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Mental Health Literacy and Stigma among Pharmacists toward Patients with Mental Illness: A Cross-Sectional Survey in Sudan

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Abstract

Background: Pharmacists, as the most accessible healthcare providers, play a significant role in disease management, yet their involvement in mental health services is limited by stigma, inadequate training, and negative perceptions. The ongoing conflict in Sudan has exacerbated mental health challenges, thus making it essential to assess pharmacists' readiness to address these issues. This study aimed to evaluate the mental health literacy, stigma, and comfort levels of Sudanese pharmacists in providing care to patients with mental health disorders.

Methods: A descriptive cross-sectional study was conducted using an online questionnaire that was distributed to Sudanese pharmacists via social media platforms. The questionnaire, adapted from a previously validated tool, measured knowledge, attitudes, stigma, and comfort in managing mental health conditions versus cardiovascular diseases. SPSS version 29 was used to analyze the data with a significance level of $P < 0.05$.

Results: A total of 413 pharmacists participated (73% female; most aged 25–30 years). Pharmacists demonstrated a high recognition of depressive disorders 94%, but moderate awareness of anxiety 62% and obsessive-compulsive disorder 68%. While pharmacists showed good knowledge of common psychiatric medications, with amitriptyline 76% and haloperidol 65% being the most recognized drugs, 37.8% of them viewed pharmacist consultation negatively. Pharmacists predominantly associated mental health patients with negative outcomes, such as increased likelihood of suicide 76.8%, violence 75.8%, and illegal drug use 70.0%. Comfort levels in discussing psychiatric symptoms and providing medication counseling (21.8%) were significantly lower compared to those for cardiovascular conditions (40%).

Conclusion: This study identified significant gaps in mental health care capacity. While baseline disorder recognition was high, pharmacists demonstrated limited knowledge of psychiatric pharmacotherapy, low professional confidence, and prevalent stigma, commonly associating mental illness with negative outcomes like violence and suicide. Comfort in managing mental health conditions was substantially lower than for cardiovascular diseases. These findings underscore an urgent need for systemic interventions and continuous pharmacist education combining advanced clinical knowledge, counseling skills, and stigma mitigation. Training should employ active learning, including case studies and role playing, while fostering collaboration with mental health professionals. Additionally, future initiatives must account for variability among displaced pharmacists, such as employment background and conflict exposure, which can affect their competency and comfort in mental health care.

Keywords: Mental health literacy, Stigma, Mental illness, Pharmacists, Sudan

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Introduction

Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn and work well, and contribute to their community [1]. In Sudan, however, mental health has historically received limited attention in terms of policy development, service provision, and research. The development of comprehensive mental health services has been significantly hindered by long-standing economic

constraints and political instability. As of 2020, a total of 878 professionals nationwide were involved in mental health service delivery, equating to approximately 2.05 mental health professionals per 100,000 population in a country of nearly 45 million people [2]. Additionally, inequitable allocation of mental health services, poor health education, and fear of stigma were the other identified barriers to treatment [3].

The continuous conflict between Sudan's military and paramilitary forces adds to the country's history of violence and its negative impact on mental health. Evidence from Khartoum State indicates that approximately 13% of secondary school students experience depression and anxiety, while 23% of pregnant women have been diagnosed with prenatal mental disorders [2]. Among internally displaced populations, the mental health burden is markedly higher, with 53% affected by mental disorders, including major depressive disorder (24.3%), and generalized anxiety disorder (23.6%) [2].

Pharmacists are essential in the management of mental health conditions by optimizing drug therapy, educating patients on their medications, and ensuring safe and effective use [4]. Research has shown that clinical pharmacists can reduce drug-related problems and healthcare costs, improve a patient's quality of life, and lower mortality rates [5]. The expanding role of pharmacists in mental healthcare isn't just for specialists; it also includes community pharmacists as part of multidisciplinary teams, who are among the most accessible healthcare professionals [6,7]. Community pharmacists are well-positioned to identify individuals at risk of mental health crises, screen for mental illnesses, and provide education to patients and caregivers. There is an opportunity and a need to better utilize pharmacists internationally in the provision of mental health care [6].

Pharmacists face several barriers in providing effective care for mental health patients, which can hinder their crucial role in supporting comprehensive treatment. These barriers include pharmacists' lack of knowledge or confidence, their attitudes toward people with mental health disorders, and the belief that such patients would be unwilling or incapable of understanding medication information [8]. Additionally, privacy in community pharmacies, limited accessibility of community pharmacists to patients' medical and/or medication records, and the perception that providing medication information is the physician's role further contribute to these challenges [9,10]. Other frequently cited barriers were the inability to monitor outcomes, as patients may never return to the pharmacy, and the lack of easy follow-up [11].

When it comes to the word "stigma", it is used to refer to a mark of shame or disgrace, or to some related ideas such as stereotyping or rejection [12]. Pharmacists can shape how patients perceive their mental illness. However, when pharmacists themselves show negative attitudes, such as discomfort or hesitation during interactions with patients, this can lead to inappropriate counselling or a failure to provide professional medical services. Unfortunately, many pharmacists hold negative stereotypes or stigmas about mental health disorders [11,13]. The term 'mental health literacy' (MHL) refers to knowledge and beliefs about mental disorders that aid their recognition, management, or prevention [14].

Pharmacists' knowledge, attitude, and stigma were studied in different communities. These studies proved that the baseline knowledge of pharmacists was adequate, but not their advanced knowledge, especially in schizophrenia and bipolar disorder, which are related to a higher level of stigma [15,16]. In contrast, some studies showed a low level of stigma from pharmacists toward mental health patients [17].

In Sudan, stigma towards mental disorders remains high, influenced by cultural, religious, and societal factors as well as augmented by the limited mental health services available. The present socio-political conflict in Sudan has caused a rise in symptoms of mental illness, but most patients come to the facilities only when their condition is confirmed and advanced [18-20]. To date, no research has evaluated mental health literacy and stigma among pharmacists in Sudan, a significant gap given their influential role. Addressing this gap is vital for understanding and improving pharmacists' attitudes, knowledge, and practices. Such insights can directly inform strategies to enhance mental health training, elevate the quality of care, promote treatment adherence, and reduce stigma-related barriers to accessing treatment

Materials and Methods

Study Design and Setting

This observational cross-sectional study was conducted to assess pharmacists' literacy and stigma toward patients with mental health disorders in Sudan between September 2023 and March 2024. Data was collected through an online questionnaire for Sudanese pharmacists across different states in Sudan.

Study population

The target population consisted of licensed pharmacists eligible to practice in Sudan. The specific inclusion and exclusion criteria were as follows:

Inclusion Criteria:

- Licensed pharmacists currently practicing in Sudan, and pharmacists displaced by the ongoing conflict but who were previously licensed and practicing within Sudan.
- Provision of voluntary informed consent to participate.

Exclusion Criteria:

- Pharmacy students or interns.
- Pharmacists practicing exclusively outside of Sudan without prior professional experience within the country.

- Individuals unwilling or unable to provide informed consent.
- Submission of incomplete survey responses.

Sample size and technique

As an official, updated registry of pharmacists in Sudan was unavailable, the minimum sample size was calculated using Cochran's formula for an infinite population: $n=Z2\times p\times q/e^2$. Where Z = 1.96 (for a 95% confidence level), p = 0.5 (the assumed population proportion for maximum variability (50%)), q = 1 - p, and e = 0.05 (the margin of error). This calculation yielded a minimum required sample size of 385 participants. To account for potential non-response and incomplete submissions, data were collected from 413 pharmacists. A convenient sampling method was applied for Sudanese pharmacists currently working in Sudan. The survey link was distributed to targeted groups across social media platforms (Whatsapp, Facebook and Telegram) for Sudanese pharmacists across different regions in Sudan

Data collection tools and methods

Data was collected through a self-administered, previously validated questionnaire adapted from a previous study with the authors' consent [15]. Face validity was assessed by a psychiatrist and two PhD holders (Pharmacy Practice and Clinical Pharmacy), and adjustments were made upon their recommendations. Content validity was assured by an extensive review of the literature [15]. The survey instrument was piloted among a small group of pharmacists (n=30), and revised for length, flow, and clarity. The questionnaire had a Cronbach's alpha of 0.82. The questionnaire was administered in English, which is the language of instruction at Sudanese pharmacy schools.

The tool contained 74 items: multiple-choice, Likert scale, and checkbox questions, and was divided into four sections:

- First section (socio-demographics): Age, gender, pharmacy setting (community, hospital), and pharmacy practice experience
- Second section (MHL (knowledge, attitude and practice)): Knowledge was assessed in terms of symptom recognition (cases of depression, anxiety, and obsessive-compulsive disorder (OCD)), medication classification, and the helpfulness of a range of interventions. Cases for generalized anxiety disorder (GAD) clinical presentation (physical, psychological, and cognitive symptoms), and the diagnostic criteria of OCD were developed based on the Diagnostic and Statistical Manual of Mental Disorders – fifth edition (DSM-V). Attitude and practice were assessed through rating the benefits of seeking help and perceived opinions about medications' safety and effectiveness. The guidelines used for medication indications were the Clinical Practice Guidelines by American Psychiatric Association (APA).
- Third section (Mental health stigma (MHS)): MHS was measured with reference to the Opening Minds Scale for Health Care Providers (OMS-HC) that included different examined dimensions of stigma, social distance, social responsibility, dangerousness and recovery. These dimensions have been established among healthcare providers; 'Social distance' refers to the desire to maintain distance from people with MHD, and 'social responsibility' represents one's emotional reactions towards patients with MHD.
- Fourth section (Comfort providing pharmaceutical care to patients with MHD): The willingness and comfort of pharmacists to provide services to patients with MHD (depression and schizophrenia) compared with those suffering from cardiovascular diseases were assessed by rating their comfort on a scale of 1–5.
- For the scoring system, pharmacist knowledge was assessed using 23 items covering: symptom recognition (3 items), medication classification (5 items), pharmacologic (7 items), and nonpharmacological interventions (8 items). Each correct response was scored as 1, and incorrect or uncertain as 0. Participants were classified as poor (0-7), moderate (8-15), and good knowledge (16-23). Stigma was assessed using 24 items comprising three domains: perceived dangerousness and recovery (6 items), comfort differentials (6 items), and interaction willingness (12 items). Each item contributed one point; pharmacists were classified as having mild stigma (0-8), moderate stigma (9-16), and severe stigma (17-24).
- Variables
- Independent variables: Demographic characteristics; Age, gender, pharmacy setting (community, hospital), and pharmacy practice experience (Grade, academic degree, year of graduation).
- Dependent variables: pharmacists' knowledge, attitude, and stigma.

Statistical Analysis

Data was entered into Microsoft Excel and cleaned for consistency and completeness. All statistical analyses were conducted using the Statistical Package for Social Sciences, version 29 (Armonk, NY: IBM Corp). Descriptive statistics were used to summarize pharmacists' demographics, MHL, and Mental Health Stigma (MHS). Inferential statistics using the chi-square test were applied to examine differences in associations between demographic characteristics or knowledge level with the MHS. A p-value of less than 0.05 was considered statistically significant.

Ethical consideration

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Ethical approval (protocol number: FPEC-51-2024) was granted by the Research Ethics Committee of the Faculty of Pharmacy, University of Khartoum, prior to the commencement of the study. All participants were provided with a comprehensive description of the study's aims. Written informed consent was obtained from each participant before data collection commenced. Participants retained the right to withdraw from the study at any time, without providing a reason and without penalty. Confidentiality and anonymity of all participant data were strictly maintained throughout the research process.

Table 1. Sociodemographic characteristics of the study participants (n= 413)

Variables		Frequency (%)
Gender	Female	300 (73)
	Male	113 (27)
Age	25 – 30	318 (77)
	>30	61 (15)
	<25	34 (8.2)
State	Khartoum	163 (39.5)
	Red Sea	59 (14.2)
	River Nile	36 (8.7)
	Gezira	30 (7.3)
	Kassala	26 (6.3)
	Northern	24 (5.8)
	Qadarif	11 (2.7)
	White Nile	10 (2.4)
	Others	54 (13)
Type of Pharmacy Degree	Pharmacy	394 (95)
	PharmD (clinical)	19 (4.6)
Highest academic degree	BSc	354 (86)
	MSc	49 (12)
	PhD	10 (2.4)
Occupation	Community pharmacists	296 (72)
	Hospital pharmacists	49 (12)
	Clinical pharmacists	23 (5.6)
	Others	45 (10.4)
Year of graduation		2021 (IQR: 2018–2022)

Results

Demographic Characteristics

A total of 413 pharmacists agreed to participate in the study. As shown in Table 1, the majority, 73%, were females, and 77% were aged 25-30 years. Participants were from various states, with the highest representation from Khartoum (39.5%). About 72% were community pharmacists, and 86% of them held a bachelor's degree in pharmacy.

Assessment of pharmacists' knowledge of mental health literacy (MHD)

In terms of accurate symptom recognition, 94% of pharmacists correctly identified the symptoms of depression, 68% identified those of obsessive-compulsive disorder (OCD), and 62% recognized the symptoms of anxiety. Regarding the participants' knowledge of commonly used psychiatric medications, Amitriptyline, as an antidepressant, was the most recognized drug and was identified by 76% of pharmacists (Figure 1).

Figure 2 summarizes pharmacists' knowledge of both pharmacological and non-pharmacological interventions for different mental health conditions. Regarding pharmacological treatments, 97.5% of pharmacists associated antidepressants with depression, while antipsychotics were mainly linked with schizophrenia (87%). Mood stabilizers were correctly associated with bipolar disorder by 69% and with schizophrenia by 45% of respondents. In this study, 24% of respondents identified herbal remedies as being related to the management of depression and anxiety. Analgesics and antibiotics were mentioned as not useful in any mental condition by 46% and 78%, respectively.

In terms of non-pharmacological approaches, 57% of pharmacists identified cognitive behavioral therapy (CBT) as beneficial for depression. Relaxation techniques and hypnosis were also linked to depression by 57% and 19%, respectively. Physical activity was associated with both depression 79% and anxiety 57%. Confinement in a psychiatric ward was considered necessary for the management of schizophrenia 74% and bipolar disorder 52%. Moreover, 47% of pharmacists correctly recognized the role of electroconvulsive therapy (ECT) in the treatment of schizophrenia (Figure 2).

Assessment of pharmacists' attitude and practice towards MHD

The perceived helpfulness of various support options for mental health patients among pharmacists showed that seeking help from a psychiatrist was rated as most helpful by 91% of the pharmacists, while consulting a pharmacist was rated as helpful by only 37.8% (Table 2). As shown in Table 3, only 15.7% of the pharmacists agreed that they had received sufficient training in mental health conditions,

Table 2. Pharmacists' attitude towards the helpfulness of different interventions for the management of mental

Characteristic	Frequency (%)		
	Harmful	Neutral	Helpful
Get spiritual help	113 (27.4)	12 (2.9)	288 (69.7)
Seek the help of a pharmacist	217 (52.5)	40 (9.7)	156 (37.8)
Seek the help of a psychiatrist	30 (7.3)	7 (1.7)	376 (91.0)
Seek the help of a social worker	171 (41.4)	79 (19.1)	163 (39.5)
Talk to a close family member	160 (38.7)	37 (8.9)	216 (52.4)
Talk to a friend	156 (37.8)	35 (8.5)	222 (53.7)

Table 3. Assessment of agreement among pharmacists on training and understanding of mental health conditions, in addition to psychiatric medications

Characteristic	Frequency (%)				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Sufficient training in mental health conditions	67 (16.2)	139 (33.7)	130 (31.5)	65 (15.7)	12 (2.9)
Sufficient training on psychiatric medications	53 (12.8)	99 (24.0)	128 (31.0)	107 (25.9)	26 (6.3)
Adequate understanding of mental health conditions	36 (8.7)	59 (14.3)	122 (29.5)	158 (38.3)	38 (9.2)
Adequate understanding of psychiatric medications	41 (9.9)	39 (9.4)	90 (21.8)	176 (42.6)	67 (16.2)

Table 4. Assessment of perceived dangerousness and recovery characteristics among patients with MHD given by pharmacists

Characteristic	Frequency (%)		
	No difference	Less likely	More likely
Attempt suicide	25 (6.1)	71 (17.2)	317 (76.8)
Be a productive worker	69 (16.7)	311 (75.3)	33 (8.0)
Be violent	64 (15.5)	36 (8.7)	313 (75.8)
Develop social relationships	52 (12.6)	308 (74.6)	53 (12.8)
Have a healthy marriage	56 (13.6)	326 (78.9)	31 (7.5)
Take illegal drugs	77 (18.6)	47 (11.4)	289 (70.0)

with 42.6% of them believing that they had a good understanding of psychiatric medications.

Assessment of the pharmacists' stigma towards MHD

Table 4 assesses the perceived dangerousness and recovery of patients with MHD. The majority (76.8%) of respondents perceived those patients with MHD were most likely to attempt suicide. In contrast, having a healthy marriage was perceived as the least likely outcome, as reported by 78.9% of respondents. As shown in Figure 3, providing medication counseling for psychiatric medications was identified as the most uncomfortable task by 21.8% of pharmacists, whereas discussing cardiovascular conditions was considered the most comfortable by 40% of respondents.

Figure 4 illustrates pharmacists' willingness to interact with individuals with depression and schizophrenia. Socializing

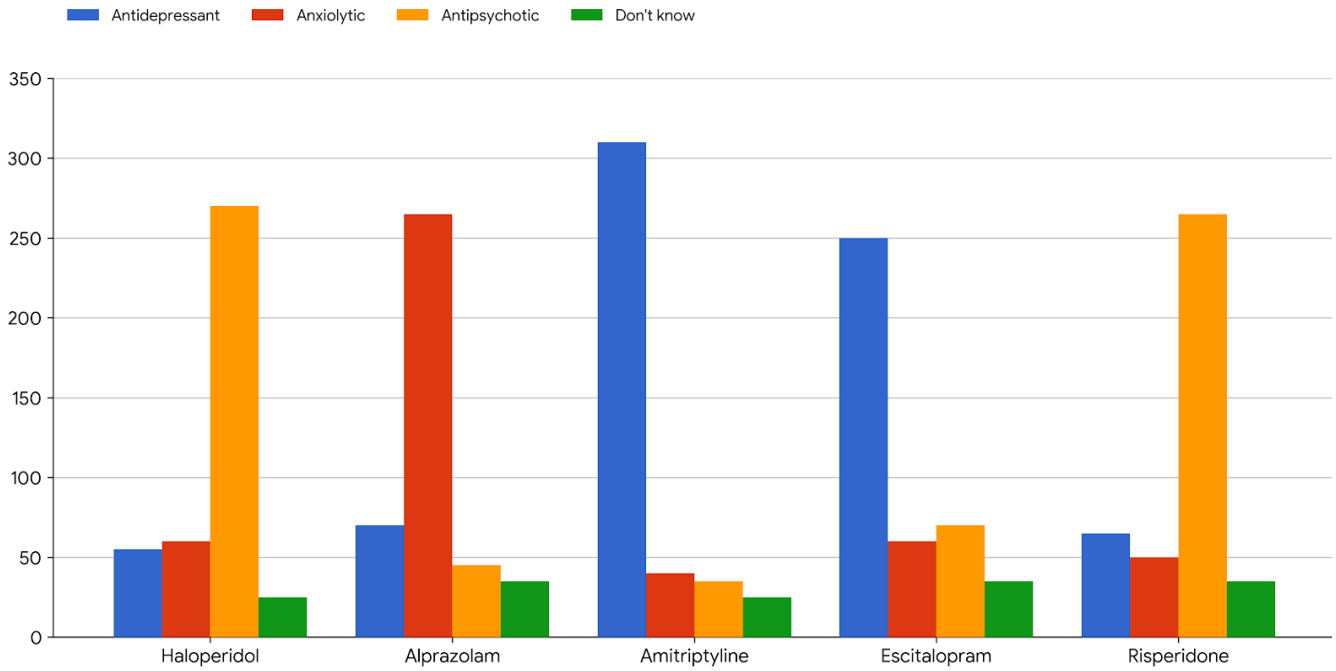

Figure 1. Knowledge of pharmacists regarding the classification of psychiatric medications.

Table 5. Association between pharmacists' stigma level towards MHD and demographic characteristics (gender, age, and academic degree), and Knowledge levels.

Characteristic	Frequency (%)			p-value
	Mild Stigma (N = 87)	Moderate Stigma (N = 161)	Sever Stigma (N = 165)	
Gender				
Female	67 (77)	126 (78)	107 (65)	
Male	20 (23)	35 (22)	58 (35)	0.09
Age				
< 25	11 (13)	11 (6.8)	12 (7.3)	
25 - 30	57 (66)	127 (79)	134 (81)	0.13
> 30	19 (22)	23 (14)	19 (12)	
Academic Degree				
BSc	74 (85)	140 (87)	140 (85)	
MSc	11 (13)	18 (11)	20 (12)	
PhD	2 (2.3)	3 (1.9)	5 (3.0)	0.4
Knowledge Levels				
Poor Knowledge	40 (46%)	83 (52%)	76 (46%)	
Moderate Knowledge	41 (47%)	63 (39%)	68 (41%)	
Good Knowledge	6 (6.9%)	15 (9.3%)	21 (13%)	0.07

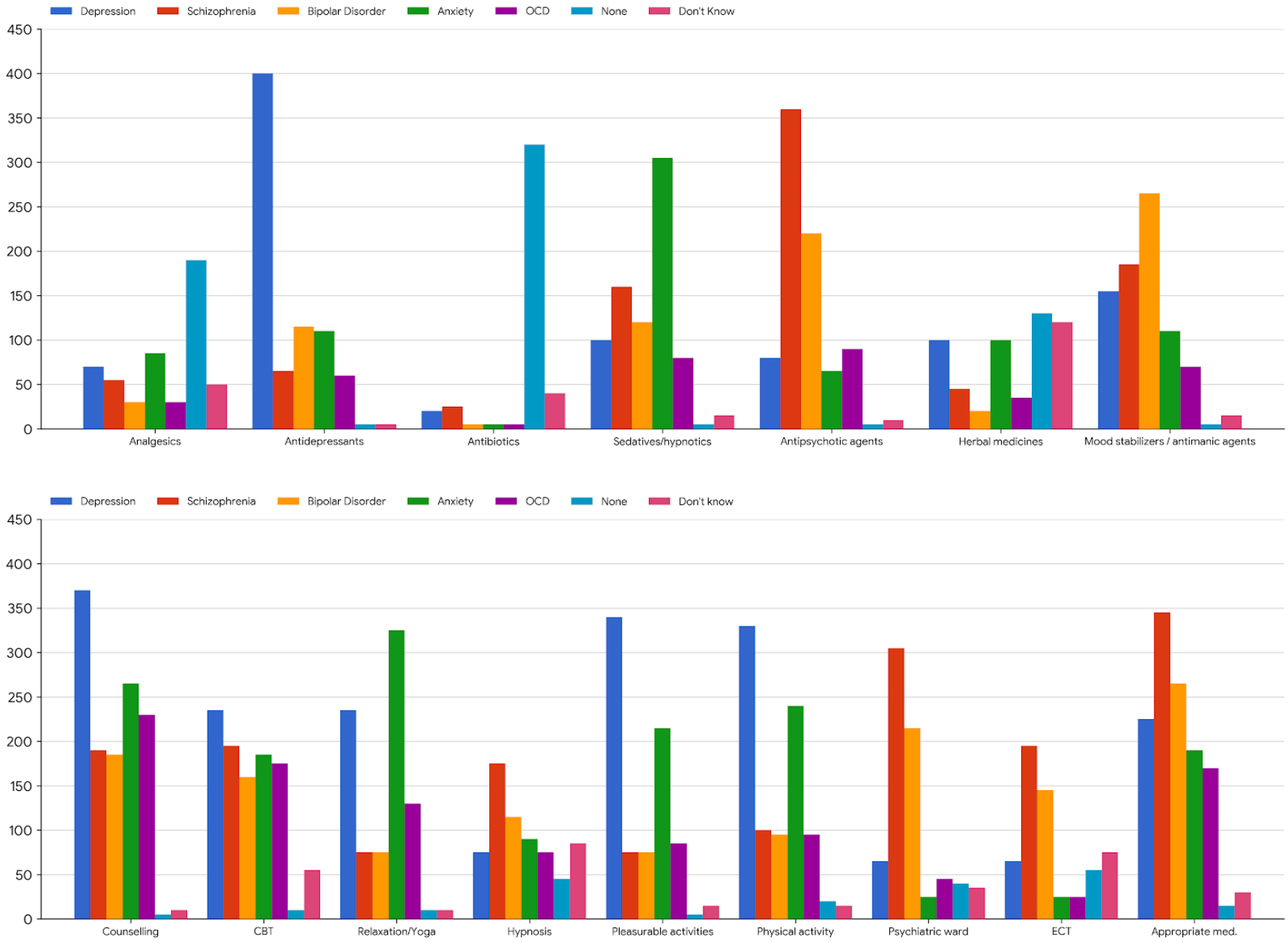

Figure 2. Knowledge of pharmacists regarding their ability to recognize pharmacologic and non-pharmacologic interventions for.

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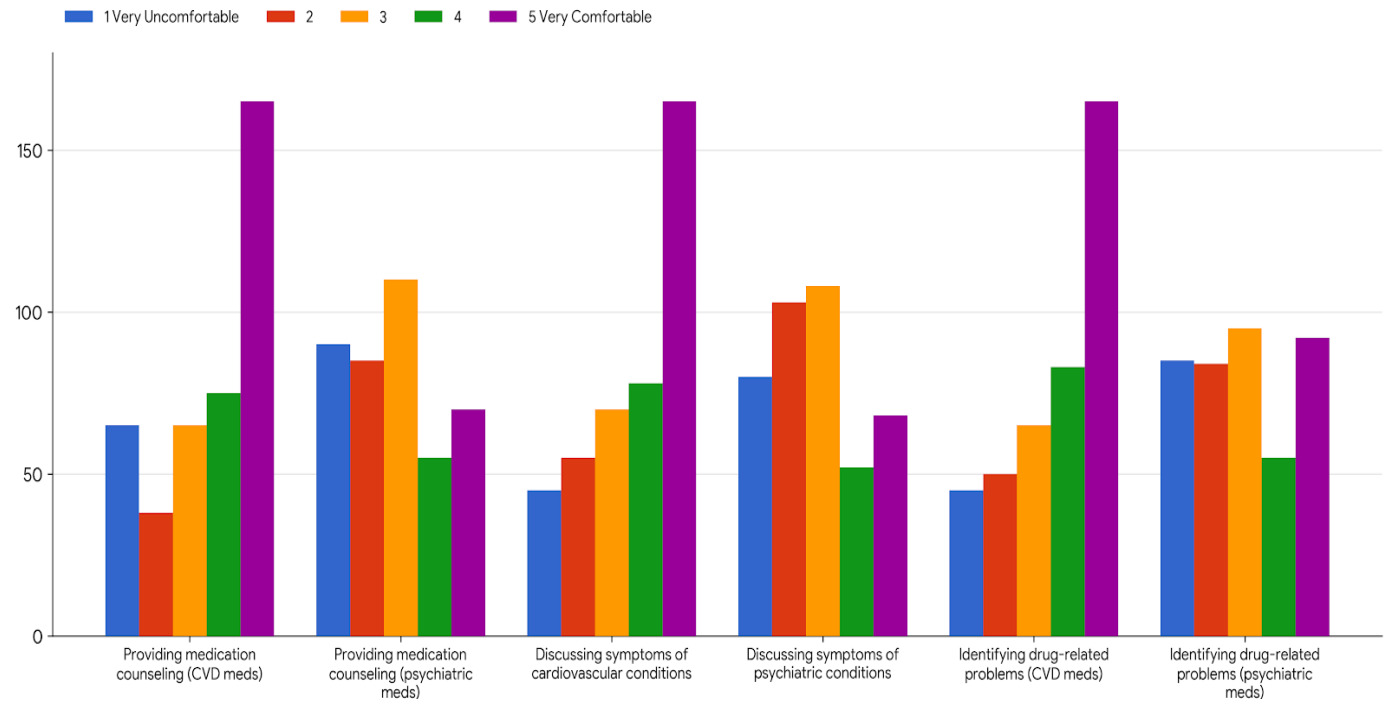

Figure 3. Knowledge of pharmacists regarding the classification of psychiatric medications.

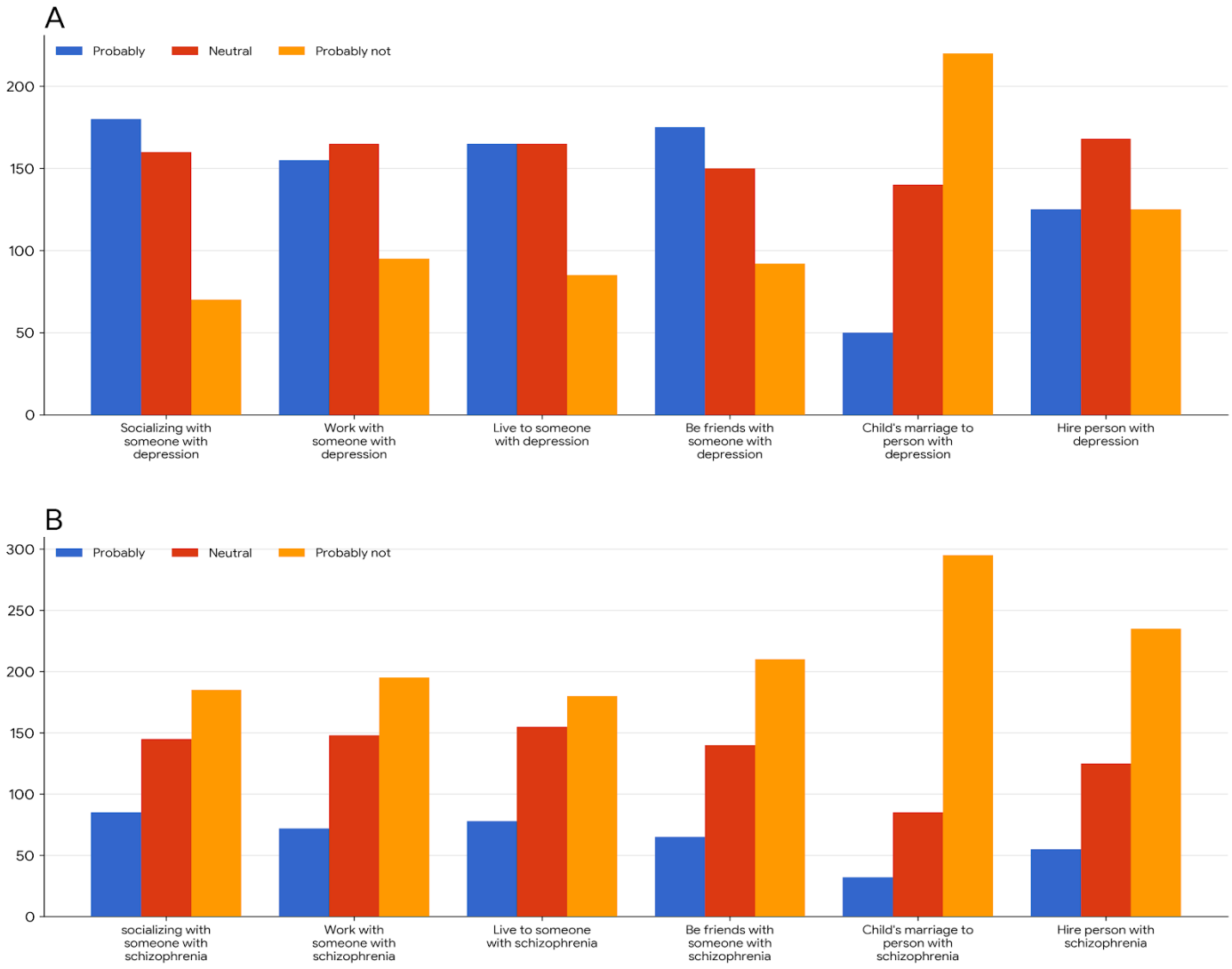

Figure 4. Assessment of pharmacists' willingness to interact with patients suffering from depression (A) and schizophrenia (B).

with individuals with depression (42.1%) or schizophrenia (15.5%) was the most accepted form of interaction. In contrast, having a child marry an individual with either condition was the least accepted scenario, reported by 12.6% of respondents for depression and 8.0% for schizophrenia.

Association between pharmacists' stigma level and demographic characteristics or knowledge levels

The distribution of pharmacists according to their level of stigma towards patients with mental health disorders (MHD) across key demographic and knowledge variables is detailed in Table 5. No statistically significant associations were found between stigma levels and gender ($p = 0.09$), age group ($p = 0.13$), highest academic degree ($p = 0.4$), or self-reported knowledge levels ($p = 0.07$).

Discussion

Despite the significant impact of mental illness diseases, to the best of our knowledge, we believe that this is the first study that has tried to evaluate the knowledge, attitude, practice, stigma, and behavioral responses towards people with mental illness among pharmacists in Sudan. Due to the ongoing socio-political instability and conflict, research showed an increase in symptoms of mental illnesses [18]. It is the need of the hour to call for urgent intervention and further research aimed at reducing stigmatizing beliefs and providing optimal care for those who suffer from mental health conditions. The study surveyed a total of 413 pharmacists, the majority of whom were under thirty years female, community pharmacists, and holding a bachelor's degree in pharmacy. Similar demographic characteristics were reported in many studies carried out in Sudan [21-23]. The large representation of the female gender could be justified by the real situation of the students in universities, with a gender ratio of at least 2:1 in most colleges [24,25].

The assessment of knowledge regarding MHD among participants showed that when it came to classifying major categories of medications, such as antidepressants, anxiolytics, and antipsychotics, pharmacists demonstrated an accuracy rate of 66%, about two-thirds of the cases across all three groups. The findings are consistent with a study of pharmacists in the MENA region, which reported that baseline knowledge of mental health disorders was sufficient for recognizing depression (93.3%), anxiety (63.7%), and obsessive-compulsive disorder (68%) [15]. In contrast, another study highlighted that although there is overall willingness and interest among community pharmacists to engage in services for patients with mental illness, there is a significant need for interventions to improve knowledge and attitudes related to mental illness [26].

To further evaluate their understanding of MHD pharmacotherapy, pharmacists were asked not only to sort medications by their correct primary indications but also to identify their potential for multiple indications. This evaluation revealed a gap in knowledge regarding the complexity and varied applications of psychiatric medications across different MHD-related situations. Such as while 87% of pharmacists correctly identified antipsychotics as primarily indicated for schizophrenia, only 53% recognized their use in the management of bipolar disorder. Our findings were at odds with the findings of research on medication therapy management (MTM), which underscores the importance of pharmacists' knowledge in identifying both primary and secondary indications of drugs [27].

The study revealed that a substantial proportion of pharmacists considered confinement in a psychiatric ward necessary for the management of schizophrenia (74%) and bipolar disorder (52%), reflecting ongoing stigma and outdated treatment approaches. Similar findings have been reported in previous studies showing that stigmatizing beliefs among health care professionals continue to favour institutional care [28].

Regarding the assessment of pharmacists' knowledge of non-pharmacological interventions, most participants recognized cognitive-behavioral therapy (CBT) as an effective treatment for depression. This is supported by a systematic review demonstrating that CBT significantly reduces depressive symptoms, especially when interventions are tailored to individual needs [29].

Additionally, in terms of correct symptom recognition, the study participants demonstrated a high level of recognition for depressive symptoms but lower awareness of anxiety-related and compulsive behavior. This could be justified by research on text-based estimation of depression that suggests that linguistic patterns associated with depressive symptoms are easier to identify, which might contribute to higher recognition rates [30]. Similar findings were reported in a study that examined the MHL of the British community [16].

The low perceived helpfulness of pharmacist consultation (37.8%) observed in this study represents a critical finding that reflects cyclical barriers to the expansion of the pharmacist's professional roles. The reported low comfort and training gaps reinforce stigma and limiting pharmacist's professional practice in mental health care. As stated in the literature, Pharmacists viewed their role as integral to providing mental health services; however, progress is impeded by challenges such as stigma, fragmented care, and training gaps [31]. The study findings align with a study showing that unfavorable attitudes toward mental illness are prevalent among pharmacists [32]. This differs from other analyses of literature, where health professionals view their field as the most beneficial [15]. This could be explained by what was reported on literature, which revealed that pharmacists face several barriers that may hinder them from performing their role, including a lack of confidence, time, payment, privacy in the current community pharmacies, lack of coordination with other health care providers, communication challenges, and stigma [33.34].

Lack of training is an important barrier in most professions. Our findings highlighted a considerable gap in training, as a low percentage of the pharmacists (15.7%) agree with the statement "I have had sufficient training in mental health

conditions". Due to that, it is important to emphasize the importance of continuous mental health training and new medical education methods for pharmacists to address gaps in their knowledge, eliminate stigma, and improve their confidence in delivering mental health services [35-39]. Nevertheless, researchers have demonstrated that this mindset can shift by incorporating more patient-focused approaches in curriculum development for topics related to MHD. A systematic review evaluating mental health training programs for pharmacists, pharmacy students, or staff showed that changes in participants' attitudes, skills, stigma, knowledge, and confidence were the most common outcomes evaluated in the studies, with overall significant improvement on those outcomes after the training [40]. In addition, individuals experiencing mental health disorders in Sudan often face significant societal stigma, leading them to seek spiritual and religious healing methods before considering professional medical assistance 41. This trend is further exacerbated by the negative attitudes and practices of healthcare providers toward mental health conditions [42,43].

Stigma was assessed based on different spectrums. The first was the degree of dangerousness and recovery. Three-quarters of the pharmacists found that patients with MHD are less likely to develop a positive outcome, like being reproductive or having a healthy marriage. Nevertheless, they believed that individuals with MHD are at a higher risk of developing harmful behaviors, such as experiencing suicidal thoughts, engaging in illegal drug use, or being violent [44]. These findings are like a study which also reported that the pharmacists stated that the presence of mental health facilities in the area poses a risk to the population in that area [17].

Secondly, pharmacists exhibited less comfort and willingness when providing essential services, such as discussing medication-related issues and offering counseling, to patients with mental health disorders compared to providing the same services to cardiovascular patients. This discomfort may stem from the stigma associated with psychotropic medications, which, in turn, could contribute to reducing follow-up monitoring for drug-related problems among mental health patients and subsequently poor medication adherence among these patients [32]. Which could be justified by the fact that pharmacists generally felt more at ease and confident when discussing symptoms related to cardiovascular conditions than when addressing symptoms of psychiatric conditions [13]. The observed differences in comfort levels likely reflect greater familiarity with cardiovascular medication, clearer clinical guidelines, and more structural support rather than stigma alone.

Regarding the pharmacists' ability to build different relationships with patients with depression and schizophrenia, the study revealed that while some pharmacists are willing to engage with individuals suffering from depression, many remain reluctant, particularly when it involves personal relationships and family matters. This reluctance aligns with findings from another study that have reported stigmatizing attitudes toward patients with depression [45]. Similarly, concerns have been raised about the inadequate attitudes and practices among Sudanese physicians in treating depression [46], and these are further challenges faced by individuals seeking mental health care in Sudan. In addition, building a relationship with a patient with schizophrenia presented greater challenges, but this was not the case in a study conducted in Australia, where participants showed the same level of stigma for both schizophrenia and severe depression [47]. In contrast, other researchers highlighted a low level of mental health stigma but high levels of schizophrenia literacy [48]. Regarding our findings, we didn't find any significant associations between age, gender, and overall stigma [49]. Unlike other observations where a more positive attitude was associated with older age and males, as reported by a Nigerian study [50].

Several limitations should be acknowledged in our study. The first limitation is self-report bias, as the questionnaire dealt with a sensitive issue like mental health disorders, participants might have been reluctant to provide honest answers out of concern for being stigmatized or judged. This could have affected the reliability of the data. Also, the use of convenience online sampling may have introduced bias, as pharmacists with reliable internet access and greater familiarity with online surveys were more likely to participate. This may have disproportionately represented younger, urban pharmacists while underrepresenting older or rural practitioners. Second, the use of cardiovascular medication users as the control group may limit generalizability, as this population may not represent users of other medications. Differences in comfort levels may reflect not only stigma but also greater familiarity with cardiovascular treatments, clearer clinical guidelines, and more established structural support for cardiovascular care in pharmacy practice.

Conclusion

This study identified significant gaps in mental health care capacity. While baseline disorder recognition was high, pharmacists demonstrated limited knowledge of psychiatric pharmacotherapy, low professional confidence, and prevalent stigma, commonly associating mental illness with negative outcomes like violence and suicide. Comfort in managing mental health conditions was substantially lower than for cardiovascular diseases. These findings underscore an urgent need for systemic interventions, including integrating mental health education, which should entail continuous education programs and workshops that focus on advanced pharmacotherapy knowledge, patient counseling skills, and stigma-reduction strategies. Training should also incorporate case-based learning, role-playing exercises to build confidence in patient interactions, and interprofessional collaboration with physicians and mental health specialists. Future studies should consider heterogeneity among displaced pharmacists, including differences in employment status and duration or intensity of conflict exposure, as these factors may influence mental health knowledge, attitudes, comfort levels, and stigma.

Authors' contributions

M.K.S., S.A.O. and E.A.A.E. conceptualized and designed the study. M.K.S., S.A.O., A.A.N., A.M.A., and A.O.A. contributed to patient recruitment and data acquisition, conducting the study, performing data analysis, and interpreting the results. E.A.A.E. and B.A.Y. supervised the research. All authors contributed to writing the first draft of the manuscript. B.A.Y. and E.A.A.E. edited the final draft and provided critical revisions. All authors reviewed, edited, and approved the final manuscript.

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None to declare

Reference

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