Introduction

Quality of health services was traditionally based on professional practice standards. However, over the last decade, patient's perception about healthcare has been predominantly accepted as an important indicator and a critical component of performance improvement and clinical effectiveness.[1] Patient's satisfaction has been defined as the degree of congruence between a patient's expectations of ideal care and their perception of real care received. It is one of the important goals of any health system, but it is difficult to measure patient satisfaction as many factors such as quality of clinical services, availability of medicine, behavior of health personnel, cost, hospital infrastructure, physical comfort, emotional support, and respect for patient preferences influence it. Well-recognized criteria include responsiveness, communication, attitude, and comforting skill.[2] It has also been reported that the interpersonal and technical skills of health-care provider are two unique dimensions involved in patient assessment of hospital care.[3] In the recent past, studies on patient satisfaction have gained popularity as it provide the

Abstract

Background: Client satisfaction on quality of medication services perceived by the patients is an important measure of the health services and needs to be addressed to improve the utilization of primary health-care services. Methods: This is a descriptive study on quality of medication services perceived by the patients attending a rural health center in Puducherry. The data were collected with pretested semi-structured questionnaire. The study population consisted of 365 patients. Results: The mean age of the study population was 44.73 years and 61.6% were females. Majority of the participants (340, 93.2%) had visited the clinic at least six times in the last 6 months. The main presenting conditions included hypertension (22.7%), pregnancy (11.8%), bronchial asthma (9%), diabetes (12%), skin infections (7%), myalgia (7%), and other ailments. Average waiting time to collect drugs was 11 min (ranging from 3 to 30 min). Around half of them were advised to consume medications regularly and on time as per prescriptions (n = 199, 54.5%). Around one-fourth of the participants were advised regarding the timing of medication with respect to food (n = 96, 26.3%). Overall satisfaction was moderate in 73% participants and extremely satisfied in 25%. Around 86% of the participants told that their doubts regarding medication use were clarified by the pharmacist at the counters while 5% felt that it was not addressed. Around two-thirds were highly satisfied with the quality of drugs received (65%) and availability of drugs (64.4%). Around 52% were highly satisfied with the behavior of the pharmacy staff and 55% were moderately satisfied with timing of the pharmacy facility. Around 60% of the participants were moderately satisfied with the discipline in the queue system. Conclusions: The quality of medication services perceived by the participants is high in comparison with other studies. However, a few areas of dissatisfaction have been noted. There is a need to improve the services at the rural health centers with more satisfaction of patients availing such public health facilities.

Keywords: Medication services, quality of health care, satisfaction

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chance to improve services in public health facilities. Patients’ feedback is necessary to identify problems that need to be resolved in improving the health services. Mismatch between patient expectation and the service received is related to decreased satisfaction. Therefore, assessing patient perspectives can make public health services more responsive to people’s needs and expectations.

To be effective health-care team members, pharmacists need skills and attitudes enabling them to assume many different functions. The concept of the “seven-star pharmacist” was introduced by the World Health Organization and taken up by the International Pharmaceutical Federation in 2000 in its policy statement on Good Pharmacy Education Practice to cover these roles: caregiver, decision-maker, communicator, manager, life-long learner, teacher, and leader. The pharmacist must be able to use the evidence base effectively to advise not only on the rational use of medicines but also sharing and documenting experiences for optimizing patient care. Many studies have developed and applied patient satisfaction as a quality improvement tool for health-care providers. Thus, patient satisfaction is an important issue both for evaluation and improvement of health-care services. Keeping this in view, this study is designed to evaluate client perceptions on pharmacy services in a rural health center in Puducherry and assess their satisfaction levels.

**Methods**

**Study design and setting**

This was a descriptive study carried out in 2015 at Ramanathapuram, a rural health center in Puducherry located about 15 km from town serves as the rural field practice area of a Tertiary Care Teaching Institute. The Union Territory of Puducherry is situated on the Coromandel Coast, 130 km south of Chennai with an area of 479 km² and a total population of 12.48 lakhs (Census 2011). The health center provides preventive, promotive, and curative services for a population of 9100 spread across four villages. The health center is led by two medical officers, with other supporting staff such as staff nurses, laboratory technician, medical social worker, pharmacist, and office staff. Medical interns (approximately 6–8) posted for a month involved in providing round-the-clock health services under the supervision of the medical officer. Outpatient clinics are conducted 6 days a week and special clinics 3 days a week for antenatal mothers, under-five children, and chronic disease patients. The average outpatient department (OPD) attendance is 30–35/day.

**Sample size and sampling technique**

Assuming 50% satisfaction levels among the study participants, the sample size was estimated to be 364 with 5% absolute precision and 95% confidence limits (based on the formula \(4pq/d^2\)). Stratified random sampling technique was used to select participants for the study among the various special clinics and OPD. A proportionate sampling method was used based on patient attendance in each of these clinics (antenatal and under-five clinic, chronic disease clinic) and OPD during 1 month.

**Study tool**

A semi-structured questionnaire was developed to collect details on sociodemographic characteristics, treatment practices, client perception on pharmacy services assessed in various domains such as waiting time, advice received, interaction with the pharmacist, and understanding. Patient satisfaction was assessed based on perceived behavior of the pharmacy staff, timing, queue system, drug quality and availability, availability of drugs, method of dispensing, and overall satisfaction. Patient satisfaction was measured on Likert’s 4 points rating scale (4 - very satisfied; 1 being extremely dissatisfied).

**Study procedure**

The questionnaire was translated into the local language and back-translated to English. This was pretested among ten patients and modified accordingly. Pilot data were excluded from the main study results. During the main study, required number of patients were randomly chosen for interview (every fifth patient) in each of these clinics and OPD. The eligible patients were initially provided medical care for their presenting illness. After taking informed consent, they were interviewed using the questionnaire. On an average, 15 min was given for interview of each patient. In case of children, the accompanying adult was administered the questionnaire.

**Statistical analysis**

Data were entered in MS Excel 2010 and analyzed using IBM SPSS Statistics version 19.0. (Armonk, NY: IBM Corp. 2010). Categorical data were summarized as proportions and continuous variables as median (interquartile range) or mean (standard deviation) as appropriate.

**Results**

The total study population was 365. The mean age of the study population was 44.7 years with a standard deviation of 16.2 years (range: 3–75 years). The sociodemographic characteristics of the study participants are summarized in Table 1. The total study population comprised 61.6% (225) females and 38.4% (140) males. Literate patients were 67.7% (247). Up to 20% participants had completed high school education and 22% till primary education. Majority of the participants (87.7%) were married while 11% of them were single. More than half of the participants were homemakers. More than one-third of the patients belonged to Class-4 socioeconomic status according to the updated modified Prasad’s classification.

Nearly, half of the participants interviewed were attendees of chronic disease clinic (\(n = 183\), 50.1%), 37% from daily OPD,
and 13% from antenatal or under-five clinics. Majority of the participants (340, 93.2%) had visited the clinic at least six times in the last 6 months. The main presenting conditions included hypertension (22.7%), diabetes (12%), bronchial asthma (9%), skin infections (7%), myalgia (7%), gastritis, injury, and respiratory illness.

Around half of them were advised to consume medications regularly (n = 199, 54.5%). Around one-fourth of the participants were advised regarding timing of medication with respect to food (n = 96, 26.3%). Dietary modifications, application of ointments, safe storage of medicines were other advice received by the participants. Major proportion of the participants (84.4%) said that they had not faced any difficulty in taking medicines as per doctor’s advice.

### Patient satisfaction with pharmacy services

Around half (189, 52%) were very satisfied with the behavior of the pharmacy staff. Around 55% patients were moderately satisfied while others were very satisfied with timing of the pharmacy facility. Around 60% of the participants were moderately satisfied with the discipline in the queue system while 40% were very satisfied. Around two-thirds were very satisfied with the quality of drugs received (65%) and availability of drugs (64.4%) [Table 2].

Around 63% were moderately satisfied with the methods of dispensing medicines while one-thirds were highly satisfied. Around 7% participants felt that the medicines can be dispensed in convenient containers such as pouches or container for tablets with labels indicating timings of medicines. Around 3% felt that the number of tablets was too many and they were confused. Around 2% participants requested containers for syrup/liniments as they find it difficult to collect it when they do not carry empty bottles.

Overall satisfaction was moderate in 268 (73%) participants and extremely satisfied in ninety participants (24.7%). Around 2% participants were dissatisfied with the methods of dispensing (tablets, syrup, liniments) and behavior of pharmacy staff.

### Client perception on pharmacy services

Average waiting time to collect drugs was 11 min with a minimum of 3 min and a maximum of 30 min as reported by the participants. Three-fourth of the participants reported that the waiting area was very comfortable and one-fourth said that it was moderately comfortable. Most of the participants (98.9%) said that dispensing of drugs at the pharmacy counter was organized and only 1.1% said that it was crowded. Majority of the respondents (346, 94.8%) told that sufficient time was spent by pharmacist in explaining medications to them. Around 95% participants (n = 346) felt that they were able to understand pharmacist’s advice clearly [Table 3].

| Table 1: Sociodemographic characteristics among the study participants (n=365) |
|-------------------------------------------------|
| **Sociodemographic characteristics**              |
| **Frequency (%)**                                |
| **Age (years)**                                  |
| ≤30                                              |
| 105 (28.8)                                       |
| 31-50                                            |
| 111 (30.4)                                       |
| >50                                              |
| 149 (40.8)                                       |
| **Females**                                      |
| 225 (61.6)                                       |
| **Education status**                             |
| Illiterate                                       |
| 118 (32.3)                                       |
| Primary school                                   |
| 80 (21.9)                                        |
| Up to high school                                |
| 124 (34.0)                                       |
| Higher secondary and above                       |
| 43 (11.8)                                        |
| **Marital status**                               |
| Married                                          |
| 320 (87.7)                                       |
| Single                                           |
| 39 (10.7)                                        |
| Widow/widower                                    |
| 6 (1.6)                                          |
| **Occupation**                                   |
| Homemaker                                        |
| 196 (53.7)                                       |
| Semiskilled and unskilled                        |
| 110 (30.1)                                       |
| Skilled and professional                         |
| 20 (5.5)                                         |
| Unemployed                                       |
| 39 (10.7)                                        |
| **Socioeconomic status (in INR)**                |
| Class 1: >5571                                   |
| 17 (4.7)                                         |
| Class 2: 2786-5570                               |
| 85 (23.3)                                        |
| Class 3: 1671-2785                               |
| 36 (9.9)                                         |
| Class 4: 836-1670                                |
| 141 (38.6)                                       |
| Class 5: <836                                    |
| 86 (23.5)                                        |
| **Total**                                        |
| 365 (100)                                       |

**INR:** International normalized ratio

| Table 2: Patient satisfaction with pharmacy services at the rural health center (n=365) |
|------------------------------------------------------------------------------------------------|
| **Statements** | Very satisfied (%) | Moderately satisfied (%) | Dissatisfied (%) |
|----------------|--------------------|--------------------------|-----------------|
| Behavior of the pharmacy staff                  | 189 (51.8)    | 168 (46)                  | 8 (2.2)         |
| Timing of the pharmacy facility                 | 166 (45.5)    | 199 (54.5)                | 0               |
| Discipline in the queue system                  | 145 (39.7)    | 220 (60.3)                | 0               |
| Quality of drugs                                 | 238 (65.2)    | 127 (34.8)                | 0               |
| Availability of drugs                            | 235 (64.4)    | 130 (35.6)                | 0               |
| Method of dispensing (tablets, syrup, liniments) | 127 (34.8)    | 230 (63)                  | 8 (2.2)         |
| Overall satisfaction                             | 90 (24.7)     | 268 (73.4)                | 7 (1.9)         |

| Table 3: Perception on pharmacy services in the study population (n=365) |
|-------------------------------------------------------------------------|
| **Client perception (n=365)** | Yes (%) | No (%) |
|--------------------------------|----------|--------|
| Waiting area was comfortable                                           | 274 (75.1) | 91 (25) |
| Dispensing of drugs was organized                                       | 361 (98.9) | 4 (1.1) |
| Sufficient time spent by pharmacist in explaining medicines             | 346 (94.8) | 19 (5.2) |
| Able to understand pharmacist’s advice clearly                          | 346 (94.8) | 19 (5.2) |
Around 86% of the participants told that their doubts regarding medication use were clarified by the pharmacist, 5% felt that it was not addressed and 8.5% did not have doubts. Nearly, one-third of the patients had approached doctors and another one-third had approached nursing staff for additional help in medications advice. Around 43% (157) of the respondents felt that the interaction of the pharmacist was friendly, 38% (141) felt that it was good, and 3.3% (12) felt that it was hurried or with no eye contact [Figure 1].

**Discussion**

This study on client perception and user satisfaction among pharmacy services was conducted in a rural health center in Puducherry. Overall satisfaction was moderate in 268 (73%) participants and extremely satisfied in ninety participants (24.7%). This is comparable to other studies available in similar settings. Sarkar and Chatterjee reported that 75% were satisfied and 5.5% were dissatisfied with pharmacy services. A common reason for dissatisfaction in this study was the method of dispensing medicines - 63% were moderately satisfied.

Average waiting time to collect drugs was 11 min with a range of 3–30 min. This was less when compared to other studies where it was 15–20 min to 30 min. Three-fourth of the participants reported that the waiting area was very comfortable. This is high in comparison with another study where half of the patients were dissatisfied with cleanliness of waiting area and sitting arrangement. In this study, almost all participants were satisfied with the discipline in the queue system. A study by Sodani et al. reported that patients at lower level health facilities (Community Health Center and Primary Health Center) were more satisfied with the queue system than at the higher level health facilities (District Hospital and Civil Hospital).

In this study, majority of the respondents told that sufficient time was spent by pharmacist in explaining medications and their doubts were clarified. This study shows that the pharmacy counter is providing counseling support in addition to medication dispensing. Regular consumption and timing of medication, dietary modifications, application of ointments, and safe storage of medicines were common advice received by the participants. This is better when compared to other studies on satisfaction regarding pharmacist services.

Around 81% were very satisfied with the behavior of the pharmacy staff in this study. This is comparable with Bilkish et al. who reported 80% satisfaction. Manna et al. reported that 47% were satisfied with the attitude and behavior of pharmacist. Sodani et al. reported that the behavior of the pharmacist was good particularly at the higher level facilities. In a study done in Sudan, the mean satisfaction percentage level with pharmacist interaction was found to be 78.4%.

In this study, around two-third were very satisfied with the quality of drugs received and availability of drugs. Manna et al. reported 43% satisfaction of patients on getting 51%–75% of drugs available at pharmacy while Patro et al. reported the availability of medicines was satisfactory among 65% participants. In a study done in Saudi Arabia in 2014, the highest score of patient satisfaction was for medication availability, patient counseling, and pharmacist-patient relationships and lowest score for pharmacy communication and medication reconciliation.

Measuring patient satisfaction has many purposes to evaluate health-care services from patient’s point of view, facilitate the identification of problem areas and help generate ideas toward resolving these problems. Despite a good level of patient satisfaction, a small proportion of patients expressed dissatisfaction with the services in this study. This indicates that hospital administration needs to do more in the drive toward improving services. A few recommendations to improve the satisfaction of patients regarding pharmacy services are as follows. Sufficient time can be spent to address doubts of patients regarding medication use. Medicines can be dispensed in convenient containers with labels indicating medicine timings. Boxes or pouches for very elderly patients who need help with medicines but do not have family support can be piloted. Containers for syrup/liniments can also be provided. Such surveys can be repeated at regular intervals and feedback obtained be used to augment services provided. In OPDs, complaint and suggestion box should be kept to further enhance service improvement.

**Conclusions**

Patients’ satisfaction has now become the most important and measurable aspect for assessing the quality of patient care services. The satisfaction levels observed in this study are high in comparison with other studies, but there is definite scope for improvement. Pharmacists should be aware of their various roles toward patient care services. The findings of this study can be utilized to streamline the pharmacy services at the health center and thereby improve patient satisfaction.
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Conflicts of interest
There are no conflicts of interest.

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