

# Patient Satisfaction Regarding Food and Nutrition Care in Hospitals of Lahore, Pakistan

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**Summary.** *Background:* Patient satisfaction surveys regarding nutritional services reflect an overall standard of health; and are necessary to highlight patient concerns. The objective of the current study was to assess patient satisfaction regarding food and nutrition care in hospitals of Lahore, Pakistan. *Methods:* A cross sectional survey was conducted at two purposefully selected Government tertiary care hospitals. Four hundred patients fulfilling inclusion criteria were enrolled consequently after taking written informed consent. Data on demography was collected through a pretested, structured questionnaire. A validated and reliable instrument “Acute Care Patient Satisfaction Questionnaire” in local language was administered to the patients. Descriptive and inferential statistics were applied accordingly using SPSS version 17. *Results:* Majority of the patients was aged between 31- 50 years (n=200, 50%). 210 (52.6%) females and 129 (47.3%) male were included in the final sample. Overall 71% and 50 % patients were not satisfied in Sheikh Zayed Hospital and Mayo Hospital respectively ( $p < 0.001$ ). Logistic regression analysis revealed the level of satisfaction; hospital food (OR=1.724, CI=1.11-2.69,  $p=0.016^*$ ), crockery (OR = 0.948, CI = 0.67-1.33,  $p=0.0760$ ), staff hygiene (OR= 0.467, CI 0.27-0.80,  $p=0.006$ ), hospital smell (OR = 0.712, CI 0.49-1.03,  $p=0.073$ ), disturbance by noise (OR =1.083, CI = 0.76- 1.54,  $p=0.016^*$ ), cooking methods (OR = 1.310, CI = 0.91- 1.89,  $p=0.015^*$ ), meal taste (OR 1.198, CI= 0.79-1.81,  $p=0.394$ ), staff behavior (OR =1.035, CI = 0.61-1.77,  $p=0.900$ ), portion sizes (OR =0.996, CI= 0.73-1.35,  $p=0.979$ ), temperature of food (OR = 1.065, CI = 0.55-1.83,  $p=0.851$ ), quality of food (OR= 1.581, CI = 1.09- 1.46,  $p=0.160$ ), satiety (OR = 0.956, CI = 0.61- 1.36,  $p=0.847$ ). *Conclusion:* It can be concluded that patients were dissatisfied with food and nutritional services. Thus, hospitals must raise their standards of services as indicated by patient’s feedback in these categories i.e. increased menu items, opportunity of food choice, improved quantity and quality of food, improved physical environment of the wards and staff hygiene.

**Key Words:** Patient Satisfaction, Food Services, Government and Pakistan.

## Background

Provision of food services by the hospitals to their patients is an important aspect of comprehensive patient care and improves patient health outcomes. Not only the provision of food services is vital but also patient satisfac-

tion with these services is equally important too. Patients receiving these food related services feel being looked after well and also seem content when they know that a whole team of professionals is involved in their food process. Patient satisfaction in turn reflects an overall standard of health care of the respective hospital (1, 2).

The nutritional care and food provision to inpatients is an important aspect of treatment. On admission in hospital almost 50% of the patients are undernourished and many others develop malnutrition during their stay in hospital and malnutrition adds to illness, mortality, costs and readmissions (3). Undernourished patients have an effect on hospitalization costs and length of stay, therefore an active short, medium and long-term nutritional involvement in patients with chronic diseases is essential (4-6). Due to hospital related malnutrition and increased hospitalization of patients with chronic diseases; hospitals need to make improvements in the quality of nutrition care (7). Knowledge related to the real status of food and nutritional care is critical for rendering of top quality hospital assistance. This type of diagnosis will make it possible for future comparisons and permits for assessment of implemented changes, which is very important for action planning (8).

Only a few hospitals have dietitians and a very few tertiary care hospitals provide food service to inpatients. Assessment of patient satisfaction is a continuous process in developed countries {Stanga, 2003 #2}(9-11), yet it is a neglected aspect of hospitals in Pakistan. Thus this study was aimed at assessing patient satisfaction regarding food and nutrition care in hospitals of Lahore, Pakistan.

## Methodology

*Study design and settings:* The study was conducted in city of Lahore, capital of Punjab. It is the second-largest metropolitan area in Pakistan and known for its academic and medical institutes. A hospital based cross sectional survey was conducted to assess satisfaction of the patients receiving food service. Only those hospitals were approached which were providing food services to their patients and two hospitals were selected on the basis of permission. Data was collected in April and May 2014.

*Sample:* Patients fulfilling the inclusion criteria were enrolled consecutively after taking written informed consent. Patients who could read were requested to fill the acute care patient satisfaction questionnaire (ACPSQ) (12) whereas an interview method was used to record responses from illiterate patients. A total of 400 patients, 200 from each hospital were included in the study.

*Inclusion & Exclusion criteria:* Those patients who were present in respective wards at the time of survey, and who consumed at least one meal from hospital. Patients who did not consume any meal from the hospital were excluded.

*Instrument:* The Acute Care Patient Satisfaction Questionnaire (ACPSQ) was used after taking author's permission Sandra Capra (2005 ). It is an accurate and reliable tool. The ACPSQ consisted of 18 closed ended items comprising four factors as food quality, meal service quality, staff/service issues and physical environment. The scale assess at 5 Likert scale starting from Always, Often, Sometimes, Rarely to Never. Factor analysis and Cronbach's alpha which was 0.777.(13) revealed reliability of four factors; food quality ( $\alpha = 0.89$ ), meal service quality ( $\alpha = 0.72$ ), staff/service issues ( $\alpha = 0.65$ ) and the physical environment ( $\alpha = 0.61$ ).

*Translation and reliability:* The scale was translated into local (Urdu) language for the convenience of patients, following forward translation and backward translation steps evaluated by experts in the field. The translated version in Urdu ACPSQ was pretested and the reliability of the translated scale was 0.777.

*Data quality assurance:* To assure quality of data, a pre-test of questionnaire was performed and these participants were not included in final sample. Data collector was a trained interviewer. The collected data were reviewed and checked for completeness on the day of each data collection.

*Ethical Considerations:* The permission was obtained from administration of Mayo Hospital and Sheikh Zayed Hospital Lahore. Two public sectors tertiary care hospitals of Lahore were selected, one is Sheikh Zayed Hospital, consisting of 1050 bed, it has autonomous status working under Provincial body (Punjab). Pakistan Medical & Dental Council recognized it, centrally located. It has super specialties like organ transplantation i.e. renal, liver transplant. The other hospital is Mayo Hospital Lahore, which is also a public sector tertiary hospital, consisting, in patients total beds 2000, 500 beds in emergency, average patient in OPD daily are almost 2000. Forty-two OPDs with different specialties.

The study purpose and voluntary nature of participation was explained to the subjects before they were requested to sign the consent form. Anonymity and confidentiality of data was ensured.

### Data Analysis

The data was compiled, tabulated and analyzed by applying descriptive statistics. Chi square test and logistic regression analysis was performed and a p value less than 0.05 were taken as significant. Before applying the parametric tests normality of the data was checked. Statistical Package for Social Sciences (SPSS v. 17) was used to analyze data.

### Results

Table 1 shows the general characteristics of the study sample, 200 patients from each hospital. Out of which 52.6 % were male and 47.4 % were female. Length of stay of 42% was less than one week. In case of intake, 32% reported their intake was unchanged while 59% said that their intake was less than usual during their hospital stay. 49.7% of sample was worker and 47.8% were housewives, 1.4 % of sample was comprised of students and 1.1% was unemployed. Most (50%) of the patients fell in the range of 31-50 years of age while 27.8% were from 51- 70-age range. Education of patients varies, 64.1 % were literate, while 34.1% were illiterate. Most of the patients (59%) responded that they were not aware of the type of diet they were being served with. 38% of the patients have experienced hospital stay before while 60.9 % responded that it is the first time that they are in hospital.

When the views of the patients on different aspects of foods and hospital food services were considered, it was found that 91 % of the patients were satisfied with overall quality of food services in hospital. Table 2 shows the results of the satisfied and not satisfied patients in comparison with their general characteristics. Between hospitals there was significant difference in patients' satisfaction, 49% of the patients from Mayo hospital reported they are satisfied with food service in comparison with 29% of Sheikh Zayed hospitals satisfied patients. Most (70%) of the patients of Sheikh Zayed hospital were not satisfied with food services. The results of chi-square test indicate that there is association ( $\chi^2=17.172$ ,  $p < 0.001$ ) between level of satisfaction and type of hospital. It is concluded that the patients of Mayo hospital are more satisfied as compared to Sheikh Zayed hospital (Table 2).

**Table 1.** General Characteristics of the Study Sample (N=400)

Variables	F	%
<b>Hospitals</b>		
Sheikh Zayed	200	50
Mayo Hospital	200	50
<b>Ward</b>		
Cardiology	68	17.5
Medical	153	39.4
Neurology	56	14.4
Surgical	111	28.6
<b>Gender</b>		
Female	210	52.6
Male	189	47.4
<b>Length of stay</b>		
Less than 1 week	168	42.7
1-2 weeks	128	32.6
2-4 weeks	66	16.8
1-2months	25	6.4
More than 2 months	5	1.3
<b>Intake</b>		
Unchanged	122	32.6
More than Usual	30	8.0
Less than usual	222	59.4
<b>Occupation</b>		
Worker	179	49.7
House wife	172	47.8
Student	5	1.4
Unemployed	4	1.1
<b>Age</b>		
18 and under	10	2.5
19-30 year	55	13.8
31-50	200	50.0
51-70	111	27.8
Above 70 years	24	6.0
<b>Education</b>		
Literate	234	64.1
Illiterate	131	35.9
<b>Prior stay</b>		
Yes	146	38.5
No	231	60.9
<b>Diet type</b>		
Standard diabetic/cardiac	71	17.8
Restricted for medical reason	40	10.0
Textured modified	23	5.8
High protein	30	7.5
Don't know	236	59.0

**Table 2.** Patients' Satisfaction with General Characteristics of the Study Sample

Variables	Not satisfied		Satisfied		$\chi^2$	P
	N	%	N	%		
Hospitals						
Sheikh Zayed	142	71.0	58	29	17.172	<.001
Mayo Hospital	101	50.8	98	49		
Ward						
Cardiology	49	72.1	19	27.9	11.501	.009**
Medical	101	66.4	51	33.6		
Neurology	34	60.7	22	39.3		
Surgical	55	49.5	56	50.5		
Gender						
Female	130	62.2	79	37.8	.360	.607
Male	112	59.3	77	40.7		
Length of stay						
Less than 1 week	103	61.7	64	38.3	.368	.985
1-2 weeks	79	61.7	49	38.3		
2-4 weeks	39	58.2	28	41.8		
1-2months	16	64.0	9	36.0		
More than 2 months	3	60.0	2	40.0		
Intake						
Unchanged	72	59.5	49	40.5	9.391	.009**
More than Usual	12	40.0	18	60.0		
Less than usual	150	67.6	72	32.4		
Occupation						
Worker	113		66		1.565	.667
House wife	101		70			
Student	4		1			
Unemployed	2		2			
Age						
18 and under	8	80.0	2	20.0	3.983	.408
19-30 yr	29	52.7	26	47.3		
31-50	122	61.3	77	38.7		
51-70	71	64.0	40	36.0		
Above 70 years	13	54.2	11	45.8		
Education						
Literate	148	63.2	86	36.8	.970	.191
Illiterate	76	58.0	55	42.0		
Prior stay						
Yes	89	61.4	56	38.6	1.270	.530
No	141	61.0	90	39.0		
Diet type						
Standard diabetic/cardiac	54	76.1	17	23.9	10.710	.030*
Restricted for medical reason	21	57.5	9	42.5		
Textured modified	23	60.9	17	39.1		
high protein	14	70.0	9	30.0		
Don't know	131	55.7	104	44.3		

Satisfaction within the wards varies; the patients (72.1%) from cardiology ward were not satisfied, 50.5 % patients who were satisfied were from surgical ward. The results of chi-square test indicate that there is association ( $\chi^2=11.501$ ,  $p < 0.009$ ) between level of satisfaction and wards. Thus it is concluded that the patients from surgical wards are more satisfied as compared to other wards i.e. cardiology, medical and neurology (Table 2).

Most of the patients (67%) responded that their intake was less than usual they also reported that they are not satisfied with food service. Fifty nine percent, whose intake was not changed during their hospital stay, were also not satisfied with food services. The results of chi-square test indicate that there is association ( $\chi^2=9.391$ ,  $p < 0.001$ ) between level of satisfaction and intake. Thus it is concluded that the patients whose intake was less than usual were most dissatisfied with food service as compared to the patients whose intake was unchanged or more than usual (Table 2).

The patients who were consuming standard diabetic or cardiac diet, of which 76.1 % accounted that they were not satisfied with food service. Most of the patients don't know about the diet and 55.7% of which were not satisfied. The results of chi-square test indicate that there is association ( $\chi^2=10.710$ ,  $p < 0.030$ ) between level of satisfaction and diet type. Thus it is concluded that the patients who were consuming standard diabetic or cardiac menu were not satisfied with food service as compared to the patients who were on restricted or textured modified diet (Table 2).

There were no significant difference found between overall satisfaction and other sample characteristics i.e. gender, age, occupation, length of stay, education, and prior stay (Table 2).

Table 3 shows summary of statistics of each statement related to quality of food meal services, staff services issues and physical environment. The patients' response values vary from 1 to 5 in all aspects of food services. The patients were more satisfied with the quantity of food, hot and cold food temperature, staff services staff hygiene, taste of meal. A large number of patients' response that they were not satisfied because of hospital smell, crockery is chipped or stains and also they were disturbed by the noise of finished trays.

Table 4 shows the logistic regression analysis, which indicates that the statements like the food is as

good as I expect, staff who deliver my meal are neat and clean, disturbance by the noise of finished meal and distinct flavors of meal are statistically significant variables related to patient satisfaction with food services ( $p < 0.05$ ).

## Discussion

When the views of the patients on different aspects of foods and hospital food services were considered, it was found that 91 % of the patients were satisfied with overall quality of food services in hospital. These results are in accordance with a previous study (14) in which a validated 16-item questionnaire was used as the instrument to evaluate the views of patients on an oral diet in two Swiss health institutions. Overall patient were satisfied with food service thus indicating positive responses regarding satisfaction with meals during hospitalization, as compared to the usual perception established by criticisms. This is probably, since dissatisfaction is more frequently expressed than satisfaction. Between hospitals there was found significant difference in patients' satisfaction.

Present study finds the association between level of satisfaction and type of hospital. The results indicate that there is association between level of satisfaction and type of hospital. The results of present study reveal that the patients of Mayo hospital are more satisfied as compared to Sheikh Zayed hospital. The reason might be that the Mayo hospital patients are receiving food service free of cost while the patients of Sheikh Zayed are paying for meals they receive; thus their expectations are high.

Another reason might be that in Mayo hospital most of the patients belong to low socioeconomic level thus they receive food from charity, as indicated in another study (14) that low monthly income of patients was significantly associated with higher level of satisfaction. This may make patients satisfied with any services that they were provided;(15)while the results of (16) another study were in contrast to the present study, (17)while another study reported that patient with high income were more satisfied than with low-income patient.

The patients who were consuming standard diabetic or cardiac menu were not satisfied with food

**Table 3.** Mean level of Satisfaction Scores

Variables	Min.	Max.	Mean	Ranking	SD
1 The hospital food has been as good as I expected	1	5	4.14	7	1.06
2 The crockery are chipped and/ stained	1	5	3.20	18	1.37
3 The staff who deliver my meals are neat and clean	1	5	4.43	3	0.79
4 The hospital smells stop me from enjoying my meals	1	5	3.94	10	1.18
5 I am disturbed by the noise of finished meal	1	5	3.59	15	1.21
6 I like the way the vegetables are cooked	1	5	3.68	14	1.27
7 The meals taste nice	1	5	3.93	11	1.11
8 The hot drinks are just the right temperature	1	5	4.10	9	1.09
9 The staff who take away my finished meal tray are friendly and polite	1	5	4.45	2	0.81
10 I like to be able to choose different sized meals	1	5	3.86	12	1.42
11 The cold foods are the right temperature	2	5	4.57	1	0.74
12 The staff who deliver my menus are helpful	1	5	4.41	4	0.79
13 The meals have excellent and distinct flavors	1	5	3.79	13	1.28
14 The hot foods are just the right temperature	1	5	4.19	6	0.93
15 The meat is tough and dry	1	5	3.29	17	1.23
16 Overall, how would you rate your satisfaction with the foodservice	1	5	3.41	16	0.78
17 I receive enough food	1	5	4.21	5	1.03
18 I still feel hungry after my meal	1	5	2.56	20	1.40
19 I still feel hungry between my meal	1	5	2.71	19	1.41

service as compared to the patients who were on restricted or textured modified diet. This may be due to the low sodium and low fat diet that is provided in Sheikh Zayed hospital's cardiology ward, and patients are not counselled about changes in diet so they are more dissatisfied. (17) It has been previously suggested that the application of nutrition education might be an appropriate approach to increase satisfaction level. (15) Another study also stated that ongoing education and communication with patients and dieticians is important in improving satisfaction with food service (14). The findings of present study related to diet type are in contrast to the previous study (17) stated that food type was not a significant determinant of overall satisfaction with hospital food service.

The results of present study shows that, age and gender are insignificant variables with overall food service satisfaction these results are in accordance with

the study of (14) But these results are in contrast to the study of (16) Sahin et al., who found that the satisfaction level was significantly higher in younger age groups. On the other hand a patient satisfaction study (18) conducted by (20) Senarath & Gunawardena in 2011 in Sri Lanka concluded that the satisfaction level was significantly low for the age group 21-50 years. Patients aged 70 and older gave higher overall food service satisfaction (21).

Less educated patients are generally more satisfied since they are less demanding (21). Patients who had tertiary education had significantly lower levels of satisfaction in a study conducted in United Arab Emirates (22)(23)and in Saudi Arabia (23).In the current study there was no significant association found between education with overall food service satisfaction in this study. Similar results were found in two previous studies (15) (22).

**Table 4.** Logistic Regression Analysis between Overall Satisfaction and Other Aspects Related to Satisfaction

Variables	P	Odds ratio	95%CI of odds ratio
The hospital food has been as good as I expected	.016	1.724	1.11 - 2.69
The crockery are chipped and/ stained	.760	.948	0.67 - 1.33
The staff who deliver my meals are neat and clean	.006	.467	0.27 - 0.80
The hospital smells stop me from enjoying my meals	.073	.712	0.49 -1.03
I am disturbed by the noise of finished meal	.016	1.083	0.76 - 1.54
I like the way the vegetables are cooked	.150	1.310	0.91 -1.89
The meals taste nice	.394	1.198	0.79 -1.81
The hot drinks are just the right temperature	.293	.789	0.51 -1.23
The staff who take away my finished meal tray are friendly and polite	.900	1.035	0.61 -1.77
I like to be able to choose different sized meals	.979	.996	0.73 -1.35
The cold foods are the right temperature	.851	1.065	0.55 -1.83
The staff who deliver my menus are helpful	.984	.994	0.54 -2.29
The meals have excellent and distinct flavors	.016	1.581	1.09 -1.46
The hot foods are just the right temperature	.636	.887	0.54 -1.90
The meat is tough and dry	.160	1.306	0.90 -1.51
I receive enough food	.847	.956	0.61 - 1.36
I still feel hungry after my meal	.658	.915	0.62- 1.52
I still feel hungry between my meal	.819	1.045	0.72- 1.77
Constant	.161	.53	

Patients, who had a longer hospital stay, gave higher food quality ratings when compared with patients with shorter hospital stays (14). The results of present study show that there was no association between length of stay and overall satisfaction with food services and these findings are in contrast to the previous findings (9) (16), which found a negative relationship between length of stay and overall satisfaction with hospital food services. The previously found satisfaction and dissatisfaction could be due to individual differences in the population and type of hospital.

The temperature of food is an important determinant of patient satisfaction with food service (25) (14). In present study patient are satisfied with the temperature of food thus increasing the overall satisfaction level. These results are supported by the study of Abdelhafez et al.,(14) who stated that increasing the level of satisfaction with temperature of

foods decreases the level of dissatisfaction, while Sahin et al., and Tranter et al., did not found such association in their studies (16, 24).

A study (16) compared meal service quality when nurses or dietary staff delivered trays, found that patients served by the dietary staff were more positive about food quality and appearance than were served by nurses. Personal contact with staff is beneficial because patients perceive emotional support (15). In the current study, patients were more satisfied with the staff of food services department who delivers meals in wards. The results are in line with previous findings (14, 16, 24).

The study has a few limitations; only two government tertiary care hospitals providing food services were included in the study and sample was retrieved from four wards only.

## Conclusion

It can be concluded from the stated results that patients are overall satisfied with food and nutritional services. But they highlighted the certain aspects of food services, which need to be improved. As indicated by patient's feedback in these categories i.e. increased menu items, opportunity of food choice, improved quantity and quality of food, improved physical environment of the wards and staff hygiene. Thus, hospitals must raise their standards of services and this type of surveys must be carried out periodically to improve the services. It is recommended that all hospitals should establish a food service department, appoint dietitians for planning and food service managers and personnel to provide food service to the patients to improve quality of care.

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