Factors Influencing Patient Satisfaction with Pharmacy Services: An Empirical Investigation at King Fahd Armed Forces Hospital, Saudi Arabia

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Abstract

The current research investigates the factors influencing patient satisfaction with pharmacy services at King Fahd Armed Forces Hospital (KFAFH). This research proposes and tests a three-factor model that influence patient satisfaction. These factors include accessibility, availability of medications, and pharmacy staff attitude as independent variables, while the dependent variable is patient satisfaction. In order to explore this issue, a quantitative method was used in the form of a questionnaire issued in KFAFH in Jeddah city in Saudi Arabia. The research targeted 333 patients as a representative sample, rather than the whole population. A random sample was used to choose the participants in this research. The research retrieved 290 valid questionnaires, which represented a response rate of 87%. The results confirm significant differences in the influence of these factors on patient satisfaction. The research concludes that there are significant influences from accessibility and availability of pharmacy services, whereas there is no significant influence of staff attitudes on patient satisfaction. The research recommends improving the accessibility and availability of medication regularly and continuously. It is also recommended that pharmacy services should conduct training courses to improve staff skills and attitudes to deal with patients.

Keywords: accessibility, availability, attitude of staff, patient satisfaction, pharmacy, Saudi Arabia

1. Introduction

A high demand for prescription drugs continues to grow, to create a necessity for improving workflow management within the outpatient pharmacy settings to provide high-quality services. The role of the pharmacist is to provide advice about medication, screening prescriptions, dispensing and any other management work related to the stocking of medications. Many research articles have illustrated that waiting time reduction improves the efficiency and resulting increased patient satisfaction (Helbig et al., 2009). This study will deal with a neglected area in Arab countries, which are factors influencing patient satisfaction of pharmacy services in the Kingdom of Saudi Arabia. Increasing patient knowledge of awareness within healthcare systems is a key component for improving the quality and sustainability of the services provided to patients that reflect on patient satisfaction. The hospital under study is a 622-bedded, non-profit, government-run hospital located in Jeddah city within the Western Region of Saudi Arabia. There are three pharmacy departments operating within the hospital: main pharmacy, primary care and dental pharmacies. A total of 195 pharmacy staff members are employed. The duties of the staff working within these departments include processing prescriptions, dispensing medications, and giving advice and instruction to patients on the correct use of their medications. The research problem evolves around investigating the factors influencing patient satisfaction of pharmacy services in KFAFH in Jeddah. The research answered the following questions: is the availability of medicine influencing patient satisfaction? is the accessibility of medicine influencing patient satisfaction? is the attitude of staff influencing patient satisfaction? This study's purpose is to examine the factors influencing patient satisfaction with pharmacy services at KFAFH in Jeddah.
2. Literature Review

Patient satisfaction has many different facets, reflecting the type and quality of service provided by healthcare providers, how well service is delivered, and the extent to which the expectations and needs of patients are met. In measuring performance, patient satisfaction has been defined as the personal evaluation of healthcare services and providers (Alfolabi et al., 2013). Most of the studies that provided a means of measuring patient satisfaction with pharmaceutical services showed satisfaction in terms of evaluating performance, focusing on three to nine dimensions of satisfaction. Some authors included eight dimensions: explanation, consideration, technical competence, financial aspects, accessibility, drug efficacy, non-prescription products, and quality of the drug product dispensed (MacKeigan & Larson, 1989), while Lang and Fullerton (1992) reported only four underlying dimensions of patient satisfaction, namely professional communication, physical and emotional comfort, demographic issues and location plus convenience. Other researchers who had developed scales to measure patient satisfaction have come up with various dimensions of satisfaction, and these studies portray satisfaction as an experience-based performance evaluation of the services (Briesacher & Corey, 1997).

In a pharmaceutical context, many patient-satisfaction definitions are ambiguous. Schommer and Kucukarslan's (1997) early work was important in its contributions to conceptualizing patient satisfaction within a pharmaceutical services framework. They classified pharmaceutical services based on four patient-satisfaction ideas: performance evaluation (a service's salient characteristics); disconfirmation of expectations (gap between expectation and actual experience); an individual's emotional response to a service and resulting actions (effect-based assessment); an individual's evaluation of what is gained compared to its cost (equity-based assessment). According to Schommer (2003), satisfaction can be viewed as how much an individual is able to carry out a desired behavior based on a service. Furthermore, research defines satisfaction as "an individual's judgment about the extent to which a product or service provides a pleasurable level of consumption-related fulfillment". This emotional reaction is a result of a product or service evaluation, which is followed by a judgment that is made by an individual on how perfectly the service was provided, which results in either pleasure or displeasure (Schommer, 2003). In Larson et al. (2002), patient satisfaction is viewed as his/her "personal evaluation of healthcare services and providers". Satisfaction determinants can be considered the patient's preferences and expectations, whereas technical and interpersonal care elements can be considered its components.

No single patient-satisfaction measure is valid in every pharmacy situation (Schommer & Kucukarslan, 1997). A theoretical base is required for satisfaction evaluation which allows for the assessment of the validity of the measure. The measure must fit an overall research process framework and the researcher must have an understanding of what is to be measured (Schommer & Kucukarslan, 1997). Patient satisfaction is the function which underpins ideas of satisfaction, and includes satisfaction with the primary provider's staff and waiting time (Aragon and Edwards, 2004). With an understanding of these elements, pharmacy managers can improve those areas, thus generating more satisfied patients and developing the pharmacy's feasibility.

Patient satisfaction is a valuable humanistic outcome which needs to be measured. It can determine the sustainability of a healthcare service (Panvelkar et al., 2009), as well as reflecting the influence of pharmacy services on patients’ lives. However, owing to its subjective nature, it is difficult to evaluate and it is not a structure or process measure (Gourley et al., 2001). Additionally, satisfaction is more subjective than reports of care, which provide objective evidence about what occurs in an encounter (Larson et al., 2002).

Therefore, the research hypothesized that:

There is a significant relationship between availability of medications and patient satisfaction.
There is a significant relationship between accessibility of medications and patient satisfaction.
There is a significant relationship between attitude of staff and patient satisfaction.

3. Rationale of the Research

This research will positively contribute to the direct antecedents of factors which influence patient satisfaction in KAFAFH. The specific references only partially covered the antecedents of efficiency of pharmacy services with patient satisfaction. Therefore, the present study aims to fill a gap in the subject of accessibility, availability of medications, attitude of staff and its consequences in the Kingdom of Saudi Arabia hospitals.

4. Research Objectives

Based on the above section highlighting the factors influencing patient satisfaction in KAFAFH, the objectives of this research are:
1- To identify the factors which affect patient satisfaction of pharmacy services in KAF FH in Jeddah city.
2- To investigate the impact of pharmacy factors (accessibility, availability of medications, and attitude of staff) on patient satisfaction at KAF FH in Jeddah city.

5. Research Methodology

Using a cross-sectional method approach which includes all three pharmacies at KAF FH (main pharmacy, primary care clinic pharmacy and dental pharmacy), this research is a descriptive analytical research using a quantitative approach methodology. The research questionnaire was used to collect primary data from patients visiting the pharmacies at KAF H. The population in this research is defined as all the patients who are visiting the pharmacies. The research population consisted of approximately 77,750 patients per month; the average number of visitors per day is 2592 who participated in this study. The research sample of the current study is 333, depending on the statistical sample size table. The research questionnaire was distributed according to the average numbers of visitors to each pharmacy (main pharmacy, outpatient department, and dental pharmacies). The research retrieved 290 valid questionnaires, which represents 87%.

5.1 Reliability

Reliability is the extent to which an experiment, test, or any measurement procedure yields the same result on repeated trials (APA, 1985). Without the agreement of independent observers able to replicate research procedures, or the ability to use research tools and procedures that yield consistent measurements, researchers would be unable to satisfactorily draw conclusions, formulate theories, or make claims about the generalizability of their research.

In this research, the researcher has used the Split Half method to assess the reliability of the questionnaire sections. Table 1 presents the results of the Split Half method for the questionnaire reliability.

Table 1. Split half method of the questionnaire

<table>
<thead>
<tr>
<th>Section</th>
<th>Correlation Coefficient</th>
<th>Modified Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>0.753</td>
<td>0.762</td>
</tr>
<tr>
<td>Availability</td>
<td>0.619</td>
<td>0.623</td>
</tr>
<tr>
<td>Attitudes</td>
<td>0.748</td>
<td>0.811</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>0.820</td>
<td>0.824</td>
</tr>
</tbody>
</table>

From the above table, the Split Half method was calculated for each section of the questionnaire and these coefficients are acceptable as the questionnaire is used for the first time. The questionnaire is then considered a reliable tool. The research questionnaire shows in appendix 1.

6. Analytical Approach

6.1 Demographic Information

Table 2. Frequency and percentage for demographic information

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>122</td>
<td>42.1</td>
</tr>
<tr>
<td>Male</td>
<td>168</td>
<td>57.9</td>
</tr>
<tr>
<td>Total</td>
<td>290</td>
<td>100.0</td>
</tr>
<tr>
<td>Nationality</td>
<td>277</td>
<td>95.5</td>
</tr>
<tr>
<td>Non-Saudi</td>
<td>13</td>
<td>4.6</td>
</tr>
<tr>
<td>Total</td>
<td>290</td>
<td>100.0</td>
</tr>
<tr>
<td>Age</td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Under 30 Years</td>
<td>48</td>
<td>16.5</td>
</tr>
<tr>
<td>30-40 Years</td>
<td>113</td>
<td>38.9</td>
</tr>
<tr>
<td>41-50 Years</td>
<td>90</td>
<td>31.3</td>
</tr>
<tr>
<td>51-60 Years</td>
<td>33</td>
<td>11.3</td>
</tr>
<tr>
<td>More than 60 Years</td>
<td>6</td>
<td>2.1</td>
</tr>
</tbody>
</table>
Table 2 shows that:

1. The percentage for “gender” reached 57.9% for male, but the percentage for female reached 42.1%.
2. The percentage for “nationality” reached 95.5% for Saudi, but the percentage for Non-Saudi reached 4.6%.
3. The highest percentage for “age” reached 38.9% for age category 30-40 years, but the lowest percentage reached 2.1% for age category more than 60 years.
4. The highest percentage for “education” reached 40.3% for secondary holders, but the lowest percentage reached 10.3% for higher education holders.

6.2 Hypotheses Analysis

To test the general hypothesis, multiple regression was applied, Table 3 shows that:

Table 3. Result of regression for relationship between factors accessibility, availability, and behaviors of staff and patient satisfaction

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility to pharmacy</td>
<td>0.344</td>
<td>0.423</td>
<td>0.17</td>
<td>2.87</td>
<td>0.00</td>
</tr>
<tr>
<td>Availability of medications</td>
<td>0.326</td>
<td>0.361</td>
<td>0.18</td>
<td>2.46</td>
<td>0.00</td>
</tr>
<tr>
<td>Attitudes of pharmacy staff</td>
<td>0.107</td>
<td>0.277</td>
<td>0.11</td>
<td>1.37</td>
<td>0.92</td>
</tr>
</tbody>
</table>

Dependent Variable: Patient Satisfaction

\[ Y = B0 + B1X1 + B2X2 + B3X3 + E \]

Where:

- **Y** = The predicted value on the patient satisfaction.
- **B0** = The Y intercept, the value of Y when all Xs are zero.
- **X1** = Accessibility to pharmacy.
- **X2** = Availability of medications.
- **X3** = Behaviors of pharmacy staff.
- **B** = The various coefficients assigned to the IVs during the regression.
- **E** = An error term.

1. There is a significant positive relationship between accessibility to pharmacy and patient satisfaction, where the values of (Beta, T) reached (0.17, 2.87), Sig. (0.00). Therefore the first hypothesis is accepted.
2. There is a significant positive relationship between availability of medications and patient satisfaction, where the values of (Beta, T) reached (0.18, 2.46), Sig. (0.00). Therefore the second hypothesis is accepted.
3. There is a significant positive relationship between behaviors of pharmacy staff and patient satisfaction, where the values of (Beta, T) reached (0.11, 1.37), Sig. (0.92). Therefore the third hypothesis is rejected.

These coefficients as shown in Table 3 are referred to as B values, which indicate the individual contribution of each predictor to the model. By replacing the B values into the above equation, the model becomes defined. In this way, the B values inform the relationship between the patient satisfaction and the factors influencing patient satisfaction. If the value is positive, this indicates a positive relationship between the predictor and the outcome, whereas a negative coefficient represents a negative relationship. Viewing the B value under the first column, accessibility to pharmacy has the highest positive relationship with the outcome variable patient satisfaction (B=0.344 and P-value=0.00). Similarly, availability of medications was significant (B= 0.326 and P-value= 0.00).
The third dimension behaviors of pharmacy staff were not significant (B= 0.107 and P-value= 0.92).

### Research model

**Independent Variable**

**Factors of pharmacy services**

**Availability of medicine**
- Mean= 3.321
- P-value 0.00 H1 accepted

**Accessibility of medicine**
- Mean= 3.561
- P-value 0.00 H2 accepted

**Attitude of staff**
- Mean= 1.891
- P-value 0.00 H3 rejected

**Dependent Variable**

**Patient Satisfaction**
- Mean= 1.891

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7. **Research Discussion**

The demographic information results show that the majority are Saudi patients, and this is due to the beneficiaries from the hospitals providing healthcare for the Saudi people and their relatives and workers. Regarding the first dimension of the study, which is accessing pharmacy services, the results of this general dimension were good, with a rate of (3.321). The reason for that is the pharmacy is carrying out a set of procedures like time to receive the prescribed medicine, separation of males and females when receiving medicine, applying the electronic system for dispensing medications, and having sufficient numbers of windows for dispensing the medicine. Regarding the second dimension, which is the availability of medications in the pharmacy, the results of this general dimension were good, with a rate of (3.56). The reasons for this result include the provision of the best medications by the international medication manufacturers, as well as providing the medications in different forms (pills, syrup, injections) which leads to this result, and providing alternative medications in the case of unavailability of the prescribed medicine. Moreover, the pharmacy dispenses adequate amounts of medications, in some cases, to patients who live far away from hospital. Regarding the results of the third dimension, which is the behavior of the pharmacy staff, the results have a general rate (1.891) which is relatively low, because the pharmacy staff do not explain enough to the patients about how to take the medicine, and also because dealing with the patients by pharmacy staff is relatively uncomfortable, in addition to the lack of respect for the privacy of the patient in some cases. The overall results of patient satisfaction regarding
pharmacy services are good, except the behaviors of service providers in the pharmacy, where the general average was (3.22).

8. Research Conclusion
The main conclusion of this study as the following:
The pharmacy has applied a set of procedures which positively affect pharmacy services, and which take into account a set of things like the culture of the Saudi community regarding the separation of males and females in the process of dispensing, as well as the culture of commitment to everybody having a turn in dispensing the medicine. This problem was solved by implementing the electronic dispensing system, which introduced enough waiting areas to reduce the tension of this type of patient because pharmacy services come in the final stage after long time of periods in the hospital (medical checkup, lab tests, X-rays, etc.).
The pharmacy at KFAFH took into consideration a set of things for providing the medications properly for the beneficiaries of the service, like purchasing contracts for medications from the best manufacturers of well-known trademark medications, such as GSK, Pfizer, and Astra Zeneca. In addition, the pharmacy is keeping in mind the cases of some patients with chronic illnesses, like diabetes mellitus and hypertension, and patients who are living far away from the hospital.

One of the problems facing the pharmacy is the lack of communication skills and the responses of the workers toward patients, and this depends on several factors, such as workloads, lack of training courses about how to deal with patients and how to calm them down, and lack of treatment culture for some patients’ cases.

9. Research Recommendations
Improve the service permanently and continuously through special procedures for dispensing medication, by updating the policy and procedures of the pharmacy continuously and commensurately with the current situation of the pharmacy.

Try to increase the medication-dispensing windows to reduce the time it takes to dispense medication. Also, ensure that there is a medication information center and activate it properly.

Provide medication continuously in terms of quality and quantity of medications, by collaborating with purchasing and supply departments. Also permanently monitor the dispensing of medication based on prescriptions, and non-dispensed medication without prescription.

Provide training sessions to improve communication skills with patients, as well as motivating pharmacy employees to do their work in the right way. Moreover, motivate employees morally and financially, through promotions, bonuses and giving them extra vacation.

References


Appendix 1 Research Questionnaire

Section 1. (Demographic Information)

Educational Level
- ☐ Less than secondary
- ☐ Diploma
- ☐ Bachelor's Degree
- ☐ Postgraduate Degree

Age:
- ☐ Less than 30
- ☐ 30-40
- ☐ 41-50
- ☐ More than 50

Gender:
- ☐ Female
- ☐ Male

Nationality:
- ☐ Saudi
- ☐ Non-Saudi

Section 2. (Research Dimensions)

<table>
<thead>
<tr>
<th>Serialnumber</th>
<th>Item</th>
<th>Totally agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>I do not agree</th>
<th>I totally do not agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1st dimension: accessibility to pharmaceutical services</td>
<td>The time of dispensing the medication is suitable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The pharmacy considers the separation between genders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Enough service windows to dispense medication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Service window is organized and not crowded by patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The time of taking a number by pharmacy staff to receive medication is suitable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Enough seats in waiting area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Digital screen facilitates access to the window to dispense medication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>2nd dimension: availability of medications</td>
<td>Quality of medications in terms of commercial brands is suitable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Verity of medications is suitable (syrup / pills in all concentrations)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>All medications prescribed by physicians are available over the year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>All medications are prescribed from the place providing the service (medications from specialty clinics to be dispensed from main pharmacy and medications from the family medicine clinic to be dispensed from family medicine pharmacy)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Alternatives of medications are provided in case of unavailability of medication prescribed by the physician</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>The amount of medications is dispensed in the case of patients outside the area for chronic diseases such as hypertension and diabetes mellitus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>3rd dimension: behaviors of the pharmacist</td>
<td>Level of explanation provided by the pharmacist is suitable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>The pharmacist is dealing with me with kindness and patience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>The pharmacist is respecting my privacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Communicate with the pharmacy staff by phone, easily and comfortably</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>The pharmacist is guiding me in cases where the medications are unavailable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>The pharmacist dispensed the medication to me in a proper way</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Special needs patients are being dealt with faster by the pharmacist</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>4th dimension: Patient satisfaction towards pharmacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>I am satisfied with accessing the pharmacy services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>I am satisfied with the availability of medications in the pharmacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>I am satisfied with the behaviors of the workers in the pharmacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>In general, I am satisfied with the pharmacy services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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