Comparing Perceived Service Quality between Government Medical College Hospitals

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Abstract

The main objective of this study is to compare the quality of service as perceived by patients in government medical college hospitals. It involves a descriptive cross sectional research design in which primary data is collected from 180 in-patients from three medical college hospitals. Perceived service quality in these hospitals is compared across twelve dimensions such as infrastructure, availability of resources, clinical procedures, quality of outcome, administrative procedures, attitude of staff, personalized attention, waiting time, availability of information, trustworthiness, safety measures, and quality of food. Statistical tools like One-Way-ANOVA followed by Tukey's test are performed to analyze the data. The result shows statistically significant difference in perceived service quality among the three hospitals across all the dimensions except administrative procedures. This indicates lack of standardized practice in government hospitals with respect to delivery of healthcare services.

Keywords: Perceived Service Quality, Government Hospital, Patient, Comparison

Introduction

Healthcare is one of the largest sectors in terms of revenue as well as employment in India. According to Indian Brand Equity Foundation (IBEF) January, 2017 report, Indian healthcare industry is expected to grow at 16.5% CAGR during the period 2008 to 2020 to reach a market size of USD280 billion by 2020. Indian healthcare delivery system involves participation of both government and private organizations. Union Ministry of Health and Family Welfare (MoHFW) in involved in policy making, planning, evaluating and coordinating the work of different provincial authorities along with funding for implementation of various national level health programs. The ministry has also setup medical college and hospitals such as All Indian Institute of Medical Sciences (AIIMS) and Post Graduate Institute of Medical Sciences (PGIMS) which act as the apex referral hospitals for providing highest degree of tertiary care. Each state government runs its healthcare delivery system through primary health centres (PHC), community health centres (CHC), district head quarter hospitals, and medical colleges. The planning commission has allocated a budget of 3,00,018 crores to the MoHFW under twelfth five year plan which is 335% higher than the actual healthcare expenditure in eleventh plan (Twelfth five year plan, Social sectors, 2013). Despite of this high expenditure,

Indian healthcare system suffers from major weaknesses such as availability, quality and affordability which are likely to worsen in future with increased cost of healthcare and rising life expectancy (Twelfth five year plan, Social sectors, 2013). Thus, it is high time to evaluate and manage the quality of care in government healthcare organizations. The main objective of this study is to compare the quality of service as perceived by patients in government medical college hospitals.

Present study is an extension of the work done by Swain and Kar (2017) in which they proposed fifteen dimensions of perceived service quality in hospital settings. This study compares perceived service quality among three government medical college hospitals across twelve dimensions namely infrastructure, availability of resources, clinical procedures, quality of outcome, administrative procedures, attitude of staff, personalized attention, waiting time, availability of information, trustworthiness, safety measures, and quality of food. Whereas, three dimensions such as religious needs, price, and continuity are not considered for the purpose of comparison due to following reasons. The hospitals selected for the study do not provide any facility of prayer room or access to religious leaders. Though price is one of the important dimensions of service quality (Mosadeghrad, 2013), government medical college hospitals provide almost all services free of cost or at a very nominal charge called users' fee. Measuring the dimension continuity falls beyond the scope of this study as respondents include only in-patients, not the discharged ones.

Literature Review

Quality of care comprises three major areas such as structure, process, and outcome (Donabedian, 1980). Structure refers to the physical environment and facilities in a healthcare organization. Patients evaluate quality of structure through dimensions like infrastructure, availability of resources, and safety measures. Process refers to the operational activities involved in service delivery. Patients evaluate quality of process through dimensions like clinical procedures, administrative procedures, attitude of staff, personalized attention, waiting time, availability of information and food service. Outcome refers to the end result achieved through various processes. Patients evaluate quality of outcome through dimensions like outcome of treatment, and trustworthiness. Review of literature for this study hovers around these twelve dimensions through which patients perceive quality of service in healthcare organizations.

'Infrastructure' is found to be one of the most important dimensions of perceived service quality in hospital setting. Researchers like Dagger et al. (2007); Arasli et al. (2008); Padma et al. (2010); Vanniarajan and Arun (2010); Atinga et

al. (2011); Eleuch (2011); and Zineldin et al. (2011); have addressed this dimension in their work to evaluate perceived service quality. It refers to cleanliness, comfort, level of noise, and visual appeal of the facility. 'Availability of Resources' is also one of the most important dimensions which has been addressed by researchers like Mejabi and Olujide (2008); Narang (2010); Atinga et al. (2011); Frimpong et al. (2010) to evaluate perceived service quality. It refers to the ease of availability doctors, paramedical staff, ambulance, drugs, equipments and diagnostic facilities in a hospital. Another important dimension of hospital service quality is 'Clinical Procedures' which refers to the thoroughness of diagnosis and treatment procedures. Researchers like Duggirala et al. (2008); Padma et al. (2010); Eleuch (2011); Amin and Nasharuddin (2013) have considered this dimension while evaluating perceived service quality in hospital setting. 'Administrative Procedures' is also considered as an important dimension of hospital service quality by researchers like Atinga and Garg (2010); Padma et al. (2010); Zineldin et al. (2011); Amin and Nasharuddin (2013). It refers to the established processes of admission, discharge, and record management followed in hospitals. Researchers like Rose et al. (2004); Chahal and Kumari (2010); and Mosadeghrad (2013) considered 'Quality of outcome' as an important technical dimension of hospital service quality which refers to effectiveness of clinical and diagnostic processes to cure illness.

Researchers like Mejabi and Olujide (2008); Roshnee and Fowder (2008); Chahal and Kumari (2010); Vanniarajan and Arun (2010); Eleuch (2011);Mahapatra (2013); and Murti et al. (2013) addressed 'Attitude of Staff' as an important functional dimension which refers to friendly behavior, quick response, and caring attitude shown by the staff members in hospital. 'Personalized Attention' popularly known as empathy is also an important and very common functional dimension addressed by many researchers in their work to evaluate perceived service quality in hospitals. 'Waiting time' which refers to time taken to meet doctors, receive treatment and test reports is also another functional dimension from patients' perspective. It has been addressed by researchers like Rose et al. (2004); Tam (2007); Chahal and Kumari (2010); Frimpong et al. (2010); Zineldin et al. (2011); and Mosadeghrad (2013) to measure hospital service quality. 'Availability of Information' related to illness, treatment procedure and expenses is considered as an important dimension of hospital service quality by researchers like Sower et al. (2001); Roshnee and Fowder (2008); Rashid and Jusoff (2009). 'Trustworthiness' popularly referred to as assurance that is reflected in the credibility of hospital services, is a very common dimension of perceived service quality studied by many researchers. Some of the researchers like Duggirala et al. (2008); Padma et al. (2010); and Murti et al. (2013) have also considered 'safety measures' reflected through hygienic care, fall and

theft prevention protocols as one of the dimensions while evaluating perceived service quality in hospitals. 'Food' is included as a dimension of hospital service quality in research works conducted by Tomes and Peng (1995); Sower et al. (2001); Mejabi and Olujide (2008).

Research Methodology

This study involves a descriptive cross sectional research design. Three government medical college hospitals situated in the region of Cuttack and Bhubaneswar, Orissa are included for this comparative study. Due to issues related to privacy and non-disclosure of organization name these hospitals are coded as Hospital-1, Hospital-2, and Hospital-3 throughout this research work. The sample size includes 180 in-patients (60 from each of the three hospitals) who have spent at-least 24 hours after being admitted in the general medicine, general surgery, or obstetrics & gynecology wards. Primary data is collected from these respondents by administering a structured questionnaire

designed by Swain and Kar (2017)consisting 62 items on 1-7 points rating scale to measure the twelve dimensions of service quality as discussed earlier. Statistical tools like One-Way-ANOVA followed by Tukey's test are performed with the help of SPSS-20 to make comparison of perceived service quality across each of the twelve dimensions. Analysis of Variance (ANOVA) is a statistical technique used to examine the differences in means between two or more population. Tukey's test is conducted if the main effect in ANOVA turns out significant and has more than two levels or groups. It checks for pairwise differences between the mean values.

Data Analysis

One-way-ANOVA is performed for each of the twelve dimensions to compare perceived service quality between the three hospitals. The compiled output of this procedure is shown in Table-1.

Table-1: Compiled output of One-way-ANOVAs for comparison of service quality

Dimension of Perceived Service Quality	Hospital	Mean	Mean Square		F-Value	Significance
			Between Groups	Within Groups		
Infrastructure	Hospital-1	13.00	2978.150	14.505	205.314	0.000
	Hospital-2	24.70				
	Hospital-3	12.05				
Availability of Resources	Hospital-1	22.57	598.289	15.283	39.148	0.000
	Hospital-2	22.77				
	Hospital-3	17.20				
Clinical Procedures	Hospital-1	30.15	689.867	9.406	73.345	0.000
	Hospital-2	26.08				
	Hospital-3	23.42				
Administrative Procedures	Hospital-1	26.73	25.956	21.509	1.207	0.302
	Hospital-2	27.93				
	Hospital-3	27.80				
Quality of Outcome	Hospital-1	21.98	206.956	5.813	35.605	0.000
	Hospital-2	19.85				
	Hospital-3	18.28				
Attitude of Staff	Hospital-1	12.30	601.250	15.345	39.182	0.000
	Hospital-2	18.30				
	Hospital-3	17.05				
Personalized Attention	Hospital-1	16.78	88.817	7.630	11.640	0.000
	Hospital-2	14.35				
	Hospital-3	15.57				
Waiting Time	Hospital-1	9.58	132.706	5.834	22.745	0.000
	Hospital-2	12.37				
	Hospital-3	11.88				
Availability of Information	Hospital-1	14.48	126.667	7.535	16.811	0.000
	Hospital-2	17.15				
	Hospital-3	14.82				

Trustworthiness	Hospital-1	26.60	115.550	9.353	12.355	0.000
	Hospital-2	24.90				
	Hospital-3	23.85				
Safety Measures	Hospital-1	17.57	420.117	6.070	69.217	0.000
	Hospital-2	18.83				
	Hospital-3	13.75				
Quality of Food	Hospital-1	20.47	486.050	10.902	44.582	0.000
	Hospital-2	20.22				
	Hospital-3	15.42				

Comparison of Infrastructure

H01 (Null Hypothesis): Patients perceive similar quality of infrastructure between the three government medical college hospitals

H11 (Alternate Hypothesis): Patients perceive different quality of infrastructure between the three government medical college hospitals

One-way-ANOVA is performed with infrastructure as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 205.314 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about infrastructure of the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-2 shows statistically significant difference in mean values (significance value < 0.05) for the pairs Hospital-1 & Hospital-2 and Hospital-2 & Hospital-3. This indicates significant difference in patients' perception about infrastructure of Hospital-1 & Hospital-2 as well as Hospital-2 & Hospital-3. However, patients have similar perception about infrastructure of Hospital-1 and Hospital-3. Thus, it can be concluded that patients perceive Hospital-1 (mean value 24.70) has better infrastructure compared to Hospital-2 (mean value 13.00) and Hospital-3 (mean value 12.05).

Table-2: Tukey's test output for comparison of infrastructure

Infrastructure Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	-11.700*	.695	.000	-13.34	-10.06
	Hospital-3	.950	.695	.361	-.69	2.59
Hospital-2	Hospital-1	11.700*	.695	.000	10.06	13.34
	Hospital-3	12.650*	.695	.000	11.01	14.29
Hospital-3	Hospital-1	-.950	.695	.361	-2.59	.69
	Hospital-2	-12.650*	.695	.000	-14.29	-11.01

*. The mean difference is significant at the 0.05 level.

Comparison of Availability of Resources

H02 (Null Hypothesis): Patients perceive similar level of availability of resources between the three government medical college hospitals

H12 (Alternate Hypothesis): Patients perceive different level of availability of resources between the three government medical college hospitals

One-way-ANOVA is performed with availability of resources as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 39.148 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about availability of resources in the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-3 shows statistically significant difference in mean values (significance value < 0.05) for the pairs Hospital-1 & Hospital-3 and Hospital-2 & Hospital-3. This indicates significant difference in patients' perception about availability of resources in Hospital-1 & Hospital-3 as well as Hospital-2 & Hospital-3. However, patients have similar perception about availability of resources in Hospital-1 and Hospital-2. Thus, it can be concluded that patients perceive Hospital-1 (mean value 22.57) and Hospital-2 (mean value 22.77) have better availability of resources compared to Hospital-3 (mean value 17.20).

Table-3: Tukey's test output for comparison of availability of resources

Availability of Resources
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	-.200	.714	.958	-1.89	1.49
	Hospital-3	5.367*	.714	.000	3.68	7.05
Hospital-2	Hospital-1	.200	.714	.958	-1.49	1.89
	Hospital-3	5.567*	.714	.000	3.88	7.25
Hospital-3	Hospital-1	-5.367*	.714	.000	-7.05	-3.68
	Hospital-2	-5.567*	.714	.000	-7.25	-3.88

*. The mean difference is significant at the 0.05 level.

Comparison of Clinical Procedures

H03 (Null Hypothesis): Patients perceive similar quality of clinical procedures followed in the three government medical college hospitals

H13 (Alternate Hypothesis): Patients perceive different quality of clinical procedures followed in the three government medical college hospitals

One-way-ANOVA is performed with clinical procedures as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 73.345 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about the quality of clinical procedures followed in the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-4 shows statistically significant difference in mean values (significance value < 0.05) for all the pairs. This indicates significant difference in patients' perception about clinical procedures followed in all the three hospitals. Thus, it can be concluded that patients perceive better quality of clinical procedures followed in Hospital-1 (mean value 30.15) followed by Hospital-2 (mean value 26.08) and Hospital-3 (mean value 23.42).

Table-4: Tukey's test output for comparison of clinical procedures

Clinical Procedures
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	4.067*	.560	.000	2.74	5.39
	Hospital-3	6.733*	.560	.000	5.41	8.06
Hospital-2	Hospital-1	-4.067*	.560	.000	-5.39	-2.74
	Hospital-3	2.667*	.560	.000	1.34	3.99
Hospital-3	Hospital-1	-6.733*	.560	.000	-8.06	-5.41
	Hospital-2	-2.667*	.560	.000	-3.99	-1.34

*. The mean difference is significant at the 0.05 level.

Comparison of Administrative Procedures

H04 (Null Hypothesis): Patients perceive similar quality of administrative procedures followed in the three government medical college hospitals

H14 (Alternate Hypothesis): Patients perceive different quality of administrative procedures followed in the three government medical college hospitals

One-way-ANOVA is performed with administrative procedures as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 1.207 and the significance of F-value is more than 0.05 resulting in acceptance of the null hypothesis. This indicates difference in patients' perception about the quality of administrative procedures followed in the three government medical college hospitals is not statistically significant at 95% confidence interval. Thus, it can be concluded that patients perceive the quality of administrative procedures is similar in all the three government medical college hospitals.

Comparison of Quality of Outcome

H05 (Null Hypothesis): Patients perceive similar quality of outcome in the three government medical college hospitals

H15 (Alternate Hypothesis): Patients perceive different quality of outcome in the three government medical college hospitals

One-way-ANOVA is performed with quality of outcome as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 35.605 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about the quality of outcomes in the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-5 shows statistically significant difference in mean values (significance value < 0.05) for all the pairs. This indicates significant difference in patients' perception about quality of outcomes in all the three hospitals. Thus, it can be concluded that patients perceive better quality of outcome in Hospital-1 (mean value 21.98) followed by Hospital-2 (mean value 19.85) and Hospital-3 (mean value 18.28).

Table-5: Tukey's test output for comparison of quality of outcome

Quality of Outcome
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	2.133*	.440	.000	1.09	3.17
	Hospital-3	3.700*	.440	.000	2.66	4.74
Hospital-2	Hospital-1	-2.133*	.440	.000	-3.17	-1.09
	Hospital-3	1.567*	.440	.001	.53	2.61
Hospital-3	Hospital-1	-3.700*	.440	.000	-4.74	-2.66
	Hospital-2	-1.567*	.440	.001	-2.61	-.53

*. The mean difference is significant at the 0.05 level.

Comparison of Attitude of Staff

H06 (Null Hypothesis): Patients perceive similar attitude of staff in the three government medical college hospitals

H16 (Alternate Hypothesis): Patients perceive different attitude of staff in the three government medical college hospitals

One-way-ANOVA is performed with attitude of staff as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 39.182 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about the attitude of staff members in the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-6 shows statistically significant difference in mean values (significance value < 0.05) for the pairs Hospital-1 & Hospital-2 and Hospital-1 & Hospital-3. This indicates significant difference in patients' perception about attitude of staff members in Hospital-1 & Hospital-2 as well as Hospital-1 & Hospital-3. However, patients have similar perception about attitude of staff members in Hospital-2 and Hospital-3. Thus, it can be concluded that patients perceive Hospital-2 (mean value 18.30) and Hospital-3 (mean value 17.05) have better attitude of staff members compared to Hospital-1 (mean value 12.30).

Table-6: Tukey's test output for comparison of attitude of staff

Attitude of Staff
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	-6.000*	.715	.000	-7.69	-4.31
	Hospital-3	-4.750*	.715	.000	-6.44	-3.06

Hospital-2	Hospital-1	6.000*	.715	.000	4.31	7.69
	Hospital-3	1.250	.715	.190	-.44	2.94
Hospital-3	Hospital-1	4.750*	.715	.000	3.06	6.44
	Hospital-2	-1.250	.715	.190	-2.94	.44

*. The mean difference is significant at the 0.05 level.

Comparison of Personalized Attention

H07 (Null Hypothesis): Patients perceive similar level of personalized attention in the three government medical college hospitals

H17 (Alternate Hypothesis): Patients perceive different level of personalized attention in the three government medical college hospitals

One-way-ANOVA is performed with personalized attention as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 11.640 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about the level of personalized attention in the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-7 shows statistically significant difference in mean values (significance value < 0.05) for all the pairs. This indicates significant difference in patients' perception about the level of personalized attention in all the three hospitals. Thus, it can be concluded that patients perceive higher level of personalized attention in Hospital-1 (mean value 16.78) followed by Hospital-3 (mean value 15.57) and Hospital-2 (mean value 14.35).

Table-7: Tukey's test output for comparison of personalized attention

Personalized Attention
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	2.433*	.504	.000	1.24	3.63
	Hospital-3	1.217*	.504	.044	.02	2.41
Hospital-2	Hospital-1	-2.433*	.504	.000	-3.63	-1.24
	Hospital-3	-1.217*	.504	.044	-2.41	-.02
Hospital-3	Hospital-1	-1.217*	.504	.044	-2.41	-.02
	Hospital-2	1.217*	.504	.044	.02	2.41

*. The mean difference is significant at the 0.05 level.

Comparison of Waiting Time

H08 (Null Hypothesis): Patients perceive similar level of waiting time in the three government medical college hospitals

H18 (Alternate Hypothesis): Patients perceive different level of waiting time in the three government medical college hospitals

One-way-ANOVA is performed with waiting time as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 22.745 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about the level of waiting time in the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-8 shows statistically significant difference in mean values (significance value < 0.05) for the pairs Hospital-1 & Hospital-2 and Hospital-1 & Hospital-3. This indicates significant difference in patients' perception about waiting time in Hospital-1 & Hospital-2 as well as Hospital-1 & Hospital-3. However, patients have similar perception about waiting time in Hospital-2 and Hospital-3. Thus, it can be concluded that patients perceive Hospital-2 (mean value 12.37) and Hospital-3 (mean value 11.88) have better waiting time management compared to Hospital-1 (mean value 9.58).

Table-8 : Tukey's test output for comparison of waiting time

Waiting Time
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	-2.783*	.441	.000	-3.83	-1.74
	Hospital-3	-2.300*	.441	.000	-3.34	-1.26
Hospital-2	Hospital-1	2.783*	.441	.000	1.74	3.83
	Hospital-3	.483	.441	.518	-.56	1.53
Hospital-3	Hospital-1	2.300*	.441	.000	1.26	3.34
	Hospital-2	-.483	.441	.518	-1.53	.56

*. The mean difference is significant at the 0.05 level.

Comparison of Availability of Information

H09 (Null Hypothesis): Patients perceive similar level of availability of information in the three government medical college hospitals

H19 (Alternate Hypothesis): Patients perceive different level of availability of information in the three government medical college hospitals

One-way-ANOVA is performed with availability of information as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 16.811 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about the level of availability of information in the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-9 shows statistically significant difference in mean values (significance value < 0.05) for the pairs Hospital-1 & Hospital-2 and Hospital-2 & Hospital-3. This indicates significant difference in patients' perception about availability of information in Hospital-1 & Hospital-2 as well as Hospital-2 & Hospital-3. However, patients have similar perception about availability of information in Hospital-1 and Hospital-3. Thus, it can be concluded that patients perceive better availability of information in Hospital-2 (mean value 17.15) compared to Hospital-1 (mean value 14.48) and Hospital-3 (mean value 14.82).

Table -9: Tukey's test output for comparison of availability of information

Availability of Information
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	-2.667*	.501	.000	-3.85	-1.48
	Hospital-3	-.333	.501	.784	-1.52	.85
Hospital-2	Hospital-1	2.667*	.501	.000	1.48	3.85
	Hospital-3	2.333*	.501	.000	1.15	3.52
Hospital-3	Hospital-1	.333	.501	.784	-.85	1.52
	Hospital-2	-2.333*	.501	.000	-3.52	-1.15

*. The mean difference is significant at the 0.05 level.

Comparison of Trustworthiness

H010 (Null Hypothesis): Patients perceive similar level of trustworthiness for the three government medical college hospitals

H110 (Alternate Hypothesis): Patients perceive different level of trustworthiness for the three government medical college hospitals

One-way-ANOVA is performed with trustworthiness as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 12.355 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about the level of trustworthiness for the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-10 shows statistically significant difference in mean values (significance value < 0.05) for the pairs Hospital-1 & Hospital-2 and Hospital-1& Hospital-3. This indicates significant difference in patients' perception about the level of trustworthiness for Hospital-1 &Hospital-2 as well as Hospital-1& Hospital-3. However, patients have similar perception about level of trustworthiness for Hospital-2 and Hospital-3. Thus, it can be concluded that patients perceive higher level of trustworthiness for Hospital-1 (mean value 26.60) compared to Hospital-2 (mean value 24.90) and Hospital-3 (mean value 23.85).

Table-10: Tukey's test output for comparison of trustworthiness

Trustworthiness
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	1.700*	.558	.008	.38	3.02
	Hospital-3	2.750*	.558	.000	1.43	4.07
Hospital-2	Hospital-1	-1.700*	.558	.008	-3.02	-.38
	Hospital-3	1.050	.558	.147	-.27	2.37
Hospital-3	Hospital-1	-2.750*	.558	.000	-4.07	-1.43
	Hospital-2	-1.050	.558	.147	-2.37	.27

*. The mean difference is significant at the 0.05 level.

Comparison of Safety Measures

H011 (Null Hypothesis): Patients perceive similar level of safety measures in the three government medical college hospitals

H111 (Alternate Hypothesis): Patients perceive different level of safety measures in the three government medical college hospitals

One-way-ANOVA is performed with safety measures as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 69.217 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about safety measures in the three government medical college hospitals is statistically significant at 95% confidence interval.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-11 shows statistically significant difference in mean values (significance value < 0.05) for all the pairs. This indicates significant difference in patients' perception about safety measures followed in all the three hospitals. Thus, it can be concluded that patients perceive better safety measures in Hospital-2 (mean value 18.83) followed by Hospital-1 (mean value 17.57) and Hospital-3 (mean value 13.75).

Table-11: Tukey's test output for comparison of safety measures

Safety Measures
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	-1.267*	.450	.015	-2.33	-.20
	Hospital-3	3.817*	.450	.000	2.75	4.88
Hospital-2	Hospital-1	1.267*	.450	.015	.20	2.33
	Hospital-3	5.083*	.450	.000	4.02	6.15
Hospital-3	Hospital-1	-3.817*	.450	.000	-4.88	-2.75
	Hospital-2	-5.083*	.450	.000	-6.15	-4.02

*. The mean difference is significant at the 0.05 level.

Comparison of Quality of Food

H012 (Null Hypothesis): Patients perceive similar quality of food service in the three government medical college hospitals

H112 (Alternate Hypothesis): Patients perceive different quality of food service in the three government medical college hospitals

One-way-ANOVA is performed with quality of food as the dependent variable and hospital name as the grouping variable. Table-1 shows F-value 44.582 and the significance of F-value is less than 0.05 resulting in rejection of the null hypothesis. This indicates difference in patients' perception about quality of food service in the three government medical college hospitals is statistically significant at 95% confidence interval.

Table-12: Tukey's test output for comparison of quality of food

Quality of Food
Tukey HSD

(I) Name of the hospital	(J) Name of the hospital	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Hospital-1	Hospital-2	.250	.603	.910	-1.17	1.67
	Hospital-3	5.050*	.603	.000	3.63	6.47
Hospital-2	Hospital-1	-.250	.603	.910	-1.67	1.17
	Hospital-3	4.800*	.603	.000	3.38	6.22
Hospital-3	Hospital-1	-5.050*	.603	.000	-6.47	-3.63
	Hospital-2	-4.800*	.603	.000	-6.22	-3.38

*. The mean difference is significant at the 0.05 level.

Since the ANOVA shows statistically significant difference in mean values, Tukey's test is performed to conduct multiple pairwise comparisons. Table-12 shows statistically significant difference in mean values (significance value < 0.05) for the pairs Hospital-1 & Hospital-3 and Hospital-2& Hospital-3. This indicates significant difference in patients' perception about quality of food service in Hospital-1 & Hospital-2 as well as Hospital-2& Hospital-3. However, patients have similar perception about quality of food service in Hospital-1 and Hospital-2. Thus, it can be concluded that patients perceive Hospital-1 (mean value 20.47) and Hospital-2 (mean value 20.22) provide better quality of food service compared to Hospital-3 (mean value15.42).

Conclusion

Findings of this study shows that patients perceive significant difference in the quality of service in the three government medical college hospitals across all the dimensions except administrative procedures. It further shows that Hospital-2 performs better followed by Hospital-1 and then Hospital-3 with respect to the structural dimensions of perceived service quality. However, Hospital-2 performs better than that of Hospital-1 and Hospital-2 with respect to the process dimensions of perceived service quality. It also reveals that Hospital-1 performs better followed by hospital-2 and then Hospital-3 with respect to the outcome dimensions of perceived service quality. This indicates lack of uniform or standardized practices in government hospitals. Government needs to address this issue through a standardized manual for

development of facilities, recruitment and training of medical, paramedical as well as administrative staff, blueprint of various process involved in service delivery, and continuous monitoring for quality improvement.

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