



# Gaps in pharmaceutical care for patients with mental health issues: A cross-sectional study

Amal Akour<sup>1,2</sup> · Shiraz Halloush<sup>3</sup> · Mohmmad B. Nusair<sup>4</sup> · Muna Barakat<sup>3</sup> · Fatima Abdulla<sup>5</sup> · Malik Al Momani<sup>4</sup>

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## Abstract

**Background** Mental health issues such as depression and anxiety are often underdiagnosed and undertreated. Medications are a primary method of managing mental health problems, and pharmacists therefore have a vital role in supporting patients and providing them with information about the safety and efficacy of mental health medications. However, the potential role of pharmacists in managing mental health issues in Jordan has not been well established.

**Aim** This study aimed to assess Jordanian pharmacists' attitudes and actual practices related to the provision of mental health services.

**Method** This was an exploratory cross-sectional study that used a self-report questionnaire among a convenience sample of 347 pharmacists in Amman, the capital of Jordan.

**Results** The participating pharmacists had positive attitudes towards providing care for patients with mental health problems. However, their actual practices did not resonate with their enthusiasm, particularly in terms of the long-term follow-up of disease symptoms and medication side effects and adherence. The participating pharmacists showed an eagerness to collaborate with their colleagues, but their level of actual cooperation was lower than desired. The most reported barrier to providing care for patients with mental health problems was the lack of education on mental health issues (71.5%), followed by the lack of privacy in pharmacy settings (53.9%).

**Conclusion** To be effectively involved in the provision of care to mental health patients, pharmacists should receive adequate education/training related to mental health issues, and pharmacies should be redesigned to provide private areas for patient counseling.

**Keywords** Antipsychotic agents · Mental health services · Pharmacy services · Pharmacist

## Impact Statements

- Pharmacists are not well-informed about mental health issues and their related medications, which may in turn lead to poor patient outcomes.
- There is an urgent need to actively involve pharmacists in the care of patients with mental health issues by providing them with further education and promoting their collaboration with other healthcare professionals.

## Introduction

Mental health issues such as depression and anxiety are often underdiagnosed and undertreated [1], both in high-income

✉ Amal Akour  
amalakour@gmail.com; a.akour@ju.edu.jo;  
aakour@uaeu.ac.ae

<sup>1</sup> Department of Biopharmaceutics and Clinical Pharmacy, The School of Pharmacy, The University of Jordan, Amman, Jordan

<sup>2</sup> Department of Pharmacology and Therapeutics, College of Medicine and Health Sciences, United Arab Emirates University, Abu Dhabi, United Arab Emirates

<sup>3</sup> Department of Clinical Pharmacy and Therapeutics, The School of Pharmacy, Applied Science Private University, Amman, Jordan

<sup>4</sup> Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmacy, Yarmouk University, Irbid, Jordan

<sup>5</sup> Department of Public Health, The School of Medicine, The University of Jordan, Amman, Jordan

and low to middle-income countries (LMICs) [1]. Many barriers may mitigate the ability of patients with mental health disorders to approach proper healthcare services, which may contribute directly to the worsening of their symptoms and quality of life [2]. However, studies have shown that pharmacists may play a pivotal role in improving patients' access to these services and hence their mental health management [3, 4]. As compared to other primary healthcare providers, pharmacists are considered easily accessible [5]. Further, pharmacists are equipped with knowledge about the medications used to treat mental health issues and have adequate skills to facilitate patients' adherence to antipsychotic medications, reduce patients' polypharmacy, and provide counseling to patients about their diseases and medications [6]. A study conducted by Bingham et al. demonstrated that pharmacists contributed to the substantial improvement in diabetic mental health patients' adherence to psychotropic medications [7]. With regards to patients with depression, pharmacists' intervention is focused on educating patients about their conditions, the importance of adherence to medications, and the efficacy and potential adverse reactions of drugs [8]. Specifically, pharmacists' efforts are centered around the management of adverse drug reactions and the alteration of doses based on the safety and efficacy of medications. Pharmacist-led interventions have been shown to lead to decreased rates of non-adherence to antidepressants, though they have not been evidenced to impact patients' intervention acceptability or level of depression symptoms [8]. In schizophrenic patients, pharmacists' interventions have been evidenced to lead to a decrease in the number of antipsychotic medications and their doses [9]. Recommendations about the role of pharmacists in the provision of care to patients with depression have been well-described [10]. The role of pharmacists includes collecting data about depression patients' demographics, clinical conditions, and medications, identifying treatment-related problems (TRPs), and ensuring the safe and effective use of medications. Their role also includes providing follow-up care for patients to ensure the long-term efficacy and safety of medication use, evaluate medication adherence, and identify the emergence of potential and/or actual TRPs. Unfortunately, in real practice, gaps have been identified in pharmacists' provision of full pharmaceutical care to mental health patients, with their role found to be limited to the distribution of prescriptions and the provision of information about medications and side effect management. Two major expectations have been identified as being unmet, namely the lack of privacy during pharmacist-patient encounters and the lack of patient counselling throughout the treatment period. From the patients' perspectives, pharmacists should actively provide counseling and advice to patients with depression

during their treatment, rather than wait for the patient to ask questions [11, 12].

In LMICs, there is a paucity of evidence regarding the prevalence and management of mental health disorders, and various challenges in the management of mental health issues have been identified. In these countries, healthcare providers, including pharmacists, suffer from the lack of education and training related to dealing with mental health issues [13]. Other challenges include the lack of governmental support [14], conflicts, immigration, and economic crises (i.e., the lack of resources) [15, 16]. Furthermore, stigma, that is [17] associated with mental health illnesses and pharmacists' discomfort providing mental health services are common barriers in both LMICs and developed countries [18, 19].

Medications are the primary method of managing mental health problems, and pharmacists therefore have a vital role in supporting patients and providing them with information about the safety and efficacy of mental health medications. However, the potential role of pharmacists in managing mental health issues in Jordan has not been well established.

## Aim

The objective of this study was to evaluate Jordanian pharmacists' attitudes and actual practices related to the provision of care to patients with mental health issues.

## Ethics Approval

This study was conducted in line with the Declaration of Helsinki. Ethical approval was obtained from the Institutional Review Board at the Applied Science Private University in Jordan (approval number 2021-PHA-5).

## Method

### Study Design and Participants

This study was conducted in February 2021 using an exploratory cross-sectional design and convenience sampling methods. The "Strengthening the Reporting of Observational Studies in Epidemiology" (STROBE) checklist was utilized as a guideline for reporting the methods and results. The participants were recruited through groups on social media platforms, and an online self-administered questionnaire with closed-ended questions was distributed to them via these platforms. These social media groups were created by pharmacists in Jordan for general and professional communication, especially during the COVID-19 pandemic. These groups include the Jordan Pharmacist Association

Facebook® group and miscellaneous pharmacist groups on WhatsApp. The questionnaire was designed to ensure the anonymity and confidentiality of the participants, whereby identifying data such as names, phone numbers, physical addresses, or emails were not collected. The first page of the questionnaire included a comprehensive description of the study and its objectives, the researchers and their affiliations, the eligibility criteria for participation, the voluntary nature of participation, the right to withdraw from the study, the potential benefits and risks of participation, privacy and confidentiality concerns, data handling, and the contact details of the researchers for any enquiries. Following the first page, an informed consent letter was presented to the participants, and accepting it was a prerequisite for proceeding in participation. The questions were entered into and distributed via SurveyMonkey® Inc. (San Mateo, California, USA). No form of compensation was offered to the participants for their involvement in the study. The selection of an internet-based survey for data collection was due to the COVID-19-related restrictions regarding the use of paper and face-to-face communication. In addition, using the internet and social media for recruitment and sampling has been shown to be an effective and time-efficient method which allows for reaching otherwise inaccessible potential participants from different regions [20]. The inclusion criteria in the present study were being a practicing Jordanian pharmacist and having been resident in Jordan during the COVID-19 pandemic.

### Instruments and Measures

The online questionnaire was created using SurveyMonkey and was constructed in modern standard Arabic. The questionnaire was adopted from a previous survey, with modifications [21], and consisted of three sections. The first section included questions about sociodemographic information such as age, gender, marital status, region of residence, educational level, job sector, years of practice, and professional experience. Professional experience was measured by estimating the frequency at which the pharmacists encountered patients with mental health issues (including depression, anxiety, and post-traumatic stress disorder (PTSD) during their practice (on a 5-point Likert scale ranging from 1 (never) to 5 (daily)). The second section included questions about the role of pharmacists in mental health care in practice and their attitudes towards these roles. Attitude items were assessed on a 5-point Likert scale with responses ranging from strongly disagree to strongly agree. Practice items were assessed on a 4-point Likert scale ranging from “I provide. . to no patients” to “I provide. . to all patients”. No “undecided” option was available for practice items, as these items concerned facts and not attitudes. In the third

section, the pharmacists were asked to indicate their perceived barriers (from a list including pharmacist-, patient-, and system-level barriers) to taking up these roles. In the later section, the pharmacists were asked which partners they wanted to collaborate with in the provision of care to patients with mental health issues. The current level of cooperation with these partners was also measured using a 5-point Likert scale ranging from 1 (no cooperation) to 5 (discussing how to deal with individual patients). Finally, the perceived barriers to this cooperation were listed for the participants to choose from. A first version of the survey was piloted among a group of pharmacists who did not participate in the main study, and the content and face validity were discussed with experts in the field. Based on their feedback, minor modifications were made to produce the final version.

### Data Management and Analysis

The completed questionnaires were extracted from SurveyMonkey® and then incorporated into SPSS version 24.0 (IBM, United States). Descriptive analysis and summary statistics were used, whereby the categorical variables were described as frequencies and percentages. Two-tailed t test was used to test the association between the sociodemographic characteristics and the pharmacists’ current practices related to the provision of care to patients with mental health issues. The confidence level was set at 95%, and a P-value of less than 0.05 was considered statistically significant. Moreover, logistic regression was carried out to assess the effects of the pharmacists’ sociodemographic variables, perceived barriers to the provision of mental health services, and collaboration with other healthcare providers on their current practices related to the provision of pharmaceutical care to patients with mental health conditions (i.e., the dependent variable).

## Results

### Sociodemographic Characteristics

A total of 347 questionnaires were included in the final analysis. The majority of the participants were female ( $n=264$ , 76.1%), aged between 21 and 29 years old ( $n=236$ , 68%), and residing in the central region of Jordan ( $n=183$ , 52.7%). Most of the participating pharmacists (71.8%) held a bachelor’s degree ( $n=249$ ), 64.6% were employed ( $n=224$ ), and 58.2% had 6–10 years of work experience ( $n=202$ ). More than half of the participants were working in community pharmacy settings ( $n=127$ , 56.7%), with over half of the reported salaries ranging between 300 and 599 JOD

( $n = 113$ , 50.4%). Around 45% percent of the pharmacists were working for over 40 h per week ( $n = 101$ ). Depression and anxiety were the most commonly reported mental health conditions, with 64.6% of the pharmacists reporting that they provided care for patients with depression and 46.1% for patients with anxiety (Table 1).

### The Role of Pharmacists in Mental Health Support Services

The participating pharmacists demonstrated substantially positive attitudes towards their potential role in providing mental health support, especially for depression and anxiety (Table 2). At least 70.8% ( $n = 246$ ) of the participating

pharmacists agreed/strongly agreed on the need to provide thorough patient care and pharmaceutical care practice to patients with mental health problems. The majority of the participants ( $n = 338$ , 97.5%) agreed/strongly agreed on the role of the pharmacist in advising the patient to consult a physician upon the worsening of symptoms. However, in comparison to the pharmacists' attitudes towards the eleven roles, their current practices regarding these roles were poor. Hence, the pharmacists reported that they provided many of the services they were asked about to few or no patients. About 68.6% ( $n = 238$ ) and 72% ( $n = 250$ ) of the participants provided long-term follow-up care for the symptoms of mental health problems/side effects and medication adherence, respectively, to few or no patients. On the other hand,

**Table 1** Sociodemographic characteristics of participants ( $n = 347$ )

Sociodemographic characteristics		n (%)
Gender	Male	83 (23.9%)
	Female	264 (76.1%)
Age (years)	21–29	236 (68%)
	30–39	48 (13.8%)
	40–49	50 (14.4%)
	Above 50	13 (3.7%)
Region	North	123 (35.5%)
	Central	183 (52.7%)
	South	41 (11.8%)
Marital Status	Single/never married	208 (59.9%)
	Married/previously married	139 (40.1%)
Highest education degree	BPharm	249 (71.8%)
	PharmD	46 (13.2%)
	Postgraduate degree	52 (15%)
Working experience (years)	Less than 3 years	53 (15.3%)
	3–5 years	28 (8.1%)
	6–10 years	202 (58.2%)
	More than 10 years	64 (18.4%)
Employment Status	Employed	224 (64.6%)
	Unemployed/retired	123 (35.4%)
Monthly income (in JOD)*	Less than 300	38 (17%)
	300–599	113 (50.4%)
	More than 600	73 (32.6%)
Practice setting*	Community pharmacy	127 (56.7%)
	Hospital pharmacy	33 (14.7%)
	Others	64 (28.6%)
Working hours/week*	Less than 30 h	29 (12.9%)
	30–40 h	94 (42%)
	More than 40 h	101 (45.1%)
Conditions that you provided pharmaceutical care for patients with mental illness	Depression	224 (64.6%)
	Anxiety	160 (46.1%)
	Attention deficit hyperactivity disorder (ADHD)	37 (10.7%)
	Eating disorders	29 (12.9%)
	Addiction	48 (13.8%)
	Post-partum depression	60 (17.3%)
	Obsessive compulsive disorder (OCD)	69 (19.9%)
Schizophrenia	36 (16.1%)	

\* These characteristics were measured for currently employed participants ( $n = 224$ )

**Table 2** Attitudes and current practices among participants in regard to their potential roles in the care of patients with mental health problems

	Attitude			Current practice	
	<i>Strongly agree/agree</i>	<i>Neutral</i>	<i>Strongly disagree/disagree</i>	<i>No patients or up to a few patients</i>	<i>Most or all patients</i>
Advise patient to consult a doctor when symptoms worsen	338 (97.4%)	7 (2%)	2 (0.6%)	73 (21%)	274 (79%)
Advise patient to consult a doctor when the pharmacist recognizes symptoms	336 (96.8%)	11 (3.2%)	-	82 (23.6%)	265 (76.4%)
Provide information on medication for treatment (side effects and duration)	334 (96.2%)	11 (3.2%)	2 (0.6%)	123 (35.4%)	224 (64.6%)
Maintain a trusting relationship	331 (95.4%)	14 (4%)	2 (0.6%)	127 (36.6%)	220 (63.4%)
Provide support and listen to the patient	321 (92.5%)	22 (6.3%)	4 (1.2%)	107 (30.8%)	240 (69.2%)
Know the patient's medication history	320 (92.2%)	24 (6.9%)	3 (0.9%)	184 (53%)	163 (47%)
Short-term follow-up symptoms and side effects (2–4 weeks)	309 (89.1%)	32 (9.2%)	6 (1.7%)	211 (60.8%)	136 (39.2%)
Provide information on condition (symptoms, causes, and treatment)	305 (87.9%)	33 (9.5%)	9 (2.6%)	147 (42.4%)	200 (57.6%)
Short-term follow-up medication adherence (2–4 weeks)	292 (84.1%)	43 (12.4%)	12 (3.5%)	216 (62.2%)	131 (37.8%)
Long-term follow-up symptoms and side effects	261 (75.2%)	72 (22.1%)	28 (8.1%)	238 (68.6%)	109 (31.4%)
Long-term follow-up medication adherence	246 (70.8%)	73 (21%)	28 (8.2%)	250 (72%)	97 (28%)

more than 69% of the pharmacists reported providing the following services to most or all patients: providing support/listening to the patient and advising the patient to consult a physician when symptoms worsen or when the pharmacist recognizes symptoms.

With regards to the cooperation of the participating pharmacists with other healthcare providers in serving patients with mental health problems, 94.8% (n = 329) reported the desire to cooperate with psychiatrists, and 92.5% (n = 321) with their pharmacist colleagues (Table 3). However, the pharmacists' reported actual level of cooperation with most partners was relatively low, except for cooperation with the relatives of patients. The rate of cooperation with other

pharmacists exceeded 70%, ranging from 'merely collegial relationship' to 'pharmacists and partners discuss the treatment and medication of individual patients'. Among the total sample, 56.2%, 56.8% and 63.4% confirmed the lack of cooperation with psychologists, community healthcare services, and health insurance companies, respectively.

Table 4 demonstrates the statistically significant association between the pharmacists' current practices and sociodemographic characteristics. The role "Know the patient's medication history" was significantly affected by gender, training in the mental health domain, and years of work experience. Further, the participants' gender and training in mental health significantly impacted their short-term

**Table 3** Participants reported current level and desired level of cooperation with other partners in providing care for patients with mental health problems

	Desired Cooperation	The current level of cooperation				
		<i>No cooperation</i>	<i>Merely collegial relationship</i>	<i>Pharmacist receives general advice on treatment medication of patients</i>	<i>Pharmacist and partner share information about individual patients</i>	<i>Pharmacist and partner discuss treatment medication of individual patients</i>
Psychiatrists	329 (94.8%)	166 (47.8%)	81 (23.3%)	31 (8.9%)	41 (11.8%)	28 (8.1%)
Pharmacist colleagues	321 (92.5%)	51 (14.7%)	105 (30.3%)	75 (21.6%)	66 (19%)	50 (14.4%)
Psychologists	315 (90.8%)	195 (56.2%)	65 (18.7%)	36 (10.4%)	38 (11%)	13 (3.7%)
Community health care services	306 (88.2%)	197 (56.8%)	65 (18.7%)	34 (9.8%)	35 (10.1%)	16 (4.6%)
General practitioners	294 (84.7%)	147 (42.4%)	95 (27.4%)	44 (12.7%)	26 (7.5%)	35 (10.1%)
Patients' relatives	279 (80.4%)	82 (23.6%)	n/a	n/a	265 (76.1%)	-
Health insurance companies	267 (76.9%)	220 (63.4%)	66 (19%)	23 (6.6%)	23 (6.6%)	15 (4.3%)

and long-term follow-up of symptoms, side effects, and medication adherence. Furthermore, the results from the logistic regression analysis (Table 5) showed that the pharmacists' current practices related to the provision of care to patients with mental health issues is significantly associated with collaboration barriers, whereby pharmacists were more likely to provide care for depression to patients who wanted this support from their pharmacists (AOR=1.755, p-value=0.027), partners who have another framework for collaboration (AOR=1.687, p-value 0.042). However, they were less likely to provide such services when they had time constraints (AOR=0.585, p-value=0.030).

### Pharmacists' Perceived Barriers to the Provision of Care for Patients with Mental Health Problems

With regards to the pharmacists' perceived barriers to the provision of care for patients with mental health problems, Fig. 1 illustrates that the main barrier was lack of education about mental health problems (71.5%). Moreover, 53.9%, 48.4%, 45.2%, and 41.5% of the participants reported the lack of privacy in pharmacies, social stigma, lack of information about patients, and lack of time for providing individual attention for patients as being main barriers, respectively. Most of the answers were not substantially different between male and female participants, except for the reported lack of time for providing individual attention and insufficient desire to providing mental health services that were significantly associated with male gender.

Moreover, the perceived barriers to collaboration between pharmacists and other partners were assessed. More than half of the study participants (58.8%) perceived the collaboration as unusual, while 5.2% reported that cooperation with other healthcare providers was unnecessary. Also, more than half the participants with work experience of fewer than 5 years reported that time constraints (51.9%) and professional secrecy (61.7%) were the most challenging barriers.

## Discussion

### Statement of key findings

This study aimed to quantitatively describe the role of pharmacists in the provision of mental health services in Jordan through assessing the discrepancies between pharmacists' attitudes and their current practices. In Jordan, is considered an LMIC, there are 64 mental health outpatient facilities and four psychiatric hospitals established until 2012 [22]. However, mental health training for primary healthcare workers and interactions between primary care and mental health

systems are scarce [22]. Pharmacists in Jordan are well-qualified healthcare providers, with universities in Jordan providing two bachelor programs (BPharm and PharmD) and postgraduate programs (MSc and PhD) [23]. Thus, it can be hypothesized that pharmacists in Jordan hold the potential to provide care to mental health patients. In this study, depression was the most common encountered mental health condition by pharmacists in various settings, and more than 80% of participating pharmacists showed high motivation toward providing health care services to patients under this category. Nevertheless, there was a discrepancy of what pharmacists' attitudes and the real practice, especially when it comes to long-term follow-up of patients. Lower discrepancies were observed between the likelihood of advising patients to refer to a psychiatrics when their condition gets worse. Important perceived barriers were identified by pharmacists which included the lack of education/training in mental health topics, as well as the weak collaboration with other healthcare providers.

## Interpretation

### Attitudes vs. practice of mental health services by pharmacists

Among the eight mental health conditions mentioned (i.e., depression, anxiety, attention deficit hyperactivity disorder, eating disorders, addiction, post-partum depression, obsessive-compulsive disorder, and schizophrenia), depression was reported as the most prevalent condition in Jordan for which pharmacists provide pharmaceutical care services. This is typically the case in LMICs and can be explained by different factors such as economic difficulties and the low socioeconomic status of many people in these countries [16]. In contrast, in developed countries, anxiety seems to be the most prevalent mental disorder [24].

On average, most of the participating pharmacists in this study (89%) showed positive attitudes towards their potential role in the provision of mental health care. However, their perceived importance of their role does not reflect their practices in the real world. More than two-thirds of the included pharmacists were highly motivated and expressed a willingness to provide long-term follow-up care to encourage medication adherence. Further, most of the participating pharmacists reported that they would advise patient to consult a doctor when the pharmacist recognizes symptoms related to mental health.

However, significant differences in attitudes and practices scores were observed in some items. For example, 70.8% of the participating pharmacists strongly agreed on the importance of providing mental health patients with long-term follow-up care to encourage medication adherence and

**Table 4** Statistically significant association between sociodemographic characteristics and current practices among participants in the care of patients with mental health issues

Demographic variable	current practices among participants in the care of patients with mental health issues		P-value	
	mean	SD		
Gender	Male	Female		
Training in mental health	Maintain a trusting relationship	2.16 ± 0.97	1.82 ± 0.99	0.008
	Know the patient's medication history	1.75 ± 0.88	1.44 ± 0.85	0.005
	Short-term follow-up symptoms and side effects (2–4 weeks)	1.53 ± 0.95	1.23 ± 0.92	0.012
	Long-term follow-up symptoms and side effects	1.40 ± 1.04	1.04 ± 0.93	0.003
	Short-term follow-up medication adherence (2–4 weeks)	1.52 ± 0.95	1.16 ± 0.93	0.030
	Long-term follow-up medication adherence	1.23 ± 0.99	0.94 ± 0.91	0.016
	No previous training		Received a training	
	Know the patient's medication history	1.49 ± 0.76	1.72 ± 0.82	0.043
	Provide information on condition (symptoms, causes, and treatment)	1.67 ± 0.84	2.0 ± 0.92	0.008
	Provide information on medication for treatment (side effects and duration)	1.80 ± 0.82	2.07 ± 0.94	0.028
Working experience	Short-term follow-up symptoms and side effects (2–4 weeks)	1.23 ± 0.81	1.58 ± 0.96	0.005
	Long-term follow-up symptoms and side effects	1.07 ± 0.89	1.35 ± 0.94	0.031
	Short-term follow-up medication adherence (2–4 weeks)	1.21 ± 0.85	1.49 ± 0.98	0.037
	Long-term follow-up medication adherence	0.94 ± 0.92	1.22 ± 0.86	0.029
	< Five years		≥ Five years	
SD: standard deviation	1.69 ± 0.88	1.46 ± 0.86	0.037	

**Table 5** Binary Logistic Regression results for the association between participants' current practice of providing care for patients with mental health issues with sociodemographic variables and perceived barriers

		OR	SE	P-value	95% CI
Patients with depression do not want support from their pharmacist (barrier for collaboration)		REF	REF	0.021	REF
		1.786	0.250		1.093–2.917
Partners have another framework (barrier for collaboration)	No	REF	REF	0.023	REF
	Yes	1.777	0.253		1.083–2.918
Time constraints (barrier for collaboration)	No	REF	REF	0.031	REF
	Yes	0.596	0.240		0.372–0.955

monitor medication side effects. However, the same pharmacists reported that this was rarely practiced by pharmacists and that few or no patients are provided with long-term follow-up care. Similarly, previous studies have reported that ongoing follow-up of antidepressant treatment adherence remains lacking in pharmacists' daily practice [25, 26]. On the other hand, relatively lower discrepancies between the pharmacists' attitudes and practices scores were identified for the items related to providing support to patients and advising patients to consult a doctor if symptoms appear or worsen.

### Perceived barriers to providing mental health services

In Jordan, pharmacists believe that their cooperation with psychiatrists is more important than their cooperation with other healthcare providers. However, in practice, most pharmacists and partners share information about individual patients. Also, cooperation at different levels (i.e., receiving, sharing, and discussing information) is frequently observed between pharmacists and their colleagues. On the contrary, the reality that this collaboration between pharmacists and psychologists, community healthcare service providers, and health insurance companies is lacking. This could be explained by different factors, including the low number of psychologists in Jordan [22], cultural sensitivity towards visiting psychologists, and the limited number of community healthcare facilities [27].

All of the participating pharmacists reported lack of education about mental health issues as being the most challenging barrier to the provision of mental healthcare, which has been consistently reported in the literature [28, 29]. It was observed in our study that lack of education explained the great discrepancy between the participants' attitudes and practices scores for the items related to the provision of long-term follow-up care for monitoring symptoms and the side effects of treatment. The participating pharmacists also expressed their need for private areas in community pharmacies to discuss personal issues with their patients. Social stigma was perceived as being the third most challenging barrier, and this can be resolved by psychological awareness campaigns [27].

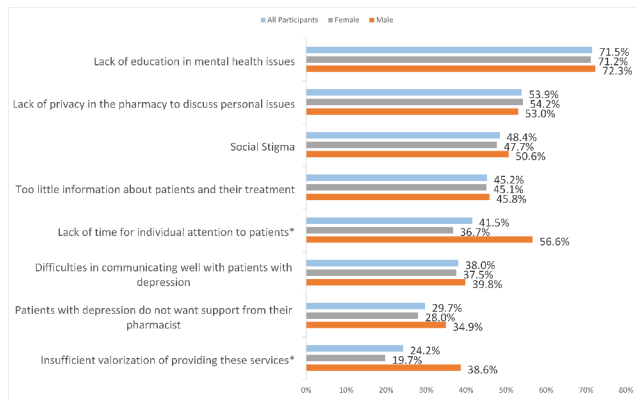
Nearly half of the pharmacists highlighted the insufficient collaboration with other partners (patients or providers) and the difficulty to obtain information from partners are considered the most challenging barriers for them to get involved in mental health care. The lack of collaboration between pharmacists and partners was also observed by Scheerder et al. [21]. Different mechanisms have been suggested to increase pharmacist-partner collaboration, such as treatment pathways utilizing a multidisciplinary team [30]. However, any attempt to increase pharmacist-partner collaboration must take into consideration the issue of patient confidentiality.

The association between pharmacists' perceived barriers to providing care for patients with mental health issues and their characteristics has not been previously evaluated. The current study findings indicated a correlation between the gender and perceived barriers. The time provided by pharmacists for patient care was less among male pharmacists than among female pharmacists. Also, the desire to providing mental health services that was also less reported among male participants. However, most of the participants in this study were females, and therefore, further research may provide further insight into the impact of gender on pharmaceutical care services.

### Strengths and weaknesses

This study is the first to provide insight into the role of pharmacists in the provision of care for patients with mental health issues, based on a sample of pharmacists in different practice settings in Jordan. However, there are limitations to the current study. The cross-sectional nature of this study does not allow for drawing cause-effect or temporal relationships between the variables. Further, the survey responses were online and self-reported, and the recruited pharmacists may have been biased towards the topic of depression. While this study had a sufficient sample size, the results of this study are limited to Jordanian settings and therefore cannot be generalized to other countries. The results of this study can be considered exploratory, and further research is needed to identify the associations between the variables.





**Fig. 1** Pharmacists' perceived barriers to providing care for patients with mental health issues \* p-value < 0.05

### Future research

Future research should assess the impacts of mental health training and education on the actual clinical practices of pharmacists. Also, the quality of mental health services provided by pharmacists, as perceived by mental health patients and psychiatrists, should be evaluated. Future research should also explore training and educational needs to make pharmacists well suited for providing care for patients with mental problems. Furthermore, the community must be more aware on what it means to 'have a mental illness' and patients should be more involved in making therapeutic decision (i.e., non-pharmaceutical or pharmaceutical treatments) in the context of shared decision making. Finally, the potential role of pharmacists in the provision of care as early as possible in the treatment process should be considered.

### Conclusion

The present study is the first to provide insights into the potential role of pharmacists in the provision of care for patients with mental health problems in Jordan. Although the participating pharmacists expressed positive attitudes towards their potential role in providing mental health services, their actual practices did not reflect these attitudes. The pharmacists expressed a willingness to be more involved in the provision of care to patients with mental health issues. More active collaboration between pharmacists and other healthcare providers, such as psychiatrists and psychologists, should be encouraged. There is a need to provide pharmacists with further education and training related to the provision of mental health services, and pharmacies should be redesigned to offer private areas for counseling.

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