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## IMPACT OF BEHAVIOURAL COMPETENCIES OF HEALTHCARE PERSONNEL ON PATIENT SATISFACTION AND ITS ESTIMATION

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## **IMPACT OF BEHAVIOURAL COMPETENCIES OF HEALTHCARE PERSONNEL ON PATIENT SATISFACTION AND ITS ESTIMATION**

### **1. INTRODUCTION**

The private healthcare sector has emerged out of the growing healthcare needs of the population with inflow of both domestic and foreign investments. The government had taken significant measures to improve the access to quality care but it was not enough due to the rising number of patients and healthcare needs (Jairam et al., 2015). The two major categories of Indian healthcare delivery system are: public and private. The public healthcare systems focuses mainly on providing basic healthcare facilities in the form of primary healthcare centres (PHCs) in rural areas and comprises of secondary and tertiary care institutions in key cities. Whereas the private sector provides healthcare to majority of secondary, tertiary and quaternary care institutions especially in metropolitan cities, tier I and tier II cities (Healthcare Industry in India, Indian Brand Equity Foundation, 2015). The private healthcare sector has experienced addition of most of the healthcare capacity since 2005. In India 58% of the hospitals fall in the private sector, accounting to 29% of beds in hospitals and 81% of doctors (Thayyil & Jeeja, 2013). According to National Family Health Survey-3, the private medical sector has become the primary source of healthcare for 63% of households in rural areas and 70% of households in urban areas. The study conducted by IMS Institute for Healthcare Informatics in 2013, indicated a steady increase in the usage of private healthcare facilities over the last 25 years.

The private healthcare sector consists of many employees consisting not only doctors but nurses, outdoor patient department (OPD) representatives, nursing staff, diagnostic professionals, housekeeping staff etc. Like every organisation, hospitals also expect certain behaviour from their employees. In recent times the patients in the private hospitals not only

consists of natives but also foreigners as well. Many foreigners from the Middle East countries, Africa, Pakistan, Bangladesh come to India for procedures that are not done in their home countries. Also patients from United Kingdom also come to India to avail the cheap medical services as compared to their country (Sengupta & Nundy, 2005). A study by Basu et al. (2012), published in PLOS medicine, indicated that healthcare providers in the private sector are more likely to spend a longer duration with their patients and conduct physical exams as a part of the visit compared to those working in public healthcare. Patients are the ones for whom the hospitals run on the first hand. The patients are the receivers of the services that the hospitals provide and satisfying the patients in one of the major concerns of the hospitals. Satisfaction of patients ensures them to visit the hospitals with trust whenever in need. The main aim of the employees in the hospitals is to gain the trust of the employees by their behaviour and convince them that they would be receiving the best care in their hospital. Every patient deserves to be treated rightfully and with respect, failing to treat them accordingly may lead to their dissatisfaction with the hospital staff and may be the hospital as a whole. Hospital staffs are expected to provide privacy and use interactions that help patients feel comfortable, in control and valued which in turn promotes patient dignity, thus indicating that all staff should behave towards patients in a way that promotes dignity and satisfies them during each and every interaction (Baillie, 2007). Individual staff behaviour failing to promote patient dignity may result in patient dissatisfaction as well leading to loss of potential loyal patients of the hospital.

The employees not only interact with the patients but also work with each other, which help the colleagues (supervisors, subordinates, same-level employees) develop an idea about the behaviour of the employees with the patients at the hospital. Hence the study would be focusing on the perception of the supervisors, same-level colleagues and subordinates about the competence of the employees' behaviour to satisfy the patients as compared to the actual

satisfaction of the patients with the employee behaviour and understanding the behavioural competencies which have a significant impact on the actual satisfaction of the patients. As the patients' feedback may not be available at all times, the perception of the colleagues may act as a good basis for estimating the patient satisfaction with employee behaviour. Furthermore, this important performance parameter (patient satisfaction) would also be estimated statistically with the help of employees' competencies. It would be helpful for a healthcare organization to assess the change (increase) in patient satisfaction with the change (improvement) in employees' behavioural competencies, which may be achieved through some training programmes or alike.

The paper is organised as follows: Section 2 presents the review of existing literature and identifies the research gap. Section 3 discusses the research objectives and methodology. The data analysis and findings of the study are presented in Section 4. Section 5 concludes the work.

## **2. REVIEW OF LITERATURE**

Competency can be defined as the capacity of the behaviour of an individual which is continuously developing so that it can meet the job demands to achieve desired results in the governance of various parameters of the organisational environment (Krishnaveni, 2013). Every organisation requires its employees to acquire new competencies or develop their existing competencies in order to meet the organisational objectives. Competency has been defined in different ways by different scholars. Competencies are personal characteristic that contribute to effective managerial performance (Albanese, 1989). Competency was defined by Mansfield (1997) as underlying characteristics of a person that results in an effective superior performance. According to Rankin (2002), competencies are definition of skills and behaviours that organisation expects their staff to practice at work. A competency is a set of skills, related knowledge and attributes that allow an individual to successfully perform a task

or an activity within a specific function or job (UNIDO, 2002). Competencies are the generic knowledge motive, trait, social role or a skill or a person linked to superior performance on a job (Hayes, 1979). According to Woodruffe (1991), competency and competence is not the same thing, competency is a person-related concept that refers to the dimension of behaviour lying behind competent performer, whereas competence is a work-related concept that refers to area of work at which a person is competent. The combination of competency and competence forms competencies. The major components of competency involve skills, knowledge, personal attributes and behaviour.

The human resources are the most valuable assets of an organisation. Unlike other assets, human resources develop over time and gain new competencies thus they add value to themselves and also to the firms. Competencies can provide the logic for designing an organisation that will enable human resources to continually add value to its firm (Kaur & Kumar, 2013). With the days passing by, the manpower cost is increasing and every organisation wants to use the available manpower to the optimum and in order to do so the areas of improvement are identified and proper training is provided to the employees so they possess the competency in the highest level required for their jobs making them competent performers.

Competency mapping is a process of identifying key components for a company or institution and the jobs and functions within it (Kaur & Kumar, 2013). Competency mapping analyses an individual's SWOT, i.e., strength, weakness, opportunity and threat, which helps in identifying the gap between the actual and the expected level of competencies required by the employees to perform their job. Competency mapping is important for an organisation because of the following reasons: recruitment and selection, establishing performance standards, performance appraisal, gap analysis, training and development, career development, job satisfaction and employee retention.

Based on the behaviour expressed by the employees towards the customers (patients, in the present context), certain behavioural competencies can be identified. These behavioural competencies would act as a basis for measuring such competencies amongst employees and their effect on the customer satisfaction accordingly. According to Economic Times any behaviour or attribute such as knowledge, skill set, technical know-how, etc. which helps in development of an individual in the organisation for taking up greater roles in the future or to perform their current job role in a competent way is known as behaviour competency. These behavioural competencies define the requirements in terms of behaviour. According to Michigan University, behavioural competencies encompass knowledge, skills, attitudes and actions that help in determining excellent performers. The university developed such behavioural competencies and definitions in order to achieve consistency of understanding across the university and to enhance discussions about work behaviours.

Employees in an organisation having necessary competencies are seen to have a higher performance level. In a study it was found that competence and performance have a positive relationship implying that good competence would lead to increased performance (Mukhtar et al., 2018). Also in another study the effect of competence on the performance of employees was measure with the help of correlation analysis which depicted that competence has a strong and positive relationship with performance thus suggesting that increase in competence of employees would result in increased performance of employees as well (Winarno & Perdana, 2015). Thus it can be seen from the previous studies that competence does have positive impact on performance, i.e., more competent employees have increased performance. Now we look the literature suggesting performance has a impact on customer satisfaction. Customers are the main aspect of every business, the main aim of every business or organisation is to meet the needs of the customers and satisfy them. Employees with required competencies would be able to perform the tasks required to satisfy the customers in

the best way thus leading to increases employee performance and increased customer satisfaction.

Customer satisfaction is the measure of how the products and services provided by a company meet the demands of the customers or exceed the expectations of the customers. Products and services are the end products being delivered by companies to its customers while customers are the main reason the organisations are operating in order to meet their needs. Customer satisfaction is important to measure because of its significant impacts on firm's long-term performance and also customer purchase behaviours (Ngo, 2015).

While measuring the services provided by hospitals, customer satisfaction indicates patient satisfaction. Patient satisfaction is the measure of the extent to which a patient is pleased with the healthcare and related services which they have received from their healthcare provider. Consumer is someone who purchases products or services, similarly patients are buyers of health services. Hence there is a need to acknowledge that patients have certain rights putting special emphasis on the quality of healthcare delivered to them (Prakash, 2010; Lateef, 2011). The behaviour expressed by the employees towards their customers and in case of hospitals towards their patients plays a huge role in patient satisfaction. There have been studies indicating some kind of relationship between behaviour expressed by employees and customer satisfaction. In a study where the impact of positive behaviour of bank employees on customer satisfaction was being measured it was seen that positive behaviour and sincere emotions displayed by service employees have significant and positive effect on the overall customers' satisfaction (Limboire & Khillari, 2016). Also in another study the impact of employees behaviour on overall satisfaction of the customers in the hotel industry was studied which indicated that negative behaviour of employees had a negative impact on the overall satisfaction of the customers (Kattara et al., 2008).

Multi-source feedback (three-sixty degree rating) of competency involves the peers', subordinates' and superiors' rating the competencies of individuals (London & Beatty 1993; Mount et al., 1998). Each of them rates the competency level of an individual to find out the actual competency level possessed by him or her. Multi-source feedback may be used to find the competency level of each employee in an organisation and to mark the potential benefits of performance improvement at both individual and organisational level (Bailey & Fletcher, 2002; Edwards & Ewen, 1996; Fletcher & Baldry, 1999; London & Smither, 1995). The ratings might differ by perspective of employees at various levels. Extra-role and Intra-role competencies collectively help in determining the competencies required for various jobs and the ratings help us in determining the level of each of those competencies required by individuals to be competent performers in their jobs.

In the healthcare sectors no such studies has been found where impact of employees' competencies on the patient satisfaction has been assessed on the basis of their co-workers' perception. Some precise method of estimating patient satisfaction based on various influencing behavioural competencies is also missing in the existing literature. The present study focuses on identifying behavioural competencies of the health sector employees and understanding their effect on patient satisfaction taking colleagues' perception into account. Also the level of patient satisfaction has been estimated here statistically based on various competencies of the healthcare personnel.

### **3. RESEARCH OBJECTIVES AND METHODOLOGY**

Based on the research gap that has been identified in previous section, the main research objectives are developed as follows:

- To identify the major behavioural competencies of health care personnel and their impact on patient satisfaction.



- To identify the similarity between the perception of colleagues (supervisors, subordinates and the same-level employees) about employees' competence to satisfy patients with their behaviours and the actual patient satisfaction with employee behaviour.
- To assess the level of patient satisfaction with the help of the perception of different colleagues (supervisors, same-level colleagues and subordinates).
- To estimate and predict patient satisfaction on the basis of various behavioural competencies of the healthcare personnel.
- To identify the difference in patient satisfaction with employee behaviour in various hospital departments and the differential behavioural competencies having impact on patient satisfaction in those departments.

Addressing the above objectives will help the HR managers identify the behavioural competencies required by health care employees to perform their jobs efficiently and their impact on the satisfaction of the patients. These behavioural competencies may be further used for setting standards for recruitment and selection of employees and understanding the areas of improvement for making the training and development plans for the employees. Also at times the patient data is not available, in such times the estimated values may be used for understanding the level of satisfaction amongst the patients.

#### **4. RESEARCH METHODOLOGY**

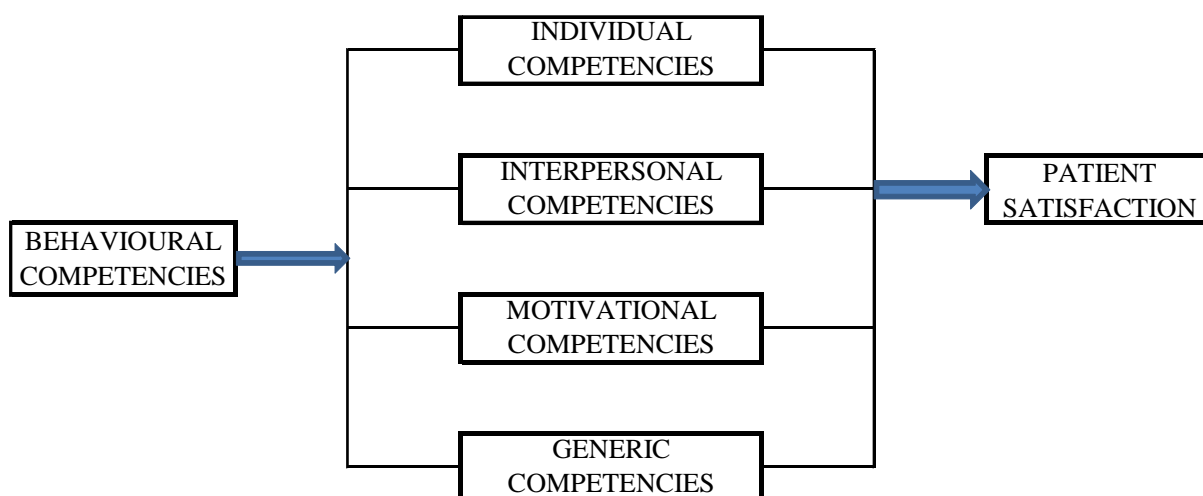
A sample of 157 employees from premier healthcare providers in Kolkata were surveyed during 2019-2020, which includes 43 outdoor patient department (OPD) employees, 77 nursing employees and 37 assisting staff. The employees were rated by 20 supervisors, 134 colleagues and 90 subordinates and 157 patients. The supervisors included the various shift supervisors and heads of the departments, the colleagues consisted of colleagues of employees of their respective departments and subordinates consisted of nursing staff,

assisting staff and housekeeping staff. A structured interview with the human resource personnel was conducted in order to identify and understand the behaviour expected of their employees with the patients and based on the information so collected structured questionnaires were formed for collecting data from the colleagues (supervisors, subordinates and same-level employees) and patients.

The aforesaid objectives were addressed through the following methodology: Pearsonian chi-square tests were conducted to find if there is any significant relation between the perception of the supervisors, same-level colleagues and subordinates about employees' competence to satisfy patients with the patient satisfaction with employee behaviour.

The framework used in the study demonstrated in Diagram 1:

Diagram 1: Framework of the study



The study has looked into the identification of the behavioural competencies as mentioned in Diagram 1 for the different hospital departments and understands its impact on the satisfaction level of the patients.

An exploratory factor analysis (EFA) was used to identify the various behavioural competencies and then a step-wise regression analysis was conducted to understand the

impact of the scores of the new components so formed on the actual patient satisfaction. The regression equation so formed would be a predictor of the future patient satisfaction. The Kruskal-Wallis and Mann-Whitney tests were conducted to see if there was any difference in patient satisfaction among various departments, after testing the normality of the data with the help of Shapiro-Wilk test. IBM SPSS, Version 2 was used to analyse the data.

## **5. DATA ANALYSIS AND FINDINGS OF THE STUDY**

The present section organises the entire analysis into the following parts: (i) exploring the association between behavioural competencies of employees and patient satisfaction, (ii) identifying behavioural competencies influencing patient satisfaction, (iii) assessing the impact of significant behavioural competencies on actual patient satisfaction, (iv) comparing behavioural competencies across the departments, and finally, (v) examining differences in patient satisfaction among the departments.

Firstly, the association between perception of supervisors', same-level colleagues' and subordinates' about employees' competence to satisfy patients with their behaviours and the actual patient satisfaction with employee behaviour were examined using statistical tests.

Next an exploratory factor analysis was conducted to identify the different types of behavioural competencies of the employees that significantly influence the patient satisfaction. A step-wise regression was done to assess the impact of the competencies on patient satisfaction. The multiple regression model so obtained has been shown to be useful to estimate and predict patient satisfaction based on the significant behavioural competencies. Validity of the model has been examined with a new set of data where various measures of estimation errors have been used. Different behavioural competencies required to satisfy patients have been compared for various healthcare departments. Further the differences in

the patient satisfaction among various departments were tested using Kruskal-Wallis and Mann-Whitney U tests.

***Exploring the association between behavioural competencies of employees and patient satisfaction***

In order to identify the similarity between the perception of supervisors', same-level colleagues' and subordinates' about employees' competence to satisfy patients with their behaviours and the actual patient satisfaction with employee behaviour the following tests have been conducted. The contingency table showing the category-wise counts of respondents according to the supervisors' perception about employees' competence to satisfy patients and actual satisfaction with employee behaviour has been presented in Table 1.

The data suggest that almost 50.31% of the employees were moderately satisfied with employee behaviour whereas according to the supervisors 57.32% constituting the major portion of employees were able to moderately satisfy the patients with their behaviour. Hence it can be seen that the perception of the supervisors were close enough to the actual patient satisfaction while looking at employees who were not able to or moderately able to satisfy the patients with their behaviour.

Table 1. *Supervisors' perception on employee's competence and actual patient satisfaction*

<Table 1>

Further in order to test if the relationship between supervisors' perception about employees' competence to satisfy patients with their behaviour and actual patient satisfaction with employee behaviour is significant (Chanda & Roychowdhury, 2020), a Pearsonian chi-square test was conducted to test the following null hypothesis:

H<sub>0</sub>: Actual patient satisfaction with employee behaviour and supervisors' perception about employees' behavioural competence to satisfy patients with their behaviour are independent on each other, against the following alternative hypothesis (research hypothesis):

H<sub>a</sub>: Actual patient satisfaction with employee behaviour and supervisors' perception about employees' competence to satisfy patients with their behaviour are dependent on each other.

The observed value of Pearsonian chi-square test statistic was found to be 15.188 whereas tabulated value is 5.991 suggesting that the H<sub>0</sub> was rejected at 5% level ( $p$ -value < 0.05), which indicates that the actual patient satisfaction with employee behaviour and supervisors' perception about employees' competence to satisfy patients with their behaviour are dependent on each other.

The contingency table showing the relationship between the same-level colleagues' perception about employees' competence to satisfy patients and actual satisfaction with employee behaviour has been presented in Table 2.

Table 2. *Same-level colleagues' perception on employee's competence and actual patient satisfaction*

<Table 2>

The data suggest that almost 50.31% of the employees were moderately satisfied with employee behaviour whereas according to the colleagues 55.41% constituting the major portion of employees were able to moderately satisfy the patients with their behaviour. Hence it can be seen the perception of the colleagues were close enough to the actual patient satisfaction while looking at employees who were not so able, moderately able and extremely able to satisfy the patients with their behaviour.

Further in order to examine if the relationship between same-level colleagues' perception about employees' behavioural competence and actual patient satisfaction with employee behaviour is significant, a chi-square test was conducted to test the following hypotheses:

H<sub>0</sub>: Actual patient satisfaction with employee behaviour and same-level colleagues' perception about employees' behavioural competencies are independent, against the following alternative hypothesis:

H<sub>a</sub>: Actual patient satisfaction with employee behaviour and same-level colleagues' perception about employees' behavioural competencies are dependent.

The observed value of Pearsonian chi-square test statistic was found to be 25.053 whereas tabulated value is 5.991 suggesting that the H<sub>0</sub> was rejected at 5% level ( $p$ -value<0.05). Hence it can be considered that actual patient satisfaction with employee behaviour and same-level colleagues' perception about employees' behavioural competencies are dependent on each other.

The number of respondents under various categories of subordinates' perception about employees' behavioural competencies and actual satisfaction with employee behaviour has been presented in Table 3.

Table 3. *Subordinates' perception on employee's competence and actual patient satisfaction*

<Table 3>

The data suggests that almost 50.31% of the employees were moderately satisfied with employee behaviour whereas according to the subordinates 60.50% constituting the major portion of employees were able to moderately satisfy the patients with their behaviour. Hence it can be seen that the perception of the subordinates were close enough to the actual patient satisfaction while looking at employees who were moderately or extremely able to satisfy the patients with their behaviour.

Further in order to verify if the relationship between subordinates' perception about employees' behavioural competencies and actual patient satisfaction with employee behaviour is significant, a chi-square test was conducted to test the following null hypothesis:

H<sub>0</sub>: Actual patient satisfaction with employee behaviour and subordinates' perception about employees' behavioural competencies are independent, against the following alternative hypothesis:

H<sub>a</sub>: Actual patient satisfaction with employee behaviour and subordinates' perception about employees' behavioural competencies are dependent.

The observed value of Pearsonian chi-square test statistic was found to be 11.203, whereas tabulated value is 5.991 resulting in the rejection of H<sub>0</sub> at 5% level of significance, indicating that actual patient satisfaction with employee behaviour and subordinates' perception about employees' behavioural competencies are dependent on each other.

From the above tests it can be suggested that the same-level colleagues were better able to perceive the competence of the employees who were not so competent or moderately competent to satisfy patients, whereas subordinates were able to better perceive the ability of those employees who were extremely competent to satisfy the patients with their behaviour. Moreover it can be seen that the observed chi-square value for the test conducted between same-level colleagues' perception about employees' behavioural competencies and actual patient satisfaction with employee behaviour is the highest of all indicating a high association between each other. Thus, suggesting that the perception of the same-level colleagues may be used to estimate the patient satisfaction with employee behaviour.

### ***Identification of behavioural competencies influencing patient satisfaction***

Next an exploratory factor analysis has been conducted in order to find out which of the different behavioural competencies are similar and can be grouped together to form a

component or a particular competency group. Table 4 depicts the total variance explained table showing the amount of variance explained by the factors. It can be seen that four components have eigen values greater than 1 suggesting that four components were formed after the factor analysis explaining 68.794 % of the total variance.

Table 4. *Percentage of total variance explained for identifying the behavioural competencies of hospital employees*

<Table 4 >

The *varimax rotation* was used while conducting the factor analysis, which provides us with the *rotated component matrix*, which is presented in Table 5. It was seen that four groups were made, viz., individual competencies, interpersonal competencies, motivational competencies and generic competencies. The individual competencies involved courtesy, ability to form good relationship, respectful behaviour, ability to handle diversity, equal treatment to all and problem solving ability. These are the behavioural competencies which are intrinsic to an individual and are required to be held by employees at hospitals in order to satisfy patients.

Table 5. *Rotated component matrix for identifying the behavioural competencies of hospital employees*

<Table 5>

The interpersonal competencies constitute of ability to communicate easily, transparent behaviour, building a sense of confidence amongst patients, patience while handling problems or arguments and ability to convince the patients for they would receive the best care in their hospital. These competencies not only help in forming good interpersonal relationship between the employees' and the patients but also help in increasing the level of satisfaction of the patients. Good interpersonal relationship make the patients feel that they are valuable to the organisation and that they have people who actually care about them.



The motivational competencies involve providing guidance to the patients, making the patients feel comfortable in the hospital's environment, job efficiency and ability to handle stress. These competencies held by an employee while interaction with patients would motivate the patients to become loyal towards the hospital and would motivate them to come back to hospital in time of need.

The generic competencies involve adaptability, knowledge about patient rights and timeliness. These behavioural competencies are required by every employee in the healthcare industry. The patients when treated rightfully at the right time while the employees adapt to the specific needs of the patients lead to satisfaction of the patients.

***Assessing the impact of significant behavioural competencies on actual patient satisfaction***

The correlations between the competencies and the actual patient satisfaction were obtained, the results of which are shown in Table 6 in descending order.

Table 6. *Correlations between actual patient satisfaction with employee behaviour and the behavioural competencies in descending order*

<Table 6>

Step-wise regressions were conducted considering the variable (competency) with highest correlation in the beginning, and then adding the other variables in order of magnitude of their correlations in order to develop a suitable regression model based on the respective  $R^2$  values as depicted in Table 7.

Table 7.  *$R^2$ -values of step-wise regression*

<Table 7>

After conducting stepwise regressions it was seen that individual and generic competencies were the only two competencies which had a significant impact on the dependent variable, i.e., actual patient satisfaction with employees' behaviour while the other two variables

interpersonal competencies and motivational competencies had an insignificant impact on the dependent variable. It can also be seen that the  $R^2$ -value in the regression analysis considering only individual competencies was 0.555 and when generic competencies was also considered the  $R^2$ -value increased to 0.665. But when motivational competencies and interpersonal competencies were added it was seen that the  $R^2$  value hardly increased. Thus suggesting that motivational and interpersonal competencies did not have much impact on the actual patient satisfaction with employee behaviour resulting in very less or no increase in the variance being explained by the variables. Hence only the variables explaining the highest portion of the variance in the regression model and having a significant impact on the dependent variable were considered to form a regression equation which would help in estimating the future patient satisfaction.

The regression analysis so conducted considering the two significant variables so found, i.e., individual competencies and generic competencies is shown in the Table 8 and Table 9.

Table 8. *Model summary table for identifying the impact of behavioural competencies on patient satisfaction with employee behaviour*

<Table 8>

The  $R^2$ -value is 0.665 meaning that 66.5% of the variance has been explained by the model with an error of 0.409. Table 9 tabulates the related regression coefficients.

The data in the regression analysis table suggest that individual competencies and generic competencies have a significant and positive impact on the dependent variable, i.e., actual patient satisfaction with employee behaviour considering the  $p$ -values which are less than 0.05. It can also be seen that individual competencies have a greater impact than generic competencies based on the unstandardized beta coefficients. The standardized beta coefficients suggest the same that individual competencies have a greater impact than generic competencies while the variances of the dependent and independent variables are 1.

Table 9. *Regression coefficients for identifying the impact of behavioural competencies on patient satisfaction*

<Table 9>

The multiple regression equation so obtained is:

$$PS = -0.935 + 0.644 IC + 0.580 GC,$$

where

PS: actual patient satisfaction

IC: individual competencies

GC: generic competencies.

Hence it can be said that these two competencies are crucial for patient satisfaction, but it can also be said that if proper training is provided for the other two competencies, i.e., motivational and interpersonal competencies, then the patient satisfaction may increase more but providing training in all the four behavioural competency areas would incur higher costs as well (Chanda & Roychowdhury, 2020). This equation can be used for estimating and predicting patient satisfaction based on the above competencies.

Further calculations were done in order to measure the accuracy of the estimation of patient satisfaction with employee behaviour using the regression model and its relationship with actual patient satisfaction. The correlations and errors have been depicted in Table 10.

The correlation between the actual patient satisfaction and the estimated patient satisfaction based on the data is found to be high and positive, indicating a good and positive relationship between them. Also as the measures of accuracy in estimation, the mean absolute deviation, mean absolute percentage of error and mean square of errors were found to be low. Thus it can be concluded that the above regression model is useful to estimate the future patient satisfaction. In order to further test the validity of the above model, a sample of 20 respondents (patients) was collected, and the results are discussed below.

Table 10. *Descriptive statistics relating to actual patient satisfaction and estimated patient satisfaction*

<Table 10>

Next a data set of 20 patients has been used to validate the model, i.e., to see if the said regression equation is able to predict the patient satisfaction with employee behaviour. It was found to work well. Table 11 shows the correlation between the predicted and observed values of patient satisfaction together with the error estimates.

Table 11. *Measures depicting the accuracy of the prediction of patient satisfaction with employee behaviour*

<Table 11>

It has been seen in Table 11 that the correlation between the estimated patient satisfaction (using the multiple regression equation) and the actual patient satisfaction is high and positive, suggesting that the patient satisfaction so predicted is reasonably accurate with a low values of error estimates. Thus, suggesting that the colleagues' perception about behavioural competencies of employees can be taken into consideration for estimating the patient satisfaction at times when it would be difficult to collect the feedback of the patients.

### ***Comparing behavioural competencies across the departments***

The group of behavioural competencies of the employees serving in different healthcare departments were looked upon in order to identify the main factors (encompassing a number of competency variables) that influence the patient satisfaction.

A factor analysis conducted in respect of the nursing department resulted in that 51.743% of the variance was explained by four components (factors) with eigen values greater than 1. The components so formed were interpersonal competencies, motivational competencies, individual competencies and generic competencies. Table 12 depicts the competencies and its constituents for the nursing department.

Table 12. *Competencies and its constituents with respect to the Nursing department*

<Table 12>

For the OPD when a factor analysis was conducted it was seen that 70.789% of the variance was explained by four components having eigen values greater than 1. The competencies so formed were individual competencies, motivational competencies, interpersonal competencies and generic competencies. Table 13 displays the competencies and its constituents for the OPD.

Table 13. *Competencies and its constituents with respect to the OPD*

<Table 13>

It may be noted that the competency variables are already very few in number for assisting staff. Hence further reduction using factor analysis was not necessary for them.

Then stepwise regressions were conducted in order to see which of the competencies had a significant impact on the patient satisfaction. It was seen that in case of the nursing department all the four competencies had a significant impact on patient satisfaction with employee behaviour, i.e., individual competencies, motivational competencies, interpersonal competencies and generic competencies with an  $R^2$  value of 0.776.

When a regression analysis was conducted for the OPD, it was seen that only component 1, i.e., individual competencies, had a significant impact on the patient satisfaction with employee behaviour with an  $R^2$  value of 0.712.

#### ***Examining differences in patient satisfaction among the departments***

In order to see if the patient satisfaction between the departments were same or different, firstly a normality test of the patient satisfaction score for the nursing department, OPD and the assisting staff department were conducted to see if the data came from a normal

population (or not) so that whether a parametric (or a non-parametric) test would be appropriate can be decided. Accordingly the further tests were conducted to understand if the patient satisfaction with employee behaviour was different for the three departments. Table 14 shows the results of the Shapiro-Wilk test of normality for all three departments.

Table 14. *Shapiro-Wilk test of normality for nursing department, OPD and assisting staff department*

<Table 14>

Further in order to test the difference between the patient satisfactions with employee behaviour in the three departments a Kruskal-Wallis test was conducted. On rejection of null hypothesis of equality in patient satisfaction in all three departments, Mann-Whitney U tests were conducted for pairwise comparison. Table 15 depicts the results of the Kruskal-Wallis and Mann-Whitney U tests.

Table 15. *Kruskal-Wallis and Mann-Whitney U test results*

<Table 15>

The tests suggested that the patient satisfaction with employee behaviour in the nursing department and the OPD were similar whereas it was different for the assisting staff department.

In the process of the study it has also been explored that there exists a strong correlation ( $r=0.768$ ) between patients' perception about quality of service provided by the employees and patient satisfaction with the employees' behaviour. This indicates that the patients' perception about quality of service provided by employees also depends on their behaviour towards the patients.

## 6. CONCLUSION

The private healthcare sector had emerged out of the demand for healthcare services which the public healthcare sector was not capable of providing due to the pressure of inflowing patients from different economic strata. The services so provided by the healthcare personnel in the private sectors not only require proper technical know-how but also require a certain behaviour that they need to portray towards the patients who they are serving. Behaviour is an important aspect when it comes to interacting with patients. Patients are generally scared and sometimes agitated due to the treatments or illness they are going through and require some kind of mental support and assurance to go through it. Behaviour of the employees helps them build a sense of trust amongst the patients and provides them with confidence to go through their procedures. The patients tend to form a good relationship with the employees throughout their stay at the hospital which even motivates them to visit the hospital in case of any medical need in future, not only for themselves, but for their family and friends too. Thus, in order to form a good relationship with the patients, the employees are expected to behave in a certain manner with the patients which would in turn have a positive impact on the patient satisfaction. Hence it is required to understand the behavioural competencies which impact the patient satisfaction. The study evolved that even though there are mainly four behavioural competencies (viz., individual competencies, interpersonal, motivational and generic competencies), only the individual and generic competencies had a significant impact on the patient satisfaction with the employee behaviour. But when the impact of the behavioural competencies on patient satisfaction for various departments was being studied it was seen that for the nursing department all the four behavioural competencies and for the OPD only individual competencies had a significant impact on the patient satisfaction. In view of this, questions arose if the patient satisfaction may be different for the different departments. The statistical tests suggested that the patient satisfaction for

the OPD and the nursing department were not significantly different from each other but the patient satisfaction with the assisting staff department was different from the other two departments.

Now it might not be feasible to identify the patient satisfaction with each and every employee individually, in such a situation the supervisors', same-level colleagues' and subordinates' perception who interact with the employees being rated may be taken into consideration. By performing test of dependence it was also seen that the actual patient satisfaction was the most dependent on the colleagues' perception about the employees' competence to satisfy patients with their behaviour. Therefore it can be said that the same-level colleagues' perception may be used as an indicator to identify the competence of employees to satisfy patients with their behaviour. The ability of the prediction equation (regression equation) to estimate the patient satisfaction with employee behaviour was also assessed, which shows that the equation was able to predict the patient satisfaction with small estimation errors. Also patients' perception about quality of service provided by the employees was found to have a positive relationship with the behaviour of the employees towards them.

Hence it can be concluded that the individual and generic competencies are the most important and are required by the hospital employees to satisfy their patients. Any kind of improvement or development needed in an individual in terms of these competencies must be ascertained and accordingly training must be provided which would in turn increase the level of satisfaction amongst patients with employees' behaviour. The other behavioural competencies, i.e., the motivational and interpersonal competencies were found to have relatively less impact on the patient satisfaction with employee behaviour but ascertaining the lack of these competencies in the employees and accordingly training them may lead to higher patient satisfaction. Along with higher patient satisfaction the training costs might also get high, so the HR managers must keep that in mind and accordingly plan the training



programmes etc. As the patient satisfaction for different departments were seen to be different, the areas of improvement are different as well and hence the training programmes so designed particularly for a department must be designed accordingly and must try to achieve the highest level of patient satisfaction for all the departments.

As patients' data may not be readily available at all times, the colleagues' perception may be taken into consideration for understanding the ability of the individuals to satisfy patients, as there has been found to exist a high correlation between actual and estimated patient satisfaction. Also by evaluating various competencies of the employees, patient satisfaction can be estimated statistically with the help of those values.

It is relevant to mention that the entire study was conducted right before the Covid-pandemic period starts. At present a study is being conducted to assess the extent of difference in results during pandemic period in comparison with the same observed in pre-pandemic period in order to analyse the impact of the current pandemic on the variables involved in the study, which will be covered in a forthcoming paper.

## REFERENCES

- Aitken, Murray; Backliwal, Amit; Chang, Mark & Udeshi, Amardeep Understanding Healthcare Access in India, Report by the IMS Institute for Healthcare Informatics, 2013
- Albanese, Raffaele. Competency-based management education, *Journal of Management Development*, vol. 8, no. 2, 1989, pp. 66-79
- Bailey, C. and Fletcher, C. The impact of multiple source feedback on management development: findings from a longitudinal study, *Journal of Organisational Behaviour*, vol. 23, 2002, pp. 853-867
- Baillie, L. The impact of staff behaviour on patient dignity in acute hospitals, *Nursing Times*, vol. 103, no. 34, 2007. pp. 30-3. Extracted from: <https://www.nursingtimes.net/clinical-archive/long-term-conditions/the-impact-of-staff-behaviour-on-patient-dignity-in-acute-hospitals-21-08-2007/>
- Basu, S., Andrews, J., Kishore, S., Panjabi, R. & Stuckler, D. "Comparative Performance of Private and Public Healthcare Systems in Low- and Middle-Income Countries: A Systematic Review". *PLOS Medicine*, 2012

Chanda, P. & Roychowdhury, S. A study of the relationship between behavioural competencies and patient satisfaction in the healthcare sector, *Innovative Business Practices in a V.U.C.A World*, 2020, pp. 297-303.

Definition of 'Behavioural Competency'. *The Economic Times*. Extracted from: <https://economictimes.indiatimes.com/definition/behavioural-competency>

Edward, M.R. & Ewen, A.J. How to Manage Performance and Pay With 360-Degree Feedback: Multisource assessment can work for both performance and pay management when participants know the system is fair. But doing it right requires a commitment, *Compensation & Benefits Review*, vol. 28, no. 3, 1996, pp. 41-46

Fletcher, C. & Baldry, C. Multi-source feedback systems: A research perspective, *International review of industrial and organisational psychology*, vol. 14, 1999, pp. 149-193

Hayes, J.L. A new look at managerial competence: the AMA model of worthy performance. *Management Review*, 1979, pp. 2-3

Healthcare industry in India. *Indian Brand Equity Foundation*, 2015. Extracted from: <https://www.ibef.org/industry/healthcare-india.aspx>,

Human resources administrators & supervisors, Michigan University. Extracted from: <https://hr.msu.edu/ua/performance/support-staff/competencies/>

International Institute for Population Sciences and Macro International. *National Family Health Survey (NFHS-3)*, 2005-06, 2007

Jairam, N., Kakkar, A., Bali, V. & Varma, N. Healthcare: The neglected GDP driver, *FICCI Heal 2015: India's Healthcare: Time for Paradigm shift*, 2015, pp. 5-17

Krishnaveni, J. A study on mapping of employees' competency, *Indian Journal of Economics and Development*, vol. 1, no. 3, pp. 71-75, March 2013

Kaur, J., & Kumar, V. Competency Mapping: A gap analysis, *International Journal of Education and Research*, vol. 1, no. 1, 2013, pp. 1-9.

Kattara, H.S., Weheba, D. & Ahmed, O. The impact of 'employee's behaviour on customers' service quality perceptions and overall satisfaction, *Tourism and Hospitality Research, 17th Annual International CHME Research Conference, Strathclyde*, vol. 8, no. 4, 2008, pp. 309-323.

Lateef, F. Patient expectations and the paradigm shift of care in emergency medicine, *Journal of Emergencies, Trauma and Shock*, vol. 4, no. 2, 2011, pp. 163-167.

Limbore, N.V. & Khillari, S.K. The impact of employees smiling and positive behaviour on customers' satisfaction with reference to selected banks in Baramati region, 5th National Conference on Management Perspectives on Changing Socio-Economic Environment: Vision and Challenges, at Anekant Education Society's Anekant Institute of Management Studies, *Think India Journal*, vol. 22, no. 24, 2016

London, M. & Beatty, R.W. 360-degree feedback as a competitive advantage. *Human Resource Management*, vol. 32, 1993, pp. 353-372.

London, M. & Smither, J.W. Can Multi-source Feedback change perceptions of goal accomplishments, self-evaluations and performance-related outcomes? Theory-based applications and directions for research. *Personnel Psychology*, vol. 48, 1995, pp. 803-839.

Mansfield, R. S. Building competency models: Approaches for HR professionals. *Human Resource Management*, vol. 35, 1996, pp. 7-18.

Mukhtar, A., Modding, B., Latief, B. and Hafied, H. The influence of Organisational Culture and Work Stress on Job Satisfaction and Performance of Sahira Bank employees in Makassar, *Quest Journals: Journals of Research in Humanities and Social sciences*, vol. 6, no. 1, 2018, pp. 58-64.

Mount, M.K., Judge, T.A., Scullen, S.E., Systma, M.R. and Hezlett, S.A. Trait, Rater and Level Effects in 360-Degree Performance Ratings. *Personnel Psychology*, vol. 51, 1998, pp. 557-576.

Ngo, M. V. Measuring Customer Satisfaction: A Literature Review, *7th International Scientific Conference Finance and Performance of Firms in Science*, Zlin, Czech Republic: Education and Practice 2015, 2015

Prakash, V. Patient Satisfaction. *Journal of Cutaneous and Aesthetic Surgery*, vol. 3, no. 3, 2010, pp. 151-155.

Rankin, N. Raising performance through people: The ninth competency survey. *Competency and Emotional Intelligence*, 2002, pp. 12-21.

Sengupta, A. & Nundy, S. The private health sector in India is burgeoning, but at the cost of public healthcare, *US National Library of Medicine national Institutes of Health*, vol. 331, no. 7528, 2005, pp. 1338-1339.

Thayyil, J. & Jeeja, M.C. Issues of creating a new cadre of doctors for rural India. *International Journal of Medicine and Public Health*, 2013, vol. 3, no. 1, 2013, pp. 8-11.

United Nations Industrial Development Organisation. UNIDO Competencies. Extracted from: <http://www.unido.org> 2002.

Winarno, A. & Perdana, Y. The effects of Competence and Motivation of Employee performance at PT Pos Indonesia Bandung Cilaki Head Office, *International Conference on Business, Marketing & Information System Management*, 2015

Woodruffe, C. What is meant by competency?, *Leadership & Organisational Development Journal*, vol. 14, no. 1, 1991, pp. 22-33.

**TABLES**

Table 1

*Supervisors' perception on employee's competence and actual patient satisfaction*

<b>Perception of supervisors' on satisfaction of patients with employee behaviour</b>	<b>Actual patient satisfaction of with employee behaviour</b>			<b>Total</b>
	Not so satisfied	Moderately satisfied	Extremely Satisfied	
Not so satisfied	10	10	18	38
Moderately Satisfied	18	55	17	90
Extremely Satisfied	5	14	10	29
<b>Total</b>	33	79	45	157

Table 2

*Same-level colleagues' perception on employee's competence and actual patient satisfaction*

<b>Perception of colleagues' on satisfaction of patients with employee behaviour</b>	<b>Actual patient satisfaction with employee behaviour</b>			<b>Total</b>
	Not so satisfied	Moderately Satisfied	Extremely Satisfied	
Not so satisfied	9	13	9	31
Moderately Satisfied	17	56	14	87
Extremely Satisfied	7	10	22	39
<b>Total</b>	33	79	45	157

Table 3

*Subordinates' perception on employee's competence and actual patient satisfaction*

<b>Perception of subordinates' on satisfaction of patients with employee behaviour</b>	<b>Actual patient satisfaction with employee behaviour</b>			<b>Total</b>
	Not so satisfied	Moderately Satisfied	Extremely Satisfied	
Not so satisfied	7	10	5	22
Moderately Satisfied	19	55	21	95
Extremely Satisfied	7	14	19	40
<b>Total</b>	33	79	45	157

Table 4

*Percentage of total variance explained for identifying the behavioural competencies of hospital employees*

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.491	47.171	47.171	8.491	47.171	47.171	3.756	20.867	20.867
2	1.663	9.236	56.407	1.663	9.236	56.407	3.263	18.126	38.993
3	1.219	6.775	63.182	1.219	6.775	63.182	3.001	16.670	55.663
4	1.010	5.612	68.794	1.010	5.612	68.794	2.364	13.131	68.794
5	.949	5.271	74.065						
6	.714	3.966	78.031						
7	.651	3.616	81.646						
8	.591	3.282	84.929						
9	.458	2.542	87.471						
10	.450	2.502	89.973						
11	.367	2.036	92.010						
12	.326	1.810	93.820						
13	.255	1.417	95.236						
14	.234	1.297	96.534						
15	.222	1.234	97.768						
16	.188	1.045	98.812						
17	.118	.654	99.466						
18	.096	.534	100.000						

Table 5

*Rotated component matrix required for identifying the behavioural competencies of hospital employees*

Variables considered for dimension reduction	Component			
	1	2	3	4
Perception of patients on employee adaptability	.535	.077	.158	.608
Perception of patient on employee courtsey	.615	.543	.232	.075
Perception of patient on employees knowledge of patient rights	.235	.231	-.009	.736
Perception of patient on employee relation with patient	.783	.128	-.015	.248
Perception of patient on employees respect towards patient	.644	.510	.260	-.101
Perception of patient on employee guidance to patients	.111	.443	.710	-.035
Perception of patient on employees communication	.503	.581	.495	-.006
Perception of patient on employee transparency with patients	.522	.538	.476	-.058
Perception of patient on employees ability to make patient comfortable	.271	.225	.558	.307
Perception of patient on employees handling diversity	.668	.124	.486	.069
Perception of patient on employees treating patients equally	.699	.244	.451	.100
Perception of patient on employee problem solving	.464	.449	.274	.432
Perception of patient on employee ability to gain trust	.215	.540	.310	.344
Perception of patient on employee efficiency	.068	.378	.498	.458
Perception of patient on employee patience	.074	.761	.220	.273
Perception of patient on employee stress tolerance	.221	-.018	.787	.243
Perception of patient on employees timeliness	-.129	.073	.186	.708
Perception of patient on employees convincing ability	.353	.680	-.058	.334



Table 6

*Correlations between behavioural competencies and actual patient satisfaction with employee behaviour*

<b>Competencies</b>	<b>Correlation with Actual Patient satisfaction with employee behaviour</b>
Individual Competencies	0.745
Generic Competencies	0.686
Motivational Competencies	0.669
Interpersonal Competencies	0.531

Table 7

*R<sup>2</sup> values of step-wise regression*

<b>Competencies</b>	<b>R-square values</b>
Individual Competencies	0.555
Individual and Generic Competencies	0.665
Individual, Generic and Motivational Competencies	0.672
Individual, Generic, Motivational and Interpersonal Competencies	0.673

Table 8

*Model summary for identifying the impact of behavioural competencies on patient satisfaction with employee behaviour*

<b>Model</b>	<b>R</b>	<b>R-square</b>	<b>Adjusted R-square</b>	<b>Std. Error of the Estimate</b>
1	0.816	0.665	0.661	0.40924

Table 9

*Regression coefficients for identifying the impact of behavioural competencies on patient satisfaction*

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-0.935	0.292		-3.196	0.002
Individual Competencies	0.644	0.068	0.528	9.482	0
Generic Competencies	0.58	0.081	0.397	7.132	0

Table 10

*Descriptive statistics relating to actual patient satisfaction and estimated patient satisfaction*

<b>Measures</b>	<b>Values</b>
Correlation	0.8204
Mean Absolute Deviation	0.334
Mean Absolute percentage of error	8.52%
Mean Square of errors	0.1604

Table 11

*Measures depicting the accuracy of the prediction of patient satisfaction with employee behaviour*

<b>Measures</b>	<b>Values</b>
Correlation	0.826
Mean Absolute Deviation	0.285
Mean Absolute percentage of error	6.78%
Mean square of errors	0.107

Table 12

*Competencies and its constituents with respect to the nursing department*

<b>COMPETENCIES</b>	<b>CONSTITUENTS</b>
Interpersonal Competencies	Greeting patients, Ability to form good relationship with patients, Being respectful towards patients, Ability to communicate easily, Maintaining transparency, Ability to make patients feel comfortable, Ability to handle diversity and Treating patients equally.
Motivational Competencies	Included ability to guide patients, Ability to gain confidence of patients, Efficiency and Ability to handle stress.
Individual Competencies	Ability to solve problems easily, Patience and Convincing skills
Generic Competencies	Adaptability, Knowledge about patient rights and Timeliness

Table 13

*Competencies and its constituents with respect to the OPD*

<b>COMPETENCIES</b>	<b>CONSTITUENTS</b>
Individual Competencies	Greeting the patients, Knowledge about patient rights, Ability to form good relationship with patients, Respect towards the patients, Maintaining transparency, Treating patients equally, Patience and Ability to handle stress.
Motivational Competencies	Ability to make patients feel comfortable, Efficiency, Timeliness and Convincing skills
Interpersonal Competencies	Adaptability, Ability to guide patients, Ability to communicate easily and Ability to handle diversity.
Generic Competencies	Ability to solve problems quickly and Ability to gain the confidence of the patients



Table 14

*Shapiro-Wilk test of normality for nursing department, OPD and assisting staff department*

<b>Department</b>	<b>p value &gt; 0.05 or p value &lt; 0.05</b>	<b>Null Hypothesis</b>	<b>Ho accepted or rejected</b>	<b>Type of Distribution</b>
Nursing department	p value < 0.05	The distribution is normal	Ho rejected	Non- normal distribution
OPD	p value < 0.05	The distribution is normal	Ho rejected	Non- normal distribution
Assisting staff department	p value < 0.05	The distribution is normal	Ho rejected	Non- normal distribution

Table 15

*Kruskal-Wallis and Mann-Whitney U test results*

Name of the test	Departments involved	p value > 0.05 or p value < 0.05	Null Hypothesis	H <sub>0</sub> accepted or rejected
Kruskal-Wallis test	Nursing, OPD & Assisting staff	p value < 0.05	There is no difference in patient satisfaction with employee behaviour for all three departments	H <sub>0</sub> rejected
Mann-Whitney U test	Nursing & OPD	p value > 0.05	There is no difference in patient satisfaction between nursing department and OPD.	H <sub>0</sub> not rejected
Mann-Whitney U test	Nursing & Assisting staff	p value < 0.05	There is no difference in patient satisfaction between the nursing and assisting staff departments	H <sub>0</sub> rejected
Mann-Whitney U test	OPD & Assisting staff	p value < 0.05	There is no difference in patient satisfaction between OPD and assisting staff department	H <sub>0</sub> rejected