

Impact of ‘Customer Relationship Management (CRM) Software’ on Patient Satisfaction in Public Hospitals of Urban West Bengal, India: An Empirical Analysis

Satakshi Chatterjee, Arunangshu Giri, Pradip Paul, Manigrib Bag

Abstract: Healthcare has transformed drastically over the course of the past few years. It has become one of the most sought after services in India today. Majority of the Indian population bank on the diagnostic services as well as treatment offered by the public hospitals today as they do not have the financial resources required to seek services from the private healthcare institutions. As a result, the pressure incurred in these institutions is humongous. However, the use of CRM technology could be used to ease up a little bit of this pressure. The objective of this paper is to identify and further analyse the various factors which affect the patient satisfaction in a positive manner by the implementation of CRM technology in the private hospitals of West Bengal. Both primary as well as secondary data was used in this study. Primary data was collected through a structured questionnaire using a 5 point Likert scale. 289 responses were catalogued. The study was limited to the state of West Bengal, India. Exploratory Factor Analysis (EFA) through SPSS Software and Structural Equation Modeling (SEM) through AMOS Software were used as statistical tools. It was found out that several factors like service quality; maintenance of patient data, organizational culture as well as employee satisfaction through the usage of CRM technology has a very deep impact on patient satisfaction. Patient satisfaction, in turn helps the hospital to develop a strong relationship with the patients in the long run, which further results in patient loyalty and patient retention.

Keywords: Customer Relationship Management, Healthcare, Public Hospitals, Patient Satisfaction, Service Quality

I. INTRODUCTION

The healthcare industry today experiences multiple issues in order to grow. A large magnitude of these problems lies in the competitive environment faced by this industry as well as the adoption of the right technology as the types of technology is rapidly evolving by leaps and bounds. CRM, or Customer Relationship Management, through the use of certain high end technology can help in solving this matter and lead to patient satisfaction in the long run. It will likely be quintessential for

the organisations as it helps in changing the orientation of the potential as well as the existing customers (Gandhi & Tandon, 2017)^[7]. Basically, the healthcare organisations rely on two types of CRM software to generate their customer base. The first type of CRM software is used to maintain relationships with the patients in order to generate customer loyalty. Some examples of this kind of CRM software are Oracle, Healthgrades, Influence Health, Veriomed, etc. On the other hand, healthcare organisations can also maintain a good relationship with the referral organisation through the help of the second type of CRM software. The examples of this type of CRM software are MarketWare System and Healthgrades. There are numerous other CRM softwares used in the various healthcare organisations which are implemented for giving benefits in generating individual patients as well as patients from the referral systems. Some of them are tuOtempO, Evariant, Healthgrades, Sequence Health, hc1.com, etc. Thus, the healthcare organisations have already started to rely on the mechanisms of the CRM softwares being implemented in the organisation. It helps them to keep a track of the patients’ progress and also helps in aiding the communication process between the patient’s families and the hospital as well. Adoption of CRM technology could also lead to the acquisition of the patients in the long run (Asgar & Shahri, 2015)^[2]. However, CRM in the healthcare industry is a relatively new genre. It lacks empirical evidence (Baashar, et al., 2016)^[3] and so this paper tries to delve deeper into the healthcare industry and identify the factors and variables of CRM software that are responsible for influencing the patient satisfaction as well as the patient retention.

II. LITERATURE REVIEW

CRM helps the organisations of the healthcare industry to provide better services as compared to the competitors. By improving the quality of the services, the organisations could better satisfy the customers, which is the basic goal of any organisation today. The quality of the services rendered to the patients could improve by addressing the immediate needs of the patients, an interactive management platform between the patient party as well as the organisation, providing post

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treatment facilities and maintaining the privacy of the patients (Rafique & Dadhichi, 2016)^[15]. The service quality could also be improved by adopting the e-healthcare systems which works on EMR, otherwise known as Electronic Medical Records). This ensures that the information of the patients is shared with the relevant persons in a rapid manner so that the services could be provided to the patients in a timely manner. Moreover, usage of these tools could reduce the expenditure of the organisations as fewer amounts of human resources and their expertise will be required to go through the data and reach a conclusion within a specific span of time. It must be noted that every day, the data generated in the hospitals are massive in number and a majority of this data is irrelevant. Hence, CRM tools helps to sort out this data in a faster manner (Durairaj & Ranjani, 2013)^[5]. The relevant data can be further utilised to acquire new customers and build the customer base of the healthcare organisations. The communication channels between the patients and the hospitals must remain clear (Yaghoubi, et al., 2017)^[17]. CRM helps in the building of an organisational culture which focuses in the improvement of the efficiency in the hospital. This can be achieved by the collaboration of the new technology embedded in the organisation with that of the top management. Courteous behaviour must be encouraged within the healthcare organisations. Generally, in the hospitals and nursing homes, the patients as well as the patient party are in a state of tension and disrepair. Majority of them are in a worried state of mind. Hence, the employees must be trained in such a way so that they are highly responsive to a particular situation and they must be always willing to help. This would help to build trust and confidence on the part of the patient (Ali, et al., 2013) ^[1]. Patient satisfaction can also be built based on the foundation of trust as well as the commitment built by the organisation (Zhou, et al., 2017)^[18]. This could be immensely helpful as a marketing strategy in the long run as word of mouth marketing is one of the best forms of marketing which involves minimal investment with the largest results. Employee satisfaction motivates the employees to give their best in the organisation. This would result in reduced waiting times and the patients remember their experience with the particular hospital or nursing home. Similarly, if there is any dissatisfaction in the minds of the employees regarding any matter, the promptness of the service delivery might be affected. Also, having a particular vision, having fun in the workplace and also regular changes in the work curriculum to break the monotonous nature, etc, must also be encouraged by the organisation (Jackson & Wood, 2010)^[12]. After all, a happy employee will become a productive employee in the long run. Thus, it can be said that employee satisfaction plays a very important role in the generation of patient satisfaction in a hospital (Janicikovic, et al., 2013)^[13]. Enhanced level of patient satisfaction helps to develop a strong relationship with the patients which could result in a strong patient centric approach (Chandra, et al., 2018)^[4]. Building a strong relationship with the patients is also very useful in increasing the degree of loyalty amongst them. Patient satisfaction would automatically lead to Patient retention as the patients become loyal towards the particular hospital (Qomariah, 2016)^[14] and the profitability

of the hospitals would increase drastically. A research study indicates that CRM can target the influencing factors that are indicative to the degree of patient satisfaction in an organisation and also value creation is done during the course of the entire process (Rahmani, et al., 2017)^[16]. Patient satisfaction would also result in the increasing level of patient loyalty towards a particular hospital and nursing home (Hajikhani, et al., 2016)^[10] which would ultimately lead to patient retention. The organisations in the healthcare industry are shifting towards a customer centric development. The services provided by these organisations are often times crucial for the patients as it may be a matter of life and death for the patients. Hence, it is of utmost importance to nurture a good relationship between the patients and the hospitals in order to aid this process of cooperation (Fabac & Mance, 2011)^[6]. Improvement of this aforementioned relationship is one of the significant factors which are being addressed by the implementation of the various CRM softwares (Gbadeyan, 2010)^[8]. This relationship can be categorised under physician and patient relationship, nurse and patient relationship and staff and patient relationship. All these three can help in the enhancement of a healthy relationship between the two parties. A healthy relationship is also supported by open communication channels between the two parties as well (Hajikhani, et al., 2015)^[9]. Also, the hospital should be accountable for the entire experience of the patient during the course of treatment (Hosseini, et al., 2015)^[11].

III. HYPOTHESES AND RESEARCH MODEL

H1: ‘Improving Service Quality through CRM-Software’ positively influences ‘Patient Satisfaction’ in Public Hospitals of Urban West Bengal.

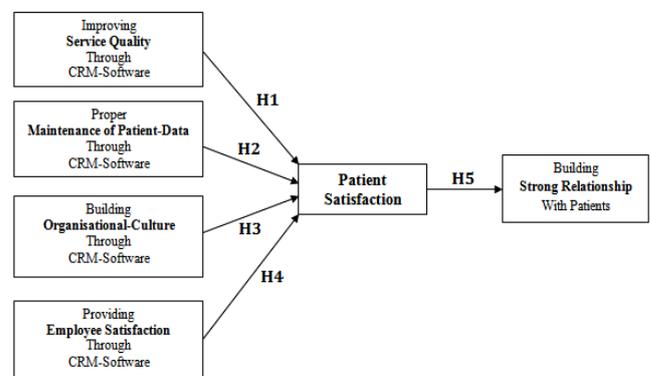
H2: ‘Proper Maintenance of Patient-Data through CRM-Software’ positively influences ‘Patient Satisfaction’ in Public Hospitals of Urban West Bengal.

H3: ‘Building Organizational-Culture through CRM-Software’ positively influences ‘Patient Satisfaction’ in Public Hospitals of Urban West Bengal.

H4: ‘Providing Employee Satisfaction through CRM-Software’ positively influences ‘Patient Satisfaction’ in Public Hospitals of Urban West Bengal.

H5: ‘Patient Satisfaction’ positively influences ‘Building Strong Relationship with Patients’ in Public Hospitals of Urban West Bengal.

Figure 1: Hypothesized Research Model



IV. RESEARCH METHODOLOGY

In this study, descriptive research design has been used along with cross sectional survey. First of all, hypothesized research model (Figure 1) was developed using secondary data. Primary data was collected through structured questionnaire (Annexure 1) with 5 point Likert scale. Convenience sampling technique was used for collecting the sample elements. Public Hospitals as CRM-users of Urban West Bengal were chosen by convenience sampling technique in the first stage. In the second stage patient and patient-party feedbacks were collected from those hospitals through same sampling technique. Total 289 responses with different demographic profile were collected in this research. The survey period was from 25th January, 2019 to 10th April, 2019. Exploratory Factor Analysis (EFA) through SPSS Software and Structural Equation Modeling (SEM) through AMOS Software were used here as statistical tools.

Table 1: Demographic Profile of Respondents

	Category	Number	% (Percentage)
Gender	Male	162	56.06
	Female	127	43.94
Age	<25 years	92	31.83
	25-40 years	110	38.06
	41-60 years	52	17.99
	>60 years	35	12.11

V. DATA ANALYSIS AND RESULTS

A. Reliability Testing:

Table 2: Overall Reliability Statistics

Cronbach's Alpha	No. of Items
0.719	16

For checking the reliability of primary data, Cronbach's alpha value was observed and the alpha value (0.719) proves satisfactory range (>0.70) of reliability.

B. Validity Testing:

Exploratory Factor Analysis (EFA) was used to validate the primary data set through testing Convergent and Discriminant Validity.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.781
Bartlett's Test of Sphericity	Approx. Chi-Square	2677.051
	Df	120
	Sig.	<0.001

The MSA value (0.781) proved Sampling Adequacy for factor analysis and significant value of Bartlett's Test of Sphericity indicated significant correlations among variables under different factors. So, KMO and Bartlett's Test (Table 1) proved the appropriateness of carrying out EFA. EFA extracted 6 different factors along with their variables

(‘factor loadings’ more than 0.5) through Rotated Component Matrix (Table 2).

Table 2: Result of Factor Analysis and Individual Factor Reliability

Factors	Questions	Factor Loading	% of Variance Explained	Cronbach's Alpha Reliability
Service Quality	q3	.945	16.732	0.939
	q1	.921		
	q2	.899		
Organizational-Culture	q7	.915	15.303	0.878
	q9	.895		
	q8	.844		
Maintenance of Patient-Data	q4	.901	15.210	0.868
	q6	.879		
	q5	.868		
Employee Satisfaction	q12	.909	14.373	0.820
	q10	.858		
	q11	.732		
Patient Satisfaction	q13	.940	11.719	0.904
	q14	.931		
Building Relationship	q16	.796	7.528	0.843
	q15	.725		

Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization, The fitness indexes (Table 3) were observed for checking the aptness of research model. Also, Path Analysis was conducted for checking the hypothesis.

Table 3: Fit indices for Research Model

Fit Index with Acceptable Range	Research Model Values
χ^2/df (Values less than 3)	0.529
RMSEA (Values less than 0.06)	0.001
GFI (Values greater than 0.90)	0.998
AGFI (Values greater than 0.90)	0.987
NFI (Values greater than 0.90)	0.997
CFI (Values greater than 0.90)	0.999

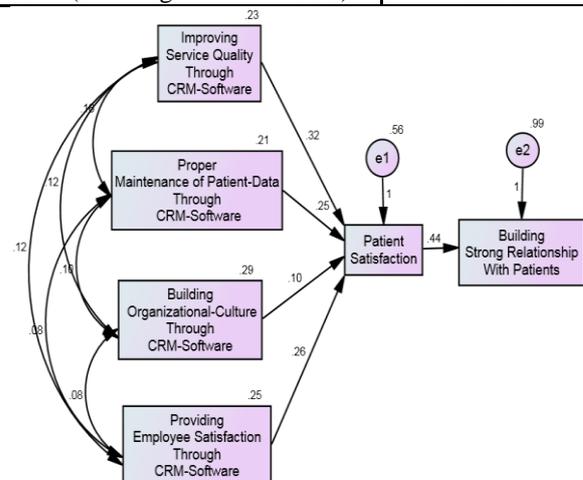


Figure 2: Output of Structural Equation Modeling



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Multi-co-linearity was checked through Variance Inflation Factor (VIF) in this research. Here, all VIF values existed inside the suitable range (below 3) and proved that factors are free from Multi-co-linearity.

Table 4: Co-linearity Statistics

<i>'Patient Satisfaction' as dependent factor</i>		
	Tolerance	VIF
Improving Service Quality Through CRM-Software	.385	2.596
Proper Maintenance of Patient-Data Through CRM-Software	.477	2.098
Building Organizational-Culture Through CRM-Software	.762	1.312
Providing Employee Satisfaction Through CRM-Software	.756	1.323

Table 5: Path analysis of Research Model

Measurement Path		Hypothesis	Estimate	P-Value
Patient Satisfaction	← Service Quality	H1 (S)	.317	.033**
Patient Satisfaction	← Maintenance of Patient-Data	H2 (S)	.251	.045**
Patient Satisfaction	← Organizational Culture	H3 (S)	.105	.003*
Patient Satisfaction	← Employee Satisfaction	H4 (S)	.260	.010*
Building Relationship	← Patient Satisfaction	H5 (S)	.439	<0.01*

Note: * & ** indicate 1% & 5% level of significance (S)- indicates 'Supported Hypothesis'

V. HYPOTHESIS TESTING AND FINDINGS

H1: 'Improving Service Quality through CRM-Software' positively influences 'Patient Satisfaction' in Public Hospitals of Urban West Bengal.

Research model supported the above hypothesis because path coefficient is having significant value (p=0.033) and expected positive sign (+.317). The quality of the healthcare services is one of the most important factors that mark the satisfaction of the patients. These services are often times

H5: 'Patient Satisfaction' positively influences 'Building Strong Relationship with Patients' in Public Hospitals of Urban West Bengal.

Research model supported the above hypothesis because path coefficient is having significant value (p <0.01) and expected positive sign (+.439). Patient satisfaction helps in strengthening the relationship between the patient and the organization so that the patient visits the hospital again at their time of need. This patient loyalty will help in the increasing of the customer base of a particular hospital and also it will prove to be very profitable in the long run.

VI. IMPLICATION OF THE STUDY

Healthcare has become a basic necessity of the people. A majority of the healthcare expenses come from the out of

life saving for the patients and hence, the hospitals must make sure to render the optimal quality of services to the patients through the implementation of various CRM softwares.

H2: 'Proper Maintenance of Patient-Data through CRM-Software' positively influences 'Patient Satisfaction' in Public Hospitals of Urban West Bengal.

Significant P-value (p=0.045) with positive (+.251) path coefficient supported the above hypothesis. A huge number of data is generated every day in the public hospitals and thousands of people visit there on a regular basis. This data could be captured through the use of the CRM software and properly maintained as this data of the patients would help immensely to influence the patient satisfaction in a positive manner. This would also enable the public hospitals to deal with the different cases in a time specific manner, thus improving the quality rendered to the patients. This would ultimately result in improving patient satisfaction.

H3: 'Building Organizational-Culture through CRM-Software' positively influences 'Patient Satisfaction' in Public Hospitals of Urban West Bengal.

Research model supported the above hypothesis because path coefficient is having significant value (p=0.003) and expected positive sign (+.105). An organizational culture needs to be present in the public hospitals to use the CRM software embedded within the system. This would help in the establishment of a structure which would be collecting as well as analyzing the data from time to time. This will also positively influence the satisfaction of the patients in the long run.

H4: 'Providing Employee Satisfaction through CRM-Software' positively influences 'Patient Satisfaction' in Public Hospitals of Urban West Bengal.

Significant P-value (p=0.010) with positive (+.260) path coefficient supported the above hypothesis. Employees are pivotal links in a service organization as the profitability as well as the productivity of the organizations depends on them fully. As a result, it is crucial to expend on the human resources of a public hospital by implementing software which will be able to increase the satisfaction level of the employees. Higher level of employee satisfaction would automatically result in increasing patient satisfaction.

pocket expenditure in a country like India. Majority of the population has to depend on the public hospitals for treatment as they cannot afford to avail the healthcare services provided by the private hospitals. As a result, the public hospitals have a higher degree of access to various kinds of patients suffering from different illnesses. The usage of CRM software in the public hospitals can tap into this huge data by collecting them from the patients and analyzing them later onwards. This could be helpful in improving the productivity of the public hospitals as previous medical records would be available to the doctors and the nurses at a moment's notice.



This would speed up the treatment regimen of the patients and also reduce the chances of errors as all the crucial information related to the physiology of the patients would be recorded in the medical records. The productivity of the organization would increase drastically. Everyday thousands of patients visit the public hospitals for seeking treatment. However, in a majority of the cases, the number of beds in the hospitals as well as the physicians available to treat these patients is not optimal. Hence, it is crucial for the hospitals to optimally utilize the infrastructure which is present with them. With the help of the CRM technology, the patients could be treated in a faster manner, thus, freeing up space in the hospitals for more patients. This will have some economical as well as social benefits as well. In terms of social benefits, a larger population will be treated in the hospitals in a shorter period of time. Also, in terms of economical benefits, the profitability of the public hospitals will increase drastically as more patients are getting treated in a specified period of time. Hence, the public hospitals should think about adopting the relevant CRM technology to smooth their operational procedures, at the same time, maintaining the quality of the services rendered to them.

VII. CONCLUSION

Majority of the Indian population depend on the public hospitals for the diagnosis and treatment of their diseases and conditions. The healthcare infrastructure, at the same

time, is grossly underdeveloped and the present system is not equipped to handle the huge inflow of patients on a daily basis. The government of India is looking into this matter very seriously and they are taking steps to strengthen the infrastructure and healthcare network. However, this is a slow process and it will take some time to accomplish. Meanwhile, the present infrastructure needs to be utilized in an optimal manner so as to cater to the needs and demands of as many people as possible. This could be accomplished by the adoption of the CRM technology into the public hospitals at present. The public hospitals can keep medical records of each and every patient to increase the speed of their treatment when the patient visits the hospital. At the same time, the hospital would be aware about the needs of the patients and it can work very fast in order to deliver the required service to that particular patient. Automatic devices are utilized by the hospitals today for the purpose of treatment as well as diagnosis. Improvement of the quality of the service being delivered could also impress the patients. A suitable organizational culture creates a ambience in the minds of the patients. Together with employee satisfaction, all these factors work in tandem to build patient satisfaction which is the most desired objective of the public hospitals. This, in turn, helps in the building of strong relationships between the hospitals and the patients which results in patient loyalty towards a particular organization.

ANNEXURE: 1

Factors	Structure Questionnaire with Different Variables
Service Quality	q1: Service quality positively affects satisfaction level.
	q2: You have got an interactive platform for diagnosis and treatment.
	q3: You have enjoyed friendly environment with time to time supervision.
Maintenance of Patient Data	q4: Maintenance of Patient data positively affects patient satisfaction.
	q5: Your medical data has been efficiently protected for future treatment.
	q6: Your personal data has not been utilized for other purpose.
Organizational Culture	q7: Organizational culture positively influences your satisfaction level.
	q8: You are observing continuous improvement of employee efficiency.
	q9: Maintaining proper decorum and rules through supervision enhances the satisfaction level.
Employee Satisfaction	q10: Employee satisfaction positively influences Patient satisfaction.
	q11: You have observed less waiting time.
	q12: You have observed continuous improvement of employee productivity.
Patient Satisfaction	q13: Patient satisfaction results in patient retention for future treatments.
	q14: High satisfaction level helps to build a long term relationship with the patient and the patient party.
Building Relationship	q15: Hospital is taking responsibility for any adverse situation which the patient faces through proper documentation.
	q16: Communication channels are open between the patients and the hospitals.

REFERENCES

1. Ali, N., Habidin, N.F., Jamaludin, N.H., Khaidir, N.A. & Shazali, N.A. (2013). Customer relationship management and organisational performance in Malaysian Healthcare Industry. *International Journal of Advancements in Research and Technology*. 2(1). 1-5. ISSN: 2278-7763.
2. Asgar, M.G. & Shahri, S. (2015). Customer relationship management in healthcare. *Cumhuriyet University Faculty of Science Journal*. 36(3). 1003-1005. ISSN: 1300-1949.
3. Baashar, Y.M., Mahomood, A.K., Almomani, M.A. & Alkaws, G.A. (2016). 3rd International Conference on Computer and Information Sciences. 97-103. ISBN: 978-1-5090-2549-7.
4. Chandra, S., Mohammednezhad, M. & Ward, P. (2018). Trust and communication in a doctor-patient relationship: a literature review. *Journal of Healthcare communications*. 3(3). 1-6. ISSN: 2472-1654.

5. Durairaj, M. & Ranjani, V. (2013). Data mining applications in healthcare sector: a study. *International Journal of Scientific and Technology Research*. 2(10). 29-35. ISSN: 2277-8616.
6. Fabac, R. & Mance, I. (2011). Customer relationship management system in occupational safety and health companies: Research on practice and preliminary design solution. *Interdisciplinary Description of Complex Systems*. 9(2). 101-118. ISSN: 1334-4676.
7. Gandhi, P. & Tandon, N. (2017). Study to analyse the variables that affect the CRM implementation in the hospitals. *Advances in Computational Sciences and Technology*. 10(5). 933-944. ISSN: 0973-6107.



Impact of 'Customer Relationship Management (CRM) Software' on Patient Satisfaction in Public Hospitals of Urban West Bengal, India: An Empirical Analysis

8. Gbadayan, R.A. (2010). Customer relationship management and hospital service quality in Nigeria. *African Research Review*. 4(2). 168-184. ISSN: 2070-0083.
9. Hajikhani, S., Tabibi, S.J. & Riahi, L. (2015). The relationship between the Customer Relationship Management and Patients' Loyalty to hospitals. *Global Journal of Health Science*. 8(3). 65-71. DOI: 10.5539/gjhs.v8n3p65.
10. Hajikhani, S., Tabibi, S.J. & Riahi, L. (2016). The relationship between the customer relationship management and patient's loyalty to hospitals. *Global Journal of Health Science*. 8(3).65-71. DOI: 10.5539/gjhs.v8n3p65.
11. Hosseini, M.H., Meymand, M.M. & Heidarvand, S. (2015). Examining the patients' satisfaction from hospital service quality using the CRM (Customer Relationship Management) model: A case study in Bahrami hospital of Tehran. *Journal of Entrepreneurship, Business and Economics*. 3(2). 16-40. ISSN: 2345-4695.
12. Jackson, T. & Wood, B.D. (2010). Employee and customer satisfaction in healthcare. *Radiology Management*. 32(2).
13. Janicikovic, I., Seke, K., Djokovic, A. & Filipovic, T. (2013). Healthcare workers satisfaction and patient satisfaction – where is the linkage? *Hippokratia*. 17(2). 157-162.
14. Qomariah, N. (2016). Measurement of patient satisfaction and loyalty of hospital based customer relationship management in Jember Indonesia. *IOSR Journal of Business and Management*. 18(6). 55-60. ISSN: 2278-487X.
15. Rafique, N. & Dadhichi, A. (2016). Emerging role of customer relationship management in global world with reference to healthcare services in hospitals. *International Journal of Research in Management and Technology*. 6(3). 90-95. ISSN: 2249-9563.
16. Rahmani, R., Ranjbar, M., Gara, A.A.N. & Gorji, M.A.H. (2017). The study of the relationship between value creation and customer loyalty with the role of trust moderation and customer satisfaction in Sari hospitals. *Electron Physician*. 9(6). 4474-4478. DOI: 10.19082/4474.
17. Yaghoubi, M., Asgari, H. & Javadi, M. (2017). The impact of the customer relationship management on organizational productivity, customer trust and satisfaction by using the structural equation model: A study in the Iranian hospitals. *Journal of Education Health Promotion*. 6(6). DOI: <http://www.jehp.net/text.asp?2017/6/1/6/204748>.
18. Zhou, W.J., Wan, Q.Q., Liu, C.Y., Feng, X.L. & Shang, S.M. (2017). Determinants of patient loyalty to healthcare providers: An integrative review. *International Journal of Quality Healthcare*. 29(4). 442-449. DOI: 10.1093/intqhc/mzx058.

Commerce Conference, organized by Lucknow University, Lucknow on November 13, 2016.



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