
INTERNATIONAL JOURNAL OF BUSINESS, MANAGEMENT
AND ALLIED SCIENCES (IJBMAS)
A Peer Reviewed International Research Journal

THE IMPACT OF HOSPITAL ACCREDITATION ON THE PATIENTS
SATISFACTION OF DIETARY SERVICES

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ABSTRACT

The quality of hospital dietary or food service is one of the most pivotal parameter of health care quality perceived by patients and by their families. Patient satisfaction is considered a way of measuring the quality of services provided. **Objectives:** To study the impact of National Accreditation Board for Hospitals & Healthcare Providers (NABH) Accreditation, India on dietary services patient satisfaction. **Methods:** It is a quantitative, descriptive and inferential research based case study in which sample of a population was studied by structured satisfaction survey questionnaires (before and after the accreditation) in a private tertiary care hospital in Secunderabad, Telangana State, India to determine its characteristics, and it is then inferred that the population has the same or different characteristics. **Significance of Research:** It was observed initially before the accreditation that there was a lower patient satisfaction rate of the hospital dietary services, which was affecting the study hospitals' business. **Hypothesis:** Null Hypothesis (Ho) and Alternative Hypothesis (H1) were used and tested to compare the before and after impact of accreditation by applying to each question in the questionnaire. **Study Design:** The closed ended questionnaire was developed considering the dietary services by incorporating the six dimensions of quality Safe, Timely, Effective, Efficient, Equitable, and Patient-centred (STEEP) and tested prior to implementing. Questionnaires were given to the patients' families for completion upon using the ambulance services two months before and two months after the accreditation. The data were collected in order to cover all three shifts of the Hospital and Dietary Department. **Study Population:** Simple random sampling method was selected, the researcher had involved all conscious patients (clinical conditions) from all age groups and their families. **Data Collections:** Primary data were collected from the survey questionnaires. Secondary data were collected from relevant published journals, articles, research papers, academic literature and web portals. **Conclusion:** The Chi-

Square test performed at 5% level of significance revealed that there is significant difference between the satisfaction levels of patients on the overall dietary service before and after accreditation ($p < 0.05$). The satisfaction score has improved from before accreditation compared to after accreditation which indicates that the accreditation has a positive impact on the satisfaction of dietary services of the study hospital.

Key words: Patient Satisfaction, National Accreditation Board for Hospitals & Healthcare Providers (NABH) Accreditation, Dietary Services

INTRODUCTION

Quality has become a fundamental requirement for all healthcare organizations in order to survive and succeed in this competitive, demanding and challenging healthcare service industry. Today, developed and developing nations are working towards continuous quality improvement and patient safety by achieving the national and or international healthcare accreditation and providing safe, effective, patient-centred, timely, efficient and equitable health care services to all their patients, families and caretakers. Accreditation of a health care organization is an external evaluation of the level of compliance against a set of organizational standards. Healthcare accreditation standards are advocated as an important means of improving structure, process and outcome.ⁱ Dietetics and Food Service Department is an integral part of the hospital supportive service which provides normal and therapeutic diets to the patients. Efficient delivery of proper, quality diet to each type of patient is the primary work of the dietetics department resulting in greater satisfaction of patients and their caretakers. The dietary or food service quality is significantly correlated with overall patient satisfaction.ⁱⁱ

REVIEW OF LITERATURE:

The increased international focus on improving patient outcomes, safety and quality of care has led stakeholders, policy makers and health care provider organizations adopt standardized processes for measuring health care systems.ⁱⁱⁱ

Patient satisfaction has become a key criterion by which the quality of health care services is evaluated. When looking at overall hospital patient satisfaction, foodservice satisfaction may sometimes go un-noticed, as nursing and physician quality and the quality of technical medical care are more commonly identified in the research.^{iv} Several researchers have identified food quality as the most important determinant of patient foodservice satisfaction.^v However, food service in a hospital is an important component of treatment process since it affects the length of recovery and life quality.^{vi} Studies on satisfaction with food services discuss that the quality of hospital food services is a common problem in all over the world, and patients of many hospitals are undernourished, since the patients do not like the food or they say the food is unacceptable.^{vii}

DATA ANALYSIS:

Table1: Frequencies of participation of patients before and after accreditation

Group	Frequency	Percentage
Before Accreditation	200	45.5
After Accreditation	240	54.5
Total	440	100

Table 1 depicts that there are about 200 patients participated before accreditation and 240 patients participated after accreditation. The participation of patients had increased only after accreditation.

Table2: Comparative evaluation of age and group of patients using Chi-Square test

Group	Age Group					Chi-Square Test Statistic, p-value
	<17 yrs	17-25 yrs	25-55 yrs	55-65 yrs	>65 yrs	
Before Accreditation	25	101	45	29	0	46.999, 0.000
After Accreditation	30	68	54	52	36	
Total	55	169	99	81	36	

Hypothesis:

H₀: There is no significant difference in age distribution between group of patients before and after accreditation.

H₁: There is a significant difference in age distribution between patients before and after accreditation. Table 2 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between age categories between before and after the accreditation group ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

Table3: Comparative evaluation of gender and group of patients using Chi-Square test

Group	Gender		Chi-Square Test Statistic, p-value
	Male	Female	
Before Accreditation	92	108	0.003, 0.958
After Accreditation	111	129	
Total	203	237	

Hypothesis:

H₀: There is no significant difference in gender and group of patients before and after accreditation.

H₁: There is a significant difference in gender and group of patients before and after accreditation.

Table 3 depicts that the Chi-Square test performed at the 5 % level of significance reveals that, there is no significant difference between gender and groups of before and after accreditation ($p > 0.05$). Hence H_0 is accepted and H_1 is rejected.

Table4: Comparative evaluation of geographical states of India and a group of patients using Chi-Square test

Group	Geographical states		Chi-Square Test Statistic, p-value
	Same State	Other States	
Before Accreditation	126	74	0.005
After Accreditation	152	88	0.942
Total	278	162	

Hypothesis:

H₀: There is no significant difference in the geographical states of patients before and after accreditation group.

H₁: There is a significant difference in the geographical states of patients before and after accreditation group.

Table 4 depicts that at the 5 % level of significance the Chi-Square test indicates that, there is no significant difference in the geographical states of patients before and after the accreditation group ($p>0.05$). Hence H_0 is accepted and H_1 is rejected.

Table5: Comparative evaluation of language and the group using Chi-Square test

Group	Language		Chi-Square Test Statistic, p-value
	Telugu	Non- Telugu	
Before Accreditation	142	58	0.052, 0.819
After Accreditation	168	72	
Total	310	130	

Hypothesis:

H_0 : There is no significant difference in the language the patients speak and their visit before and after accreditation.

H_1 : There is significant difference in the language the patients speak and their visit before and after accreditation.

Table 5 depicts that the Chi-Square test performed at the 5 % level of significance revealed that, there is no significant difference in the language the patients speak with that of their visit before and after accreditation ($p>0.05$). Hence H_0 is accepted and H_1 is rejected.

Table6: Chi-Square test for payment type and group of patients

Group	Payment type			Chi-Square Test Statistic, p-value
	Cash	Insurance	Government	
Before Accreditation	71	110	19	0.001, 0.999
After Accreditation	85	132	23	
Total	156	242	42	

Hypothesis:

H_0 : There is no significant difference in the payment type and group of patients visiting before and after accreditation.

H_1 : There is a significant difference in the payment type and group of patients visiting before and after accreditation.

Table 6 depicts that the Chi-Square test performed at the 5 % level of significance revealed that, there is no significant difference in the payment type and group of patients visiting before and after accreditation ($p>0.05$). Hence H_0 is accepted and H_1 is rejected.

Table7: Relationship between group of patient and satisfaction level of the presentation of meal tray

Group	Meal presentation					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	31	37	14	57	61	30.093, <0.001
After Accreditation	21	17	7	114	81	
Total	52	54	21	171	142	

p-value in bold implies significant test with $p\text{-value}<0.05$

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level for the presentation of the meal tray before and after accreditation.

H₁: There is a significant difference between groups of patients and their satisfaction level for the presentation of the meal tray before and after accreditation.

Table 7 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between the group of patient and their level of satisfaction with the presentation of the meal tray before and after accreditation ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

Table 8: Relationship between group of patient and their level of satisfaction with the taste of food

Group	Food Taste					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	59	38	13	51	59	38.800, <0.001
After Accreditation	83	14	5	110	83	
Total	142	52	18	161	142	

p-value in bold implies significant test with $p\text{-value} < 0.05$

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level for the taste of food before and after accreditation.

H₁: There is a significant difference between groups of patients and their satisfaction level for the taste of food before and after accreditation.

Table 8 depicts that the Chi-Square test for 5% level of significance revealed that there is a significant difference between the group of patients and their satisfaction level for the taste of food before and after accreditation ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

Table9:Relationship between the group of patients and their satisfaction level with the quality of food

Group	Quality of food					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	31	37	14	57	61	30.093, <0.001
After Accreditation	21	17	7	114	81	
Total	52	54	21	171	142	

p-value in bold implies significant test with $p\text{-value} < 0.05$

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level for the quality of food before and after accreditation.

H₁: There is significant difference between group of patients and their satisfaction level for the quality of food before and after accreditation.

Table 9 depicts that the Chi-Square test for 5% level of significance revealed that there is a significant difference between the group of patients and their satisfaction level for the quality of food before and after accreditation ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

Table10:Relationship between the group of patients and their satisfaction level for the quantity of food

Group	Quantity of food					Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	30	45	17	57	51	43.816, <0.001
After Accreditation	19	16	7	99	99	
Total	49	61	24	156	150	

p-value in bold implies significant test with p-value < 0.05

Hypothesis:

H_0 : There is no significant difference between groups of patients and their satisfaction level for the quantity of food before and after accreditation.

H_1 : There is a significant difference between groups of patients and their satisfaction level for the quantity of food before and after accreditation.

Table 10 depicts that the Chi-Square test for 5% level of significance revealed that there is a significant difference between the group of patients and their satisfaction level for the quantity of food before and after accreditation ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

Table11:Relationship between the group of patients and their level of satisfaction with the temperature of food

Group	Temperature of food					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	35	36	15	53	61	41.094, <0.001
After Accreditation	10	26	9	120	75	
Total	45	62	24	173	136	

p-value in bold implies significant test with p-value < 0.05

Hypothesis:

H_0 : There is no significant difference between groups of patients and their level of satisfaction with the temperature of food before and after accreditation.

H_1 : There is a significant difference between groups of patients and their level of satisfaction with the temperature of food before and after accreditation.

Table 11 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between the group of patients and their level of satisfaction with the temperature of food before and after accreditation ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

Table12:Relationship between group of patients and their satisfaction level of choice of food in the menu

Group	Choice of food in the menu					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	36	35	11	59	59	43.174, <0.001
After Accreditation	30	10	1	120	79	
Total	66	45	12	179	138	

p-value in bold implies significant test with p-value<0.05

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level of choice of food in the menu before and after accreditation.

H₁: There is a significant difference between groups of patients and their satisfaction level of choice of food in the menu before and after accreditation.

Table 12 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between groups of patients and their satisfaction level of choice of food in the menu before and after accreditation (p<0.05). Hence H₀ is rejected and H₁ is accepted.

Table13:Relationship between group of patients and their satisfaction level with the accuracy of food choices

Group	Accuracy of food choices					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	32	31	13	61	63	35.098, <0.001
After Accreditation	21	14	7	135	63	
Total	53	45	20	196	126	

p-value in bold implies significant test with p-value<0.05

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level with the accuracy of food choices before and after accreditation.

H₁: There is a significant difference between groups of patients and their satisfaction level with the accuracy of food choices before and after accreditation.

Table 13 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between groups of patients and their satisfaction level with the accuracy of food choices before and after accreditation (p<0.05). Hence H₀ is rejected and H₁ is accepted.

Table14: Relationship between group of patients and their satisfaction level with the meal delivery time

Group	Meal delivery time					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	25	35	17	66	57	29.108, <0.001
After Accreditation	19	17	6	125	73	
Total	44	52	23	191	130	

p-value in bold implies significant test with p-value<0.05

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level with the meal delivery time before and after accreditation.

H₁: There is a significant difference between groups of patients and their satisfaction level with the meal delivery time before and after accreditation.

Table 14 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between groups of patients and their satisfaction level with the meal delivery time before and after accreditation (p<0.05). Hence H₀ is rejected and H₁ is accepted.

Table 15: Relationship between group of patients and their satisfaction level on cleanliness of the food and tray

Group	Cleanliness of the food and tray					Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	93	36	16	55	0	34.915, <0.001
After Accreditation	108	12	6	114	0	
Total	201	48	22	169	0	

p-value in bold implies significant test with p-value<0.05

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level of cleanliness of the food and tray before and after accreditation.

H₁: There is a significant difference between groups of patients and their satisfaction level of cleanliness of the food and tray before and after accreditation.

Table 15 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between groups of patients and their satisfaction level of cleanliness of the food and tray before and after accreditation (p<0.05). Hence H₀ is rejected and H₁ is accepted.

Table16: Relationship between group of patients and their satisfaction level on staff professionalism

Group	Staff professionalism					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	36	31	13	57	63	36.097, <0.001
After Accreditation	26	13	5	127	69	
Total	62	44	18	184	132	

p-value in bold implies significant test with p-value<0.05

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level on staff professionalism before and after accreditation.

H₁: There is a significant difference between groups of patients and their satisfaction level on staff professionalism before and after accreditation.

Table 16 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between groups of patients and their satisfaction level on staff professionalism before and after accreditation ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

Table17:Relationship between appearance and courtesy of staff with the satisfaction level of patients before and after accreditation

Group	Staff professionalism					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	34	29	15	63	59	38.316, <0.001
After Accreditation	11	21	11	138	59	
Total	45	50	26	201	118	

p-value in bold implies significant test with p-value<0.05

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level on the appearance and courtesy of staff before and after accreditation.

H₁: There is a significant difference between groups of patients and their satisfaction level on the appearance and courtesy of staff before and after accreditation.

Table 17 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between groups of patients and their satisfaction level on the appearance and courtesy of staff before and after accreditation ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

Table18:Relationship between timely collection of meal tray and group of patients before and after accreditation

Group	Timely collection of meal tray					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	29	31	19	61	60	

After Accreditation	18	19	5	122	76	32.469, <0.001
Total	47	50	24	183	136	

p-value in bold implies significant test with p-value<0.05

Hypothesis:

H₀: There is no significant difference between groups of patients and their satisfaction level on timely collection of meal tray before and after accreditation.

H₁: There is a significant difference between groups of patients and their satisfaction level on timely collection of meal tray before and after accreditation.

Table 18 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between groups of patients and their satisfaction level on timely collection of meal tray before and after accreditation (p<0.05). Hence H₀ is rejected and H₁ is accepted.

Table19:Relationship between the levels of satisfaction of patients on diet counseling provided before and after accreditation

Group	Diet counseling					Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	31	36	13	59	61	41.695, <0.001
After Accreditation	24	10	6	129	71	
Total	55	46	19	188	132	

p-value in bold implies significant test with p-value<0.05

Hypothesis:

H₀: There is no significant difference between the satisfaction level of patients on diet counseling provided before and after accreditation.

H₁: There is a significant difference between the satisfaction level of patients on diet counseling provided before and after accreditation.

Table 19 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between the satisfaction level of patients on diet counseling provided before and after accreditation (p<0.05). Hence H₀ is rejected and H₁ is accepted.

Table20: Relationship between overall dietary service systems with the group of patients participating before and after accreditation

Group	Overall dietary service system					Chi-Square Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	32	46	15	54	53	51.723, <0.001
After Accreditation	23	15	4	125	73	
Total	55	61	19	179	126	

p-value in bold implies significant test with p-value<0.05

Hypothesis:

H₀: There is no significant difference between the satisfaction levels of patients on the overall dietary service system before and after accreditation.

H₁:There is a significant difference between the satisfaction levels of patients on the overall dietary service system before and after accreditation.

Table 20 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between the satisfaction levels of patients on the overall dietary service system before and after accreditation ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

Table 21:Relationship between overall food service with the group of patients participating before and after accreditation

Group	Overall food service					Test Statistic, p-value
	Very Dissatisfied	Dissatisfied	Neither satisfied nor Dissatisfied	Satisfied	Very Satisfied	
Before Accreditation	32	38	10	59	61	34.631, <0.001
After Accreditation	24	10	8	110	88	
Total	56	48	18	169	149	

p-value in bold implies significant test with $p\text{-value} < 0.05$

Hypothesis:

H₀: There is no significant difference between the satisfaction levels of patients on the overall food service before and after accreditation.

H₁:There is a significant difference between the satisfaction levels of patients on the overall food service before and after accreditation.

Table 21 depicts that the Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between the satisfaction levels of patients on the overall dietary service before and after accreditation ($p < 0.05$). Hence H_0 is rejected and H_1 is accepted.

CONCLUSION

The Chi-Square test performed at the 5 % level of significance revealed that there is a significant difference between the satisfaction levels of patients on the overall dietary service before and after accreditation ($p < 0.05$). The satisfaction score has improved from before accreditation compared to after accreditation which indicates that the accreditation has a positive impact on the satisfaction of dietary services of the study hospital.

LIMITATIONS OF THE STUDY:This study is limited to the Dietary Department Services of the study hospital and for a limited duration (before two months and after two months of accreditation) only.

DIRECTIONS FOR FUTURE RESEARCH:In future such research should be conducted to study the impact of national and international accreditations on the other services of the hospitals over a large period of time.

SOURCES OF FUNDING FOR THE STUDY: This research was self financed by the author himself.

IMPLICATIONS OF THE FINDINGS: The accreditation has a positive impact on the satisfaction of Dietary Department Services of the study hospital.

ACKNOWLEDGEMENT: The author would like to thank the leadership, all patients and staff of Krishna Institute of Medical Science (KIMS), Secunderabad, Telangana State, India, who had participated in this research study. KIMS Hospital is a 750-bed multi-super Specialty hospital with ISO 9000:2001, NABL and NABH accreditations, strategically located on a sprawling 5-acre campus in the heart of the city, having accessibility from all major landmarks and as well from all major public transport junctions, serving all classes of the population and international patients.

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