

Patient satisfaction with clinical pharmacy services and the affecting factors: a literature review

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Abstract

Service quality is measured to assess the consistency of medical services provided to fulfill patient expectations. This article provides an overview of patient satisfaction with clinical pharmacy services and the influencing factors. A literature search from MEDLINE and EBSCO databases was performed with the keywords “patient satisfaction”, “pharmacy service”, “hospital pharmacy service”, and “clinical pharmacy service”. The inclusion criteria for articles are original articles, full papers, articles in English, and published in 2011–2021. A total of 25 articles from 1,118 articles discussed patient satisfaction with clinical pharmacy services such as counseling, drug therapy monitoring, patient support programs, and pharmaceutical care. Generally, patients are satisfied with clinical pharmacy services such as counseling, drug therapy monitoring, patient support programs, and pharmaceutical care. The most influencing factors with clinical pharmacy services are the quality, convenience, ease of information, and confidence in pharmacist competence. Pharmacists should equip themselves with the appropriate knowledge and competencies in clinical pharmacy services for benefits their patients.

Keywords

counseling, drug therapy monitoring, pharmaceutical care, patient support program

Introduction

Patient satisfaction measures the consistency of health services provided to fulfill patient expectations (Kabba et al. 2021) and it is beneficial for assessing communication patterns (Schoenfelder et al. 2011). This assessment will affect the service program to improve the health system. Previous studies showed that satisfied patients are expected to cooperate with health care practitioners, participate in their health care, adhere to medication regimens, and have better health outcomes (Malewski et al. 2015).

In experiencing health care, patients need professional health assistance that is easily accessible. Therefore,

pharmacists are one health care professionals selected to accompany patients during the treatment period (Miller and Goodman 2016). They can conduct activities related to public health promotion to build patient trust as a form of pharmacist concern for well-being (Hillier-Brown et al. 2017). Pharmacists can provide clinical services in carrying out their practice of providing services to patients (Malewski et al. 2015).

Clinical pharmacy service provides rational drug therapy that is safe, precise, and cost-effective (Ansari 2017). Patients will get satisfaction based on how well pharmaceutical service practices meet their expectations and needs (Chou et al. 2019). The evaluation used to monitor the quality is

to assess patient satisfaction with the care services received by patients (Garattini and Padula 2018). Therefore, pharmacists should know the right time to discuss with patients because they are responsible for fulfilling needs and answering questions (Al-Arifi 2012). They also equipped with motivation and good technical training will increase the effectiveness of quality health care (Kabba et al. 2021).

Previous studies explained that patient satisfaction impacts pharmaceutical services, including patient compliance to the treatment provided, improving treatment outcomes and patient loyalty to healthcare providers (Kabba et al. 2021). A review article in 2019 discussed patient satisfaction with pharmacy services (Gulcan and Aransiola 2019). It showed that the determinants were regulated through the services provided by pharmacists. However, the article did not discuss the types of clinical pharmacy services and the influencing factors. Therefore, this paper will give an overview of patient satisfaction with clinical pharmacy services and the influencing factors.

Methods

Data search

The literature search on the MEDLINE and EBSCO databases was conducted in May–June 2021. The keywords used included “patient satisfaction”, “pharmacy

service”, “hospital pharmacy service”, and “clinical pharmacy service”. The literature search report of flow diagram followed to the the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).

Study selection

The inclusion criteria for articles are original articles, full papers, article in English, and published in 2011–2021. Articles excluded have criteria that do not discuss clinical pharmacy service and do not contain the desired keywords.

Article extraction

The extracted data are references containing the main author’s name and year of publication, country, participants, the number of participants, place of service, type of clinical pharmacy service, study design, satisfaction measurement instrument, factors influencing patient satisfaction, results, and funding sources.

Results and discussion

Fig. 1 shows the PRISMA flow diagram of article selection process. The selection was made based on predetermined keywords resulting in a total of 1,118 articles, where 441 were sourced from MEDLINE, and 677 were from EBSCO database. The initial selection process was followed by

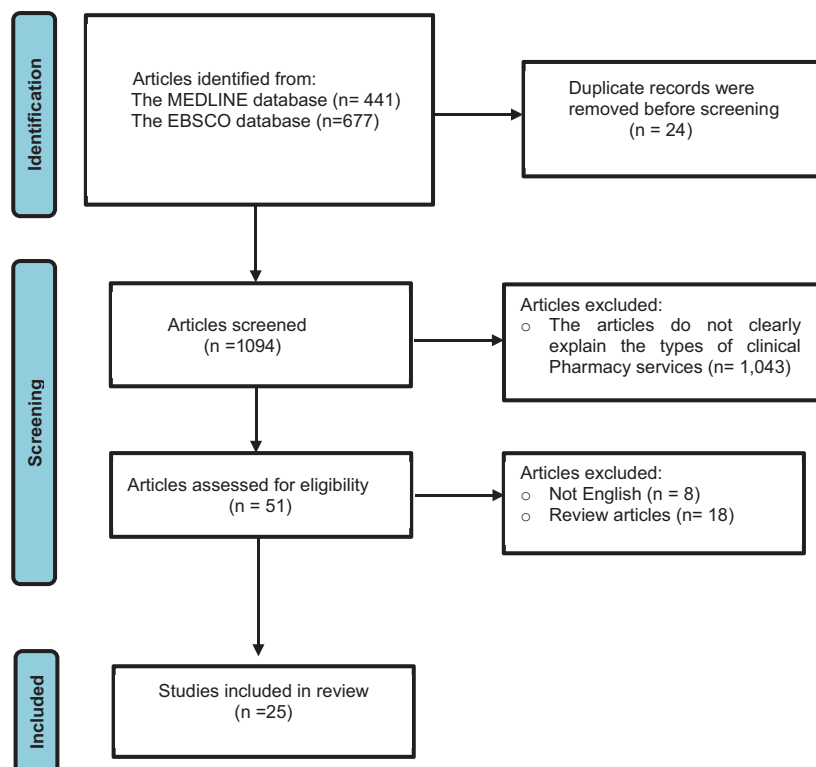


Figure 1. PRISMA flow diagram of the literature search.

removing duplicate articles until 1,094 articles were obtained. Furthermore, a second selection was carried out by excluding 1,069 articles unrelated to the inclusion and exclusion criteria. Therefore, 25 articles were obtained about patient satisfaction with clinical pharmacy services.

Table 1 shows 25 articles on patient satisfaction with clinical pharmacy services. The studies were conducted worldwide with the number of participants more than 41,000 participants at hospitals, primary health care services, pharmacies, and community pharmacies. The service type of clinical pharmacy includes patient counseling, drug therapy monitoring, patient support program, and pharmaceutical care services. Most studies were conducted with cross-sectional design through self-reported questionnaires or interviews. Different types self-reported questionnaire such as modified questionnaire from previous studies, Medication Adherence Scale-8 (MMAS-8) questionnaire, Diabetes Medication Satisfaction (DiabMedSat) questionnaire, The Leeds Satisfaction Questionnaire (LSQ), Patient Satisfaction Feedback (PSF) questionnaire, The Consumer Assessment of Health Plans Survey (CAHPS), and The Pesquisa Nacional sobre Acesso, Utilização e Promoção do Uso Racional de Medicamentos –Serviços (PNAUM – National Survey on Access, Use and Promotion of Rational Use of Medicines – Services), were used to assess patients satisfaction related to pharmacy facility, clinical pharmacy services, role of pharmacist, communication, and pharmaceutical care services.

Patient satisfaction with counseling services

Table 2 presents 9 articles on patient satisfaction with counseling services. Generally, the patients showed high satisfaction with clinical pharmacy services. Patient satisfaction with counseling in Saudi Arabia was reported to have different levels. According to the study conducted by Al-Arifi. (2012) , most patients were very satisfied with the performance and professionalism of pharmacists with satisfaction indicators such as the role in counseling, patient compliance, and providing appropriate drug information. The higher the frequency of counseling the greater the satisfaction rating. However, there are several barriers counseling moments as include lack of privacy and an inadequate number of qualified pharmacists (Al-Arifi 2012).

Another study from Saudi Arabia reported that the level of is low patient satisfaction with score was 2.97 ± 0.65 out of 5 scale (Alotaibi et al. 2021). The influencing factors were pharmacy facilities, pharmacy services, and counseling. Most of the patient's reported that they were not satisfied with history taking practice by the pharmacists (Score: 3.17 ± 1.60), provision of instructions for side effects or interactions (Score: 3.08 ± 1.64), and dissemination of information on storage conditions (score: 3.11 ± 1.63). Other causes are to

Table 1. List of patient satisfaction articles on clinical pharmacy services.

No	Authors, Country, Year	Participant	Number of participants	Service Place	Service Type	Study design	Instrument
1	Alotaibi NH et al., Saudi Arabia, 2021	Outpatient pharmacies of various public hospitals	n = 746	Hospitals	Counseling	Cross-sectional study	A 23-items questionnaire that measure patient satisfaction related to pharmacy facilities and pharmacy services with 5-items Likert scale.
2	Al-Arifi MN, Saudi Arabia, 2012	Patients attending community pharmacies.	n = 1,699	Community pharmacies	Counseling	Cross-sectional study	The questionnaire composed of 8 items about patients' views and satisfaction with the pharmacists' role in the current community pharmacy practice
3	Alkhoshaiban A, Saudi Arabia, 2019	Type II diabetic patients.	n = 102	Hospitals	Counseling	The comparative study used Longitudinal method	Medication Adherence Scale-8 (MMAS-8) and Diabetes Medication Satisfaction (DiabMedSat) questionnaires
4	Hale A et al., Australia 2015	Patients scheduled for elective surgery	n = 200	A tertiary Hospital	Counseling	Cross-sectional study	Surveys containing 12 and 25 questions with a Likert scale responses that investigate patient satisfaction and views of collaborative doctor-pharmacist prescribing.
5	Iancu ME, et al. Romania, 2014	Patients, relatives and caregivers who obtained counselling by pharmacists.	n = 3,303	Pharmacies	Counseling	Prospective survey design	A 16 items questionnaire regarding the counseling provided by the pharmacist during the visit.
6	Munro L, et al., Canada, 2020	Patients at the oncology clinic	n = 35	Hospital	Counseling	Cross-sectional study	Surveys and patient interviews with a total 20 items questions on their perceptions of the importance of the clinical pharmacy services and their satisfaction with the services provided.
7	Hall JJ, et al., Canada, 2016	Rheumatology clinic patients	n = 62	Hospital	Counseling	Cross-sectional study	The Leeds Satisfaction Questionnaire (LSQ) with a 5 points of Likert scale to measure patient satisfaction.
8	Fesharaki F, Iran, 2019	Patients who waiting for their medicine	n = 326	Pharmacies	Counseling	Cross-sectional study	A 36-items questionnaire with a 5-item Likert scale that ask the patient about the nonverbal communication of the pharmacist and their satisfaction.
9	Alshayban DM, et al., Saudi Arabia 2020	Chronic and acute disease patients	n = 531	Hospitals	Counseling	Cross-sectional study	Arabic version of Patient Satisfaction Feedback (PSF) questionnaire that measured satisfaction as well as willingness-to-pay for a pharmacist counseling session.
10	Martin and Faber, United States of America 2016	Patients receiving Hepatitis C Virus (HCV) treatment	n = 64	Hospital	Drug therapy monitoring	Cross-sectional study	A patient satisfaction survey consists of 20 questions that assess the patient satisfaction with the health care provider(s) including clinical pharmacist during the management of HCV therapy.

No	Authors, Country, Year	Participant	Number of participants	Service Place	Service Type	Study design	Instrument
11	Reich CM et al., United States of America, 2018	Patients diagnosed with psychiatric disorders	n = 240	Hospital	Drug therapy monitoring	Cross-sectional study	A 19-item questionnaire that measure patient satisfaction with a 5-point scale.
12	Crespo and Tyszka, Canada, 2016	Patients receiving chemotherapy	n = 112	Hospital	Drug therapy monitoring	Cross-sectional study	The 20-item survey with a Likert-scale questions that assessed satisfaction with clinical pharmacy services.
13	Beyene K et al., New Zealand, 2020	Patients taking warfarin	n = 305	Pharmacies	Drug therapy monitoring	Cross-sectional study	The 36-item questionnaire with a 5-item Likert scale to measure patient satisfaction with community pharmacist-led anticoagulation services.
14	Bezuidenhout et al., South Africa, 2014	Patients with antiretrovirals treatment	n = 300	Hospital	Drug therapy monitoring	Cross-sectional study	An interview with using a standardised structured questionnaire to assess patient satisfaction on general facility and healthcare provision, communication, and medicine management.
15	Chou YC et al., Taiwan, 2019	Patients who received medical care	n = 741	Hospital	Drug therapy monitoring	Cross-sectional study	The 5-item questionnaire to investigate patients' perceptions about their trust, satisfaction, and cooperation with clinical pharmacists.
16	Sites BD et al., Lebanese 2018	Patients with musculoskeletal conditions	n = 19,566	Hospital	Drug therapy monitoring	Cross-sectional study	The Consumer Assessment of Health Plans Survey (CAHPS) from the the Medical Expenditure Panel Survey (MEPS) data.
17	Hatton J et al., United States of America 2017	Patients who received care from the face-to-face or clinical video teleconferencing (CVT) pharmacy clinic.	n = 57	Hospital	Patient support program	Cross-sectional study	The 10-item, patient self-reported questionnaire to evaluate patient satisfaction with pharmacist-provided consultations via CVT.
18	Mooney EV et al., United States of America, 2018	Patients receiving LAIA (Long-Acting Injectable Antipsychotics)	n = 161	Pharmacies	Patient support program	Prospective survey design	A survey consisted 4 sections that assessed patients' satisfaction with pharmacist- administered LAIAs in the community pharmacy.
19	Bourdin A et al. Switzerland, 2020	Patients who participated in Fingolimod Patient Support Program (F-PSP)	n = 17	Hospital	Patient support program	Cross-sectional study	A qualitative study with face-to-face semistructured interviews to explore the satisfaction, experiences and perceptions regarding the F-PSP.
20	Takaki H et al, Japan 2015	Patients who visit the pharmacy and receive prescription medication	n = 407	Pharmacies	Pharmaceutical care	Cross-sectional study	A questionnaire package using four items and five response categories was used to measure overall satisfaction with pharmaceutical care services.
21	Soeiro OM et al., Brazil, 2017	Patients in primary health care services	n = 8,803	Primary health care services	Pharmaceutical care	Cross-sectional study	The Pesquisa Nacional sobre Acesso, Utilização e Promoção do Uso Racional de Medicamentos – Serviços (PNAUM – National Survey on Access, Use and Promotion of Rational Use of Medicines – Services) that measure patients satisfaction with pharmaceutical care services.
22	El-Sharif SI et al., Uni Emirat Arab, 2017	Patients with medical and non-medical educational background	n = 375	Pharmacy	Pharmaceutical care	Cross-sectional study	Modified questionnaire from the Community Pharmacy Patient Questionnaire (PSNC), United Kingdom and surveys of patient satisfaction with pharmaceutical services in rural areas, Ministry of Health in Saudi Arabia that measure patients satisfaction with pharmaceutical care services.
23	Abebe TB et al., Ethiopia 2016	HIV/AIDS patients	n = 291	Hospital	Pharmaceutical care	Cross-sectional study	Data were collected using structured questionnaires measuring patients expectation and satisfaction of pharmaceutical care using a Likert scale of 1–5 through face-to-face interviews.
24	Ali HS et al, Uni Emirat Arab, 2019	All patients who come to the pharmacy	n = 210	Community pharmacies	Pharmaceutical care	Cross-sectional study	A 20-item questionnaire regarding the patients' perception towards pharmacist 'performance and satisfaction with the pharmaceutical services provided.
25	Minarikova et al., Slovakia, 2016	Patients aged 40 years and over	n = 2844	Community pharmacies	Pharmaceutical care	Cross-sectional study	A 29-item questionnaire with a 5-item Likert scale to measure the extent of patient satisfaction with the pharmaceutical care provided in community pharmacies.
			Total n=41.494				

limited number of pharmacists and pharmacy staff in the hospitals, increased workload, lack of continuous education for pharmacy service providers as well as lower standards of pharmacy services and less attention of regional health departments on pharmacy standards and practice (Alotaibi et al. 2021).

In addition, the study conducted by Alkhoshaiban A et al. (2019) on 102 patients with type II diabetes showed that the intervention program has improved medication adherence, satisfaction, and HbA1c level among patients with type II diabetes. Medication adherence, satisfaction, and HbA1c level were all associated with gender. The improvement

Table 2. Patient satisfaction with counseling services.

Authors	Country	Participants	Factors that affect satisfaction	Result	Funding
Alotaibi NH et al. 2021	Saudi Arabia	746 patients	Quality of pharmacy services, pharmacy facilities	Approximately one-half of the patients were not satisfied with outpatient pharmacy services. The overall satisfaction score was 2.97 ± 0.65 out of 5 scale.	Not applicable
Al-Arifi MN, 2012	Saudi Arabia	1,699 patients	The role of pharmacists in counseling patient compliance and providing drug information	The patients showed better satisfaction, perception and appreciation of the pharmacists' role in the health care team.	Not applicable
Alkhoshaiban A et al. 2019	Saudi Arabia	102 type II diabetic patients (T2DM)	Treatment adherence and satisfaction of elderly patients, the impact of adherence to HbA1c	The intervention program has improved medication adherence, satisfaction, and HbA1c level among elderly patients with T2DM.	Not applicable
Alshayban DM et al. 2020	Saudi Arabia	531 patients with chronic and acute disease	Quality of service, duration of counseling, pharmacist knowledge	Most patients (43.9%) were satisfied with pharmacist counseling and average satisfaction rating was $7.87 \pm 1.99/10$.	Not applicable
Hale A et al. 2015	Australia	200 patients scheduled for elective surgery	Consultation satisfaction from doctor collaboration and patient satisfaction with prescribing pharmacists	Most of the patients had a high satisfaction with pharmacist prescriber consultations.	Not applicable
Iancu ME et al. 2014	Romania	Patients, relatives and caregivers who obtained counselling by pharmacists.	Patient education and counseling satisfaction, counseling on expired drug information	A great proportion of the respondents received all the information they needed from the pharmacist and were satisfied in the highest degree by the interview with the pharmacist.	Not applicable
Munro L et al. 2020	Canada	35 patients at the oncology clinic at	Convenience and easiness, medication information, communication between patients and clinical pharmacists	Patients are very satisfied with the average satisfaction score from 5.97 to 6.70, out of 7 possibilities.	Not applicable
Hall JJ et al. 2016	Canada	62 patients at rheumatology clinic	General satisfaction, providing information, empathy for patients, Service techniques as well as competencies, ethics, and communication	Patient satisfaction in the collaborative care group was consistently higher across all dimensions.	Not applicable
Fesharaki F, 2019	Iran	326 patients	Counseling using nonverbal communication (pharmacist tone of voice, body language), waiting time, Pharmacy atmosphere	In community pharmacies, nonverbal communication are significantly related to patient satisfaction.	Not applicable

in medication adherence, satisfaction, and HbA1c level demonstrates the pharmacist's critical role in the patient's overall health management (Alkhoshaiban et al. 2019).

The study conducted by Hale A et al. (2016) in Australia on 200 patients scheduled for surgery reported that most of the patients had a high satisfaction with pharmacist prescriber consultations. This is because more than 97% patients were satisfied with counseling services in consultations with pharmacists. These are all key components in forming an effective partnership with a patient and adherence with treatment plans. (Hale et al. 2016).

In Romania, Iancu et al. (2014) study also showed a high level of patient satisfaction. The majority of respondents (47.65%) estimated that they spent 5–10 minutes with the pharmacist. 95.85% of patients said the pharmacist provided them with all of the information they required, and 76.51 percent of participants said they were very satisfied with the pharmacist interview (5 on a 1–5 scale). The pharmacist provided the majority of the respondents with all of the information they need, and the interview with the pharmacist left them extremely satisfied. The counseling activities are carried out by pharmacists in a very professional manner, in accordance with patient feedback during counseling. Patients received advice on drug administration information such as the route of administration, how to take the drug with food, the dose used, and the length of treatment. (Iancu et al. 2014).

Study conducted in Canada in 2021 on 35 patients experiencing anticancer therapy showed very high patient satisfaction with counseling services, where the average satisfaction score was 5.90–6.70 out of 7 possibilities (Munro et al. 2021). Patient satisfaction is based on indicators of comfort during counseling, ease of delivery of treatment information, and good communication between patients and pharmacists (Munro et al. 2021). The pharmacist provided the majority of respondents with all of the information they required, and the interview left them extremely satisfied with their relationships with oncology pharmacists: the feeling of being supported by the pharmacist may not only improve emotional well-being but also improve the quality of care received if patients communicate with pharmacists about emerging issues and adhere to recommended pharmaceutical treatments (Munro et al. 2021). In addition, previous study conducted on 62 female patients in a rheumatology clinic showed high patient satisfaction with indicators of providing information, service techniques, ethical competence, and good communication by pharmacists to patients (Hall et al. 2017).

In Iran, study conducted on 326 patients showed high patient satisfaction (Fesharaki 2019). This satisfaction is influenced by the component of verbal communication by pharmacists while providing counseling, with indicators of the tone of voice and body language, waiting time for counseling, and the atmosphere of the pharmacy (Fesharaki 2019). Furthermore, non-verbal communication such as maintaining eye contact, showing

interest in providing information about drugs, and maintaining expression when interacting with patients should also be mastered. Counseling with verbal and non-verbal communication positively increases patient satisfaction since they feel happier while conversing with the pharmacists (Fesharaki 2019).

Patient satisfaction with drug therapy monitoring services

Table 3 displays eight articles on patient satisfaction with drug therapy monitoring services in clinical pharmacy. Generally, 7 articles showed high satisfaction, but one article showed low patient satisfaction with clinical pharmacy services.

Patient satisfaction with drug therapy monitoring services in the United States is reported to have different levels. According to Martin and Faber (2016), 64 patients with Hepatitis C Virus (HCV) treatment had high satisfaction with drug therapy monitoring services by pharmacists. The clinical pharmacist-run HCV treatment program provides services to improve medication access, education about medications and adherence, and ADR management. Patients rate their overall satisfaction with the services provided in the “great” category (Martin and Faber 2016). This contrasts with the findings of Reich et al. (2018) study, that found that poor communication between prescribers and patients was the cause of low patient satisfaction (Reich et al. 2018).

According to Beyene et al. (2021) study in New Zealand, patients under warfarin drug therapy monitoring registered with the Community pharmacist-led Anticoagulant Management Service (CPAMS) were very satisfied with

the drug delivery management services provided with the mean overall satisfaction score was $94.5\% \pm 13.1$ (range 3%–100%). Furthermore, patient satisfaction was identified from factor analysis of patient-centered communication, pharmacist competence, patient-pharmacist relationship, confidence in CPAMS, and pharmacist environment. This study also stated that the increasing age and the more frequent visits to the pharmacy are positively related to patient satisfaction (Beyene et al. 2021).

Study of satisfaction with drug therapy monitoring services in South Africa on 300 patients with antiretroviral drug therapy monitoring for four months or more showed a high satisfaction level but patients expressed some dissatisfaction with certain dimensions of the quality of care, including an inability to talk to health workers about their treatment and problems, time spent in queues waiting to be examined and facility cleanliness (Bezuidenhout et al. 2014). In Canada, 107 out of 112 patients receiving chemotherapy were very satisfied with the monitoring regimen of chemotherapy drug therapy. This is influenced by satisfaction and follow-up care in chemotherapy patients. Satisfaction levels were very high in questions that evaluated the information provided by the pharmacist. A pharmacist led proactive follow-up program is an effective method for clinical pharmacy services (Crespo and Tyszka 2017).

Based on another study, patients in Taiwan with a history of more than one disease and monitored for therapy with more than one prescription had high satisfaction, as evidenced by a high level of confidence in pharmacists. Patient trust is positively related to patient satisfaction and cooperation between patients and clinical pharmacists. Thus, pharmacists should spend more time on each patient for can provide detailed information (Chou et al. 2019).

Table 3. Patient satisfaction with drug therapy monitoring services.

Authors	Country	Participants	Factors that affect satisfaction	Result	Funding
Martin MT and Faber D M, 2016	United States of America	A total of 64 patients received Hepatitis C Virus (HCV) treatment	HCV infection treatment as well as compliance education	Patients expressed high levels of satisfaction with the clinical pharmacist who assisted them with HCV treatment.	Not Applicable
Reich CM et al. 2018	United States of America	A total of 240 patients with psychiatric disorders	Satisfaction with antipsychotic drug monitoring	Conversations between prescribers and psychiatric patients in which the prescriber controls the conversational floor are a symptom of low patients satisfaction.	Not Applicable
Crespo and Tyszka 2016	Canada	A total of 112 respondents were chemotherapy patients	Clinical pharmacy services and follow-up care for chemotherapy patients	95.5% of respondents indicated that the time spent with the pharmacist at the first chemotherapy treatment was worthwhile (n=112).	Not Applicable
Beyene K et al. 2020	New Zealand	A total of 305 respondents who use Warfarin and are registered with the Community pharmacist-led Anticoagulation Management Service (CPAMS)	Patient satisfaction with CPAMS, communication, patient confidence in pharmacist competence, patient and pharmacist relationship	The mean overall satisfaction score was $94.5\% \pm 13.1$ (range 3%–100%).	Not Applicable
Bezuidenhout et al. 2014	South Africa	A total of 300 patients used antiretrovirals	Antiretroviral treatment (ART) management satisfaction	The majority of patients (n = 297; 98%) were satisfied with the care they received at the ART locations.	Not Applicable
Chou YC et al., 2019	Taiwan	A total of 741 patients who received medical care	Patient confidence in doctors and pharmacists, patient satisfaction	Patient satisfaction and cooperation between patients and clinical pharmacists are both positively related to patient trust.	Taiwan National Science Council
Sites BD et al, 2018	Lebanese	A total of 19,566 patients with musculoskeletal disease	Satisfaction with prescription opioids use	Patients who take prescribed opioids for musculoskeletal pain are satisfied with their treatment.	Not Applicable

In addition, a study in Lebanon on musculoskeletal patients who received more than one prescription stated the patients were satisfied with drug therapy services. This is influenced by satisfaction with pharmacist care for patients with musculoskeletal conditions, those using prescription opioids (Sites et al. 2018).

Patient satisfaction with patient support program services

Table 4 shows 3 articles on patient satisfaction with the support programs. Generally, the patients receiving the support program felt comfortable and reported high satisfaction.

According to Hatton et al. (2018) study in the United State, patients were satisfied with both Clinical Video Teleconferencing (CVT) and face-to-face consultations. The consultation through CVT did not differ from face-to face consultations. Factors that affect satisfaction were patient convenience level, patient satisfaction with pharmacist communication, competence, and clinical skills by pharmacist (Hatton et al. 2018).

In addition, a study in the United States was conducted by Mooney EV et al. (2018) on patients receiving aripiprazole, paliperidone, palmitate, and risperidone treatment. These patients were reported to have high satisfaction with the LAIA program with factors such as privacy, ease of making consultation appointments, convenience to pharmacy services, location convenience, and level of confidence in pharmacists (Mooney et al. 2018)

Another study concerning the patient support program conducted in Switzerland by Bourdin, A. et al. (2020) on 17 patients who participated in The Fingolimod Patient Support Program (F-PSP) program showed high satisfaction assessed based on safety and compliance with treatment using the F-PSP method. The pharmacist-led consultations with medication-related and holistic support were well received by the patients. Patients' involvement in their health is boosted by consultations based on motivational technique and the use of provided tools. Furthermore, pharmacists tend to contribute significantly to patient management from the perspective of patients (Bourdin et al. 2020).

Table 4. Patient satisfaction with patient support program services.

Authors	Country	Participants	Factors that affect satisfaction	Results	Funding
Hatton J et al. 2017	United States of America	57 patients who received care from the face-to-face or clinical video teleconferencing (CVT) pharmacy clinic.	Patient convenience level, patient satisfaction with communication made with the clinical pharmacist competence and skills	Patients are satisfied with clinical pharmacists' use of patient-centered communication via both CVT and face-to-face consultations.	Not Applicable
Mooney EV et al. 2018	United States of America	161 patients received LAIA (Long-Acting Injectable Antipsychotics).	The level of privacy, the ease of making consultation appointments, convenience to pharmacy services, location convenience, the level of confidence in the pharmacist	Patients are satisfied with the LAIA services provided by pharmacists in community pharmacies.	Not applicable
Bourdin A et al. 2020	Switzerland	17 patients participated in F-PSP (The Fingolimod Patient Support Program).	The level of patient safety and medication compliance with the F-PSP (Fingolimod Patient Support Program) method	Patients satisfied with F-PSP (The Fingolimod Patient Support Program)	The development of the F-PSP is supported by an unlimited grant from Novartis Pharma Schweiz AG.

Patient satisfaction with pharmaceutical care services

Table 5 shows seven articles that discuss patient satisfaction with pharmaceutical care services. While 6 of 7 articles show high patient satisfaction, 1 article shows low patient satisfaction.

In the United Arab Emirates (UAE), a study conducted by El-Sharif et al. (2017) reported that 77.1% of patients were satisfied with pharmaceutical care services. This is influenced by several factors, such as experience, trust, courtesy, and confidence of pharmacists when providing pharmaceutical services. However, there are still many patients who are not aware of what information is expected and should be received regarding the drugs they receive from pharmacists. Therefore, pharmacists need to fully practice their role for the benefit of their patients (El-Sharif et al. 2017). Another study in the UAE was also conducted by Saad Ali et al., (2019) reported that 72.8% of patients were very satisfied with simple, understandable language

used by the pharmacists. However, the patients were not satisfied with the privacy while pharmacists discussed with patients (Saad Ali et al. 2019).

In a study conducted by Abebe et al. (2016) in Ethiopia on 291 HIV/AIDS patients using a type 5 Likert scale instrument through interviews, patient satisfaction was reported to be relatively low with an average satisfaction level of 2.46 out of a 5-point Likert scale. Meanwhile, overall patient expectations for pharmaceutical services are very high. This is influenced by uncomfortable waiting rooms, private counseling rooms, and waiting times (Abebe et al. 2016).

The study conducted by Soeiro, O.M., et al. (2017) on 8,803 patients in five geopolitical regions of Brazil stated that 58.4% were satisfied with the services received. This is influenced by the patients' comfort feeling when communicating with pharmacists (Soeiro et al. 2017).

Another study was also conducted by Minarikova, et al. (2016) in Slovakia, using a type 5 Likert scale instrument. A total of 2,844 patients reported that overall patients were very satisfied with pharmaceutical care services: interpersonal relationships (1.85±0.598; 86.7%

Table 5. Patient satisfaction with pharmaceutical care services.

Authors	Country	Number of samples	Factors that affect satisfaction	Results	Funding
El-Sharif SI et al. 2017	United Arab Emirates	A total of 375 patients with medical and non-medical educational backgrounds	Satisfaction with pharmaceutical care services	77.1% of patients are satisfied with the pharmacist's assistance.	Not Applicable
Ali HS et al. 2019	United Arab Emirates	A total of 210 respondents who came to pharmacy	The convenience of pharmacists in providing pharmaceutical care services	39% patients were highly satisfied with the professional pharmacists' counselling profile and 72.8% satisfied with the simple, understandable language used by the pharmacists.	Not Applicable
Soeiro OM et al. 2017	Brazil	A total of 8,803 patients present in the five geopolitical regions of Brazil	Convenience, availability of pharmaceutical care services	58.4% patients satisfied with the pharmaceutical care services	Department for Pharmaceutical Services and Strategic
Takaki H et al. 2015	Japan	A total of 407 patients in Fukuoka Prefecture, Japan	Pharmaceutical care service information satisfaction	Patient satisfaction with pharmaceutical care was linked to pharmacist and patient views of information provision.	Not Applicable
Abebe TB et al. 2016	Ethiopia	A total of 291 patients living with HIV/AIDS	The level of privacy, the ease of making consultation appointments, the convenience of pharmaceutical care services	Patient satisfaction is relatively low with an average satisfaction of 2.86, 2.88, and 2.99 from 5-point Likert-type scale	Not applicable
Minarikova et al. 2016	Slovakia	A total of 2844 respondents aged 40 years and over	Location of pharmacy services, patient experience with qualified pharmacists and staff convenience, health checks, and self-service areas.	The results show high patient satisfaction with pharmaceutical services, specifically interpersonal relationships.	Not Applicable

highly satisfied respondents) and general satisfaction (2.02 ± 0.643 ; 71.3% highly satisfied respondents). Managing therapy received a lower score (2.24 ± 0.704 ; 65.4% highly satisfied respondents). Prescription (70.4%) and over-the-counter drugs were the most common reasons for visiting a community pharmacy (70.4%) (Mináriková et al. 2016). Therefore, pharmacists need to improve their professional behavior in providing pharmaceutical care to patients.

Limitation

This literature review has several limitations. First, because of insufficient information about the health care system in countries where studies were conducted, this review does not discuss the difference in the health care system that could lead to different satisfaction levels. Second, the level of satisfaction could not be generalized, because the different cultures could influence the level of satisfaction of patients. However, this article could give an overview of patient satisfaction with clinical pharmacy services and the affecting factors.

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Conclusion

In general, most patients are satisfied with clinical pharmacy services such as counseling, drug therapy monitoring, patient support programs, and pharmaceutical care. In addition, pharmaceutical service quality, convenience, information easiness, and patient confidence in pharmacist competence primarily influence patient satisfaction with clinical pharmacy services. Therefore, in the future, community pharmacists should equip themselves with the appropriate knowledge and competencies in clinical pharmacy services for benefit their patients.

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Conflict of interest

This study has no conflict of interest.

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