

ANALYSIS OF HOSPITAL SYSTEM FEATURES IN INDORE

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ABSTRACT

The hospitals at Indore are among the excellent health care centres in the city. They are known to offer the ultimate medical and therapeutic facilities in Madhya Pradesh. These hospitals work hand in hand for prevention of the communicable, infectious diseases and maintain well-being of the people in city. Healthcare or hospital management system is important to manage or touch up with the latest technology. The hospital management system feature list is concentrated on providing the smooth experience of customers and staff. This research project is done by preparing structured questionnaires based on hospital features which are necessary for any hospital industry. 247 responses were recorded and analysed using software IBM SPSS STATISTICS 20, the methodology includes data collection and screening, statistical methods like factor analysis and One-way Anova are used. Initially in our research, screening of data was done by using factor analysis method. After the dimension reduction we have reduced the 24 variables into 3 factors which consist of 21 super variables. Later, as per the interpretation (through one-way Anova) 01 variable showed statistically significant difference between the various group means. And the rest 20super variables showed not statistically significant difference between the group means. The results obtained says, monitoring patient satisfaction level will help in advancement of services in hospital and to ensure sustainable growth and gain competitive advantage in healthcare sector, infrastructure plays a role to provide services efficiently. At last after the findings and discussions we concluded the study by stating the result being obtained by fulfilling all the objectives of our research project.

Keywords: Features, Hospital industry, Indore, infrastructure, performance, satisfaction level.

1. INTRODUCTION

Healthcare has become one of the biggest sectors in India both in terms of income and employment. The Indian hospital sector is growing at a rapid pace due to its strengthening of public and private player's coverage, infrastructure and increased investment. Indian healthcare providing system is divided into two main components -public and private. State, i.e. public healthcare network, provides a limited number of secondary and tertiary care institutions in key cities and focuses on delivering basic healthcare services in rural areas in the form of primary healthcare centres (PHCs). Most secondary, tertiary and quaternary care institutions are provided by the private sector with a significant concentration in metro, tier I and tier II cities. Indian healthcare also has room for development and growth that can be Calculated and measured by continuous improvement and advancement in hospital services. Both the public and private sectors are making immense efforts to develop quality care measures and to innovate new ways of confronting long-term challenges and objectives. Indore (Tier II district) is the most populous city in Central India and the largest. The city sees an immense influx of people from nearby areas for different purposes each day. With the advent of hospitals such as Medanta, Bombay Hospital and CHL Cancer Hospital, here is no longer a need to go to the metro to visit and operate a doctor. Today Indore has over 50 hospitals able to handle thousands of patients together. Indore has now become a hub for medical services, and boasts state-of-the-art facilities and connectivity that further strengthens the city's healthcare sector.

2. LITERATURE REVIEW

Healthcare has recently received much attention as it is the fastest growing service industry around the world. This heading defines the review related to literatures which formed the background of this research project.

The study by Sing MM, Chadda RK, Bapna SJ (1 January 2003) revealed experience of 45 patients and 59 family members picked from a psychiatric hospital's outpatient department. Issues such as performance, punctuality, doctor's and other staff behavior, waiting time, drug supply and hospital diet and cleanliness etc. were investigated. The services provided were appreciated by over ninety percent of patients and their escorts. Most (75-80 percent) were pleased with drug supply, diet efficiency, clinical care, and hospital cleanliness. It has also proposed steps for change. The study of KS Prasanna, MA Bashith, and S Sucharitha (2009 April): As Consumer satisfaction is an important metric for measuring the services provided to patients. The healthcare systems need to be measured as often as possible about consumer satisfaction. 100 patients were given a27-item, pre-tested questionnaire. This study showed good results, in terms of availability and clinical care, according to the consumer's view. To boost consumer satisfaction, guidelines on ways to reduce the time spent in the pharmacy and the cost of investigations are required. The another such study which was conducted by Seetesh Ghose and S. Vivek Adhis (2011) The study was conducted at Mahatma Gandhi Medical College and Research Institute, Puducherry to find out in-patient's views on hospital admission process, pharmacy service, billing service, cleanliness, pantry service, nursing care, physician care and overall perception. The responses were collected in the form of 'not satisfied' and 'satisfied' for different services. In this study it was found that timing of admission, MRD, pharmacy, pantry facilities, nursing care and doctor care greatly affected patient satisfaction. Further, the findings showed that age, address, education, length of hospital stay and cleanliness did not influence their satisfaction with various hospital services. The another study conducted by Aswar Nandkeshav R, Kale Kalpana M,

Rewatkar Mangesh P, Jain Akanksha, BarureBalaji S (2014): "Patient's Waiting Time and their Satisfaction with HealthCare Services Received at Government Medical College Outpatient Hospital, Nanded (Maharashtra, India);" This explains increasing patient satisfaction with healthcare services by minimizing their waiting time, supporting the patient in a timely manner and compassionate attitude will create a positive picture of the hospital in people's minds, and will also help build up hospital reputation in the community.

3. METHODOLOGY

The chosen research method for the undertaken study includes analytical algorithms and concept namely factor analysis and one-way analysis of variance (anova) and fact finding technique- questionnaire consisting of self-administered statements.

3.1. RESEARCH OBJECTIVE

- To calculate the varying degree of accessibility that hospital system offers.
- To assess the consumer satisfaction regarding the services provided by hospital in Indore city.

3.2. DATA COLLECTION & SCREENING

For this research reliable data collected by using self-administered questionnaire. In data collection we have **sample size of 247**. The analysis was carried out on software IBM SPSS STATISTICS 20.

The questionnaire prepared for this project consists following sections:

- ✓ Section 1: Demographic Data of people residing in Indore.
- ✓ Section 2: 24 self-administered questionnaire.

Table 1 Demographic Details N=247

GENDER	
MALE	37.70%
FEMALE	61.90%
AGE	
UNDER 20	11.70%
21-30 Yrs	67.20%
31-40 Yrs	9.30%
ABOVE 40 Yrs	11.70%
MARITAL STATUS	
UNMARRIED	78.90%
MARRIED	21.10%
FAMILY TYPE	
NUCLEAR	75.30%
JOINT	24.70%
EDUCATION	
MATRIX	2.98%
HIGHER SECONDARY	11.30%

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GRADUATION	47%
POST GRADUATION	37.70%
PhD	1.02%
OCCUPATION	
STUDENT	41.70%
EMPLOYED	26.30%
SELF EMPLOYED	15.40%
HOUSEWIFE	6.60%
UNEMPLOYED	5%
PROFESSIONAL	5%
INCOME PER ANNUM	
LESS THAN 1 LAKH	41.70%
1 LAKH - 2 LAKH	8.50%
2LAKH - 3 LAKH	13.40%
3 LAKH- 4 LAKH	16.20%
ABOVE 4 LAKH	20.20%

The data was tested for reliability using CRONBACH'S ALPHA for the Psychometric test so adopted. The cronbach's alpha for 24 items came out to be 0.948. The value lies between $\alpha > 0.9$ which indicated excellent consistency.

Table 2 Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.948	.949	24

The screening of data is done by using factor analysis- principle component with varimax rotation method for condensing the data. By this dimension reduction we have reduced the 24 variables into 3 factors which consist of 21 super variables. The output of factor analysis is shown in table given below.

3.3. FACTOR ANALYSIS

Table 4

FACTORS	FACTOR LOADING	VALUE	% OF VARIANCE
Efficiency of services (Total Initial Eigenvalue 11.069)	Assured food quality	0.701	20.245
	Scheduling of patient investigation	0.701	
	Infrastructure for environment	0.674	
	maintenance	0.628	
	Pace of service	0.626	
	Response to queries	0.619	
	Accuracy of treatment	0.567	
	Attention and patience of nurses	0.525	
Work Skills	Maintaining patient privacy	0.760	18.941
	Experience of staff	0.674	

(Total Initial Eigenvalue 1.295)	Perfection of internal medical store Trustworthiness Counseling facility Transparency of treatment procedure Attitude of hospital staff Well equipped laboratory & pathology	0.669 0.614 0.591 0.573 0.525 0.524	
Based on Safety and Security (Total Initial Eigenvalue 1.147)	24/7 surveillance measure Display of symbols Infection control process Fire safety management Staff interpretation level	0.812 0.705 0.686 0.651 0.509	17.105
CUMULATIVE % OF VARIANCE : 56.292			

4. INTERPRETATION

Following are the remaining super variables (21) after systematic reduction by factor analysis. We got the significant difference between the groups with the help of one-way Anova; There was not a statistically significant difference between group means of variables-pace of service and income per annum namely below one lakh, one lakh to 2 lakh, 3 lakh to 4 lakh and above 4 lakh, determined by ONE WAY ANOVA ($F_{4,242}$)=0.957 P=0.432. There was not a statistically significant difference between group means of variables - accuracy of treatment and income per annum, determined ($F_{4,242}$)=2.066 P=0.086. There was not a statistically significant difference between group means of variables- scheduling of patient investigation and income per annum, determined ($F_{4,242}$)=0.43 P=0.787. There was not a statistically significant difference between group means of variables- response to queries and income per annum, determined ($F_{4,242}$)=0.086 P=0.987. There was not a statistically significant difference between group means of variables- response to immediate care and income per annum, determined ($F_{4,242}$)=0.262 P=0.902. There was not a statistically significant difference between group means of variables- assured food quality and income per annum, determined ($F_{4,242}$)=0.566 P=0.687.

There was a statistically significant difference between group means of variables- infrastructure for environment maintenance and income per annum, determined ($F_{4, 242}$) =**3.121 P=0.016 (As the obtained P value is less than 0.05)**. Hence, the Null hypothesis is rejected. The difference is due to infrastructure for maintaining environment depends on the revenue generation of the hospital, if it generates enough revenue then only investment on improving or maintain the infrastructure is done which in turn attracts more patients which results in more revenue generation. With advancement of technology, hospitals are installing more and more upgraded technology for providing high-tech speed services which can be afforded mainly by patient with high income in luxury hospitals and patient with relatively less income can't afford.

There was not a statistically significant difference between group means of variables- attention and patience of nurses and income per annum, determined ($F_{4,242}$)=2.049 P=0.088. There was not a statistically significant difference between group means of variables- well equipped laboratory & pathology and income per annum, determined ($F_{4,242}$)= 0.77 P=0.545. There was not a statistically significant difference between group means of variables- experience of staff and income per annum, determined ($F_{4,242}$)=0.703 P=0.591. There was not a statistically significant difference between group means of variables- perfection of internal medical store and income per annum, determined ($F_{4,242}$)=0.217 P=0.929. There was not a statistically significant difference between group means of variables- attitude of hospital staff

and income per annum, determined ($F_{4,242}$)=0.535 P=0.71. There was not a statistically significant difference between group means of variables- maintaining patient privacy and income per annum, determined ($F_{4,242}$)=1.231 P=0.298. There was not a statistically significant difference between group means of variables- counseling facility and income per annum, determined ($F_{4,242}$)=1.617 P=0.171. There was not a statistically significant difference between group means of variables- transparency of treatment procedure and income per annum, determined ($F_{4,242}$)=1.332 P=0.259. There was not a statistically significant difference between group means of variables- trustworthiness and income per annum, determined ($F_{4,242}$)=0.281 P=0.89. There was not a statistically significant difference between group means of variables- infection control process and income per annum, determined ($F_{4,242}$)=0.498 P=0.737. There was not a statistically significant difference between group means of variables- fire safety management and income per annum, determined ($F_{4,242}$)=0.925 P=0.45. There was not a statistically significant difference between group means of variables- 24/7 surveillance measure and income per annum, determined ($F_{4,242}$)=1.635 P=0.166. There was not a statistically significant difference between group means of variables- staff interpretation level and income per annum, determined ($F_{4,242}$)=0.411 P=0.801. There was not a statistically significant difference between group means of variables- display of symbols and income per annum, determined ($F_{4,242}$)=0.373 P=0.827

5. CONCLUSION

With population growth, the need for primary and special healthcare services has also increased. Indore now has a number of well-known and trusted hospitals to care for multiple patients and to provide each of its specialized services. Healthcare has become one of the largest sectors in Indore, both in terms of income and employment, making investors to think about health sector in order to generate more profit.

By assessing the dimensions and the level of satisfaction of customers through this research project we got conclusions that to improve services provided in hospitals of Indore, it's important to contact patients regularly and assess their service experience and their satisfaction level, this research has given the direction that infrastructure for maintaining environment in hospital is the area which clearly demands more advancement in terms of its accessibility to every patient irrespective of their income. Hence, services if measured and monitored subsequently will result in overall development and sustainable growth of hospital.

The patient satisfaction study is an effective means of assessing hospital performance from the patient's point of view. The information obtained through such studies is useful in removing discrepancies that distort patient satisfaction to make the hospital more attractive to the patient.

The need for primary and special health care services has also increased with population growth. Indore is now fitted with a number of well-known and trusted hospitals, super-specialty and multi-specialty health clinics, and neonatal clinics etc. to manage multiple patients and provide each of the specialized services.

With enhancement of the businesses in this area, Reliance group has also shown the interest. Reliance led by Anil Ambani is all set to launch a specialty hospital in Indore - BCM reliance hospital which will advance the service offering and will try to showcase benchmark for service providers.

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