Original article

Satisfaction with community pharmacies services in Jordan: A cross-sectional study

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Background: Pharmacists are responsible for giving patients basic information about their medications, as well as informing them about drug administration, safety, efficacy, medication storage, and promoting patient adherence to their medications. Patient satisfaction will undoubtedly improve if patient-centered care is used and the patient is encouraged to participate in the decision-making process. The aim of this study is to explore patients’ satisfaction with the pharmacy, its location, medication handling, dispensing and counselling procedures, or other non-paid services.

Method: This was a cross-sectional study that was conducted in Jordan using online questionnaire tool. Data was collected for the period between November 2021 and January 2022. A previously developed and validated questionnaire tool was used in this study. Binary logistic regression analysis was used to determine factors affecting satisfaction with community pharmacy services.

Results: A total of 1,611 patients participated in this study. More than half of the patients (55.5%) were males. Around 50.0% of the patients were aged 30 years and below. Patients were moderately satisfied with community pharmacy services (the mean satisfaction score was 148.6 (SD: 19.4) out of 205 (maximum obtainable score), which is equal to 72.5%). Patients' satisfaction was relatively consistent across the four sub-scales, ranging from 68.0% (satisfaction with additional non-paid services) to 74.7% (for satisfaction with the store, location, and staff). Patients' satisfaction with the store, location, and staff, as well as satisfaction with dispensing and counselling methods, differed significantly by age, marital status, work status, and the existence of chronic disease history. Patients' satisfaction with drug handling varies significantly depending on the patients' age, marital status, education level, employment position, and the presence of a history of chronic conditions. Patients' satisfaction with additional non-paid services differed significantly depending on the patients' educational level alone. Patients aged between 24 and 30 years old, as well as university students, were more likely to be satisfied with community pharmacy services.

Conclusion: In Jordan, patients were satisfied with community pharmacy services to a moderate degree. Future research should look on patient satisfaction with pharmaceutical services in hospitals. Furthermore, strategies to promote satisfaction with pharmaceutical services should be investigated.

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1. Introduction

Jordan is a small Middle Eastern developing country with a limited supply of natural resources (Alefan and Halboup 2016). It has a population of around 10 million people in 2018 (Higher Health Council 2020), and it is regarded as a regional leader in terms of healthcare provision and medical services (Nazer and Tuffaha 2017). Jordan has 14 distinct pharmacy schools (Alefan and Halboup 2016). Pharmaceutical educational requirements, like those in most nations, range from four to six years of study (Mossialos et al., 2015). Pharmacists must complete 1440 h of practice under supervision after completing their bachelor's degree requirements (Basheti et al., 2020). Around 90% of pharmacists in Jordan work in the private sector, with the majority of them working as community pharmacists (Alefan and Halboup 2016). Outside of the hospital, community pharmacies
are retail pharmacies. These pharmacists operate in a local community to give healthcare to the people who live there (Scahill et al., 2018). In 2022, the number of community pharmacies is expected to be around 3,576 (Jordan Pharmacists Association 2022).

Jordan’s pharmacy education and training program launched a PharmD program and a master’s degree in clinical pharmacy in 2005 to encourage more patient-oriented practice as part of the Pharmaceutical Care (PC) philosophy (Alefan and Halboup 2016). Helper and Strand were the first to define PC in 1990, stating that the goal of medication is to improve a patient’s quality of life (Allemann et al., 2014). In 2013, the Pharmaceutical Care Network Europe (PCNE) defined pharmaceutical care as “the pharmacist’s contribution to individual patient care in order to optimize pharmaceutical use and improve health outcomes” (Rovers et al., 2003).

The community pharmacist’s responsibilities expanded beyond simply dispensing medications. Pharmacists are responsible for giving patients basic information about their medications, as well as informing them about drug administration, safety, efficacy, adverse effects, drug-drug interactions, drug-food interactions, medication storage, and promoting patient adherence to their medications (Hammerlein et al., 2007). PC implementation, on the other hand, is not an easy process with numerous obstacles. One issue is that pharmacists lack motivation; also, most community pharmacies lack a private counselling place (Garattini and Padula 2018), lack of patient medical files, and trouble communicating with other healthcare workers, particularly physicians (Garattini and Padula 2018).

The majority of these barriers are found in community pharmacies in Jordan, where pharmacists lack updated knowledge after registering with the Jordan Pharmacists Association (JPA), where there is no additional exam or training required to maintain their registration, and they are only required to pay annual fees. Another reason is that physicians do not accept most pharmacist intervention or recommendations, even if they are for the patient’s health, and finally, they do not have the time to provide proper counselling to the patient (Naser and Tuffaha 2017).

If patient-centered care is used and the patient is encouraged to participate in decision-making, patient satisfaction will undoubtedly improve. This will also increase the quality of pharmaceutical treatment delivered to the patient, as he or she will be more compliant with his medication and open to discussing any concerns or side effects he may be experiencing (Rama and Kanagaluru 2011). Patient satisfaction can be defined in a variety of ways, with Cleary and McNeil defining it as “the health care recipient’s reaction to salient features of his or her service experience” (Cleary and McNeil 1988). Patient satisfaction is a good predictor of the quality of a community pharmacist’s health service, and it’s utilized to help them improve it in the future (Aziz et al., 2017).

Only a few studies in Jordan have looked into patients’ satisfaction with community pharmacies pharmaceutical services. In a previous study, Basha et al. looked at patient satisfaction with medication management review services and found a high degree of satisfaction (Basheti et al., 2018). To our knowledge, no previous study in Jordan has examined patients’ satisfaction with the pharmacy, its location, medication handling, dispensing, and counselling procedures, or other non-paid services. The objective of this study was to look at patients’ satisfaction with community pharmacists’ services in Jordan using the four subscales mentioned above (satisfaction with the pharmacy itself, its location, medication handling, dispensing, and counselling methods, and other non-paid services).

2. Methods

2.1. Study design

This was a cross-sectional study that was conducted in Jordan using an online questionnaire tool for the duration between November 2021 and January 2022. Qualtrics survey software was used to collect the patients’ responses.

2.2. Study population

Adult (aged > 18 years) purchasers of medication from community pharmacies were invited to participate in this study and formed the study population.

2.3. Sampling procedure

This study used a convenience sampling approach in order to enrol study patients. The link to the survey was shared on social media channels (WhatsApp, Facebook, and Snapchat). The invitation letter was included in the questionnaire’s cover letter. It gave a clear picture of the study’s goal and aims. Furthermore, the inclusion criteria were stated clearly. Patients were informed that by completing the study questionnaire, they were giving their informed consent to participate in the study.

2.4. Questionnaire tool

A previously developed and validated questionnaire tool by Aziz et al. was used in this study (Aziz et al., 2018). The basic construct of the original questionnaire was based on the key concepts of the expectancy theory of Linder-Pelz (Linder-Pelz 1982, Naik Panvelkar et al. 2009), which was adapted based on discrepancy theory of patients’ satisfaction by Fox (Fox and Storms 1981). Azizi and his colleagues identified the domain of the constructs and item generation through extensive literature review (Traverso et al. 2007, Márquez-Peiró and Pérez-Peiró 2008, Naik Panvelkar et al. 2009, Smith 2009, Al-Arifi 2012, Hasan et al. 2013, Pinto et al., 2014, Yang et al. 2016). Additionally, they determined the main domains through a qualitative study that was conducted in 2016 (Azhar et al., 2013). They have checked the face validity of the questionnaire by experts in social and administrative pharmacy. Content validity was checked by a social pharmacy expert, community pharmacists, and general practitioners. The questionnaire items’ average score of item-objective congruence (IOC) was above 0.5, which was considered good for content validity.

The original questionnaire comprised of 41 items related to patient satisfaction in four main domains: satisfaction with the actual pharmacy store, its location, staff, and operation (12-items); satisfaction with the medication handling (5-items), satisfaction with the dispensing and counselling practices (21-items), and satisfaction with additional non-paid services (for example, blood pressure, weighing machine, and home delivery) (3-items). Likert scale was used to determine the level of patients’ satisfaction. A score of 1 indicated “Not at all satisfied”, 2 denoted “Not very satisfied”, 3 indicated “Fairly satisfied”, 4 represented “Satisfied”, and 5 denoted “Very satisfied”. Therefore, the total achievable score is expected to be from 41 to 205.

2.5. Questionnaire translation

The original questionnaire was developed in English. We translated the original questionnaire to the Arabic language using forward and backward translational technique. Two expert clinical pharmacists and academics reviewed the Arabic version of the
questionnaire for clarity and comprehensibility, and they confirmed that it would be easily understood by patients.

The Arabic version of the questionnaire was then used to perform a pilot study on 10 patients in Jordan who matched the research's inclusion criteria. Patients were asked about the questionnaire's clarity and comprehensibility, as well as whether any of the questions were difficult to comprehend. Patients were also asked if any of the queries were undesirable or offensive to them. Patients stated that they found the questionnaire to be simple to comprehend and complete.

2.6. Statistical analysis

The Statistical Packages for Social Sciences (SPSS) version 27 (IBM Corp, Armonk, NY, USA), was used to analyse the data for this study. Categorical data was presented as frequency and percentage. The histogram and normality measures were used to check the normality of continuous variables, which confirmed that the data were normally distributed. Based on that, the mean (SD) was used to present continuous variables, including the patients' satisfaction score. An independent sample t-test and one-way analysis of variance (ANOVA) were used to compare the mean satisfaction score between different demographic groups. Fisher's least significant difference (LSD) post hoc test was used to identify the source of significant variation within each group. The mean patients satisfaction score (148.6) was used as a cut-off point in the binary logistic regression analysis to determine factors affecting satisfaction with community pharmacy services.

2.7. Ethical considerations

This study was approved by the Research Ethics Committee at the Faculty of Pharmacy at Isra University, Amman, Jordan (SREC/21/12/021). As participation in the study was voluntary, the research ethics committee approved the consent waiver.

3. Results

3.1. Patients demographic characteristics

A total of 1,611 patients participated in this study. More than half of the patients (55.5%) were males. Around 50.0% of the patients were aged 30 years or below. Around half of the study patients (49.5%) were married. The majority of them (69.1%) stated that they have a bachelor's degree. A total of 45.7% of the study patients were employed, and around half of them (52.4%) reported that their monthly income level was <500 Jordanian Dinar (JD) (equivalent to 1.41 United States (U.S) dollars). Respiratory tract diseases, gastrointestinal tract diseases, and cardiovascular diseases were the most commonly reported diseases for which patients referred to the pharmacy to dispense their prescriptions. For further details on the demographic characteristics of the study patients, refer to Table 1.

3.2. Satisfaction with community pharmacies' services

Patients' satisfaction with community pharmacy services was measured using 41-items through four sub-scales, which were satisfaction with the store, location, and staff, satisfaction with the medication handling, satisfaction with the dispensing and counselling practices, and satisfaction with additional non-paid services. The mean overall satisfaction score for the study patients was 148.6 (SD: 19.4) out of 205 (maximum obtainable score), which is equal to 72.5%, reflecting a moderate level of satisfaction with community pharmacy services. Patients satisfaction was relatively the same across the four sub-scales and ranged between 68.0% (satisfaction with additional non-paid services) and 74.7% (satisfaction with the store, location, and staff), Table 2.

3.2.1. Satisfaction with the store, location, and staff

Patients satisfaction with the store, location, and staff was measured using 12-items. The mean satisfaction score for this sub-scale was 44.8 (SD: 6.4) out of 60 (maximum obtainable score), which is equal to 74.7%.

3.2.2. Satisfaction with the handling of medication

Patients satisfaction with the medication handling score was measured using 5-items. The mean satisfaction score for this sub-scale was 18.5 (SD: 3.0) out of 25 (maximum obtainable score), which is equal to 74.0%.

3.2.3. Satisfaction with the dispensing and counselling practices

Patients satisfaction with the dispensing and counselling practices score was measured using 21-items. The mean satisfaction score for this sub-scale was 75.1 (SD: 11.1) out of 105 (maximum obtainable score), which is equal to 71.5%.

3.2.4. Satisfaction with additional non-paid services

Patients satisfaction with additional non-paid services (for example, blood pressure, weighing machine, and home delivery) score was measured using 3-items. The mean satisfaction score...
for this sub-scale was 10.2 (SD: 2.4) out of 15 (maximum obtainable score), which is equal to 68.0%.

### 3.3. Patients characteristics and satisfaction level

The overall mean satisfaction score, the mean satisfaction with the store, location, and staff score, and the mean satisfaction with the dispensing and counselling practices score significantly differed based on the patients’ age, marital status, employment status, and based on the presence of chronic diseases history (p < 0.01). The mean satisfaction with the medication handling score significantly differed based on the patients’ age, marital status, education level, employment status, and based on the presence of chronic disease history (p < 0.01). The mean satisfaction with additional non-paid services score significantly differed based on the patients’ education level only (p < 0.05) (Table 3).

### 3.4. Factors influencing satisfaction with community pharmacy services

Patients who were aged 24–30 years and university students were more likely to be satisfied with community pharmacy services (p < 0.05). On the other hand, older patients (aged 46 years and above), those who are married, and those with a history of chronic diseases were less likely to be satisfied with community pharmacy services (p < 0.01), Table 4.

### 4. Discussion

The following were the main findings: (1) patients in Jordan were moderately satisfied with community pharmacy services. (2) Patients’ satisfaction was relatively consistent (74.7%, 74.0%, 71.5%, and 68.0%) across the four sub-scales, ranging from 68.0%

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### Table 2

| Satisfaction scale | Number of items for the scale | The maximum achievable score for the scale | Mean (SD) | Percentage of score out of the maximum achievable score |
|--------------------|-----------------------------|------------------------------------------|--------|----------------------------------|
| Satisfaction with the store, location and staff score | 12 | 60 | 44.8 (6.4) | 74.7% |
| Satisfaction with the medication handling score | 5 | 25 | 18.5 (3.0) | 74.0% |
| Satisfaction with the dispensing and counselling practices score | 21 | 105 | 75.1 (11.1) | 71.5% |
| Satisfaction with additional non-paid services score | 3 | 15 | 10.2 (2.4) | 68.0% |
| Total satisfaction score | 41 | 205 | 148.6 (19.4) | 72.5% |

### Table 3

| Demographic variable | Total satisfaction score | P-value | Satisfaction with the store, location and staff score | P-value | Satisfaction with the medication handling score | P-value | Satisfaction with the dispensing and counselling practices score | P-value | Satisfaction with additional non-paid services score | P-value |
|----------------------|--------------------------|---------|-------------------------------------------------------|---------|-----------------------------------------------|---------|----------------------------------------------------------|---------|---------------------------------------------------|---------|
| Gender               |                          |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Males                | 148.7 20.0               | 0.803   | 44.9 6.5 0.535                                       | 18.6 3.1 | 0.079                                        | 75.0 11.3 | 0.747                                      | 10.2 2.4 | 0.703                                            |
| Females              | 148.4 18.6               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Age group            |                          |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| 18–23 years          | 151.3 20.1               | 0.000***| 45.7 6.6 0.000***                                    | 18.8 3.1 | 0.000***                                     | 76.4 11.7 | 0.000***                                 | 10.4 2.3 | 0.053                                            |
| 24–30 years          | 149.2 22.9               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| 31–35 years          | 151.3 17.1               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| 36–40 years          | 147.7 17.1               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| 41–45 years          | 147.1 16.8               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| 46–50 years          | 144.8 18.5               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| 51 years and above   | 143.7 15.5               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Marital status       |                          |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Single               | 150.2 21.4               | 0.002** | 45.2 7.1 0.028*                                     | 18.7 3.2 | 0.001**                                     | 76.0 12.1 | 0.006**                                 | 10.3 2.5 | 0.289                                            |
| Married              | 147.5 16.7               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Divorced             | 147.7 18.2               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Widowed              | 140.5 29.1               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Education level      |                          |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Secondary school or lower | 146.7 15.9 0.908   |         | 44.4 5.5 0.376                                       | 18.0 2.9 | 0.008*                                      | 74.2 9.2 0.247  |         | 10.0 2.2 0.022*                  |         |                                                   |         |
| Bachelor degree      | 149.0 20.1               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Higher education     | 149.8 21.7               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Employment status    |                          |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Retired              | 142.2 20.4               | 0.000***| 42.4 6.8 0.000***                                   | 17.6 3.3 | 0.000***                                    | 72.1 11.0 0.005**  |         | 10.1 2.3 0.110                       |         |                                                   |         |
| Unemployed           | 148.6 18.0               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Employed             | 148.4 18.9               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| University student   | 150.9 20.3               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Income level (monthly) |                          |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| <500 JD              | 148.9 19.6 0.595         | 0.972   | 44.9 6.6                                            | 18.5 3.1 | 0.762                                       | 75.2 11.2 0.669 |         | 10.2 2.4 0.511          |         |                                                   |         |
| 500–1000 JD          | 147.8 19.4               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| 1001–1500 JD         | 149.6 17.3               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| 1500 JD and above    | 150.1 21.0               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Do you suffer from any chronic disease? | 149.4 19.6 0.002** |         | 45.1 6.5 0.001**                                   | 18.6 3.1 | 0.000***                                   | 75.5 11.3 0.005** |         | 10.2 2.4 0.468           |         |                                                   |         |
| No                   | 145.9 18.4               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |
| Yes                  | 145.9 18.4               |         |                                                       |         |                                               |         |                                                          |         |                                                   |         |

*p < 0.05; **p < 0.01; ***p < 0.001.
One reason for this disparity was that Jordan is regarded as a regionally pharmacy location and the availability of the pharmacist were in Riyadh, Saudi Arabia, they found that the convenience of the pharmacy degree from a university and then finish a 1440-hour operate in a community pharmacy, candidates must first obtain a pharmacy degree. Factors influencing satisfaction with community pharmacy services. (Márquez-Peiró and Pérez-Peiró 2008, Aziz et al. 2018). This finding was similar to the satisfaction survey in Spain (76%) conducted in Romanian community pharmacies, which revealed that older patients with chronic diseases were less satisfied (Druica˘ et al. 2021). One explanation is the close link that exists between patients with chronic diseases and their physicians, and as previously stated, one of the community pharmacist barriers is that the majority of physicians in Jordan do not accept pharmacist assistance (Nazer and Tuffaha 2017). One option is for physicians and pharmacists to have more trust in one another. Another issue is that several community pharmacists are unfamiliar with chronic diseases. Unfortunately, the JPA merely requires pharmacists to pay annual fees and does not require them to take any further exams or training to maintain their registration. To address this issue, community pharmacists should be properly educated and given training on a yearly basis to discuss various types of chronic diseases such as hypertension and diabetes, as well as expand their knowledge of drug-drug interactions and drug-food interactions. Pharmacists should also be kept up-to-date on the latest medications available on the market and the latest research. This will increase their trust in themselves and also build a good relationship. Furthermore, pharmacists do not have access to their patients’ electronic medical records. Medical records provide the pharmacist with information on the patient’s previous surgeries and medications. Unfortunately, in Jordan, there are no electronic medical records that connect all private and governmental clinics and hospitals. The Jordanian government launched a comprehensive electronic health system in October 2009 to connect public institutions. Hakeem was the name of the e-health system (Nazer and Tuffaha 2017). Community pharmacists, on the other hand, do not have access to it.

Another issue is that patients will not accept any intervention from the community pharmacist since they believe the pharmacist’s role is limited to delivering medications and obtaining a profit. We must inform the patient about the significance of the pharmacist’s intervention in their health. Every community pharmacy must have a pharmacist whose sole responsibility is to provide patient counselling. A prior study looked at the impact of pharmacist’s assistance (Nazer and Tuffaha 2017). Community pharmacists, on the other hand, do not have access to it.

The study’s total satisfaction percentage was 72.5%, indicating moderate satisfaction with community pharmacy services. Patient satisfaction with additional non-paid services differed significantly depending on the patients’ age, marital status, education level, employment position, and the presence of a history of chronic conditions. (5) Patients’ satisfaction with additional non-paid services differed significantly depending on the patients’ educational level alone. (6) Patients aged between the ages of 24 and 30 years, as well as university students, were more likely to be satisfied with community pharmacy services. The study’s total satisfaction percentage was 72.5%, indicating moderate satisfaction with community pharmacy services. Patient satisfaction with additional non-paid services, as well as satisfaction with dispensing and counselling methods, differed significantly by age, marital status, work status, and the existence of chronic disease history. (4) Patients’ satisfaction with drug handling varies significantly depending on the patients’ age, marital status, education level, employment position, and the presence of a history of chronic conditions. (5) Patients’ satisfaction with additional non-paid services differed significantly depending on the patients’ educational level alone. (6) Patients aged between the ages of 24 and 30 years, as well as university students, were more likely to be satisfied with community pharmacy services.

The study’s total satisfaction percentage was 72.5%, indicating moderate satisfaction with community pharmacy services. Patient satisfaction with additional non-paid services, as well as satisfaction with the store, location, and staff, ranged from 68% to 74.7%. This finding was similar to the satisfaction survey in Spain (76%) (Pinto et al., 2014), although it is deemed to be significantly higher than prior studies in Portugal (39%) and Pakistan (39.6%), respectively (Márquez-Peiró and Pérez-Peiró 2008, Aziz et al. 2018). One reason for this disparity was that Jordan is regarded as a regionally pharmacy location and the availability of the pharmacist were the primary determinants of participant satisfaction, with the pharmacist’s availability during their working hours’ duty being only 71.4% (Al-Arifi 2012).

This study showed that the overall mean satisfaction score varies significantly depending on age, marital status, employment status, and the presence of a history of chronic diseases. In comparison to the older patients (over 46 years old), the younger patients (aged 24–30) were more likely to be satisfied with the pharmacy service. This finding was different from the finding of a previous study in Pakistan, which found that older patients were happier than younger patients under the age of 36 years (Aziz et al. 2018). One study indicated a non-linear link between patient age and the health care delivered by hospital care, with satisfaction decreasing after the age of 65 years (Moret et al. 2007). One major element in the satisfaction of community pharmacists healthcare practitioners is patient age.

In our study, the presence of chronic disease was identified as another crucial element that contributes to patients satisfaction. The results of this investigation revealed that older chronic disease patients were less satisfied. This finding matched a recent study conducted in Romanian community pharmacies, which revealed that older patients with chronic diseases were less satisfied (Druica˘ et al. 2021). One explanation is the close link that exists between patients with chronic diseases and their physicians, and as previously stated, one of the community pharmacist barriers is that the majority of physicians in Jordan do not accept pharmacist assistance (Nazer and Tuffaha 2017). One option is for physicians and pharmacists to have more trust in one another. Another issue is that several community pharmacists are unfamiliar with chronic diseases. Unfortunately, the JPA merely requires pharmacists to pay annual fees and does not require them to take any further exams or training to maintain their registration. To address this issue, community pharmacists should be properly educated and given training on a yearly basis to discuss various types of chronic diseases such as hypertension and diabetes, as well as expand their knowledge of drug-drug interactions and drug-food interactions. Pharmacists should also be kept up-to-date on the latest medications available on the market and the latest research. This will increase their trust in themselves and also build a good relationship. Furthermore, pharmacists do not have access to their patients’ electronic medical records. Medical records provide the pharmacist with information on the patient’s previous surgeries and medications. Unfortunately, in Jordan, there are no electronic medical records that connect all private and governmental clinics and hospitals. The Jordanian government launched a comprehensive electronic health system in October 2009 to connect public institutions. Hakeem was the name of the e-health system (Nazer and Tuffaha 2017). Community pharmacists, on the other hand, do not have access to it.

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Table 4
Factors influencing satisfaction with community pharmacy services.

| Demographic variable | Odds ratio | 95% Confidence interval |
|----------------------|------------|------------------------|
| Gender               |            |                        |
| Males (Reference group) | 1.00      |                        |
| Females              | 1.02       | 0.83–1.24              |
| Age group            |            |                        |
| 18–23 years (Reference group) | 1.00      |                        |
| 24–30 years          | 1.31       | 1.01–1.70              |
| 31–35 years          | 1.28       | 0.90–1.82              |
| 36–40 years          | 0.90       | 0.63–1.29              |
| 41–45 years          | 0.92       | 0.65–1.30              |
| 46–50 years          | 0.62       | 0.45–0.84              |
| 51 years and above   | 0.49       | 0.35–0.67              |
| Marital status       |            |                        |
| Single (Reference group) | 1.00      |                        |
| Married              | 0.72       | 0.59–0.87              |
| Divorced             | 1.14       | 0.67–1.94              |
| Widowed              | 0.87       | 0.44–1.69              |
| Education level      |            |                        |
| Secondary school or lower (Reference group) | 1.00      |                        |
| Bachelor degree      | 1.03       | 0.84–1.28              |
| Higher education     | 1.26       | 0.88–1.79              |
| Employment status    |            |                        |
| Retired (Reference group) | 1.00      |                        |
| Unemployed           | 0.96       | 0.75–1.24              |
| Employed             | 0.99       | 0.81–1.20              |
| University student   | 1.34       | 1.07–1.66              |
| Income level (monthly) |            |                        |
| <500 JD (Reference group) | 1.00      |                        |
| 500–1000 JD          | 0.89       | 0.73–1.10              |
| 1001–1500 JD         | 1.17       | 0.83–1.65              |
| 1500 JD and above    | 1.09       | 0.64–1.87              |
| Do you suffer from any chronic disease? |        |
| No (Reference group) | 1.00       |                        |
| Yes                  | 0.68       | 0.54–0.86              |

*p < 0.05; **p < 0.01; ***p < 0.001.
data was gathered from a wide sample and compared to similar research conducted in other countries. Second, the study relied on a validated questionnaire and a non-biased recruiting approach, ensuring the study’s quality and the conclusions stated. There are, however, some limitations. Our ability to determine causality between research variables was hampered by the study design, which was a cross-sectional survey. During the recruitment phase, future studies should explore a broader range of countries to see if the findings can be expanded. Finally, because we could not demonstrate how well the sample was recruited from the population of interest, we were unable to determine the response rate for our study, which could lead to non-response bias. As a result, the findings must be interpreted carefully.

5. Conclusion

In Jordan, patients were satisfied with community pharmacy services to a moderate degree. Future research should look at patient satisfaction with pharmaceutical services in hospitals. Furthermore, strategies to promote satisfaction with pharmaceutical services should be investigated.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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