

## Original Article

# A Study of Patient Satisfaction Level in Inpatient Spine Department of a Tertiary Care Multispecialty Hospital

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## Abstract

**Background:** Patient satisfaction at spine surgery centers is a matter of concern. In specialized surgeries like spine, the satisfaction of a patient is not merely because of surgical outcomes but also empathy of doctor, rehabilitation programs, and friendliness of the hospital. **Aims and Objectives:** This study aims to investigate the prognosis and satisfaction level of patients/relatives operated with spinal surgery. This should not only help the spinal hospitals to know the ways to improve the patient outcome but also methods to provide better services. **Materials and Methods:** The study was conducted by carrying out survey among 39 patients and their relatives at inpatient department of spine surgical unit using structured questionnaire and analyzing the data using SPSS software. The patients were examined before and after surgery and their visual analog score (VAS) and Oswestry disability index (ODI) were also documented. The SERVQUAL methodology was also studied to understand if it could be implemented in the study to understand better and make the study more conclusive. **Results:** The study composed of 39 individuals with an average age of  $75.6 \pm 10.2$  years. 39% of the study group were female and 61% of males. The ODI score in post-operative stage ( $18.97 \pm 12.97$ ) was significantly reduced as compared to pre-operative stage ( $76.66 \pm 17.23$ ) ( $P < 0.05$ ). The VAS score in post-operative stage ( $1.48 \pm 1.8$ ) was also significantly reduced as compared to pre-operative stage ( $9.51 \pm 0.22$ ) ( $P < 0.05$ ). 92% of people were satisfied with the housekeeping services while 98% were satisfied with the medical care provided. 95% of people were satisfied by the behavior of staff and nurses. The nursing department, cleanliness, and behavior of the doctor satisfied 90%, 87%, and 84.59%. The admission and reception satisfied only 66%. The SERVQUAL study was not incorporated because the questionnaire designed through this methodology requires to be administrated by face-to-face interviews along with moderate-to-large sample size for statistical reliability. **Conclusion:** This study has clearly shown that satisfactory results are obtained after spine surgery. However, the results are better when performed by a fellowship trained surgeon. Moreover, doctors who spend time in explaining the ailments and possible outcomes to the patients have more satisfactory results. A caring attitude of the staff and empathy in interaction makes a lot of difference in the success of the practice of a surgeon.

**Keyword:** Patient satisfaction, Spinal cord injury, SERVQUAL

## Introduction

The dissatisfaction to medical treatment dates back to ancient time. Alexander the great is quoted as saying "I die by the help of too many physician." The emperor Adrian directed the following words to be inscribed on his tomb "A multitude of physicians have destroyed me." Patient satisfaction can be defined as fulfillment

or meeting of expectation of a person from a service or product. When a patient comes to a hospital, he has a preset image of the various aspects of the hospital as per the reputation and cost involved. Although their main expectation is getting cured and going back to their work, there are other factors, which affect their satisfaction. Sometimes, they might have rated a hospital very

low on the basis of information they have got from different sources, but they find it above their expectation and they are satisfied. Similarly, if they have got a very high expectation from a hospital, but if they find it below their expectation, they will not be satisfied.

Hospitals have expanded in terms of availability of specialties, improved technologies, facilities, and increased competition. The expectations of patients and their relatives have increased many folds. Consumer expectation in any medical experience influences the people to decide about the medical facility they are going to use. High expectation from a medical organization is a positive indicator of its reputation in the society and is very important for attracting patients, whereas low expectation deters patients from taking a timely medical help, thus negatively affecting patient as well as the medical care provider. However, a very high and unrealistic expectation may lead to dissatisfaction despite reasonable good standards of medical practice.

Previously, there were very few government hospitals which charged the patient for treatment. Hence, the expectations were also very minimal. However, now, the scenario has changed. The hospitals (even government) have started charging the patient in the name of user charges resulting in very high cost for providing care. With the advent of Consumer Protection Act (1986), the patient's expectation has also gone very high. Now, hospitals have to be very careful about patient dissatisfaction, to avoid any unnecessary litigation. Knowledge of expectation and the factors affecting them, combined with knowledge of actual and perceived health-care quality provides the necessary information for designing and implementing programs to satisfy patients. Human satisfaction is a very complex concept that is affected by a number of factors such as lifestyle, past experience, future expectation, and the values of individual and society in terms of ethical and economical standings.

Over the past 20 years, patient satisfaction surveys have gained increasing attention. Moreover, a survey conducted in a teaching hospital in France confirmed that reported data from satisfaction surveys led to the implementation of some improvement initiatives mainly in a hospital environment but no significant change in care provider's behavior such as interpersonal skills.<sup>[1]</sup> In terms of marketers understanding the customer satisfaction and service quality research can be done with the help of SERVQUAL, which suggests that service quality is fundamentally a gap between customer expectations regarding a service provider's general class and their estimation of its actual performance.<sup>[2]</sup> SERVQUAL is a multidimensional research instrument, designed to capture consumer expectations and perception of a service on the basis of its five dimensions of service quality. In its questionnaire, it consists of primarily five dimensions which are further organized in a 22 expectation item and 22 perception item in a questionnaire. Including all the parameters, the questionnaire becomes 66

questions long. To get best of the result, these questions are asked in a face-to-face interview taking more than an hour. Moreover, it requires a moderate-to-large sample size for statistical reliability.<sup>[3]</sup>

Spinal cord injury (SCI) is often a catastrophic condition requiring chronic care.<sup>[4]</sup> Despite an enormous amount of interest and research in SCI and an increased understanding of the secondary injury cascade pathways involved after an acute SCI, the neurological prognosis for a patient with severe SCI remains dismal. Furthermore, the majority of the patients with SCI are young, and the economic and societal impact are enormous, both to the immediate family and the society at large.<sup>[4]</sup> This study aims to investigate the prognosis and satisfaction level of patients/relatives operated with spinal surgery. This should not only help the spinal hospitals to know the ways to improve the patient outcome but also methods to provide better services.

## Materials and Methods

The study was conducted by carrying out survey among 39 patients and their relatives at spine surgical unit using structured questionnaire and analyzing the data using SPSS software. Further, the data collected were also tested and studied on the basis of the certain parameters of the SERVQUAL model. 39% were female and rest were male. The patients were examined before surgery and their visual analog score (VAS) and Oswestry disability index (ODI) were documented. All patients underwent spinal decompression and fixation surgery by the same team of surgeons. Postoperatively, the patients were examined with ODI and VAS scores and the data analyzed. The significance in the scores was calculated using the SPSS software. "*P*" < 0.05 was considered statistically significant. The study about the patient satisfaction in spine department was conducted by circulating structured questionnaires as mentioned in Table 1 as among 39 patients and relatives of private and general ward. A questionnaire was drafted for the patients and their relatives pertaining to facilities provided and the scope of improvement. The data were analyzed and interpreted to make the required changes to the hospital services. Thus, survey covered the experience of the inbound patients' satisfaction level along with the accompanying relatives with the patient.

## Results

The study composed of 39 individuals with an average age of  $75.6 \pm 10.2$  years. 39% of the study group were female and 61% of males [Table 2]. There were 20 individuals who underwent surgery for lumbar pathology. These were either lumbar decompression with or without fusion or simple discectomies. Six patients underwent surgery for cervical pathologies in the form of either posterior cervical decompression and fixation or anterior cervical discectomy and fusion. 11 patients underwent procedures for dorsal spine pathologies. Two patients underwent deformity corrections for spine [Figure 1]. The ODI

**Table 1: Patient satisfaction survey questionnaire**

Patient satisfaction survey				
Name of the doctor this survey is about:				
We are interested in receiving your feedback about the care provided at our office. Please take a few minutes this survey and return it to us. Your responses are important to us				
Please circle your responses				
How satisfied are you with the following?	Very dissatisfied	Satisfied	Very Satisfied	Extremely satisfied
1. Ease of making appointment for checkups (physical exams, well visits, routine follow-up appointments)?	2	3	4	5
2. Ease of making appointments for sickness?	2	3	4	5
3. Ease in contacting your doctor when our office is closed (nights and weekends)?	2	3	4	5
4. Ease in speaking directly with your doctor by telephone when you call during office hours?	2	3	4	5
5. The time it takes someone from our office to respond when you call the office with an urgent problem?	2	3	4	5
6. Waiting time in our office?	2	3	4	5
7. Ease in obtaining follow-up information and care (test results, medicines, and care instructions)?	2	3	4	5
8. Overall medical care at your doctor's office?	2	3	4	5
9. Our office's appearance?	2	3	4	5
10. Our office's convenience (location, parking, hours, and office layout)?	2	3	4	5
11. The way we teach you about improving your health?	2	3	4	5
12. The way your doctor involves other doctors and caregivers in your care when needed?	2	3	4	5



**Figure 1: Showing post-operative spine surgery in a patient of scoliosis (Spinal Deformity)**

score in post-operative stage ( $18.97 \pm 12.97$ ) was significantly reduced as compared to pre-operative stage ( $76.66 \pm 17.23$ ) ( $P < 0.05$ , Student's *t*-test) [Table 2]. The VAS score in post-operative

stage ( $1.48 \pm 1.8$ ) was also significantly reduced as compared to pre-operative stage ( $9.51 \pm 0.22$ ) ( $P < 0.05$ , Student's test) [Table 2]. 92% of people were satisfied with the housekeeping

services while 98% were satisfied with the medical care provided. 95% of people were satisfied by the behavior of staff and nurses. The nursing department, cleanliness, and behavior of the doctor satisfied 90%, 87%, and 84.59%. The admission and reception satisfied only 66% [Tables 3 and 4].

**Discussion**

History has shown that many of the spine surgeries have been unsuccessful in the past. This makes the current generation has little faith in the spinal procedures.<sup>[5]</sup> However, over a period of time, spine surgery has shown a lot of developments from robotic procedures to navigation and neuromonitoring. This has led to little post-operative paralysis and better results.

This study shows that the patients who underwent spinal surgeries had satisfactory results by both VAS score and ODI scores.<sup>[6]</sup> There is plethora of literature documenting the safety of spine surgery and how the recent procedures are free from deadly effects of paralysis.<sup>[4]</sup> However, a number of complications have been reported in literature ranging from wound infections, root damage, implant displacement, leak of cerebral fluid, excessive blood loss, and paralysis. No surgery, as such, is free of complications, spine being no exception.<sup>[4,7]</sup>

Our data correlated with a number of studies which have shown satisfactory results after spine surgery. In accordance with our

**Table 2: Epidemiological parameters and results of the study**

Category	Responses
Males	61%
Females	39%
Number of cervical surgeries	6
Number of dorsal surgeries	20
Number of lumbar surgeries	11
Number of deformity surgeries	2
Pre-operative VAS score	9.87±0.22
Post-operative VAS score, P value	1.48±0.22 P<0.05
Pre-operative ODI score	76.66±17.23
Post-operative ODI score, P value	18.97±12.97 P<0.05

VAS: Visual analog score, ODI: Oswestry disability index

**Table 3: Patients/relatives response to questionnaires in the present study**

Services	Extremely satisfied	Very satisfied	Satisfied	Very dissatisfied	Extremely dissatisfied
Admission and Reception	4	5	17	8	5
Housekeeping	19	8	9	2	1
Nursing	9	12	14	3	1
Cleanliness	17	9	8	5	0
Medical care	14	15	9	1	0
Behavior of staff and nurses	15	10	12	2	0
Behavior of doctors	16	8	9	5	1

findings, literature has even shown that the most common procedure performed in any spinal pathology deals with lumbar spine.<sup>[8]</sup> Our data had maximum of lumbar spinal surgeries in the form of discectomy of decompression and instrumentation.

VAS and ODI scores are acceptable criteria to analyze the post-operative outcomes after any surgeries related with spine. Although a number of other scores have been documents, VAS and ODI remain to be widely used and most accepted scores. Individual scores may also be used for cervical spine (Nurick score, Frankel score, and Neck Disability Index) and other pathologies, but they are of use while studying any particular surgery or a body part.<sup>[4]</sup> Role of neuromonitoring has been recently brought into notice to the general public. This technique measures the potential of the nerves while the surgery is in process. This helps to know the nerve activity and any damage occurring to the nerve can be quickly noted during the procedure. Thus, it helps in reducing the chances of post-operative paralysis.

An important issue to take care of during any spine surgery is the post-operative rehabilitative program.<sup>[4]</sup> An individual can only recover faster after a spinal surgery after a vigorous and meticulous physiotherapy session, thus preventing the atrophy of the muscles. The purpose of a surgeon or a physiotherapist is to make the patient walk and make an attempt to do it. Satisfaction of an individual is based on his or her ability to mobilize.<sup>[9]</sup> Bed rest is not a solution to any spinal ailments, especially when surgery is necessary. Prolonged bed rest and negligence towards the spinal ailments by avoiding surgery in the time of need, can deteriorate the condition of the patient. Further, it can increase the recovery time and make it difficult for the patient in the long term.

Furthermore, the study about the patient satisfaction in spine department was conducted by circulating structured questionnaires as mention as Appendix-2 among 39 patients and relatives of private and general ward. The question asked was about the process of patient getting admitted, their reception in the ward, room preparation, behavior of doctors, nurses, orderlies, preference to the hospitals and on what basis, cleanliness of toilets, etc.

**Table 4: Percentage satisfaction response of the patients/relatives in spine department**

Services	Extremely satisfied	Very satisfied	Satisfied	Very dissatisfied	Extremely dissatisfied
Admission and reception	10.25	12.8	43.5	20.5	12.82
Housekeeping	48.7	20.5	23.07	5.12	2.56
Nursing	23.07	30.7	35.89	7.69	2.56
Cleanliness	43.58	23.07	20.5	12.82	0
Medical care	35.89	38.86	23.07	2.56	0
Behavior of staff and nurses	38.86	25.64	30.76	5.12	0
Behavior of doctors	41.02	20.5	23.07	12.82	2.56

Patient satisfaction is not a clearly defined concept although it is identified as an important quality outcome indicator to measure success of the services delivery system. Patient evaluation of care is important to provide opportunity for improvement such as strategic framing of health plans, which sometimes exceed patient expectations and benchmarking. The advantages of patient satisfaction surveys rely heavily on using standardized, psychometrically tested data collection approaches. Therefore, a standardized tool needs to be further developed and refined to reflect positively on the main goals of patient satisfaction survey. There was a common salient determining factor in the survey which was interpersonal skills in terms of courtesy, respect by health-care providers in addition to communication skills, explanation, and clear information, which are more essential and influential than other technical skills such as clinical competency and hospital equipment.

Although feedback from patient satisfaction surveys is an established yardstick for health-care quality improvement plans, they are still not being systematically and extensively utilized for developing improvement initiatives. Furthermore, it is agreed that a patient satisfaction questionnaire is considered to be a significant quality improvement tool. It thus provides the opportunity for organization managers and policy-makers to yield a better understanding of patient views and perceptions, and the extent of their involvement in improving the quality of care and services. Furthermore, managers implement effective change by unfreezing old behaviors, introducing new ones, and refreezing them for better health care.<sup>[10]</sup> There were two open-ended questions for their opinion about the problems and suggestions for the improvement of services:

- Admission and reception: There is a long queue of patients waiting for admission causing delay in admissions of seriously ill patients. Hospital is full of patient; hence, critical patients need to wait sometime. Furthermore, during the monsoon season, emergency patients load also get raised exponentially. Hence, people had to struggle getting into the care of the health-care facility.
- Housekeepings: Patients and their relative were genuinely happy and thankful to the services provided in the room. Room was neat and tidy. They were always ready. There

were little worries around the room charges and time consumed in shifting patients to the room.

- Nursing services: Over the year, hospital has become a busy place. Hence, the number of working nurse was required to increase. More number of nurses should be posted for patient care.
- Cleanliness of toilets: The cleanliness of toilets should be improved. It may be done twice a day or more frequently. Frequent and surprise checks by sanitary inspectors and administrators will instill a sense of responsibility and alertness in sanitary attendants.
- Doctors: Although some of the responses showed that the doctors were empathic yet majority (92%) of patients felt that the doctors were less sensitive and empathic to their problems. The new generations of doctors should be trained and value of empathic care must be reemphasized. All tests to be carried out were not told at the time admission, which caused frequent delay in treatment and procedures. Patients require more information about their disease and treatment. Patient should be explained in detail about the tests and procedures to be carried out and these should be preplanned and if possible may be got done from the OPD itself. There were no guidelines for attendants about care of post-operative patients.
- Behavior of nurses: Over the years, a number of senior nurses have increased and working staff nurses have decreased. This is causing increased stress among them, leading to some downfall in their behavior.

**Conclusion**

This study has clearly shown that satisfactory results are obtained after spine surgery. VAS and ODI scores decrease significantly after a spinal surgery procedure which brings about patient satisfaction. However, the results are better when performed by a fellowship trained surgeon. Moreover, doctors who spend time in explaining the ailments and possible

outcomes to the patients have more satisfactory results. Engaging the patients in other activities or evaluation by junior doctors during the long hours of wait in OPD is another practice which provides satisfaction. A caring attitude of the staff and empathy in interaction makes a lot of difference in the success of the practice of a surgeon.

### Limitation of the study

The study is primarily based in a corporate hospital for patients struggling with spinal cord ailments and is undergoing surgeries. These patients are indoor patients. The study is focused on the patient-relative satisfaction with the circumstances faced during this environment. Hence, the sample size is small and availability of the research paper from the same field is also limited. Unlike corporate hospitals, government hospitals do have high foot fall and patients, but there also SCI patients are limited.

### Ethics and consent

The study has followed the Helsinki protocol and was ethically accepted by the Institutional Ethical Committee. The consent from each patient was taken before adding them in the study.

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