

Inpatient Satisfaction with the Quality of Services in Rehabilitation Hospital at Saudi Arabia: A retrospective study

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Abstract Background: Patient satisfaction is often claimed to be a critical indicator of the effectiveness and quality of the healthcare system as it is closely related to treatment outcomes and adherence to the prescribed course of treatment. The aim of the study is to explore inpatients' overall satisfaction with respect to the quality of rehabilitation services at tertiary hospital in Riyadh, Saudi Arabia. **Methods:** A retrospective cross-sectional study was conducted using secondary data collected from tertiary hospital in Riyadh, Saudi Arabia. Data was collected by the Patient Experience Measurement Program in the Ministry of Health (MOH) using the Press Ganey Survey from February 2023 to May 2023 only for inpatient of rehabilitation center of King Fahad Medical city. **Result:** A total of 832 study participants were part of the study, with their mean age being 33.51 years old. The overall patients' satisfaction score was 4.59 out of 5 (91.8 %). The highest scored domain was "Physical Therapy" and "Occupational Therapy", where both were rated as 93.4% equally, while the domain with the lowest rating was "Discharge" (88.6%). **Conclusion:** The current study indicated high inpatient satisfaction regarding the quality of services provided in the rehabilitation center at King Fahad Medical City Riyadh, Saudi Arabia. The demographics factors (age, gender, nationality) were not notably associated with the high levels of satisfaction.

Key Words patient satisfaction, rehabilitation, Saudi Arabia, quality of services

1. Introduction

Patient satisfaction is crucial to the success of rehabilitation due to various reasons. Firstly, the patient's active involvement is crucial for improving and acquiring new skills. Secondly, the proper attention of the patient and his/her family is crucial for the efficient management of chronic disease conditions; thirdly, continuous patient cooperation is important because rehabilitation lasts longer than in other medical settings [1]. Approximately 10% of the global population encounters various types of disabilities. The most prevalent causes of disability include chronic ailments such as cardiovascular and respiratory diseases, cancer, and diabetes, as well as injuries resulting from road traffic accidents, mental illness, malnutrition, and infectious diseases. The prevalence of individuals with impairments is increasing due to population expansion, the aging population, and advancements in medical technology that enhance and extend life. These issues are generating substantial requirements for health and rehabilitation facilities. Moreover, the livelihood of those with disabilities are affected by society's understanding and

response to impairment, necessitating modifications in both the physical environment and attitudes [2] "Rehabilitation" refers to a group of treatments intended to lessen disability and improve functioning in people with health conditions in relation to their surroundings. As a result, it is not limited to a percentage of disabled people or those with severe long-term impairments. People experiencing functional limitations brought on by old age, an accident, or other conditions may also benefit from rehabilitation [3]. Rehabilitation places a special emphasis on patient satisfaction as a quality indicator because patient perceptions, preferences, and motivation are so crucial to the field's success [4]. Patient satisfaction It has been claimed to be a critical pointer towards the efficacy and quality of the healthcare system as it is closely related to treatment outcomes and adherence to the prescribed course of treatment [5].

Physical rehabilitation medicine and other specialists in the health industry and other sectors provide rehabilitation as a health approach to help individuals with health conditions who are suffering or are likely to experience disability,

accomplish and sustain proper functioning while interacting with their environment. Physical, psychological, occupational, speech, and other types of therapy are all included in the broad rehabilitation category, as are support services. Access to proper rehabilitative therapies and general medical care should be available to people with impairments. One of the four health strategies prevention, treatment, and support is rehabilitation [6].

Enhancing a healthcare delivery system is increasingly reliant on patient feedback. Patient satisfaction is the feeling of relaxation or contentment that a patient has after receiving medical care. Thus, any health services provider must do patient care as their primary responsibility. It is one of the metrics used to measure a hospital's efficiency and effectiveness, where a hospital's effectiveness is correlated with its ability to give high-quality care and services. Patient satisfaction is the best indicator of how well the healthcare services are being provided [7]. A study from AlJohi et al. (2020) reported that the rehabilitation services applied to cancer patients at King Fahad Medical City, showed statistically significant functional gains. Hence, this result will help policymakers to have a standard of appropriate and helpful rehabilitation services to applied it to all cancer patients and in other healthcare facilities [8].

Patient satisfaction is a decisive indicator of the quality of care provided in a hospital, as it evaluates how well the provider has fulfilled the patient's basic expectations [9]. Delivering exceptional public or private healthcare services requires significant effort and expertise. Quantitative and qualitative academics, government politicians, planners, hospital management, and medical practitioners have found measuring patient satisfaction to be a particularly difficult undertaking. This challenge is based on the principles of contentment and quality, which are essentially limitless. Therefore, the concerns regarding patient satisfaction and the factors that contribute to high-quality hospital care are influenced by the patients' underlying psychological and philosophical beliefs, ranging from ideas about human wants to principles of open-market economics [10]. Several studies from Saudi Arabia have been conducted on this topic. It is clear that Saudi Arabia's healthcare system, which combines public and private institutions, places a high focus on hospital patient satisfaction [11]. It is crucial to identify the aspects that affect satisfaction because with this knowledge, staff members may improve service delivery by incorporating elements which are significant to and relevant to patients and their families [12]. However, the studies regarding inpatient satisfaction with quality of rehabilitation services in Riyadh city are limited and old. In Saudi Arabia, several studies have been published to assess the general satisfaction of patients, and many of them were done in PHC centers or tertiary centers, while the current research focused on inpatient satisfaction with rehabilitation services.

A. Aim of the study

The aim of the study is to explore inpatients' overall satisfaction with the quality of rehabilitation services at tertiary hospital in Riyadh, Saudi Arabia.

B. Research objectives

- 1) To assess inpatient satisfaction with the quality of rehabilitation services at tertiary hospital in Riyadh, Saudi Arabia.
- 2) To identify the most factors that have impact on inpatient satisfaction with the quality of rehabilitation services.

2. Materials and Methods

A. Study Design

A retrospective study was done to assess inpatients' satisfaction with rehabilitation treatments offered at a rehabilitation hospital in Riyadh, Saudi Arabia. This study was based on secondary data obtained from the MOH Patient Experience Measurement Program, which worked with an impartial third-party, Press Ganey. Press Ganey has established itself as a world leader in analysing and improving patient experience. Using a third party enhanced data quality by reducing bias during data collection and analysis.

B. Setting

The MOH Patient Experience Measurement Program, which is in charge of patients' experiences in Saudi Arabia, collected data from the MOH tertiary hospital (King Fahad Medical City- Rehabilitation Centre) in Riyadh, Kingdom of Saudi Arabia, using Press Ganey.

C. Sample size and technique

Patients who agreed to participate in the study completed an online survey about their MOH patient experience. The survey was issued to all patients' mobile phones upon their discharge from King Fahad Medical City's rehabilitation program. The statistics were requested from the Patient Experience Measurement Program for the Inpatient Rehabilitation Centre at King Fahad Medical City from February to May 2023.

D. Inclusion and exclusion criteria

All completed surveys submitted from inpatients at King Fahad Medical City (rehabilitation building) in Kingdom of Saudi Arabia, between February 2023 to May 2023. Incomplete surveys were excluded.

E. Study tools

This research was based on secondary data that were retrieved from the MOH Patient Experience Measurement Program. The survey first consists of Socio-demographic questions (gender, nationality, and age). Second it consists of 47 questions grouped into nine domains (Appendix 1): Rehabilitation Doctor (five questions), Nursing Care (six

questions), Physical Therapy (four questions), Occupational Therapy (four questions), Your Speech, Language Pathology & Swallowing Therapy (four questions), Your Prosthetist or Orthotist (four questions), Discharge (two questions), Our Care for You (ten questions), and Overall Assessment (six questions). The rating was scored as follows: very poor (score =1), poor (2), fair (3), good (4), and very good (5).

F. Data analysis

The data from the online Press Ganey poll was then saved to an Excel file (Microsoft® Excel®, Microsoft® Office 2019, Microsoft® Corp, Redmond, WA, USA). The data were statistically analysed using the IBM SPSS Statistics 25.0 (Armonk, NY, USA). The significance level was chosen at $P < 0.05$. Descriptive statistics (means, SDs, and proportions) were calculated. Because these variables had two categories each, an unpaired t test was employed to evaluate mean satisfaction between gender categories (male vs female) and nationality (Saudi vs non-Saudi). Because age was divided into four categories, a one-way ANOVA test was employed to evaluate the mean level of satisfaction between them. By using one-way ANOVA test, we can compare the means across multiple groups, and find out if there is any significant difference in mean values of response variables for different categories.

G. Ethical Considerations

The study followed the Declaration of Helsinki and was approved by the Ethics Committee of the Central Institutional Review Board (H-01-R-009) and the MOH Data Office, with the IRB log number 23-51 E. Secondary data for this study were sought from the Patient Experience Measurement Program, who were happy to provide data to academics. The participants faced no predicted risks in terms of data privacy and confidentiality, and no personal information was disclosed. Furthermore, the data utilised was securely saved and would be erased after a specified length of time.

3. Results

Table 1 shows the characteristics of respondents. The survey was completed by patients themselves (56 %), or by parents/guardians (44 %). The gender distribution was almost equal (Male 50.5% versus Female 49.5%). Most of participants were Saudi (90.7%). The age of participants had a range of 0-99 years old, with mean of 33.51 (SD:23.6) years old. The median of age was 33 years old, which is a result of the normal distribution of participants.

Table 2 shows the overall and means (SD) of the satisfaction scores among the various domains. The mean of overall satisfaction scores was high; 91.8% (SD: 0.84). Among the domains, "Discharge" was the lowest rating (88.6%) followed by the domain of "Your Prosthetist or Orthotist"; 90.6%. The highest scored domain was "Physical Therapy" and "Occupational Therapy", where both were rated as 93.4% equally.

Variable	Sub-category	Frequency	Percentage %
Who is completing this survey?	Patient	466	56.0 %
	Parent/Guardian	366	44.0 %
Gender	Male	420	50.5 %
	Female	412	49.5 %
Nationality	Saudi	755	90.7 %
	Non-Saudi	77	9.3 %
Age (in Years)	1-17	261	31.4 %
	18-35	192	23.1 %
	36-50	156	18.8 %
	Above 50	223	26.8 %
Range: 1-99, Median: 33 , Mean: 33.51 , SD: 23.6			

Table 1: Demographic characteristics of participants (n=832)

Domain	Mean of satisfaction score (% of 5)	SD
Rehabilitation doctor	4.57 (91.4 %)	0.89
Nursing care	4.60 (92 %)	0.86
Physical therapy	4.67 (93.4 %)	0.73
Occupational therapy	4.67 (93.4 %)	0.74
Your speech, language pathology & swallowing therapy	4.63 (92.6 %)	0.83
Your prosthetist or orthotist	4.53 (90.6 %)	0.92
Discharge	4.43 (88.6 %)	1.04
Our care for you	4.62 (92.4 %)	0.80
Overall assessment	4.66 (93.2 %)	0.76
Mean score of all domains	4.59 (91.8 %)	0.84

Table 2: The overall results of satisfaction score of the nine domains of the Press Ganey survey in rehabilitation center settings

As seen on Table 3, when compared the means of satisfaction between Gender categories (Male vs Female), there was no statistically significant difference. It is not constant about which gender is more satisfied among the domains, because male participants showed higher satisfaction in some domains, while showed lower satisfaction in other domains. However, these differences were not statistically significant.

The comparisons of satisfaction scores reported by participants according to their nationality are shown in Table 4. Non-Saudi participants were less satisfied with domains of "Your Speech, Language Pathology & Swallowing Therapy" and "Your Prosthetist or Orthotist" than Saudi participants, which were statistically significant. Other domains showed non-constant variations between Saudi and Non-Saudi scores. The mean of satisfaction scores for all domains showed higher satisfaction among Saudi participants, although was not statistically significant.

The comparisons between satisfaction scores according to Age groups are presented in Table 5. The results showed wide variations between age groups and their satisfaction scores of various domains. Only one domain showed statistically significant differences (Your Prosthetist or Orthotist). The age group of (36-50) was the least satisfied with this domain, while the younger age group (18-35) was the highest satisfied group with this domain.

Domain	Male score/5 (SD)	Female score/5 (SD)	t	95% CI	P-value
Rehabilitation doctor	4.54 (0.92)	4.60 (0.86)	0.9714	-0.1814 to 0.0614	0.3316
Nursing care	4.60 (0.85)	4.59 (0.86)	0.1687	-0.1065 to 0.1265	0.8661
Physical therapy	4.69 (0.68)	4.65 (0.78)	0.7889	-0.0596 to 0.1396	0.4304
Occupational therapy	4.67 (0.72)	4.67 (0.78)	0.0000	-0.1022 to 0.1022	1.0000
Your speech, language pathology & swallowing therapy	4.65 (0.83)	4.60 (0.83)	0.8688	-0.0631 to 0.1631	0.3852
Your prosthetist or orthotist	4.57 (0.84)	4.48 (1.00)	1.4067	-0.0357 to 0.2157	0.1599
Discharge	4.38 (1.08)	4.48 (1.00)	1.3851	-0.2418 to 0.0418	0.1664
Our care for you	4.58 (0.84)	4.66 (0.75)	1.4481	-0.1885 to 0.0285	0.1480
Overall assessment	4.66 (0.75)	4.67 (0.78)	0.1885	-0.1142 to 0.0942	0.8505
Mean score of all domains	4.59 (0.83)	4.60 (0.85)	0.1717	-0.1244 to 0.1044	0.8637

Table 3: Comparisons of the satisfaction scores by Gender (MALE versus FEMALE) Unpaired t test

Domain	Saudi score/5 (SD)	Non-Saudi score/5 (SD)	t	95% CI	P-value
Rehabilitation doctor	4.56 (0.91)	4.57 (0.87)	0.0922	-0.2230 to 0.2030	0.9265
Nursing care	4.59 (0.87)	4.69 (0.68)	0.9784	-0.3008 to 0.1008	0.3282
Physical therapy	4.68 (0.73)	4.64 (0.67)	0.4614	-0.1303 to 0.2103	0.6447
Occupational therapy	4.68 (0.73)	4.55 (0.77)	1.4810	-0.0425 to 0.3025	0.1390
Your speech, language pathology & swallowing therapy	4.67 (0.78)	4.10 (1.44)	5.5292	0.3675 to 0.7725	0.0001*
Your prosthetist or orthotist	4.55 (0.90)	3.88 (1.17)	6.0351	0.4519 to 0.8881	0.0001*
Discharge	4.44 (1.03)	4.36 (1.10)	0.6451	-0.1636 to 0.3236	0.5190
Our care for you	4.62 (0.81)	4.69 (0.67)	0.7331	-0.2576 to 0.1176	0.4637
Overall assessment	4.65 (0.77)	4.76 (0.62)	1.2139	-0.2880 to 0.0680	0.2251
Mean score of all domains	4.61 (0.83)	4.47 (0.89)	1.4004	-0.0564 to 0.3364	0.1618

Table 4: Comparisons of the satisfaction scores by Nationality (Saudi versus Non-Saudi) Unpaired t test

Domain	1-17 score/5 (SD)	18-35 score/5 (SD)	36-50 score/5 (SD)	Above 50 score/5 (SD)	Sum of Squares (SS)	Mean Squares (MS)	F value	P-value
Rehabilitation Doctor	4.58 (0.87)	4.56 (0.88)	4.57 (0.90)	4.52 (0.97)	0.471	0.157	0.192	0.9022
Nursing Care	4.68 (0.73)	4.57 (0.88)	4.57 (0.92)	4.55 (0.92)	2.540	0.846	1.157	0.3249
Physical Therapy	4.68 (0.62)	4.65 (0.74)	4.73 (0.77)	4.68 (0.75)	0.557	0.185	0.365	0.7780
Occupational Therapy	4.78 (0.53)	4.65 (0.76)	4.64 (0.82)	4.61 (0.82)	4.122	1.374	2.604	0.0507
Your Speech, Language Pathology & Swallowing Therapy	4.76 (0.56)	4.59 (1.00)	4.62 (0.84)	4.60 (0.88)	4.545	1.5150	2.265	0.0796
Your Prosthetist or Orthotist	4.36 (1.00)	4.73 (0.65)	4.07 (1.61)	4.66 (0.71)	49.145	16.382	15.876	0.0000*
Discharge	4.47 (1.00)	4.36 (1.05)	4.51 (0.93)	4.39 (1.14)	2.713	0.904	0.838	0.4729
Our Care for You	4.63 (0.77)	4.64 (0.78)	4.66 (0.73)	4.57 (0.89)	0.907	0.302	0.473	0.7008
Overall Assessment	4.71 (0.71)	4.65 (0.73)	4.66 (0.75)	4.62 (0.84)	1.022	0.340	0.592	0.6203
Mean score of all domains	4.63 (0.75)	4.60 (0.83)	4.56 (0.92)	4.58 (0.88)	0.563	0.187	0.267	0.8486

Table 5: Comparisons of the satisfaction scores by Age groups (one-way ANOVA)

4. Discussion

Enhancing a healthcare delivery system is increasingly reliant on patient feedback. Patient satisfaction is the feeling of happiness or fulfillment that a patient has after receiving medical care. Thus, any provider of health services must do patient care as their primary duty. It is one of the metrics used to measure a hospital's efficiency and effectiveness, where a hospital's effectiveness is correlated with its ability to give high-quality care and services. Patient satisfaction is the best indicator of how well the healthcare services are being provided [7].

A total number of 832 patients and patients' guardians were involved in the current study, which stressed and examined the variables influencing those participants' satisfaction. The findings of the current study verified that most of the participants were content with the provided rehabilitation services, with a satisfaction rate of 91.8%. The results indicates that there is an overall satisfaction regarding the provided rehabilitation services in King Fahad Medical City.

A number of variables that patients often mentioned were tested to determine how satisfied patients were. The researchers then assessed the data to implement new programs

and policies that should increase patient satisfaction and lead to improved outcomes. There is an important finding to know the most services that needs to focus on. According to our study the patients were satisfied with physical therapy and occupational therapy services where they not satisfied with discharge services. The interactive qualities of therapists and the caregiving method were found to be important determinants of patient satisfaction in a systematic review of research done in English-speaking nation. They discovered that the predictor of satisfaction across the board in the sample was the Functional Independence Measure (FIM) motor scores, which suggested improved agility after discharge in patients with various orthopedic impairments [1]. Also, communication has important role for patient satisfaction, a study done on inpatient, outpatient and emergency care patients in tertiary hospital in Riyadh showed the importance of communication factor in patient satisfaction; it reported there was a significant satisfaction with physicians, social workers, and patient relations officers who introduced themselves to the patients. In contrast, the patient showed significant dissatisfaction regarding the phlebotomist, who is not introducing them self to the patient and not explaining the treatment

procedures [11]. In addition, study by Medina-Mirapeix et al. (2017) done on patients who received physical rehabilitation during hospital stay in an acute care hospital in Murcia, Spain. Stated that lack or absence factors of communication and coordination among involved health providers may cause a gap in patient care, and this will impact patient satisfaction, clinical outcomes, and perception of quality and safety [13]. In point of fact, there are issues with care coordination and discharge planning are fairly common, according to research on the quality of hospital care conducted internationally, most of the issues stated can be changed by improving this continuity of care for patients, which may be the result of virtuous interactive skills of the providers, communication flow between providers, and/or their individual contribution in the care process [13].

The current study showed no statistically significant on demographic factor (gender). These results build on existing evidence of study done on inpatient with severe brain injury who receive physiotherapy services done by Leung et al. (2017b) reported that, the demographic factor (gender) had no effect on patients' overall satisfaction [14]. In addition, a recent study done by Aljarallah et al. (2023) showed no significant results when compare level of satisfaction in term of gender [9]. In contract of study was conducted by Almutairi et al. (2018), showed a significant finding which males were more contented than females (P-value=0.013) [15].

The current study also revealed that patient satisfaction was a high when they were <30 years old only in the domain of (Your Prosthetist or Orthotist), other domains showed no significant results. Nevertheless, as patients grow older and familiarize themselves with medical care, their expectations may diminish in tandem with the decrease in the frequency of visits necessary for their family's healthcare. This apparently results in an elevated level of contentment. As individuals reach the age of 60-65 years, their visits to the medical institution increase due to health issues associated with aging [9].

Diverse outcomes are reported in the rehabilitation literature, which links approval with different demographic characteristics, organisations, procedures, and therapy results. Age may impact rehabilitation satisfaction, with older persons reporting higher satisfaction levels; other demographic factors do not appear to impact satisfaction [1]. Regarding the nationality factor, there was no significant results when we compare the level of satisfaction between Saudi and non-Saudi patients. A study was done in PHC centers and tertiary hospitals in southern Saudi Arabia, Albaha that include inpatients and outpatients. Indicate that gender, level of education, and income level have a significant association with the measure of patient satisfaction [15]. Patients of the male gender, with high education and income- satisfaction, had greater satisfaction than other patients. On the other hand, the patient was unsatisfying with the lack of explanation of their health issues [15].

Moreover, A recent study on patients' satisfaction in tertiary care facilities of Riyadh done by Aljarallah et al.

(2023), indicated that sociodemographic factors positively affected patient satisfaction as patients with high education demonstrated a higher level of satisfaction; in addition, those with jobs showed higher satisfaction than those without jobs [9]. On other hand study done on inpatient with severe brain injury who receive physiotherapy services showed that, the Demographic factors (age, sex, and education), injury severity, real therapy time, and expectation fulfillment which had no effect on patients' overall satisfaction [14].

The use of surveys, the quantity of published research, and the reliability of the reported findings on the subject matter of rehabilitation continue to be rather inadequate, despite the widespread utilisation of patient satisfaction surveys and an increase in the number of research in the field of patient satisfaction. There is no optimum standard for measuring patient satisfaction, and the rehabilitation industry still needs reliable and consistent assessment instruments to evaluate patient satisfaction in a range of settings [1].

The relational qualities of therapists and the caregiving procedure were found to be important elements of patient satisfaction in a systematic review of research done in English-speaking nations. Aboabat & Qannam discovered that the best predictor of satisfaction across the board in the sample was the Functional Independence Measure (FIM) motor scores, which suggested improved mobility after discharge in patients with various orthopedic impairments [1].

5. Strength

The research comprised a huge number of participants so, it's representative number. The study contributors are of both genders, different nationalities, and all age groups.

6. Limitation

One of the limitations of the current study was the absence of open-ended questions to guarantee a thorough understanding of the participants' perceptions. Another limitation is this research was done on one rehabilitation hospital so, to be more representative of inpatient satisfaction of Riyadh region.

7. Recommendations

Conducting additional research to make a more comprehensive analysis and identify other factors that are strongly associated with and can predict the satisfaction of inpatients with rehabilitation services in Riyadh, Saudi Arabia. This recommendation is made because the current study is mostly descriptive in nature.

8. Conclusion

The current study showed high inpatient approval concerning the quality of services provided in the rehabilitation department at King Fahad Medical City Riyadh, Saudi Arabia. The demographics factors (age, gender, nationality) were not significantly linked to high levels of satisfaction. We recommend additional studies to deliver further comprehensive investigation and stress on more interrelated and predictive factors of inpatients' satisfaction with rehabilitation services

in Saudi Arabia, mostly since the current study is only descriptive in nature.

Conflict of interest

The authors declare no conflict of interests. All authors read and approved final version of the paper.

Authors Contribution

All authors contributed equally in this paper.

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