



# Patients' Satisfaction Regarding Dietary Service at Tertiary Hospitals

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## Authors' contributions

This work was carried out in collaboration among all authors. Author MRU designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript.

Authors AMS and RJ reviewed the literatures. Authors MRAT and MIKU founds the variables and took part in report writing. Authors MM and KMBA finally reviewed the manuscript.

All authors read and approved the final manuscript.

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## ABSTRACT

**Aim:** Hospital diet is an integral part of the management of in-ward patients. Patient satisfaction is a key criterion by which the quality of dietary services can be evaluated. This study was conducted to assess the patients' satisfaction regarding dietary service at tertiary hospitals.

**Methodology:** The present cross-sectional study had been carried out among 247 dietary service receivers to assess the patients' satisfaction regarding dietary service at tertiary hospitals. The

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study was conducted in Shaheed Suhrawardi Medical Collage Hospital and Dhaka Dental College Hospital, Bangladesh from January to December, 2022. Convenience sampling technique was adopted and a pre-tested structured questionnaire based on Acute Care Hospital Foodservice Patient Satisfaction Questionnaire (ACHFPSQ) was used for measuring patients' satisfaction with dietary services.

**Results:** The mean age of the service receivers was  $39.24 \pm 13.09$  years where more than half of the respondents (59%) were male and 65% of the respondents are from rural area. All of the respondents took hospital diet 3 times daily. Among the respondents 97.6% stated that they never had any option to choose their meal and 47.4% of them sometimes felt hungry between two meals. 87% of the respondents considered that the dietary staff always had good behavior. Among the respondent 41.30% had good satisfaction, 30.40% had moderate satisfaction and 22.70% had very good satisfaction regarding hospital dietary service.

**Conclusion:** The study concluded that almost half of respondents had good satisfaction with the overall dietary service whereas about one third of the respondents rated dietary services as average. Hospitals should strengthen the ongoing dietary service by providing a menu with variety of food daily and improve the taste of supplied food.

*Keywords: Patients' satisfaction; dietary service; Tertiary Hospitals.*

## 1. INTRODUCTION

Hospital dietary service is a complex and often considered to be the most complicated process in the hospitality sector with many interrelated factors impinging upon the whole. Access to a safe and healthy variety of food is a fundamental human right. Proper food service and nutritional care in hospital has beneficial effects on the recovery of patients and their quality of life. The goal of dietary services is to provide a clean, hygienic, and nutritious diet for indoor patients based on their caloric needs. Proper meal consumption is essential for patient recovery. Nutritional care; safe and nutritious food in hospitals encourages patients to eat, aids in their recovery from disease, and improves their quality of life [1].

Proper dietary intake is an important aspect of the hospital patient's recuperation. Undernutrition, in general, is connected with muscle weakness and poor immunological function, which can lead to an increase in complication rates, infection rates, and mortality. Maintaining appropriate nutritional status through high-quality hospital dietary services can result in speedier recovery and shorter hospital stays, which can have a significant impact on hospital expenses [2]. In order to be successful, health care organizations must assess and handle patient satisfaction [3]. The quality of dietary services is significantly connected to overall patient satisfaction. As a result, it is not unexpected that many hospitals foodservice companies are shifting their attention to patient

care in order to improve patient satisfaction and control expenses edge [4].

Hospital expectations frequently place the food and nutrition service as an undervalued support service, despite the fact that changes and improvements in hospital diets and nutritional care can prevent nutritional aggravations that have a negative impact on the length of hospital stay and hospitalization costs. Furthermore, such enhancements can have a favorable impact on patients' perceptions of their inpatient stay [5].

Diet consumed during hospital stay forms an integral part of patient management, therefore provision and consumption of a balanced diet is essential to speed up the recovery. These meals can provide a nutritional model for patients requiring dietary management, when tailored to their specific health conditions. Hence, every hospital dietary service must target to provide food that meets nutritional requirements, satisfies the patients and are microbiologically safe. The goal of any hospital caterer should be to provide food that meets nutritional requirements, satisfies the patient, improves morale and microbiologically safe.

Determining patients' satisfaction is one way of measuring hospital service quality with the food service delivered in the hospital; one of the important items perceived by patients regarding health care services [10]. Regular attempts to review the quality and patient satisfaction of hospital food are of paramount importance to reap the benefits of this service. Conducting research on above aspects is mandatory to

identify the deficiencies in the hospital food service and to explore the expectations of consumers with regards to the standards of meals provided to them. Such measures are useful in improving overall patient satisfaction and to prevent plate wastage due to poor meal quality.

## 2. MATERIALS AND METHODS

A descriptive type of cross-sectional study was conducted to assess the patients' satisfaction regarding dietary service at tertiary hospitals. The study was conducted for a period of 12 months from 1st January to 31st December, 2022. The study was conducted in two tertiary hospitals in Bangladesh named Shaheed Suhrawardy Medical College Hospital and Dhaka Dental College Hospital. Shaheed Suhrawardy Medical College Hospital is a 1500 bedded hospital with different specialized departments and providing tertiary level health services to the people of Bangladesh. The data was collected from Medicine, Surgery, Oral and Maxillofacial Surgery, Urology, Hepatology and ENT wards of Shaheed Suhrawardy Medical College Hospital. Dhaka Dental College Hospital is a tertiary public dental hospital. It is a 200 bedded hospital with different specialized departments. The data was collected from Medicine, Surgery and Oral and Maxillofacial Surgery wards of Dhaka Dental College Hospital.

### 2.1 Study Population

The study population were admitted patients in the study places who received dietary service.

#### 2.1.1 Inclusion criteria

- Admitted adult patients.
- Received hospital diet.

#### 2.1.2 Exclusion criteria

- Seriously ill or unconscious patients.
- Patients who are unwilling to participate.
- Patients with hearing and visual impairments.

Convenience sampling technique was adopted in this study. Out of the study population the individual sample units were selected according to selection criteria. A structured questionnaire was used to collect data. The questionnaire was adopted from Chapra et al. [11] which was a valid

reliable questionnaire. Few modifications were done due to socio cultural variation between the study population. The questionnaire was translated in Bengali.

First part of the questionnaire included socio-demographic and economic characteristics of the respondents. Second part contained questions related to satisfaction on hospital diet. It included food quality, meal service quality, staff behavior, cleanliness of dietary department etc.

21 questions were used to assess patients' satisfaction on dietary service. Patients were requested to give their opinions whether or not they were satisfied with the different items regarding dietary service included in the questionnaire by giving five choices- always, often, sometimes, rarely and never. These responses were assigned with following scores: always=5, often=4, sometimes=3, rarely=2 and never=1.

An overall satisfaction with the dietary service of the hospital was also rated on a 5-points Likert scale from very poor to very good. The average score of 21 questions were assigned with following scores: very good= (4.001-5), good= (3.001-4), moderate= (2.001-3), poor= (1.001-2), very poor= (0-1).

Data was collected from the respondents through face-to-face interview until the desired sample size was attained. Before going to the data collection, pre-testing was carried out on the respondents of Mugda Medical College and Hospital, Dhaka, Bangladesh which was a tertiary hospital. During pre-testing respondents were asked if they fail to understand any word or sentence. Any unacceptable or offensive words were also identified. Participants were also asked about language difficulties or any alternatives that fits better to their own language. The necessary modification was made and research instrument was finalized. Data analysis initiated with descriptive analysis. The findings of the study were presented by frequency, percentage in tables and graphs. Means and standard deviations for continuous variables and frequency distributions for categorical variables were used to describe the characteristics of the total sample.

## 3. RESULTS

This cross-sectional study was carried out among 247 respondents to assess the patients'

satisfaction regarding dietary service at tertiary hospitals. The mean age of the respondents was 39.24±13.09 years. 59% of them were male and rests (41%) were female. The mean monthly family income of the respondents was 15992.37±12422.28 taka. 65% of the respondents were from rural area and rests (35%) were from urban area. All (100%) of the respondents had taken hospital meals 3 times per day.

Table 1 shows that 79.4% of the respondents stated that hospital smell never stopped them from enjoying their meal, 69.2% always got adequate quantity of food, 94.7% stated that food was always supplied timely, 98.4% stated that the food always supplied in right temperature, 36.8% stated that the food was always tasty and 44.5% stated that the food was never tasty. 96.4% of the respondents stated that hospital food never had variety in menu and 47.4% sometimes felt hungry between two meals. All of the respondents stated that they never got dietician's advice about their meal and 97.6% stated that they could not choose their meal.

Table 2 shows that 69.6% respondents stated that supplied rice were always adequate in

quantity, 86.6% stated that supplied fish/meat was always adequate in quantity, 87.9% stated that supplied vegetables were always adequate in quantity, 88.3% stated that supplied dal was always adequate in quantity and 92.3% stated that supplied bread, egg and banana were always adequate in quantity. Among the respondents, 44.1% stated that supplied rice were always acceptable in quality, 46.2% stated that supplied fish/meat was never acceptable in quality and 56.7% stated that supplied bread, egg and banana were always acceptable in quality.

Among the respondents, 64.4% stated that the dietary staff did not wear hand gloves during food distribution and 35.6% stated that the dietary staff wore hand gloves during food distribution. 72.1% stated that the dietary staff did not wear apron during food distribution, 99.2% stated that the dietary staff did not wear head cap during food distribution and 73.7% stated that the dietary staff wore face mask during food distribution. Majority (78.5%) considered that the trolley used in food distribution were clean and 78.9% considered that the bowl and dishes used in food distribution were clean.

**Table 1. Distribution of respondents by their opinion regarding dietary service (n=247)**

Category	Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)	Mean satisfaction score
Get dietician advice	0	0	0	0	100	1.00±0.00
Diet as good as expected	35.3	7.3	10.1	4	43.3	2.87±1.8
Hospital smell reduce enjoyment	2	4.8	12.6	1.2	79.4	1.49±1.02
Choosing hospital meal	1.2	0	0	1.2	97.6	1.06±0.45
Adequate quantity of food	69.2	15	6.1	.8	8.9	4.35±1.21
Food supplied timely	94.8	2	1.2	.4	1.6	4.88±0.59
Nice taste of food	36.8	5.7	8.9	4.1	44.5	2.86±1.82
Right temperature of food	98.4	.8	0	0	.8	4.96±0.37
Variety of food in menu	.8	0	1.6	1.2	96.4	1.08±0.44
Good behavior of dietary staff	87	7.4	2.4	.8	2.4	4.76±0.75
Fell hungry between two meals	5.3	20.2	47.4	8.5	16.6	2.85±1.10

**Table 2. Distribution of respondents regarding quality and quantity of supplied food (n=247)**

Category	Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)	Mean satisfaction score
Adequate rice quantity	69.6	.4	1.6	.4	28	3.83±1.79
Adequate fish/meat quantity	86.6	2	2.8	.4	8.2	4.59±1.14
Adequate vegetable quantity	87.9	2	2.8	.8	6.5	4.64±1.05
Adequate dal quantity	88.3	1.6	2.8	.4	6.9	4.64±1.06
Adequate bread/milk, banana quantity	92.3	1.2	1.2	0	5.3	4.75±0.91
Acceptable rice quality	44.1	8.9	11.3	2.4	33.3	3.28±1.77
Acceptable fish/meat quality	38	4.5	9.3	2	46.2	2.86±1.85
Acceptable vegetable quality	38.9	4.5	8.9	2	45.7	2.89±1.86
Acceptable dal quality	37.2	4.9	7.7	2.4	47.8	2.81±1.86
Acceptable bread, banana, egg quality	56.7	6.9	9.3	.8	26.3	3.67±1.72

**Table 3. Distribution of respondents regarding cleanliness status and hygiene practices of dietary department (n=247)**

Category	Yes (%)	No (%)
Staff are neat and clean	95.5	4.5
Trimmed fingernail of staff	96.8	3.2
Wearing hand gloves	35.6	64.4
Wearing apron	27.9	72.1
Wearing head cap	.8	99.2
Using face mask	73.7	26.3
Clean trolley	78.5	21.5
Clean bowls and dishes	78.9	21.1
Supplied hygienic food	63.2	36.8
Availability of waste bean in ward	99.2	.8



**Fig. 1. Distribution of respondents by overall satisfaction**

Fig. 1 shows the distribution of respondents by overall satisfaction. Among the respondent almost half (41.30%) had good satisfaction regarding dietary service, 30.40% had average satisfaction, 22.70% had very good and 5.60% had poor satisfaction regarding hospital dietary service.

#### 4. DISCUSSION

For the past 20 years, patient satisfaction has been acknowledged as a key factor in assessing the quality of healthcare services. Indicators of service quality in the health care industry based on patient opinions follow trends in other service industries. It is also common knowledge that marketing research frequently employs the use of perception. Hospital dietary service is a crucial part of the healing process since it has an impact on recovery time and quality of life. Hospital malnutrition is a major issue since it makes illnesses more severe, prolongs the time needed for recovery, and lengthens hospital stays. For this reason, hospital food services should be viewed as an integral component of patient care, and it is crucial to consider patient feedback to ensure that the food provided to patients satisfies customer expectations.

A descriptive cross-sectional study was conducted by collecting data from the Shaheed Suhrawardi Medical College Hospital and Dhaka Dental College Hospital in Bangladesh. The study was conducted over one year from January 2022 to December 2022. A total of 247 data were collected by face-to-face interview. This study reveals patients' satisfaction regarding dietary service of the hospitals. This study also found the socio-demographic characteristics of the respondents.

All of the respondents in this study took hospital meals daily and they received meal three times a day. A study conducted in Egypt also found that majority of the respondents (84.3%) received 3 meals daily [6]. Among the respondents 43.30% considered that hospital food was never as good as expected and 35.20% considered that hospital food was always as good as expected. 79.4% of the respondents considered that smell in hospital ward never stopped them enjoying their meal. Almost all of the respondents (97.6%) stated that they could never choose their meals in the hospital. 69.2% considered that supplied food quantity was always adequate. 44.5% of the respondents considered that taste of hospital food was never good and 36.8% considered that

taste of hospital food was always good. Among the respondents in this study 94.7% stated that hospital food was always served timely and 98.4% considered that the supplied food was always in right temperature.

Several studies were conducted on assessing satisfaction level on hospital food service. Study of Abdelhafez et al. [7] reported that in Saudi Arabia 56.8% patients were satisfied with the taste of hospital food and 81.6% were satisfied with quantity of supplied food. The study also reported that 80.8% of respondent were satisfied with food supply timing, 52.8% were satisfied with the temperature of food and 60% were satisfied with hospital room decoration. Study of Sahin et al. [8] reported that 50.5% patients were satisfied with the taste of food, 61.8% were satisfied with quantity of supplied food and the study also reported that 74.1% of respondent were satisfied with food supply timing. Another study in Sri Lanka [9] reported that 51.9% patients were fairly satisfied with the taste of food, 60.5% were highly satisfied with temperature of supplied food and the study also reported that 73.4% of respondents had good satisfaction level on food supply timing. There are some disparities among the studies due to hospital types and other demographic conditions.

Majority of the respondents (96.4%) considered that there was never variety in the hospital food menu and 47.4% stated that they sometimes felt hungry between two meals. Study of Abdelhafez et al. [7] reported that 85.6% of the respondents stated that they received various kinds of food. Another study conducted in Egypt showed that 24.6% patients felt hungry between meals [6]. All of the respondents in current study did not get dietitian advice about meal and it was revealed that, in the hospitals there was no facility to choose meal patients want to eat. 97.6% patients stated that they had no facility to choose their meal. Study of Al-Torky et al. [6] found that 60.4% of the respondents reported that they weren't advised about appropriate diet for their health condition. Other study reported that 66% patients received normal diet and 30% received special hospital diet [8].

Hospital staff involved in food delivery play an important role in overall satisfaction level of food service. Majority of the respondents (87%) in this study stated that dietary staff always behaved good to the patients. 96% considered that staff were neat and clean. In the current study 64.4% patients stated that dietary staff didn't wear hand

gloves, 72.21% stated that dietary staff didn't wear apron, 99.1% stated that dietary staff didn't wear head cap and 73.7% stated that dietary staff used face mask during food delivery. Study conducted in Sri Lanka reported that 68.4% patients were satisfied with staff behavior [9]. A Study conducted in Saudi Arabia reported that 76.8% patients were satisfied with staff behavior [7]. Another Study conducted in Turkey reported that 85.6% patients were satisfied with staff behavior [8].

Approximately half (41.30%) of the respondents had good satisfaction with the dietary service of two tertiary hospitals in this study. 30.40% had average satisfaction, 22.70% had very good and 5.70% had poor satisfaction on dietary service of the hospitals. In a study of Imtiaz et al. [12] showed that 75.8% patients were satisfied and 9.8% of the patients were dissatisfied with the hospital dietary service. Study of Al-Torky et al. [6] found that 36.3% of participants rated their satisfaction as good while 30% of them rated it as poor. Only 5% of them reported that hospital food services were very good and 22.9% said that food services were okay. Studies showed that level of satisfaction varied across the world. In Saudi Arabia 78.8% of the patients were satisfied overall with the quality of food services in the hospital [7]. In Turkey 51.3% of the patients were satisfied overall with the quality of food services in the hospital [8]. These disparities among the studies occurred due to different demographic areas and different level of hospital.

## 5. CONCLUSION

The present study found that most of the patients took hospital diet regularly. Though patients were satisfied with the amount of food but food taste was not satisfactory. In these two hospitals patients didn't have any chance to choose their meals according to their wish. The current study concludes that almost half of respondents had good satisfaction with the overall dietary service whereas about one third of the respondents rated dietary services as average.

## CONSENT

All authors declare that 'written informed consent was obtained from the patient for publication of this research report and accompanying images.

## ETHICAL APPROVAL

Ethical approval was taken from the IRB of National Institute of Preventive and Social Medicine (NIPSOM). Bangladesh.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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## APPENDIX

### Questionnaire for the respondents:

National institute of Preventive & Social Medicine (NIPSOM)

Study Title: Patients' satisfaction regarding dietary service at tertiary hospitals

### Questionnaire for the respondents

Name:

Id no:.....

Date:.....

Study Place.....

Mobile no:.....

[Direction: Please write the code no of the correct statement and specify your answers in the space provided]

### Section A. Information regarding socio-demography of the respondents

SI No	Questions	Category	Code
1.	Age (in completed years)		
2.	Gender	1- Male 2- Female 3- Others	
3.	Religion	1-Islam 2- Hinduism 3- Christianity 4- Buddhism 5- Others. Specify.....	
4.	Marital status	1-Married 2-Unmarried 3-Widow 4- Separated 5- Others. Specify	
5.	Level of education	1-No formal education 2-Upto primary level 3-Upto secondary level 4-Upto higher secondary level 5- Graduate 6- Postgraduate/ Masters 7- Others. Specify.....	
6.	Occupational status	1- Student 2- Day labor 3- Farmer 4- Government service 5- Private service 6- Driver 7- Rickshaw puller 8- Businessman 9- Doctor 10- Housewife 11- Other. Specify:.....	
7.	Monthly family income (in taka)	1- Less than Tk 5000 2- Tk 5001- Tk15000 3- Tk 15001- Tk 30000 4- Tk 30001- TK 50000 5- Tk 50001- Tk 100000 6- More than Tk 100000	

<b>SI No</b>	<b>Questions</b>	<b>Category</b>	<b>Code</b>
8.	Place of residence	1-Urban 2-Rural	
9.	Working hours/day	1-8 hours 2-9 to 12 hours 3-More than 12 hours 4-Others	
10.	Family type	1-Nuclear 2-Joint	

**Section B. Patients' opinion regarding dietary service:**

<b>SI no</b>	<b>Questions</b>	<b>Category</b>	<b>Code</b>
1.	Do you take hospital meals daily?	1. Yes 2. No	
2.	How many times do you take hospitals meal daily?	1. 1 time 2. 2 times 3. 3 times 4. 4 times 5. 5 times	
3.	Do you receive advice about appropriate diet for your health Condition from dietician?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
4.	Is the hospital diet as good as you expected?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
5.	Does the smell of hospital environment stop you from enjoying your meal?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
6.	Are you able to choose your meals in hospital?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
7.	Is the sufficient quantity of food supplied by the hospital?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
8.	Are the foods supplied timely by the hospital?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
9.	Is the supplied food tasty?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	

<b>Sl no</b>	<b>Questions</b>	<b>Category</b>	<b>Code</b>
10.	Are the supplied foods in right temperature?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
11.	Is the quantity of rice adequate?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
12.	Is the quantity of meat and fish adequate?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
13.	Is the quantity of vegetable adequate?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
14.	Is the quantity of dal adequate?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
15.	Are the quantity of other foods (bread, banana, milk) adequate?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
16.	Is the quality of rice acceptable?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
17.	Is the quality of meat and fish acceptable?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
18.	Is the quality of vegetable acceptable?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
19.	Is the quality of dal acceptable?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
20.	Are the quality of other foods (bread, banana, milk) acceptable?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	

SI no	Questions	Category	Code
21.	Does the menu have enough variety of foods?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
22.	Are the behavior of the staff who supply food friendly and polite?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
23.	Do you feel hungry in between meals?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	

**Section C. Cleanliness status and hygiene practices of dietary department:**

SI no	Questions	Category	Code
1.	Are the staff who deliver food neat and clean?	1. Yes 2. No	
2.	Could you observe that the staff have properly trimmed fingernail who provide foods?	1. Yes 2. No	
3.	Do the staff wear hand gloves?	1. Yes 2. No	
4.	Do the staff use apron?	1. Yeas 2. No	
5.	Do the staff wear head cap?	1. Yes 2. No	
6.	Do the staff wear face mask?	1. Yes 2. No	
7.	Is the trolley clean which is used in food distribution?	1. Yes 2. No	
8.	Are the bowls and dishes clean which are used for food serving?	1. Yes 2. No	
9.	Do you think that the supplied food hygienic?	1. Yes 2. No	
10.	Are there waste beans available in every ward?	1. Yes 2. No	

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