

# Association of pharmacy services with patient satisfaction in public and private tertiary care hospitals of Rawalpindi and Islamabad

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## Research Article

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# Abstract

## Background

The healthcare system in Pakistan is facing a shortage of human resources and appropriate and sustainable financial measures and therefore fails to provide optimum services to the population of Pakistan. Furthermore, research is limited in the healthcare institutes; therefore, there is a scarcity of information about patient satisfaction with pharmacists and pharmacy services in Pakistan. As evident from the inadequate information in the literature, patients' opinions about the pharmacy services in Pakistan are important [1]. Therefore, the current study was designed to assess patient satisfaction with the pharmacy performance of the outpatient pharmacy and its variation with socio-demographic characteristics in twin cities of Pakistan (Rawalpindi and Islamabad).

## Method

A cross-sectional study design was used to assess the patient satisfaction through convenience sampling technique. Minimum sample size of 250 respondents who visit pharmacy department of public and private hospital for pharmaceutical care were included in this study. A pre validated tool was used to assess the patient satisfaction. Data was clean coded and import into spss for analysis. Descriptive and inferential statistic was applied to calculate frequency, standard deviation, mean deviation and p value to find the association among different domain of patient satisfaction with different demographic characteristics of respondents.

## Result

Current study shows overall patients were satisfied from pharmacy services provided by government and private hospitals. Furthermore patient satisfaction towards pharmacist medication advice was very good however patient satisfaction towards pharmacist approach was good while patient perception with pharmacy setting, drug availability and cost were underrated. Significance difference ( $p \leq 0.05$ ) was observed in pharmacist's approach with different gender, age groups and qualification. No significant difference ( $p \geq 0.05$ ) was observed in pharmacy setting drug availability and cost with different gender, age groups and marital status of respondents. However Significance difference ( $p \leq 0.05$ ) was observed in pharmacy setting drug availability and cost with different level of education patients with less education had better satisfaction as compared to highly educated respondents. Furthermore Significance difference ( $p \leq 0.05$ ) was observed in pharmacy setting drug availability and cost with occupation. Self-employee and government employee had low satisfaction score while other had better satisfactory score. Significance difference ( $p \leq 0.05$ ) was observed in pharmacist's approach with different gender, age groups and qualification. Females had better satisfactory score as compared to female. Younger age group had better satisfaction as compared to elderly. Patients belong to higher educational groups had better satisfaction toward pharmacist approach as compared to low qualification groups respondents.

Furthermore No significant difference ( $p \geq 0.05$ ) was observed in pharmacist's approach with marital status and number of visits

## Conclusion

Current study concluded that overall patient had average satisfaction score. Patients shows a better satisfaction towards pharmacist behavior/ way of handling the patients, information provided by pharmacist regarding medicine. Patient had less satisfaction towards the location of pharmacy, Availability and affordability of medicine. Patient shows negative satisfaction regarding waiting area and counselling area at in door patient pharmacy. It has been observed that educated respondents shows high level of satisfaction towards pharmacist availability and information provided by the pharmacist.

## Introduction

Service quality is deliberated a substantial approach to satisfy the client and reassure frequent service which fascinates loyal clients. Thus, the persistent upgrading of service is desirable in order to strive with other companies in the healthcare industry. In the healthcare industry, most healthcare facilities deliver common services but contrast in service quality which is a pointer to gain a economical benefit in the business [2] At this time, there are many infirmaries in the market. This gives patients or clients more alternatives to choose the best one with the equitable price they require. Therefore, infirmaries have to expand their service excellence and other functions in every small detail to succeed. However the remedial service in emerging nations is often achieved by the government and faced with a limited budget, and also lacks human resources [3]. This leads to customers' dissatisfaction with the level of service quality. The hospital service industry has a perceived level of excellent service quality, and this leads clients to expect these levels of excellence. Customer satisfaction is found when the level of a customer's expectations is met by the actual quality of the service provided [4]. Thus, service quality is the actual service quality the customers or clients perceived when measured against their expectations before receiving a service [5].

Over modern decades, there has been considerable worldwide increase in the morbidity and mortality associated with chronic diseases. This has been linked with lack of individualized patient care and consequent medication-related issues. To this end, the World Health Organization (WHO) and the International Pharmaceutical Federation (FIP) have recognized the need to develop pharmacy services as a way to meet the fast-growing demand for safe and quality uses of medicines, alongside affordable healthcare service provision [6]. The European Society of Pharmacy and the Canadian Pharmacist Association have also stressed the need to expand the clinical services provided by pharmacists in both hospital and community settings [7, 8]. As a result, the role of the pharmacist has shifted from product-oriented services to patient-oriented services [9], and advanced pharmacy services are progressively becoming vital within developed healthcare systems [10]. Nevertheless, despite a significant body of international research reporting positive health and economic outcomes associated with the

implementation of enhanced cognitive pharmacy services, there have been barriers to successful implementation in developing countries [11, 12].

The healthcare system in Pakistan is facing a shortage of human resources and appropriate and sustainable financial measures and therefore fails to provide optimum services to the population of Pakistan. Furthermore, research is limited in the healthcare institutes; therefore, there is a scarcity of information about patient satisfaction with pharmacists and pharmacy services in Pakistan. As evident from the inadequate information in the literature, patients' opinions about the pharmacy services in Pakistan are important [1]. Therefore, the current study was designed to assess patient satisfaction with the pharmacy performance of the outpatient pharmacy and its variation with socio-demographic characteristics in twin cities of Pakistan (Rawalpindi and Islamabad).

## Methodology

**Study design:** The study was quantitative in nature. A descriptive cross sectional design was used to conduct this study.

**Setting:** The study was carried out in pharmacy departments of public and private healthcare facilities located in twin's cities of Pakistan (Rawalpindi and Islamabad). Two public and two private hospital were selected randomly and collect data from the patients visiting the hospital pharmacy.

**Study Population:** The study population included in this research was adult patients or attendant visiting pharmacy department at public and private hospitals of Rawalpindi and Islamabad.

**Sampling Strategy:** In this study public and private pharmacy department of hospitals were the sampling units and the observational units were adults who were visiting these hospitals for seeking health care. The data was collected through non-probability convenience sampling technique.

**Sample size determination:** Initially, the sample size was calculated using a single proportion population formula and determined to be 381. This was based on the assumption of  $p = 50\%$ . This sample was planned to be addressed with a systematic random sampling method. However, the practical scenario could not allow applying this method. Therefore, the actual sample was collected using a purposive sampling technique. Then, a total of 250 patients were addressed based on the available time and resource. No more than 5 clients refused to take part in the study. The reasons for the refusal were related to the care urgencies. Though none of them discontinued, some of the clients felt reluctant close to the end of the survey.

### Study Participants:

- Patient who visit pharmacy department

### Inclusion criteria:

- Patient had 18+ year age, both gender

## Exclusion criteria

- Patient who refuse to participate

**Data Collection Tool:** A structured interview questionnaire was adapted from different related works of literature. The questionnaire includes the client socio-demographic factors, the satisfaction questions and system-related questions that can potentially affect clients' satisfaction to the pharmacist service (Appendices 2). The satisfaction questions cover two aspects. The first 6 questions address study participants' satisfaction towards the pharmacist approach or communication skills. The second 7 questions address participant satisfaction on the medication guide provided by the pharmacists. In all the satisfaction questions, the clients were asked to rate their satisfaction on a five-point scale (1—very satisfied, 2—satisfied, 3—neutral, 4—dissatisfied, 5—very dissatisfied). For descriptive interpretation the five scales were converted into a three scale format by combining very satisfied and satisfied as satisfaction, and dissatisfied and very dissatisfied as dissatisfaction. The questionnaire was prepared in English and then translated to urdu language and then retranslated to English to ensure consistency. The data was collected through interviewer-administered face to face interview

**Independent Variables:** Independent variables were socio-demographic factors like hospital setting, age, occupation, Ethnicity, income, educational status, Number of visits at pharmacy department.

**Dependent Variable:** Patient satisfaction on the medication guide provided by the pharmacists and satisfaction towards the pharmacist approach or communication skills were the dependent variables in this study.

**Data collection procedure:** Data collection was started after getting ethical approval from Institutional Review board (IRB) committee of Al-Shifa School of Public Health, Al-Shifa Trust Eye Hospital Rawalpindi. The formal letter was used to get permission from the Head of Quid e Azam International Hospital Shifa International Hospital and consider as private healthcare facility while a letter was received from ethical committee of polyclinic hospital and holy family hospital as public healthcare facility in this study. The letter included the required information e.g. name of researcher, institute, topic name etc. once permission was granted personal visits was made to both hospital for data collection. First of all the brief introduction of the researcher was given to the participants for the sake of rapport building. The purpose of the study and basic required information was given to the participants the consent from each participant. Questionnaire was filled by the mean of interview after taking the consent from each participant. Data was collected from only those participants who agreed to participate. By this way a total sample of 250 was completed from both public and private setting.

**Pilot Testing:** The questionnaire was pretested on 10 participants at the study site to assess acceptability, feasibility and validity. On the basis of response of pilot testing minor amendments were made to text and questions. After that the questionnaire was finally modified and ready for collecting data.

**Validity:** The questionnaire was pre validated tool however revalidation was performed for Urdu based questionnaire. Face to face and content validity were performed by the three experts, one from academia second from hospital pharmacy and third one from community.

**Reliability:** Reliability of the data was checked after entering the data into SPSS and reverse coding. The scale showed excellent internal consistency, the value of the cronbach's alpha was 0.885 for this study.

**Data Management:** Code book was generated to for all the variables in the questionnaire and data was entered and recorded Microsoft excel sheet. Data was rechecked for any error, discrepancies or completeness by spot checking method. Data was stored in a separate storage device to avoid any loss in future and the hard copied were discarded soon after the data entry. Upon complete data collection and coding data was import to Statistical package social sciences 26 (SPSS-26).

**Data Analysis:** Data was analyzed in SPSS version 26.0. Reliability and quality of data was cross checked by using range and frequency tables to find out the missing values if any. After that the data was arranged according to requirement for analysis. The continuous variables e.g. age was summarized into categories. All the outcome variables were computed and then summarized into different categories for further analysis.

**Descriptive Statistics:** Data was analyzed in three phases. In first phase descriptive was run for sociodemographic variables that were setting, age, occupation, Ethnicity, income, educational status, Number of visits at pharmacy department. All the sociodemographic factors were presented into percentage and frequencies and tables and bar chart were generated according to nature of variable. In second step the descriptive analysis was run for outcome variables.

To identify factors affecting satisfaction, the five-point scale satisfaction score of each study participant was summed and a mean of the sum was calculated. Then, the satisfaction score was dichotomized into satisfaction (less than or equal to 30) and dissatisfaction (above 30). Binary logistic regression was used to identify factors associated with satisfaction. The enter method was applied. The categorical variables were defined using the last variable as a reference. The association was tested kruskal wellis and Man Whitney test and p-value those variables with  $P (p \leq 0.05)$  in the univariate analysis were included in the multivariate analysis.

**Ethical consideration:** IRB approval was taken from the ethical committee of Al Shifa School of public health after synopsis presentation. Before the start of data collection purpose of the research was explained to the participants and asked for their voluntary participation. They were informed that in case of participation no any incentive was provided to them, there was no any physical harm or risk associated with this research and they were free to withdraw at any time. Participants were assured that the collected information would keep confidential and used only for research purpose. Confidentiality was ensuring by putting number or code instead of their names on the data form.

## Results

## Demographic Characteristics of respondents

Out of 250 respondents, 55.75% were males and 44.25% were females. Age between 18-25 years 25.75%, 19% from 29 to 39 year, 18.25% from 40-49y, 17.5% from 50-59 and 19.5% from more than 60 year of age group. 39.6% of the respondent were single however 52.8% were married and 7.6% were divorced/widow. Of the total respondents 36% were illiterate and 5.5% were master level education. Of all the respondent 12.75% were government employee while 15% were working in private organization and 10% were self-employee. Majority of the respondent had more than 40,000 of monthly income. Of the total 37.5% of the respondents were sought medicine for self-care while 62.5% were sought medication for their families. Majority of the respondents bear all expanses by themselves however only 18% get insurance claim for their healthcare expenses (Table 1).

Table 1  
Demographic Characteristics of respondents

<b>Indicator</b>		<b>n (%)</b>
<b>Gender</b>	<b>Male</b>	139(55.75)
	<b>Female</b>	110(44.25)
<b>Age</b>	<b>18-28Y</b>	103(25.75)
	<b>29-39Y</b>	78(19.5)
	<b>40-49Y</b>	73(18.25)
	<b>50-59Y</b>	70(17.5)
	<b>More than 60Y</b>	78(19.5)
<b>Marital Status</b>	<b>Single</b>	99 (39.6)
	<b>Married</b>	132 (52.8)
	<b>Divorced</b>	19 (7.6)
<b>Qualification</b>	<b>Illiterate</b>	90(36)
	<b>Can read and write</b>	10(4)
	<b>Primary School</b>	83(33.25)
	<b>Secondary School</b>	33(13.5)
	<b>Diploma</b>	21(8.5)
	<b>Other</b>	13(5.25)
<b>Occupation</b>	<b>Government Employee</b>	51(12.75)
	<b>Private Employee</b>	60(15)
	<b>Self-employee</b>	76(19)
	<b>Students</b>	84(21)
	<b>other</b>	130(32.5)
<b>Province</b>	<b>Less than or equal to 20K</b>	24 (9.75)
	<b>20,000 to 40,000</b>	50 (20)
	<b>40,000 to 80,000</b>	11 (4.5)
	<b>80,000 to 120,000</b>	155 (62)
	<b>More than 120,000</b>	10 (4)
<b>Service sought for</b>	<b>For Self</b>	94(37.5)

Indicator		n (%)
	For Other	156(62.5)
Payment Status	Insurance Covered	35 (18)
	Self-paid	215 (82)
Number of visit	One time	48(19)
	Two to four time	127(51)
	More than four time	75(30)

### Domain of Pharmacy Services

Current study shows overall patients were satisfied from pharmacy services provided by government and private hospitals. Furthermore patient satisfaction towards pharmacist medication advice was very good however patient satisfaction towards pharmacist approach was good while patient perception with pharmacy setting, drug availability and cost were underrated (Table 2).

Table 2  
Domain of Pharmacy Services

Indicator	Mean Standard Deviation	(S.D))
Patient perception with pharmacy setting, drug availability, and cost	25	32.474
Satisfaction scores of clients toward pharmacist's approach	21	30.838
Patients satisfaction toward pharmacist medication advice	18	19.798

### Association of different domains of patient satisfaction with demographic characteristics of respondents

Significance difference ( $p \leq 0.05$ ) was observed in pharmacist's approach with different gender, age groups and qualification. Females had better satisfactory score as compared to female. Younger age group had better satisfaction as compared to elderly. Patients belong to higher educational groups had better satisfaction toward pharmacist approach as compared to low qualification groups respondents. Furthermore No significant difference ( $p \geq 0.05$ ) was observed in pharmacist's approach with marital status and number of visits. No significant difference ( $p \geq 0.05$ ) was observed in pharmacy setting drug availability and cost with different gender, age groups and marital status of respondents. However Significance difference ( $p \leq 0.05$ ) was observed in pharmacy setting drug availability and cost with different level of education patients with less education had better satisfaction as compared to highly

educated respondents. Furthermore Significance difference ( $p \leq 0.05$ ) was observed in pharmacy setting drug availability and cost with occupation. Self-employee and government employee had low satisfaction score while other had better satisfactory score. Significance difference ( $p \leq 0.05$ ) was observed in Pharmacist medication advice with different level of qualification and Occupation. Patient with higher level of education had better satisfaction as compared to low educational age groups. Patient with higher level of education had a better satisfactory score as compared to low educational groups. However No significant difference ( $p \geq 0.05$ ) was observed in age, gender, marital status and number of visits.

Table 3  
Association of different domains of patient satisfaction with demographic characteristics of respondents

Indicator	p-Value		
	PA	PMA	DAC
Gender	0.032	0.054	0.236
Age	0.150	0.159	0.165
Marital Status	0.545	0.545	0.930
Qualification	.001	0.03	0.020
Occupation	.100	.002	.002
Income Level	.495	0.995	.002
Service sought for	0.213	0.213	.012
Payment Status	0.043	0.043	0.930
Number of visit	0.545	0.545	0.86

## Discussion

Pharmacy practice has significantly extended to provide patient-centered care. Subsequently, efforts in evaluating patient satisfaction and the development of instruments measuring the outcomes have been documented from various countries in the literature. Patient satisfaction is an important humanistic outcome as a patient's subjective assessment of health care services. Current study highlighted that resident of twins cities of Pakistan were overall satisfied from pharmacy services offered by government and private healthcare facilities located in Rawalpindi and Islamabad territory. Same results were reported in a study conducted in Korea which stated that Of the patients who visited the pharmacy, 74.6% reported to be either "very satisfied" or "satisfied," and 25.4% responded as being "neutral," "dissatisfied," or "very dissatisfied." [13].

One third respondent said that pharmacy is located on more convenience location while one third said pharmacy was not located at convenient location. The results of the current study a line with another study conducted in Japan declared that the location is utmost important for an ideal pharmacy [14]. Most of the patient reported that counselling area was not appropriate. Patients were hesitating to discuss their problems in the presence of other clients and pharmacy staff. The results of the current study a line with a study conducted in Dubai that the majority of pharmacists cited the non-availability of a counselling room as the main barrier they encountered when counselling patients [15]. Less than half of the respondents reported that price of medications were affordable. In the support of this study a study conducted in Lahore Pakistan reported that On an average, the cost of standard treatment was equivalent to 1.4 day's wages (median) for OBs and 0.6 (median) for LPG medicines. Notable treatments exceeding the minimum daily wage limits for OBs included, Simvastatin (4.3), Omeprazole (3.2), Bisoprolol (1.5), Ciprofloxacin (1.5), Insulin Isophane (NPH) (1.4) and Insulin Neutral Soluble (Regular) (1.4) – all were considered unaffordable. However, the treatment with LPG medicines seems affordable and were either equal or less than one day's wage, though with poor availability (20.7%). It is pertinent to mention that this calculation was done by taking into account the standard dose of individual medicines, if a patient is taking more than one medicines then the bar will go even higher making the treatment completely out of reach for most of the patients [16].

Near half of the patient agree that pharmacist spend sufficient time to counsel the patient. The results of the current study was a line with another study conducted in Finland, which reported that that counselling by pharmacists is beneficial for their medication. Furthermore, pharmacists seem to be more active with the patients receiving prescription drugs. According to our results pharmacists should adjust more counselling to every patient's needs. Thus, pharmaceutical information and support of self-care were found to be important areas in patient counselling [17].

Most of the patient satisfied with all the information provided by the pharmacist regarding how to use medicine, storage of medicine and side effects. A study conducted in Finland reported that Counselling had a positive effect on medication behavior (by 31%), 36% of respondents understood their medication better, i.e. why and how to use their medication drugs, although they did not change their behavior. A total of 30% felt that the counselling had no effect on their medication taking [17]. Another study explain the patient counseling by four approaches are considered within the broader frameworks of delicacy, morality and competence which impact upon the giving and receiving of advice and information more generally, as well as in this setting, and in the light of the continued development of the 'extended role' [18]. Another study conducted in Dubai support the results of current study through a statement that the overall mean patient satisfaction score was 4.71 (a score of 5 indicated most satisfied and 1 indicated least satisfied). Men, older patients and patients who considered the pharmacist to be competent and skilled were generally more satisfied with the consultations. Among patients with chronic conditions who came for medication refills, 41.8% believed that, although they needed counselling, it was not provided by the pharmacist [15].

## Conclusion

Current study concluded that overall patient had average satisfaction score. Patients shows a better satisfaction towards pharmacist behavior/ way of handling the patients, information provided by pharmacist regarding medicine. Patient had less satisfaction towards the location of pharmacy, Availability and affordability of medicine. Patient shows negative satisfaction regarding waiting area and counselling area at in door patient pharmacy. It has been observed that educated respondents shows high level of satisfaction towards pharmacist availability and information provided by the pharmacist.

## Availability Of Data And Materials

The data used and analysed during the current study are available from the corresponding author on reasonable request.

## Abbreviations

**PA** pharmacist's approach

**PMA** pharmacist medication advice

**DAC** drug availability, and cost

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## Appendix

Appendices are not available with this version