobias, agoraphobia, social anxiety disorder, and separation anxiety disorder [77].

Generally, the respondents in our studies relied on common symptoms that share features of excessive fear and anxiety and related behavioural disturbances to diagnose anxiety. The symptoms of anxiety include sweating, palpitations, and feeling of stress, which may lead to an increase in blood pressure, while treatment includes comfort offered by understanding the condition, avoiding or desensitizing exacerbating situations, and medications [79]. The diagnostic patterns of anxiety in our study show that 46.7% of anxiety disorders are associated with phobic disorder (episodic paroxysmal anxiety), which is the most common type of anxiety disorder in the population. This report was slightly higher in the female respondents (43.8%) than the male respondents (41.2%). The male respondents (23.5%) also reported generalized anxiety disorder (F41.1) as a common type of anxiety disorder, whereas 23.1% of the female respondents identified panic disorder (episodic paroxysmal anxiety) (F41.0) as common. The variations between the male and the female respondents remain undefined and require further investigation.

Epilepsy (G40)
More than 50 million people worldwide have epilepsy, a common brain disorder that affects people of all ages. Nearly 80% of those affected live in low- and middle-income countries, and an estimated 70% of people with epilepsy could be seizure-free if accurately diagnosed and treated [80]. In our study, epilepsy was diagnosed based on symptoms such as anxiety, loss of consciousness, uncontrollable jerking movements of the arms and legs, and temporary confusion. We observed that public knowledge of epilepsy is poor and that people with epilepsy suffer stigmatization and discrimination, which, according to the WHO, is common. Furthermore, we found that the treatment of epilepsy is challenging due to the lack of adequate facilities and medications. This aligns with the WHO's contention that about three quarters of people with epilepsy in low-income countries do not receive the treatment they need [80]. This increases the risk of dying prematurely and condemns many to a life of stigmatization due to the lack of facilities for mental health services and negative societal perceptions about epilepsy.

The most common type of epilepsy disorders in the population is associated with symptomatic epilepsy and epileptic syndrome (G40.1; 43.3%). We observed a variation in the rate of epileptic disorders reported by male and female respondents. Generalized idiopathic epilepsy and epileptic syndromes (G40.03) was reported by 23.5% of the male respondents and 38.5% of the female respondents. The least reported epileptic disorder in the population by gender was other generalized epilepsy and epileptic syndromes (G40.3), at 5.9% by male respondents and 8.3% by female respondents.

Bipolar Disorder (F31.9)
According to the APA (2017, para. 1), "bipolar disorders are brain disorders that cause changes in a person's mood, energy and ability to function". ''Bipolar is a brain disorder that cause change in peoples mood, energy and ability to perform. Bipolar disorder includes three different conditions - bipolar I, bipolar II and cyclothymic disorder''. Bipolar I disorder causes dramatic mood swings. During a frenzied episode, people with bipolar I disorder may feel high and on top of the world, or uncomfortably irritable and "revved up'' during a depressive episode they may feel sad and hopeless. There are typically periods of normal moods in between these episodes. Bipolar II disorder involves someone having a minimum of one major depressive episode and a minimum of one hypomanic episode. People return to the usual function between episodes. Cyclothymic disorder could be milder type of bipolar disorder involving several mood swings, with hypomania and depressive symptoms that occur often and fairly constantly. People with cyclothymia experience emotional ups and downs, but with less severe symptoms than bipolar I or II'' [55].

Diagnosing bipolar disorder depends on common symptoms related to at least one depressive, one manic, and hypomanic episode and mood swings, which can range from extreme highs to extreme lows, which persist for several weeks or months. According to the APA, bipolar disorder is diagnosed when a patient has a manic episode, shows severe depressive symptoms, and experiences co-occurring mental illness such as an anxiety disorder or substance use disorder [55]. We observed that some people with bipolar disorder experience rapid cycling from high to low without a 'normal' period between. People affected by bipolar disorder may also experience a mixed state, that is, symptoms of depression. Our observations align with the APA's report that people with bipolar disorders experience extreme and intense emotional states that occur at distinct times, called mood episodes. These mood episodes are categorized as frenzied, hypomanic, or depressive. Bipolar disorders are treatable, and individuals with bipolar disorder can lead full and productive lives. The distribution of the pattern of diagnosis associated with bipolar disorder in our study shows that bipolar disorder with a bipolar affective disorder with mild or moderate depression

(F31.3) is the most common type of bipolar disorder (57.7%) in the population. More male (58.8%) than female respondents (53.8%) identified this form of bipolar disorder as being most prevalent. The male respondents reported the same results (17.6%) for bipolar affective with manic and psychotic symptoms (F31.2) and bipolar affective with a mixed episode (F31.6), whereas the female respondents reported same results (7.7%) for bipolar affective disorder, current episode mixed (F31.6) and bipolar affective disorder, current episode severe depression with psychotic symptoms (F31.5). The least reported bipolar disorder is bipolar affective disorder with severe depression and psychotic symptoms [F31.5] (3.3%).

Delusional Disorder (F22.0)
"Delusional disorder is classified as a psychotic disorder where a person has trouble recognizing reality. A delusion could be a misconception based on an incorrect interpretation of reality. Delusions, like all psychotic symptoms, can occur as part of many different psychiatric disorders. But the term delusional disorder is used when delusions are the most prominent symptom" [81]. ''Delusional disorder could be a mental disturbance characterized by a minimum of one month of delusions, but with no other symptoms, according to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*. Delusions also presents false beliefs supported by incorrect reasoning concerning external reality that persists despite the proof to the contrary; these beliefs are not commonly accepted by alternative members of the society of the person experiencing the false beliefs [82]. Delusions can be characterized as persecutory (delusion of being vulnerable or maltreated) referential (belief that gesture, comments or environmental cues are directed at oneself), grandiose (belief that the individual has exceptional abilities, wealth or fame), erotomaniac (a false belief that another individual is in love with him/her), nihilistic (a conviction that a major catastrophe will occur), or somatic (beliefs of having physical illness or defect)'' [83].
We found that the patients with delusional disorder were convinced of the reality of their ideas, and this makes diagnosis challenging to mental health professionals, as these patients often do not want to be treated. We also observed that some patients with delusional disorder hold a strong belief belonging to another unknown group, clan, or family in the same community and supported by false evidence. This aligns with Harvard Health Publishing's statement that diagnosing delusional disorder is complicated by the person with the disorder concealing his or her thoughts and being so convinced of the reality of their ideas that they do not want treatment [81]. The mental health professionals who participated in this study evaluate common symptoms such as hallucinations related to delusions, irritability, anger, low mood, and impaired functioning to diagnose delusional disorder. We found that the distribution of the pattern of diagnosis of delusional disorder (F77.0) shows that persistent delusional disorder (F22.9) (36.7%) and acute and transient psychotic disorders (F23) (33.3%) were identified as the most common types of delusional disorders in the population. Persistent delusional disorder was identified by 47.1% of male and 23.1% of female respondents, and acute and transient psychotic disorders were identified by 29.4% of male and 38.5% of female respondents. The lowest reporting rate (3.3%) was for induced delusional disorder.

Dementia (F03.9)
"Dementia is a syndrome, usually chronic or progressive nature, in which there is deterioration in memory, thinking, behaviour and the ability to perform everyday activities. It mainly affects older people, although it is not a normal part of aging" [84]. According to the DSM-5, diagnosis of Major Neurocognitive Disorder which corresponds to dementia, requires substantial impairment to be present in one or (usually) more cognitive domains. Dementia is diagnosed when the impairment is sufficient to interfere with independence in everyday activities, with symptoms including memory loss, difficulty in planning, difficulty in solving problems, difficulty doing familiar tasks, being confused about time and place, challenges understanding visual information, problems speaking or writing, misplacing things, and poor judgement or decision making [82].

In our study, 36.7% of participants identified dementia with behavioural disturbance (F03.90) and dementia with depression and anxiety (F43.23) as the most common types of dementia in the population. Fewer male respondents (23.5%) than female respondents (30.8%) reported dementia with behavioural disturbances (F03.90). Few respondents (3.3%) reported dementia with bipolar affective disorder, current episode manic with psychotic symptoms (F31.2). These results cannot be underestimated. According to statistics published by the WHO (2019), about 50 million people worldwide are living with dementia, with nearly 60% living in low- and middle-income countries. In the WHO Global Action Plan on the Public Health Response to Dementia 2017–2025, it is estimated that the total number of people living with dementia will increase to 82 million by 2030 and 150 million by 2050. This is a warning to Ghana as a middle-come country to develop interventions to control dementia in the population.

Manic Episodes (F30.9)
The diagnosis of mania requires that a patient has a sustained and abnormally elevated, expansive, or irritable mood for at least one week. Mental health professionals in Ghana depend mainly on grandiosity or an inflated sense of self, little need for sleep, feeling pressured to speak, and talking loudly and rapidly for diagnosis [82]. Additionally, mental health professionals look for persistent behaviours such as feeling very happy, feeling full of energy, feeling self-important, being easily distracted, being easily irritated or agitated, being delusional, and experiencing hallucinations, insomnia, and loss of appetite [85]. These symptoms lead to diagnosing a mental disorder as mania. According to the respondents in our study, the most common type of mania is mania without psychotic symptoms (F30.10; 73,3%), with 76.5% of male and 69.2% of female respondents making this assertion. Thus, there was a variation in the proportions reported across genders. The reason for the variation was not defined by the respondents. Mania with psychotic symptoms (F30.2) was slightly higher in the results of the male (17.6%) than female participants (15.4%). Hypomania (F30.0) was reported only by 15.4% of the female participants.

Unspecified Psychosis (F29)
"Psychosis is characterized by a vital change in a person's perceptions thoughts, beliefs, and behaviours. The term psychotic disorder is employed to explain conditions that influence the mind, whenever there has been some loss of contact with reality. During a period of psychosis, a person's thoughts and perceptions are disturbed, and the individual might have problems understanding what is real and what is not. The symptoms of psychosis include delusions (false beliefs) and hallucinations (seeing or hearing things that others do

not see or hear). Other symptoms include incoherent or nonsensical speech, and behaviour that is inappropriate for the situation. During a psychotic episode, a person may also experience depression, anxiety, sleep problems, social withdrawal, lack of motivation, and problems functioning overall" [86].

Our findings on the symptoms that influence the diagnosis of psychosis was similar to what has been reported by the NIH [86]. The diagnosis of psychosis by the mental health professionals who participated in our study was based on common symptoms such as depression, sleeping too much, insomnia, anxiety, paranoia, withdrawal from others, delusions, hallucinations, and difficulty concentrating. We observed that the patient should experience two of these symptoms with either delusions, hallucinations, or disorganized speech to diagnose psychosis.

Overall, 56.7% of the respondents reported that organic delusion (schizophrenia-like) disorder (F06.3) is the most common type of psychotic disorder in the population, followed by organic hallucinosis (F06.0; 20.0%). Fewer male respondents (17.6%) than female respondents (23.1%) reported organic hallucinosis, whereas more female respondents (61.5%) than male respondents (52.9%) reported organic delusion (schizophrenia-like) disorder (F06.2). The lowest reported types of psychosis, at 6.7%, were organic anxiety disorder (F06.4) and mild cognitive disorder (F06.7).

Personality Disorders (F60.9)
The essential features of a personality disorder are impairments in personality (self and interpersonal) functioning and the presence of pathological personality traits. To diagnose for personality disorder, mental health professionals depend on common characteristics enshrined in the DSM-5 [87] such as:
1. Significant impairments in the self (identity or self-direction) and interpersonal (empathy or intimacy) functioning,
2. One or multiple pathological personality trait domains or trait facets,
3. The impairments in personality functioning and the individual's personality trait expression are relatively stable across time and consistent across situations,
4. The impairments in personality functioning and the individual's personality trait expression do not seem to be understood as normative for the developmental stage of the individual or his or her sociocultural surroundings, and
5. The impairments in personality functioning and the individual's personality trait expression do not seem to be entirely caused by direct physiological effects of a substance (example, a misuse of medications) or general medical condition (example, severe head trauma).

Further, mental health professionals also depended on symptoms such as ''unstable or fragile self-image; unstable and intense relationships; suicidal behaviour or threats of self-injury; mood swings, often as a reaction to interpersonal stress; and impulsive and risky behaviour, such as having unsafe sex, gambling, or binge eating and drinking'' [88]. Diagnoses of personality disorders are based on these symptoms.

Our findings align with statistics published by the National Institute of Health (NIH) in 2018 [86]. Respondents reported that schizoid personality disorder (F60.1; 46.7%) and paranoid personality disorder (F60.0; 23.3%) are the most common types of psychosis in the population. Thirty percent also reported dissocial personality disorder (F60.2), emotionally unstable disorders (F60.3), and histonic personality disorder (F60.4).

Fifty percent of the female respondents, compared to 47.1% of the male respondents, reported that schizoid personality disorder (F60.1) is the most common type of psychotic disorder in the population.

Mood Disorders (F39)
In the most recent update of the DSM, the fifth edition, mood disorders have been separated into bipolar disorder and depressive disorders [82]. This update complicated the diagnosis of mood disorders for the mental health professionals who participated in this study. Some diagnosed mood disorders as coupled with the presence of the symptoms of depression or bipolar disorder. However, all depended on the same physical presentations in their diagnosis. Mood disorders include (a) major depressive disorder (major or clinical depression), which involves long periods of extreme sadness, hopelessness, and fatigue that last for two weeks or more; (b) seasonal affective disorder (SAD), which typically strikes during winter; and (c) bipolar I disorder, which in the past was referred to as 'manic depression'. During manic episodes, people can experience euphoria, irritability, and increased energy or activity, and they often engage in risky behaviour.

Mood disorders lead to difficulty in keeping up with the daily tasks and demands of life. Moreover, some people, especially children, may have physical symptoms of depression, such as unexplained headaches or stomach aches. Because there are several types of mood disorders, they can have vastly different effects on people and lifestyle. The mental health professionals in this study depended on symptoms such as crying with a cause, fatigue, anxiety, feelings of guilt, insomnia, over-sleeping, over-eating, suicidal thoughts, loss of interest in activities patients previously enjoyed, and irritability during the diagnosis of mood disorders. The most common mood disorder identified by 36.7% of respondents is mood disorder due to known physiological condition with manic symptoms (F06.30). Among the male respondents, the most common mood disorder reported (41.2%) is mood disorder with mixed anxiety and depression (F43.23), whereas for female respondents (66.7%), the most common type of mood disorder reported was mood disorder due to known physiological condition with manic symptoms (F06.30).

Level of Diagnostic Quality in Psychiatric Hospitals and Primary Health Centres
The diagnostic quality related to mental disorders depends on ruling out other medical conditions based on a thorough assessment by mental health professionals and the availability of equipment. The patient is further assessed with the use of the DSM-5, the most common diagnostic tool that provides definitions of the symptoms per case of each mental disorder [82]. This manual, unlike the ICD-10, guides mental health professionals in the diagnosis and treatment of mental conditions. We found that while it is challenging to diagnose mental disorders based on symptoms, the mental health professionals who participated in this study relied on experience, took their time, and invested great effort to diagnose disorders and recommend treatment, despite their limited resources. Additionally, the more information the mental health professionals obtained from the relatives or caregivers of the psychiatric patients, the better the quality of the diagnosis.

We compared the reported quality of diagnosis in psychiatric hospitals and primary health centres. A distinct variation was evident: 83.3% of respondents ascribed a moderate rating to the Diagnostic quality in psychiatric hospitals, whereas 63% assigned the same rating to the diagnostic quality in primary health centres.

Our observations were that most people do not report their mental disorders for diagnosis. The levels of reporting mental disorders for orthodox diagnosis may have positively affected diagnostic quality in both the psychiatric hospitals and primary health centres due to the low turnout.

Participants' Perceptions of Interventions Aimed at Improving Diagnostic Quality

The interventions aimed at the improvement of diagnostic quality involve elements and strategies designed to produce behavioural changes towards the diagnosis of mental disorders and to improve diagnostic quality, with an additional focus on improving mental health among the population. Intervention strategies may include public mental health education programmes, improving and instituting mental health educational and diagnostic policies, and improving health promotion campaigns. For this study, we reported and described four common interventions aimed at improving diagnostic quality: (a) improving diagnostic education on mental disorders, (b) improving mental health infrastructure and expenditure, (c) increasing mental health personnel staffing levels through training, and (d) providing accessible and affordable diagnostic tools.

Forty percent of respondents identified improving diagnostic education as the key to ensuring diagnostic quality. We further observed that diagnostic education aimed at the public will help to change negative views on orthodox treatments for mental disorders. Male respondents believed that improving diagnostic education (40.0%) and improving mental health infrastructure and expenditure (33.3%) will improve diagnostic quality. Regarding the training of personnel, we found that infrastructure improvements necessitate increased staffing levels, which results in a greater need for training to improve professionals' skills and knowledge related to the diagnosis of mental disorders. Among the female respondents, improving diagnostic education (46.2%) and improving mental health infrastructure and expenditure (38.5%) were reported as the main modalities for improving diagnostic quality. Additionally, few respondents mentioned providing accessible and affordable diagnostic tools to improve diagnostic quality.

Perceptions of the Level of Interventions Aimed at Improving Diagnostic Quality

More than half of respondents (56.7%) rated overall diagnostic quality as moderate. This may be because of the limited resources available for mental health services. Regarding perceptions by gender, 52.9% of male respondents reported low levels of interventions, compared to 30.8% of the female respondents. Further, no concrete study has been conducted to assess the influence of culture on diagnostic quality. Measuring and describing diagnostic quality was difficult, because we could not find any gold standard criteria measuring the quality of mental disorder diagnosis across cultures. Our survey indicated that the interpretation of diagnostic results differs among mental health professionals, which is linked to differences in clinical experience and cultural backgrounds [89]. Kleinman noted that 'psychiatric diagnosis is an interpretation of a person's experience', which aligns with our findings.

To our knowledge, no comprehensive study on diagnostic practices in psychiatry had previously been undertaken in Ghana. Generally, Ghana has a weak information system on the diagnosis of mental disorders, so little information is available on the diagnosis of mental disorders, and few studies have focused on the diagnosis of mental disorders. According to our survey, no clear model of mental health education focusing on the early detection, diagnosis, and treatment of mental disorders existed when we conducted this study. Although patients with mental disorders attended consultations and received diagnoses and treatment in psychiatric hospitals and in primary health centres in Ghana, public mental health education on diagnosing mental disorders remains lacking. Strategies by the Ghana Mental Health Authority towards sensitizing the population to any aspect of mental health would face challenges related to budgetary, personnel, and infrastructure constraints. Therefore, conducting this study was necessary to expand the public knowledge of the diagnosis of mental disorders.

Strengths and limitations of the study

The study faced several limitations. The knowledge and behavioural assessment in our survey invariably posed problems of social desirability, where participants are reluctant to admit to a lack of knowledge and inappropriate behaviour to avoid creating a negative impression. Moreover, no standardized and contextual instrument is available to assess the diagnostic quality of mental disorders in a multicultural environment like that of Ghana. We used the existing literature and practicing mental health professionals to collect data that, to our knowledge, would be comprehensive and detailed. We further attempted to rate the overall levels of the stages of the number of diagnoses of mental disorders and the levels of mental disorders in general. However, rating the levels of the number of the stages of the diagnosis of mental disorders and the levels of mental disorders in the population may impose an artificial meaning on the results of some questions. Consequently, it was difficult to analyse the number of diagnostic stages of the mental disorders.

Variations in responses to the questionnaire introduced bias in our results. The results we have obtained cannot be generalized because only a few mental health professionals took part in the study. Additionally, we failed to classify psychiatric diagnosis under primary psychotic disorders, primary bipolar disorder, primary depressive disorders, primary anxiety disorders, personality disorders, and secondary psychiatric disorders to allow for a more detailed understanding. Therefore, we recommend a follow-up study that includes a detailed description of these diagnostic stages, from primary to secondary levels.

Important strengths of the present study include its scope and conducting in-person interviews, which yielded the highest possible response rate. The result of this study can be reliably extrapolated to the general population within the regions in which the study was conducted. Furthermore, this study included the use of a comprehensive structured questionnaire that included current common mental disorders selected from ICD-10, patterns of diagnosis, the number of stages of diagnosis, factors determining diagnostic quality, level of diagnostic quality in psychiatric hospitals and primary health centres, and the overall current prevalence of mental disorders. This enabled us to create a comprehensive picture of the diagnostic patterns of mental disorders in the general population. Knowledge and perception questions pertaining to specific topics (e.g., perceptions of diagnostic quality in primary health centres and psychiatric hospitals, and perceptions of interventions to improve diagnostic quality) were embedded among questions relating to other issues to make the questions appear as ordinary as possible with the expectation of improving individual reports of actual knowledge in such instances. Answer options provided to the respondents

(e.g., high, moderate, and low) were consistently presented in the same sequence, and the questions consistently included options that avoided anticipation of the 'right' answer.

Conclusion

"About 450 million people in the world suffer from mental disorders, and one in every four people will develop one or more mental disorders in their lifetime. Thirteen percent of the total disability adjusted life years (DALYs), or the number of years lost to illness, disability, or death, are associated with neuropsychiatric conditions, and five of the 10 leading causes of disability and premature death in the world are psychiatric conditions" [54].

Mental disorders not only represent an immense psychological, social, and economic burden to society but also increase the risk of physical illnesses. Given the current limitations in the effectiveness of treatment modalities for decreasing disability due to mental and behavioural disorders, the focus must shift to prevention [54].

We intend to use the findings of this study to solicit support from the Ghana Mental Health Authority to develop an effective community-based educational intervention and incorporating mental health education into the school curriculum that will form part of the National Targeted Programme of Mental Health Control and Diagnosis. Our goal is to provide contextual education, with basic and specific knowledge, on the diagnosis of mental disorders. Additionally, we aim to educate the public to change negative social views on mental health, promote the reporting of the symptoms of mental disorders to mental health professionals, and enhance the diagnosis and treatment of mental disorders.

We further plan to focus on advocating for the training and upgrading of the knowledge and skills of mental health professionals to help provide mental health services to a larger population. Health care providers who have direct contact with mental health patients potentially have a direct influence on preventing, diagnosing, and managing mental disorders. Therefore, we recommend that any national programme needs to include sustainable long-term policies to encourage and motivate mental health professionals to participate in diagnostic activities to improve the focus on patients with mental disorders. One aspect of our advocacy is using the results of this study to influence policymakers to consider the outlying areas in Ghana and vulnerable groups to make it easy and affordable for them to seek diagnosis and treatment for mental disorders.

Authors' Contribution

M.A conceived the study and was in charge of the planning, direction, preparation of the samples, formulation of the research questions and data collection. M.A and E.A jointly designed the methodology of the study. Formal data entry and analysis was performed by M.A. The manuscript was written by M.A. Critical review, commentary, and revision was prepared by M.A and E.A. The final approval for the version submitted for publication was jointly approved by M.A and E.A. The management of the manuscript leading to publication was completed by M.A.

Availability of Data and Materials of this Study

The data that support the finding of this study are available on request from the corresponding author, M.A. The data are not publicly available due to privacy/ethical restrictions because the data contain information that could compromise the privacy of the samples of this study.

Ethics Approval and Consent to Participants

Ethical approval for this study was granted by the Ghana Health Service Ethics Review Committee (GHS-ERC) and the Ghana Mental Health Authority. Administrative approvals were obtained from the hospitals selected for this study.

Conflicts of Interest

The authors declared that they have no potential conflict of interest in this study.

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