Original Article

Assessing Patient Satisfaction with the Service Quality Provided in Community Pharmacies: Khartoum Locality, Sudan

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ABSTRACT

Objectives: Due to the limited studies assessing community pharmacy services quality in Khartoum, this study is aimed to explore patients' satisfaction level with pharmacist's communication, consulting and service delivery qualities. **Methods:** A descriptive institutional health facility-based prospective study was carried out at 229 Community pharmacies in Khartoum Locality using data collected by self-administrative questionnaires from 385 respondents and then analysed by using SPSS version 25. **Results:** A total of 385 participants answered the questionnaire completely with a response rate of 90%. The majority of patients expressed high level of satisfaction in community pharmacy communication services (n±SD=3.88±1.10) though they were dissatisfied in 'time allocated to answer patient's questions (n±SD=3.57±1.11)' and 'time allocated to prepare medications (n±SD=3.70±1.05)'. Patients were fairly satisfied in pharmacist's consultation services quality (n±SD=3.18±1.30) but they showed lower satisfaction level in 'explaining on the possible side effects, and telling the precautions (e.g. activities to avoid.) (n±SD=2.81±1.37)' and 'encouraging patients to raise questions about medication (n±SD=2.81±1.40)' as well

as the 'level of provided privacy (n±SD=2.84±1.23)'. Services relating to delivery were associated with the worst experience and lowest level of patient satisfaction (n±SD=2.77±1.20). **Conclusion:** Patients were generally satisfied with pharmacist's communication quality but showed disappointment in consultation and the service delivery qualities. Services in Khartoum Locality community pharmacies are product-based with negligible patient participation.

Key words: Community Pharmacy Services, Patient Counselling, Patient Satisfaction, Quality Assessment, Patient-Pharmacist Intercommunication, Medication Safety.

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INTRODUCTION

The professional responsibilities of pharmacists have considerably evolved from traditional dispensing services to more advanced patient-centred pharmaceutical care (PC) services.[1] PC involves the process through which a pharmacist collaborates with a patient and other healthcare providers in designing, implementing, and monitoring a therapeutic plan to attain specific therapeutic outcomes for the patient.[2] For decades, pharmacists have understood the value of interacting with patients in significant ways to improve PC services.[3] Patient engagement is essential to improve their satisfaction with the care experience and demarcates shifting of care from the traditional paternalistic models to more collaborative partnership.[4]

The measures of healthcare service quality have expanded from the traditional practice standards to a patient's perception assessment.[5] Patients provide valid and unique information about the care they received which make their perspectives valuable in healthcare service quality measurement.[6] Patient's satisfaction (PS) has been recognized as a critical parameter for assessing the quality of healthcare services.[7] Beside as a quality indicator, PS is also one of the components proposed by World Health Organization for health care quality.[8] Therefore elaborating the patient's subjective assessment is important in health care services.[9]

PS is defined as the degree of positive feeling that a patient having used a service experiences so that it indicates the gap between the quality of expected services and the actual services experienced from patient's point of view.[10]

Most of the patients' expectations are mainly focused on the health care provider's ability to show attentiveness. Studies suggested that the most common expectations were health care providers' understanding, showing interest, and discussing problems or doubts.[11]

Many myths were generated around the pharmacy profession such as "in business the quality of care is secondary to generating profit", but in fact business and pharmacy practice are mutually compatible when patients perceive the community pharmacy trustworthy and feel satisfied from the services offered.[12] It have been seen many rewards for health organization at practices targeting to achieve satisfied patients including; great profitability, improved patient retention, increased patient referrals, improved money collection, great efficiency with reduced malpractice liability and more productive staff with higher morale.[13] Thus, improved patient care has become a priority for all health care service providers with the optimum objective of achieving a high degree of PS.[14]

Patient satisfaction with pharmaceutical care has its effect on patients' health and their health-related quality of life. It has also been linked to positive health-related manners, such as improved adherence and more effective use of healthcare resources.[15] In contrast, disregarding patients' perspectives in the assessment of healthcare quality has been associated with patient alienation and non-adherence to medication advice and/or treatment which results failures in treatment and waste of health resource.[16]

In general, PS in medical healthcare quality has been reported to be influenced by many subjective and objective factors, including patient demographic characteristics, patient expectations, patient trust, patient

social functioning, medical service quality, medical staff and administrative quality.[17] In addition to those factors waiting time, pharmacy setting and facilities, convenience, and availability of medications have been stated to affect patient's satisfaction level in pharmacy services.[18]

Most of reports regarding patients' satisfaction of pharmacist performance are positive and reflect that they are the drug experts.[19] Nevertheless, satisfaction is not enough for a good health care promotion.[20]

Unfortunately, great variation was observed in the employed questionnaires for PS assessment.[21] Therefore, there is a lack of consistent instrument to measure the level of patient's satisfaction with service quality in community pharmacies (CPs). Many studies used self-developed, non-validated or ad hoc instruments with items from previously published papers.[22]

Due to the limited studies assessing community pharmacy services quality in Sudan, recent preliminary studies exploring the patients' level of satisfaction with the quality of Khartoum Locality community pharmacy services structured around the principles of PC were desperately needed. Consequently, the results of this study will help stakeholders in assessing the current community pharmacist's communication, counselling and service delivery qualities from patients' point of view.

METHODS

Study Design

A descriptive institutional health facility-based prospective study.

Study Area and Location

The study was conducted at licensed community pharmacies (CPs) in Khartoum locality.

Ethical Approval

Approval letters were obtained from the International University of Africa-Faculty of Pharmacy and the Research Department Directorate of Pharmacy Khartoum State-Ministry of Health.

Ethical Consideration

The research purpose and objectives were explained to participants in clear simple words. The coded questionnaire maintained the interviewee privacy and confidentiality and it was filled without any interruption to the CPs work. The participants' verbal consent was taken nevertheless face-to-face interview was also conducted in the case of willing patients with low education or shortage of time.

Data Collection Method and Tools

Data was collected using self-administered questionnaire papers. The questionnaire was developed with reference to previous study relating to the research problem.[16] The questionnaire was divided into two sections; first section composed of the personal data, including age, sex, marital status, education, employment and place of residence. The second section covered the patient's satisfaction assessment, including items on communication quality, consultation quality and other aspects of service delivery quality.

Research Variables

The research variables included the CPs with respect to communication quality, consultation quality, service delivery quality and socio-demographic factors of patients.

Study Period

The study was carried out from September 2020 to December 2020.

Inclusion and Exclusion Criteria

Licensed community pharmacies and adult self-buyers of medications (aged >18 years) with a valid prescription issued by a registered medical practitioner was included in the study while patients who hadn't met the inclusion criteria were excluded.

Sampling Tools

A list of community pharmacies in Khartoum Locality was obtained from Directorate of Pharmacy Khartoum State. Danial's formula for sample size was used and the calculated sample target is 229 community pharmacies and 385 patients.

Sample Size

$$N * [Z2 * p * (1-p)/e2] / [N - 1 + (Z2 * p * (1-p)/e2]$$

Where; N= population size, Z= statistic for a level of confidence (95%), P= expected proportion (50%) and e= precision (5%).

Selection of Pharmacy

For the selection of pharmacies, a list of 562 CPs was obtained from directorate of pharmacy Khartoum state. After the license confirmation of each pharmacy, these were arranged geographically with a serial number. Pharmacies were systematically selected from the list by numeric selection. The participation in the study was voluntarily. In the case of denial of any pharmacy, an alternative pharmacy within 2km was selected.

Sampling and Study Population

A quota sampling method was applied to find equal participation of patients from every pharmacy. Each pharmacy was focused for a single working day and patients were approached randomly.

Data Analysis

The collected data was manually cross checked for completeness and entered in statistical package for social sciences (SPSS) version 25. Six parameters of patient's socio-demographic characteristics (sex, age, marital status, education, employment and place of residence) was described by frequencies and percentage, on the other hand the levels of patient satisfaction was described by calculating the average with the standard error of mean and standard deviation. A five-point Likert scale has been used to determine the exact level of patients' satisfaction. A score of 1 indicated "Not at all satisfied", 2 denoted "Not satisfied", 3 indicated "Fairly satisfied", 4 represented "Satisfied", and 5 denoted "Very satisfied". Then the significance of variation in satisfaction level with regard to socio-demographical characteristics of the patients, Kruskal-Wallis H test of one way analysis of variance was applied, furthermore, Dunnett's multiple comparisons and Mann-Witney U test were used as Post-Hoc tests.

Reliability and Validity of the Questionnaire

The questionnaire was translated to Arabic language and face and content validated by experts in the field to ensure the testing items are philosophically mirroring the community pharmacy practice and services provided in Khartoum locality. The questionnaire was pretested on 15 participants from 5 different CPs who met the inclusion criteria but outside the selected size sampling. In addition Cronbach's alpha analysis for reliability test was accomplished with each component of the questionnaire for the completed data and the obtained values as shown in Table 1 on communication quality, consultation quality and delivery

Table 1: Descriptive Analysis of Test Variables Results.

Items used to assess patient's satisfaction	n[a]	SD[b]	SE[c]	α[d]
Items on communication quality	3.88	1.10	.056	.75
Receiving medication with care and full attention	3.62	1.20	.061	
Noticing courtesy and respect from the pharmacist.	4.35	0.65	.043	
The way that the pharmacist answers patients' questions	4.14	0.92	.047	
Time allocated to answer patients' questions	3.57	1.11	.057	
Time allocated to prepare the medication.	3.70	1.05	.054	
Items on consultation quality	3.18	1.30	.066	.84
Eliciting pertinent initial drug related information (e.g. allergies, other medications, age and etc.)	3.17	1.34	.068	
Providing suitable environment for the level of patient's needed privacy.	2.84	1.23	.063	
Giving explanations on when to know if the medication is effective	3.21	1.34	.068	
Explaining on the possible side effects, and tell the precautions (e.g. activities to avoid.)	2.81	1.37	.070	
Giving an individualized advice to the patient to insure proper medication use.	3.41	1.34	.068	
Encouraging patients to raise questions about medications.	2.81	1.40	.071	
Understanding of what pharmacist say in terms of medication.	3.98	1.06	.054	
Items on delivery quality	2.77	1.20	.061	.7
Providing printed information or other patient education materials about drug therapy.	2.14	1.12	.057	
Proper labelling and packaging for the medication.	3.82	1.13	.058	
Getting help from pharmacy through phone.	2.36	1.34	.068	

a. Mean

b. Standard Deviation

c. Standard Error of Mean

d. Cronbach's alpha

service quality of 0.75, 0.84 and 0.7 respectively were in satisfactory levels according to the literature.[16]

RESULTS

Characteristics of Participants

Both sex groups took a considerable part in the study; (57.9%) of male and (41.1%) of female. The mean age of the participants was 33.6 years, with most (84.9%) falling into the (19–44) years age range, (10.4%) into (45-59) while (5.7%) were 60 years and older. The number of married and unmarried were (51.7%) and (48.3%) respectively. The majority of the participants (63.4%) were in university level or post graduate while (22.6%) and (11.4%) correspondingly finished their secondary and primary school but only (2.6%) were illiterate. The employed and self-employed respondents were nearly equal (29.1%) and (28.8%) respectively, whereas (27.5%) were students and the remaining (14.5%) unemployed. Lastly, (83.9%) of the respondents were Khartoum locality residents. Characteristics of participants are shown in (Table 2).

Descriptive Analysis of Test Variables

Table 1 expresses the average mean ratings of the 15 questions addressing patients' experience and satisfaction with community pharmacy services. The length of the cells in the scale was determined as a range of 1 to 1.80 indicated "Not satisfied at all", 1.81 to 2.60 denoted "Not satisfied", 2.61 to 3.40 indicated "Fairly satisfied", 3.41 to 4.20 represented "Satisfied", and 4.21 to 5.00 denoted "Very satisfied".

The results show that majority of patients were satisfied in the quality of the communication service (n±SD=3.88±1.1). The detailed evaluation of the 15-item showed that, among all questions, the good to excellent experience with the highest level of satisfaction related to the 'noticing courtesy and respect from the pharmacist (n±SD= 4.35±0.65)' and 'the way that pharmacist answers patient's questions (n±SD=4.14±0.92)' whilst the lowest satisfaction levels were associated with 'time allocated to answer patient's questions (n±SD=3.57±1.11)' and 'time allocated to prepare mediations (n±SD=3.70±1.05)'.

Patients' satisfaction with the quality of the consultation was expressed as fairly satisfying (n±SD=3.18±1.30). It was found that the lowest level of satisfaction in consultation is associated with 'explaining on the possible side effects, and telling the precautions (e.g. activities to avoid.) (n±SD=2.81±1.37)' and 'encouraging patients to raise questions about medication (n±SD=2.81±1.40)' and 'providing suitable environment for the level of patient's needed privacy (n±SD=2.84±1.23)'.

The items that related to service delivery were associated with the worst experience and lowest level of satisfaction (n±SD=2.77±1.20). This can be seen in the 'providing printed information or other patient education materials about drug therapy' (n±SD=2.14±1.12) and 'getting help from pharmacy through phone' (n±SD=2.36±1.34).

Variation Analysis

The relationship between categorical variables and patients' satisfaction was assessed using the Kruskal–Wallis H test (Table 3). For the demographic parameters, six variables (age, sex, marital status, educational level, employment and the place of residence) were evaluated. The findings

Table 2: Characteristics of the Participants.

Parameters		(Nᵃ=385) f (%)ᵇ
Sex	Male	223 (57.9%)
	Female	162 (42.1%)
Age groups	19-29	193 (50.1%)
	30-44	130 (33.8%)
	45-59	40 (10.4%)
	≤60	22 (5.7%)
Marital Status	Unmarried	199 (51.7%)
	Married	186 (48.3%)
Educational Level	Illiterate	10 (2.6%)
	Primary school	44 (11.4%)
	Secondary school	87 (22.6%)
	University/post graduate	244 (63.4%)
Employment	Employed	112 (29.1%)
	Self-employed	111 (28.8%)
	Student	106 (27.5%)
	Unemployed	56 (14.5%)
Place of residence	Inside Khartoum locality	323 (83.9%)
	Outside Khartoum locality	62 (16.1%)

a. Total number of participants.
b. Percentage frequency distribution of participants' parameters.

Table 3: Patient Parameters and Satisfaction Mean Ranks.

Grouping Variablesᵃ		Communication Quality	Consultation Quality	Service Delivery Quality
Sex	Male	195.95	192.63	193.18
	Female	188.94	193.51	192.76
Age Groups	19-29	184.16	192.82	198.43
	30-44	198.54	188.90	184.28
	45-59	223.40	215.33	201.52
	≤60	182.56	178.18	181.35
Marital Status	Unmarried	181.99	185.66	194.46
	Married	204.78	200.85	191.44
Educational Level	Illiterate	182.32	164.52	159.37
	Primary school	203.57	211.65	202.55
	Secondary school	205.67	202.81	190.42
	University or post graduate	187.01	187.31	193.58
Employment	Employed	198.34	192.68	190.43
	Self employed	200.15	193.44	184.70
	Student	178.90	191.64	196.56
	Unemployed	194.83	195.33	205.62
Place of Residence	Inside Khartoum locality	192.22	192.68	190.96
	Outside Khartoum locality	197.05	194.68	203.65

Test Variables Mean Rankᵇ

a. Participant's independent parameters
b. Satisfaction mean ranks assessed by using Kruskal– Wallis H test.

revealed significantly different levels of experience and satisfaction for the marital status, educational levels and employment while there were no statistically differences among the age groups, place of residence and sex.

In the marital status, the married patients were more satisfied in the quality of the communication and consultation services of community pharmacy, 204.78 and 200.85 of average mean ranks for married and 181.99 and 185.66 for unmarried respectively as shown in (Table 3).

The Mann Witney U test showed statistically a significant difference (p-value ‹ 0.05) in receiving medication with care and full attention (p-value=0.037), noticing courtesy and respect from the pharmacist (p-value=0.005), the way that pharmacist answers patient's question (adjusted p-value=0.015), time allocated to answer patients' questions (p-value=0.039), explaining on the possible side effects, and tell the precautions (e.g. activities to avoid.) (P-value=0.017) and encouraging patients to raise questions about medications (p-value=0.045) as displayed in (Table 4).

The pairwise comparisons of educational levels showed higher satisfaction level for primary school patients in eliciting pertinent initial drug related information (e.g. allergies, other medications, age and etc.) (Adjusted p-value=0.021), and encouraging patients to raise questions about medications (adjusted p-value=0.031) than those of university or post-university. On other hand, the illiterate patients showed less satisfaction level in giving an individualized advice to the patient to insure proper medication use than those of secondary (adjusted p-value=0.041) and those of primary (adjusted p-value=0.023) as presented in (Table 5).

The study also exhibited higher satisfaction for unemployed patients in understanding of what pharmacist says in terms of medication then employed (adjusted p-value=0.01) and students (adjusted p-value=0.014) as revealed in (Table 5).

DISCUSSION

Community pharmacists markedly involved in the improvement of healthcare outcomes. Results of studying patient's satisfaction can be utilized to improve the quality of current services, assess the need for new services and enhance pharmacist patient interaction.[23] This study will help the stakeholders to identify patient's unmet expectations in current community pharmacy practices to design and deliver more improved services.

The study showed that patients reported the highest level of satisfaction on the quality of services relating to communication (n±SD=3.88±1.10) as nearly alike study agreed with.[16] On top of communication quality, participants expressed high satisfaction level in noticing courtesy and respect from pharmacist (n±SD=4.35±0.65) and the way that pharmacist answers patient's questions (n±SD=4.14±0.92). Another study

Table 4: Satisfaction Mean Ranks across Marital Status Categories.

Items[a]	Married Mean Rank	Unmarried Mean Rank	P value[b]
Receiving medication with care and full attention.	204.81	181.96	0.037
Noticing courtesy and respect from the pharmacist.	207.97	179.01	0.005
The way that the pharmacist answers patients' questions.	206.35	180.52	0.015
Time allocated to answer patients' questions.	204.71	182.06	0.039
Explaining on the possible side effects, and tell the precautions (e.g. activities to avoid.)	206.55	180.34	0.017
Encouraging patients to raise questions about medications.	204.46	182.29	0.045

a. Items that showed significant differences in the level of patient's satisfaction by Mann-Whitney U test across the marital status categories.

b. Mann-Whitney U test: p value < 0.05

Table 5: Satisfaction Ranks of Patients Educational Level and Employment Parameters.

Assessed Items		Average Satisfaction Rank	P value
	Educational Level		
Eliciting pertinent initial drug related information (e.g. allergies, other medications, age and etc.)	Primary School-	237.68	0.021
	University or Post graduate	185.78	
Encouraging patients to raise questions about medications.	Primary School-	232.85	0.031
	University or Post graduate	183.24	
Giving an individualized advice to the patient to insure proper medication use.	Illiterate-	114.85	0.023
	Primary School	224.73	
	Illiterate-	114.85	0.041
	Secondary School	212.65	
	Employment		
Understanding of what pharmacist say in terms of medication.	Unemployed-	232.21	0.010
	Student	177.13	
	Unemployed-	232.21	0.014
	Employed	179.98	

a. The pairwise comparisons of the items that showed significant differences in the level of patient's satisfaction by Dunnett's multiple comparisons across the education level categories.

b. The pairwise comparisons of the items that showed significant differences in the level of patient's satisfaction by Dunnett's multiple comparisons across the employment categories

c. Kruskal– Wallis H test: *P* value < 0.05 (the significance values have been adjusted by the Benferroni correction for multiple tests).

supported that patients thoroughly satisfied in pharmacist's kindness and respect during communication.[24] Whilst the lowest satisfaction levels were associated with 'time allocated to answer patient's questions (n±SD=3.57±1.11)' and 'time allocated to prepare mediations (n±SD=3.70±1.05)'.

The study also assessed the quality of consultation services provided in Khartoum locality CPs. Patient were fairly to poorly satisfied in pharmacist's counselling (n±SD=3.18±1.30). There is a consistency with a 2019 study established in North-West India showing that higher number of patients (39.5%) were dissatisfied in pharmacist's counselling.[18] It was found that the lowest level of satisfaction in consultation is associated with 'explaining on the possible side effects, and telling the precautions (e.g. activities to avoid.) (n±SD=2.81±1.37)' and 'encouraging patients to raise questions about medication (n±SD=2.81±1.40)'. A 2017 study conducted in UAE showed that only 25% of patients agreed that pharmacist explains all the possible side effects.[23] Sudanese pharmacists are ethically and professionally required to offer this essential information for patient safety. A 2013 study conducted in Khartoum state showed that efficient dispensing of prescriptions is the primary emphasis of community pharmacists with some PC though pharmacists have expressed their readiness to apply patient-centred care practice but indicated number of barriers to successful implementation.[25] Also the study showed that participants were highly dissatisfied in 'providing suitable environment for the level of patient's needed privacy (n±SD=2.84±1.23)'. This finding is consistent with a 2016 study established in South Korea expressing that 11.1% of patients were not satisfied in pharmacy privacy.[26] Due to the absence of a comfortable private area for patient counselling in community pharmacies in Khartoum, pharmacists consult the patient and dispense prescriptions in the same place where many patients could be in the queue.

Services relating to delivery were associated with the worst experience and lowest level of PS (n±SD=2.77±1.2). The lack of printed information or other educating materials for patients about the drug therapy in Khartoum community pharmacies explains the highly dissatisfied patients (n±SD=2.14±1.12) as could be seen in (Table 2). A 2020 study conducted in Malaysia showed also that patients expressed a low score of satisfaction in the provision of health-related reading materials in the pharmacy.[1] In contrast, many patients were very satisfied (4.35/5.00) with readable instructions for their medications received in Punjabi community pharmacies.[27]

The study revealed no significant association for sex, place of residence and age to patients' level of satisfaction. Higher satisfaction levels in communication and consultation quality were associated with married participants than unmarried as presented in (Table 4). A 2013 study conducted in Turkey agreed with the higher satisfaction level of married patients with primary healthcare quality.[28]

The study also showed higher satisfaction level for primary school patients in 'eliciting pertinent initial drug related information (e.g. allergies, other medications, age and etc.) (Adjusted *p*-value=0.021)', and 'encouraging patients to raise questions about medications (adjusted *p*-value=0.031)' than those of university or post-university. Additionally, the illiterate patients were less satisfied in 'giving an individualized advice to the patient to insure proper medication use' than those of secondary (adjusted *p*-value=0.041) and those of primary (adjusted *p*-value=0.023) as shown in (Table 5). However, a 2020 study is Saudi Arabia expressed that there is no significant association between patient's educational level and their satisfaction with pharmacist's counselling.[29]

The study also exhibited higher satisfaction for unemployed patients in understanding of what pharmacist says in terms of medication then employed (adjusted *p*-value=0.01) and students (adjusted *p*-value=0.014) (Table 5). The unemployed patients have more time to interact with

pharmacist and thus understand what pharmacists say about their medication. However, there was disagreement with a study conducted in India showing that unemployed patients were less satisfied in community pharmacy services.[18]

Generally, illiterate patients were associated with lowest satisfaction ranks in consultation and service delivery qualities as you can see in their mean ranks 164.52 and 159.37 respectively (Table 3). They were highly frustrated in pharmacist's advices about proper medication use than those of secondary (adjusted *p*-value=0.041) and those of primary (adjusted *p*-value=0.023) (Table 4). It is not surprising, since they cannot read the leaflets; they were expecting from the pharmacist an appropriate verbal educating material telling more about how to use the medicines properly.

CONCLUSSION

Patients were generally satisfied with pharmacist's communication quality but showed disappointment in consultation services for instance, eliciting pertinent initial drug related information, privacy and pharmacist's explanation of possible side effects. Additionally, service delivery quality was associated with the lowest level of patient's satisfaction especially providing printed information about the drug therapy and phone help. Services in Khartoum Locality community pharmacies are product-based with negligible patient participation.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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