© Amity Management Analyst
2019 Vol IX, No I

# Measuring Patients' Satisfaction towards Inpatient Departments (IPDs) of Government Hospitals: A Study of NCR

***Jitender Kumar **Neha ***Jigyasa**

Quality in healthcare services is the major determinant of patients' satisfaction in government and private hospitals. In general, it is understood that the quality of treatment, medicines and medical equipments affect the level of patient satisfaction. No doubt, it is true; but apart from these determinants there are many factors which determine the patient's satisfaction towards In-patient Departments (IPDs). Further, patients who are admitted in hospitals are more comfortable to assess the services provided by those hospitals than the patients who have visited Outpatient Departments (OPDs). The paper aims at measuring the determinants of patient satisfaction towards Inpatient Departments (IPDs) of government hospitals of National Capital Region (NCR) of India. The statistical tools and techniques used are frequency analysis, factor analysis and multiple regression. The results of factor analysis reported that clinical care, personal attention, physical structure and technical capabilities are the main determinants of patient satisfaction towards government hospitals of NCR. The results of regression analysis reported personal attention to have maximum effect on patient satisfaction and technical capabilities the least.

## Introduction:

India ranks second in the world in terms of population. As the population increases, the need of medical services also increases. Rising income levels, increasing age and escalating literacy level have also resulted in increased per capita health expenditure (IBEF, 2018). Healthcare industry is growing at a fast pace and private sector is a major player. More than 75% medical needs of nation are catered by private sector (IBEF, 2018).

There is a large chunk of population which depends on government hospitals for its healthcare needs. The basic objective of government hospitals is to provide quality services to the citizen at affordable prices. However, like many other government hospitals around the world, quality of Indian government hospitals is also negatively influenced by growing population, political interruption, shortage of funds, etc. But, for the betterment of countrymen, it is essential to timely check the quality of healthcare facilities provided in government hospitals. Various ways to ensure the quality include skilled doctors, efficient staff, good equipments, medicines etc. Another way to assess the quality is patient satisfaction level as higher level of patient satisfaction indicates towards higher efficiency (Kumar & Neha, 2016). One single measure cannot be a true representative of quality; but if patient satisfaction level is high, the quality of healthcare can be stated as good and vice-versa. In-patient's satisfaction refers to satisfaction among those patients who stay in hospital overtime or for more time. With this background, this study is designed to assess the level of in-patient's satisfaction towards government hospitals of NCR of India.

## Review of Relevant Literature:

Vandamme and Leunis (1993) reported important findings with reference to the application of SERVQUAL (a multiple item scale for measuring consumer perceptions of service quality) to the healthcare sector. They found that the uniqueness

*Assistant Professorr, Department of Management Studies, Deenbandhu Chhotu Ram University of Science & Technology, Murthal, email:jitenderkbatra@gmail.com
**Assistant Professor, Department of Commerce, Government College for Women, Gohana.
***Junior Quality Executive, Department of Quality and Safety, Hero DMC Heart Institute, New Delhi.

of services offered by a hospital does not seem to validate the use of scales developed for other service categories.

Aagza & Garg (2010) identified five dimensions of hospital service to be included in a scale called Public Hospital Service Quality (PubHosQual): admission, medical service, overall service, discharge and social responsibility. This scale can be used as a tool to identify areas where special improvement is required.

Manaf (2012), after studying hospital clients of Malaysian hospitals, reported three factors which affected the choice of patients while selecting a hospital which are clinical service, physical service and additional facilities for patients & family members. Authors reported higher level of inpatient satisfaction regarding clinical service than physical service.

Chattopadhyay et al. (2013), after studying CGHS dispensaries in Kolkata, reported most of the patients to be very unsatisfied or moderately unsatisfied. Satisfaction was recorded on the points: general medical services, adequate medical supply; dissatisfaction was recorded on the points: number of doctors, medical facilities, overcrowding, punctuality of outdoor activities, distance of dispensary from home and inadequate facilities like toilet, drinking water and sitting arrangements.

Merkouris et al. (2013) showed that patients were satisfied from nursing care and technical aspect of care. Less satisfaction came from hotel services and information. Authors suggested a regular survey of patient satisfaction to keep a track record of improvement.

Yildiz & Demirors (2013) developed Healthcare Process Quality Measurement Model (HPQMM) for a comprehensive evaluation of healthcare quality. HPQMM was based on four areas: functionality, reliability, usability and efficiency which were measured through eighteen measures. Authors also applied HPQMM in three hospitals; the results were not only comprehensive but comparable also.

Garg et al. (2014) reported overall high patient satisfaction level. Low satisfaction level was reported regarding cleanliness in toilets and quality of meals served. Highest satisfactory was clinical care but development of soft skills in paramedics and doctors was recommended.

Ghosha (2014) using survey data from inpatient department reported that clinical care, internal environment, administrative support and communication were the four primary factors which affected the satisfaction level of patients.

Ghoshb (2014) explored patient satisfaction level in Dhubri Civil Hospital (Assam) through respondents' schedule and group discussions. Results reported dissatisfaction regarding entrance assistance, signboards, time devoted by doctors, medicine availability, drinking water facility, toilets, fans & lights and cleanliness. Satisfaction was recorded for the aspects: efficiency of doctors, behavior of nurses, parking, ATM, efficiency of doctors and timely availability of investigation results.

Mahapatra et al., (2014) surveyed patients in 25 district/area hospitals which were managed by Andhra Pradesh Vaidya Vidhana Parishad (APVVP) using a structured questionnaire. Overall a good score of patient satisfaction was recorded. Areas of concern reported by survey include corruption by hospital staff, utilities (water supply, fans, lights etc.), toilet & cleanliness, communication & interpersonal skills, supply of drugs, food availability, linen & cleanliness, staff shortage and diagnostic & general facilities.

Sharma et al. (2014) reported toilet facility and drinking water facility to be the reason of maximum dissatisfaction. High level of satisfaction was reported regarding seating arrangement, cleanliness, convenience in reaching OPD, consultants' findings, time taken for OPD slip. Moderate level of

satisfaction was recorded regarding convenience to reach pharmacist, convenience to reach investigation site, signboards, examination by doctors', doctor's explanation and time taken in taking medicine.

Mogha et al. (2015) reported that out of thirty six public hospitals, only 10 were overall technically efficient, 18 were pure technical efficient and 8 hospitals were inefficient and could reduce their inputs. Authors reported it by using the data collected from Directorate of Medical Health and Family Welfare, Government of Uttarakhand, Dehradun using Data Envelopment Analysis.

Kumar & Neha (2016) concluded that patients are not satisfied from the OPDs facilities of government hospitals including civil hospitals, community health centres, primary health centres, primary health sub centres etc. of Bhiwani district of Haryana state. In this study six determinants of patient's dissatisfaction towards OPDs of government hospitals were identified like cleanliness & behaviour, medical care, physical facilities, first impression, ward & room facility and admission procedure.

Naik & Byram (2016) by studying two corporate super specialty hospitals of South India reported that tangibility, responsiveness, assurance and empathy had a significant relationship with patient satisfaction and patient satisfaction; responsiveness, assurance and empathy had a significant relationship with behavioral intention (the intention of customer to visit same hospital again). Out of these factors, empathy was reported as a most influencing factor for a patient to visit the same hospital again.

Swain & Kar (2017) developed a conceptual model of hospital service quality by critically reviewing twenty literature studies. Author identified 15 dimensions of hospital service quality namely infrastructure, resource availability, food, religious needs, patient safety & privacy, quality of outcomes, clinical procedures, administrative procedures, waiting time for services, price, personalised attention, staff attitude, trustworthiness, information availability and continuity. These 15 dimensions were covered under 3 broad categories: infrastructure dimension, procedural dimension and interactive dimension.

## Research Gap:

Literature review reveals that most of the studies are related with multi-specialty hospitals at big cities. While a large section of population which is poor, depends on government healthcare facilities for sound health. Therefore, this study is an attempt to understand the patient satisfaction level towards IPDs of government hospitals including medical colleges, civil hospitals, community health centres, primary health centres, primary health sub centres, etc. of National Capital Region (NCR) of India.

## Research Methodology:

To fulfill the research objectives and to examine the level of patient satisfaction, it was proposed to use descriptive- cum -exploratory research design on the basis of initial literature review on patient satisfaction and previous research findings on similar kind of study done elsewhere. A mix of these designs provides enough protection against biasness, maximises dependability and provides opportunity for considering diverse facets of the research problem

## Data Collection:

### Questionnaire Design:

Data was collected using a structured questionnaire with three sections, first section collected socio-demographic details of respondents, second section collected information about thirty nine elements which affected the level of patient satisfaction; these questions were asked on a five point likert scale, third section collected the information about level of patient satisfaction through three statements asked on a five point Likert scale.

### Sample Design:

The population for current study is all the patients

who were admitted in between June 2017 to December 2017 in the government hospitals of National Capital Region of India. Further, patients who are admitted in the hospitals are more comfortable to assess the services provided by the said hospital than the patients who have visited Outpatient Departments (OPDs). But, it is not practical to study whole population, so a small part of population, known as sample is extracted from population so that inferences can be drawn about parameters from statistics. A total of 480 questionnaires were floated to the admitted patients using convenience sampling, out of which responses were received from 342 respondents. 42 responses were rejected in the process of data cleaning, leaving the effective sample size of 300 respondents. Secondary data was gathered from various websites, journals, magazines and newspapers etc.

**Statistical Tool for Data Analysis:**

Data collected through questionnaires has been analysed using Statistical Package for Social Sciences (SPSS) version 21. Statistical tools frequency analysis, descriptive statistics, factor analysis and regression analysis are used for the purpose of analysis. MS Excel has also been used for preparing charts.

## Data Analysis:

In the process of data analysis, first of all, there were few missing values which were imputed using serial mean.

**Socio-demographic Profile of Respondents:**

**Table 1: Socio demographic profile of respondents (N=300)**

| Characteristics | | N | Percentage |
|---|---|---|---|
| Gender | Male | 190 | 63.3% |
| | Female | 110 | 36.7% |
| Marital Status | Married | 191 | 63.7% |
| | Single | 104 | 34.7% |
| | Divorcee | 3 | 1.0% |
| | Widow | 2 | 0.7% |
| Age | <25 years | 75 | 25% |
| | 25-40 | 146 | 48.7% |
| | 40-55 | 64 | 21.3% |
| | 55-70 | 12 | 4.0% |
| | 70+ | 03 | 1.0% |
| Occupation | Govt. Employee | 127 | 42.3% |
| | Self employed | 53 | 17.6% |
| | Student | 65 | 21.6% |
| | Housewife | 23 | 7.6% |
| | Retired persons | 7 | 2.3% |
| | Others | 25 | 8.3 |

Source: Primary data.

Above picture depicts about demographic details of 300 respondents. Out of 300 respondents i.e. admitted patients, 63.3 % (190) were male and 36.7 % (110) female. 63.7 % (191) of the respondents were married, 34.7% (104) single, 1 % (3) divorcee and 0.7 % (2) were widowed. 25 % (75) respondents were aged less than 25, 48.7 % (146) aged between 25 and 40, 21.3 % (64) aged between 40 and 55, 4 % (12) aged between 55 and 70 and 1 % (3) of respondents aged more than 70. Out of 300 admitted patients, 42.3 % (127) were government employees, 17.6 % (53) were self employed, 21.6 % (65) were students, 7.6 % (23) were housewives, 2.3 % (7) were retired persons and 8.3 % (25) of them were engaged in other occupation.

**Reliability Analysis:**

The scale was subjected to Cronbach Alpha test for testing reliability. The Cronbach Alpha for 38 items was found to be 0.954, which indicated a good internal consistency among the items.

**Factor Analysis:**

38 items were subjected to factor analysis using principal component analysis because this research is mostly exploratory in nature. First, factor analysis was performed for factor extraction with eigen value more than 1. Second, varimax rotation was used to ascertain the factor loading of each variable on one factor. Factor loadings>0.5 were accepted as suggested by Hair et al. (2006). Variables which had a factor loading less than 0.5 were dropped. Items

with factor loading more than 0.5 on one factor and more than 0.4 on another factor were also dropped to make sure that the items selected have a high factor loading on one factor and low on others. 18 items were dropped out of 38 items in this process. Three items (B1, B2, B36) got loaded on unrelated dimension, so they had to be removed. Twelve items (B3,B4,B8,B11,B14,B16,B17,B18,B21,B24,B29,B32) were dropped as their factor loading was less than 0.5. Three items (B5, B35, B39) were dropped for their factor loading value lied between 0.4 and 0.5. 20 items were taken to next stage. Cronbach Alpha value of these 20 items came to be 0.922.

Before doing factor analysis at each stage, Barletts test of sphericity and Kaiser-Meyer-Olkin tests were performed. The output of factor analysis at various stages showed that Barletts test and KMO measure indicated sampling adequacy for factor analysis.

Factor analysis with 20 items was able to extract four primary factors: Clinical care, personal attention, physical structure and technical capability. Clinical care, personal attention, physical structure and technical capability accounted for 17.22 percent, 14.89 percent, 13.68 percent and 13.08 percent of total variance respectively. Altogether these four factors explained 58.87 percent of total variance. Clinical care, personal attention, physical structure and technical capability had Cronbach Alpha values 0.865, 0.812, 0.755 and 0.774 respectively.

**Table 2: Scale dimensions and factor loadings**

| Factor | Variable | Factor loadings | | | |
|---|---|---|---|---|---|
| | | F1 | F2 | F3 | F4 |
| Clinical care | Sufficient time for patients | 0.548 | | | |
| | Providing drug dosage on time | 0.561 | | | |
| | Proper diagnosis of disease | 0.607 | | | |
| | Appropriate prescription | 0.678 | | | |
| | Appropriate referral system | 0.610 | | | |
| | Follow up during stay | 0.606 | | | |
| | Directions of drug dosage | 0.674 | | | |
| | After care | 0.503 | | | |
| Personal attention | Compassion and support | | 0.716 | | |
| | Kindness and politeness | | 0.751 | | |
| | Interest and attention towards patients | | 0.664 | | |
| | Devotion and willingness to serve | | 0.672 | | |
| Physical structure | Condition of washrooms | | 0.740 | | |
| | Quality of meals | | 0.664 | | |
| | Management of crowd | | 0.733 | | |
| | Management of emergencies | | 0.589 | | |
| Technical capability | Ramps for differently able and old | | 0.742 | | |
| | Availability of beds | | 0.682 | | |
| | Availability of medical equipments | | 0.552 | | |
| | Availability of diagnostic equipments | | 0.543 | | |

Source: Author's calculations.

**Table 3: Principal component analysis**

| Factors | Clinical care | Personal attention | Physical structure | Technical capability |
|---|---|---|---|---|
| Eigen values | 8.131 | 1.382 | 1.191 | 1.070 |
| Percentage of total variance explained | 17.221 | 14.892 | 13.676 | 13.081 |
| Cumulative percentage of total variance explained | 17.221 | 32.113 | 45.789 | 58.870 |
| Cronbach Alpha | 0.865 | 0.812 | 0.755 | 0.774 |
| Notes: Extraction method: Principal component analysis, Rotation: Varimax with Kaiser Normalisation. | | | | |

Source: Author's calculations.

**Analysis of Factors and statements:**

**a. Clinical Care:**

First factor drawn from factor analysis explained 17.221% of total variance and was named as 'clinical care'. This factor was composed of eight elements: sufficient time for patients (mean score 3.0), providing drug dosage on time (mean score 3.06), proper diagnosis of disease (mean score 3.29), appropriate prescription (mean score 3.29), appropriate referral system (mean score 3.12), follow up during stay (mean score 2.95), directions for drug usage (mean score 3.22) and after care (mean score 3.06). Cronbach Alpha value of this factor came to be 0.865. Overall mean score of 3.12 indicates that patients perceive clinical care to be a little better than average indicating enough scope for improvement. Similar result was reported by Manaf (2012), Ghosha (2014) and Swain & Kar (2017) etc.

**b. Personal Attention:**

Second factor explained 14.892% of total variance and was named as personal attention. Four elements which formed this factor include compassion & support (mean score 3.10), kindness & politeness (mean score 3.08), interest & attention paid towards patients (mean score 2.95) and devotion & willingness to serve (mean score 3.04). Cronbach Alpha value of this factor was 0.812. Mean score of 3.04 of personal attention indicates it to be average. Such low level of patient satisfaction in terms of personal attention shows a dire need for management to ensure that hospital staff and nurses give more attention towards patients. Swain & Kar (2017) also reported this factor. Mahapatra et al. (2013) also reported interpersonal skills and personal attention to be an area of concern for patient satisfaction.

**c. Physical Structure:**

Third factor explained 13.676 % of total variance and was named as physical structure. This factor was formed of four elements including condition of washrooms (mean score 2.57), quality of meals (mean score 2.71), management of crowd (mean score 2.71) and management of emergencies (mean score 2.90). Cronbach Alpha value of this factor was 0.755. Overall mean score of 2.72 indicates the physical structure of government hospitals is standing at below average. Similar results were shown by Manaf (2012). Low level of patient satisfaction with regard to condition of washrooms and quality of meals was also reported by Chattopadhyay et al. (2013), Ghoshb (2014), Garg et al. (2014) and Mahapatra et al. (2014). Overcrowding was reported as an element of dissatisfaction by Chattopadhyay et al. (2013) also.

**d. Technical Capability:**

Fourth factor explained 13.081 % of total variance and was named as 'technical capability'. This factor was also made of four elements namely ramps for differently able & old (mean score 3.17), availability of beds (mean score 2.81), availability of medical equipments (mean score 3.07) and availability of diagnostic equipments (mean score 3.11). Cronbach

Alpha value of this factor was 0.774. Mean score of 3.04 indicates an average quality of technical capabilities of government hospitals showing the need to improve the capabilities. Merkouris (2013) also reported this factor.

**Regression Analysis:**

Regression analysis was performed taking clinical care, personal attention, physical structure and technical capability as independent variables and patient satisfaction as dependent variable. Patient satisfaction variable was created by taking an average of variables: satisfaction from recovery rate, satisfaction from speed of recovery and status of improved health. Step by step regression was carried out by taking 'personal attention' as explanatory variable first. Then 'personal attention' & 'clinical care', then 'personal attention', 'clinical care' & 'physical structure' and finally 'personal attention', 'clinical care', 'physical structure' & 'technical capability' were taken as explanatory variables. Hence four regression models were created.

All the assumptions of multiple regression including: no autocorrelation, no multicollinearity, homoskedasticity, normality of residuals, significance of predicting variables and model fit were met.

Coefficients of four models are presented in Table 4. Summary of all four models is presented in Table 5. The first model assumed patient satisfaction as dependent variable and personal attention as independent variable. Standardised $\beta = 0.473$, $\rho < 0.001$ indicates it to be significant predictor. $F = 85.86$, $\rho < 0.001$ points that model is significant. This model explained about 22.4 percent of variance in patient satisfaction. In second model, personal attention and clinical care were taken as explanatory variables and patient satisfaction as explained variable. Both personal attention ($\beta = 0.473$, $\rho < 0.001$) and clinical care ($\beta = 0.445$, $\rho < 0.001$) were found to be significant predictors. The model was also found to be significant ($F = 108.45$, $\rho < 0.001$) and explained 42.2 percent of variance in explained variable. The inclusion of clinical care resulted in a significant change in R2 of 0.198. In the third step, physical structure was added in the model along with personal attention and clinical care. Personal attention ($\beta = 0.473$, $\rho < 0.001$), clinical care ($\beta = 0.445$, $\rho < 0.001$) and physical structure ($\beta = 0.150$, $\rho < 0.001$) were found be significant. Overall model was significant ($F = 78.99$, $\rho = 0.001$) and explained 44.5 percent variance in patient satisfaction. Inclusion of physical structure in the model resulted in a significant change in R2 of 0.023. In the final stage, technical capability was added to the predictors along with personal attention, clinical care and physical structure. All four factors, personal attention ($\beta = 0.473$, $p < 0.001$), clinical care ($\beta = 0.445$, $\rho < 0.001$), physical structure ($\beta = 0.150$, $\rho < 0.001$) and technical capability ($\beta = 0.147$, $\rho = 0.001$) had a significant effect on explained variable patient satisfaction. Overall model explained 46.6 percent of variance and was significant ($F = 64.42$, $\rho = 0.001$). Inclusion of technical capability in the model resulted in a change in R2 of 0.022.

Out of four predictors, technical capability came out to be a week predictor and personal attention the strongest, indicating the need of personal care, kindness and empathy towards patients for their satisfaction.

**Table 4: Results from step by step regression analysis**

| | Unstandardized coefficients | | Standardized coefficients | t | Sig. |
|---|---|---|---|---|---|
| | β | Standard error | B | | |
| **Model 1** | | | | | |
| Constant | 3.251 | 0.042 | | 78.676 | 0.000 |
| Personal attention | .384 | 0.042 | 0.473 | 9.266 | 0.000 |
| **Model 2** | | | | | |
| Constant | 3.251 | 0.36 | | 91.033 | 0.000 |
| Personal attention | .384 | 0.36 | 0.473 | 10.721 | 0.000 |
| Clinical care | 0.361 | 0.36 | 0.445 | 10.097 | 0.000 |
| **Model 3** | | | | | |
| Constant | 3.251 | 0.035 | | 92.707 | 0.000 |
| Personal attention | .384 | 0.035 | 0.473 | 10.918 | 0.000 |
| Clinical care | 0.361 | 0.035 | 0.445 | 10.283 | 0.000 |
| Physical structure | 0.122 | 0.035 | .150 | 3.468 | 0.001 |
| **Model 4** | | | | | |
| Constant | 3.251 | 0.034 | | 94.407 | 0.000 |
| Personal attention | .384 | 0.034 | 0.473 | 11.119 | 0.000 |
| Clinical care | 0.361 | 0.034 | 0.445 | 10.472 | 0.000 |
| Physical structure | 0.122 | 0.034 | 0.150 | 3.531 | 0.000 |
| Technical capability | 0.119 | 0.034 | 0.147 | 3.458 | 0.001 |

Source: Author's calculations.

**Table 5: Regression model summary**

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| R | 0.473 | 0.650 | 0.667 | 0.683 |
| R2 | 0.224 | 0.422 | 0.445 | 0.466 |
| Adjusted R2 | 0.221 | 0.418 | 0.439 | 0.459 |
| Change in R2 | 0.224 | 0.198 | 0.023 | 0.022 |
| F | 85.857 | 108.451 | 78.993 | 64.427 |
| Change in F | 85.857 | 101.959 | 12.024 | 11.958 |
| Significance | 0.000 | 0.000 | 0.001 | 0.001 |
| Durbin watson | 1.868 | | | |

Source: Author's calculations.

## Discussion:

The need of patient satisfaction from hospital is imperative as it is the place where he comes for a solution to his health problems. Continuous efforts should be made to assess the patient satisfaction level of any hospital. The results of factor analysis conclude 'personal attention', 'clinical care', 'physical structure' and 'technical capability' to be the four primary factors which affect the level of satisfaction a patient receives from a hospital. Average or below average scores for all four factors are worrying. Similar results have been reported by Chattopadhyay et al. (2014) and Ghoshb (2014).

Results of regression analysis claimed personal attention towards patients to be the most determining factor of patient satisfaction, implying the personal and social needs of patients. It is not only the medicines and treatment which cures the patients but the kindness, politeness, respect and compassion with which they are treated also matters a lot.

## Implications for Management:

The study revealed the factors which primarily affect the level of patient satisfaction and can be used to assess the quality of hospitals. Average or below average mean scores of four factors for government hospitals indicate an average or below average condition of hospitals in terms of personal attention, clinical care, physical structure and technical capabilities. Management of government hospitals needs to work not only on the quantity of hospitals but also the quality provided therein.

Personal attention came out to be the most predicting factor towards patient satisfaction. In order to increase the level of patient satisfaction, management needs to pay attention that patients are well treated and are provided home like environment. This can be done by treating them with respect, kindness and love.

## Limitations of Study:

This study has been performed in NCR of India only due to time and resource constraints so that results cannot be generalised to the whole nation. Therefore, results need to be interpreted with caution.

## References:


Aagza, J. P. & Garg, R. (2010). Measuring Perceived Service Quality for Public Hospitals (PubHosQual) in the Indian Context. *International Journal of Pharmaceutical and Healthcare Marketing, 4(1)*, 60-83.

Chattopadhyay, A., Saha, T. K., Karmakar, P. R., Sengupta, P., Boral, K. & Yasmin, S. (2013). Patient Satisfaction Evaluation in CGHS Dispensaries in Kolkata, India. *IOSR Journal of Dental and Medical Sciences, 6(4)*, 13-19.

Garg, N., Gupta, S. K. & Mahesh, R. (2014). Patient Satisfaction Survey at a Tertiary Care Specialty Hospital. *International Journal of Research Foundation of Hospital & Healthcare Administration, 2(2)*, 79-83.

Ghosh$_a$, M. (2014). Measuring Patient Satisfaction: An Empirical Study in India. *Leadership in Health Services, 27(3)*, 240-254.

Ghosh$_b$, S. (2014). An Analytical Study on Patients' Satisfaction and Medical Facilities Provided by Public Hospital: With Special Reference to Dhubri Civil Hospital, Jhagrarpur. *International Journal of Healthcare Sciences, 2(1)*, 107-115.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.F. and Tatham, R.L. (2006). *Multivariate Data Analysis*, Pearson Education, New Delhi.

India Population (2018). Population of India (2018 and historical). Retrieved from www.worldometers.info/world-populaion/ india-populaion/ on 30th Jan 2018.

Kumar, J. & Neha (2016). Patient Satisfaction in Outpatient Departments (OPDs): An Investigative Study in Government Hospitals of Haryana. *AAYAM, 6(2)*,1-7.

Mahapatra, P., Srilatha, S. & Sridhar, P. (2001). A Patient Satisfaction Survey in Public Hospitals. *Journal of Academy of Hospital Administration, 13(2)*, 11-15.

Manaf, N. H. A. (2012). Inpatient Satisfaction: An Analysis of Malaysian Public Hospitals. *International Journal of Public Sector Management, 25(1)*, 6-16.

Merkouris, A., Andreadou, A., Athini, E., Hatzimbalasi, M., Rovithis, M. & Papastavrou, E. (2013). Assessment of Patient Satisfaction in Public Hospitals in Cyprus: A Descriptive Study. *Health Sciences Journal, 7(1)*, 28-40.

Mogha, S. K., Yadav, S. P. & Singh, S. P. (2015). Slack Based Measure of Efficiencies of Public Sector Hospitals in Uttarakhand (India). *Benchmarking: An International Journal. 22 (7)*, 1229-1246.

Naik, R. & Byram, J. A. (2016). Healthcare Service Quality Effect on Patient Satisfaction and Behavioural Intentions in Corporate Hospitals in India. *International Journal of Pharmaceutical and Healthcare Marketing, 10(1).*

Sharma, A., Kasar, P. K. & Sharma, R. (2014). Patient Satisfaction about Hospital Services: A Study from the Outpatient Department of Tertiary Care Hospital, Jabalpur, Madhya Pradesh, India. *National Journal of Community Medicine, 2(2)*, 199-203.

Swain, S. & Kar, N. C. (2017). A Holistic Framework for Conceptualizing Hospital Service Quality. *Journal of Health Management, 19(1)*, 1-13.

Vandamme, R. & Leunis, J. (1993). Development of A Multiple-Item Scale for Measuring Hospital Service Quality. *International Journal of Service Industry Management, 4(3)*, 30-49.

Yildez, O. & Demirors, O. (2013). Measuring Healthcare Process Quality: Applications in Public Hospitals in Turkey. *Informatics for Health & Social Care, 38(2)*, 132-149.

http://www.cbhidghs.nic.in/E-Book%20HTML-2017%20PART-I/ index.html#14 retrieved on 19th Feb 2018.

https://www.ibef.org/download/Healthcare-January-2018.pdf retrieved on 19th Feb 2018.