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Original Research Article

Study to assess the feedback of COVID-19 patients to nutritional services provided in dedicated COVID hospital

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ABSTRACT

Background: In patients' overall perception of their hospital experience it is widely recognized that food and other aspects of foodservice delivery are important elements and health care teams have committed to deliver appropriate food to their patients on daily basis. The provision of hospital foodservice should not only meet, but, also exceed patients' expectations so as to gain the patients' confidence in hospital food. Nutrition is an important element of care. A balanced nutrition is extremely important for patients who have been infected with COVID-19.
Methods: To see the feedbacks of COVID-19 patients admitted in dedicated COVID hospital, the present hospital based cross sectional study was undertaken in various wards of dedicated COVID hospital of metropolitan city of western Maharashtra.
Results: Mean age of participants was 41 years. Mean duration of hospital stay was 9.1 days. 60% patients were in age group between 31 to 60 whereas only 3% participants were above 80 years of age. 59% were male, 85% were from urban area. 55% participants were taking mix diet. 54% participants stayed for 8 to 10 days. 58% participants were presented with different co morbidities. 73.07% participants had normal diet during their stay in the hospital. Variables like age, gender and hospital stay had significant association with the feedback to nutritional services ($p<0.05$).
Conclusions: Participants were satisfied towards nutrition and nutritional services provided in dedicated COVID hospital.

Keywords: Hospital nutrition services, Feedback to nutritional services, Dedicated COVID hospital, COVID-19

INTRODUCTION

With the development and growth of the consumerism, measuring satisfaction in many communities has been increased. In developed countries, client satisfaction surveys have been extensively used and have grown substantially in many developing countries. In last two decades there was increase in the attention given to users' satisfaction with health services. This reflects the value of consumers' opinions about the quality of a product or service.[1]

In patients' overall perception of their hospital experience, it is widely recognized that food and other aspects of foodservice delivery are important and health care staff have committed to deliver appropriate food to their patients on daily basis.[2]

The goals of a hospital nutritional services is to provide inpatients with nutritious meals which is beneficial for their recovery and to give them an example of healthy nutrition with menus tailored to patients' specific health conditions. When meals are planned carefully and customized to meet patients' specific needs, and when

patients consume what they are served, these goals can be considered as achieved.[3]

The American society for quality defines quality in two ways: "the characteristics of a product or service that bear on its ability to satisfy stated or implied needs and a product or service that is free of defects".[3]

Defining quality for hospital foodservice requires a balance between different features. Hospital menus should be based primarily on clinical needs, as well as on patients' preferences. Personal and sociocultural aspects have also been identified as a main factor in acceptance of food and in predicting food consumption. Other characteristics such as variety, appearance, quantity, quality, and type of food should be included.[3]

The provision of hospital foodservice should not only meet, but, also exceed patients' expectations so as to gain the patients' confidence in hospital food.[3]

Accordingly, Hong and Kirk stated that meal consumption by inpatients was a good indicator of dietary status and satisfaction with the foodservice. Furthermore, foodservice quality is known to influence patient satisfaction with hospital stay.[4,5]

Food quality, meal service, staff issues, and the physical eating environment contribute to patient satisfaction.[6]

Hospital food is the sole source of nutrition for more than 75% of hospital patients. It is critical, as the consumption of less food than the required amounts can lead to malnutrition among patients. Patient satisfaction enhances hospital image, which in turn translates into increased service use and market share.[7]

The novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), responsible for coronavirus disease 2019 (COVID-19), was identified for the first time in humans at the end of 2019 in Wuhan, China. Since then, it has gradually spread worldwide, so that the World Health Organization (WHO) declared COVID-19 as a global pandemic in March 2020.[8]

Nutrition is an important element of care.[9] A balanced nutrition is extremely important for patients who have been infected with coronavirus. Managing the nutritional status of hospitalized patients with COVID-19 is a pivotal point in reducing complications and improving clinical outcomes.[10]

A comprehensive literature review reveals that many studies were conducted on satisfaction in health care facilities as well as in other service providers, but the number of studies on the satisfaction with food services in health care facilities is relatively low'.[4] Surveys are limited in that they usually contain very few general questions about foodservice, with the result that there is not enough detailed feedback to precisely determine patients' wishes. Knowledge of patients' expectations is an essential baseline for monitoring and measuring the effect of foodservice innovations or patients' foodservice satisfaction outcomes.[3]

Considering the above background, the present study has been planned with the objective to assess the feedback of COVID-19 patients to the nutritional services provided in dedicated COVID hospital. It will also help to recommend changes for improving nutritional services provided in dedicated COVID care hospital.

METHODS

Study design

To see the feedbacks of COVID-19 patients admitted in dedicated COVID hospital, the present hospital based cross sectional study was undertaken.

Setting

The study was conducted in various wards of dedicated COVID hospital of metropolitan city of western Maharashtra where confirmed diagnosed patients were seeking treatment.

Data for present study was collected over a period of two months January 2021 and February 2021

Ethics approval

The present study was approved by ethics committee of institution (ethics committee of BJ Government College, Pune). Utmost care was taken to maintain the privacy and confidentiality of enrolled participants.

Source and collection of data

The data source used for collection of data was a predesigned and pretested questionnaire containing questions related to demographic details of admitted patients as well as questions related to feedback to nutrition and nutritional services provided inside the dedicated COVID hospital.

Sample size

To calculate sample size for present study, response rate of 50% was considered as a prevalence and based on formula for sample size calculation for cross sectional studies it was worked out to be 156.

Here P=50 (response rate of participants), C.L=95%, and e=8%.

$$Q = 100 - P = 50$$

$$N = Z^2 \times P \times Q/e^2 = 156$$

P=Prevalence which was taken as a response rate, Q=(100-P), and 3=absolute precision.

Thus, for the present study the minimum samples to be included were 156.

Systematic sampling method was used to enrol the participants in the study. Since average 6 patients of moderate category were seeking admission to the dedicated COVID hospital, alternate patient was approached to include in the study fulfilling the inclusion criteria. Enrolment in the study was stopped the moment sample size was met.

Inclusion criteria

Mild/moderate COVID patients with age more than 18 years admitted in dedicated COVID hospital and willing to participate in the study.

Exclusion criteria

Severe COVID patients admitted in intensive care unit (ICU) in dedicated COVID hospital. Those who are not willing to participate in the study.

Data analysis

The data was analysed using statistical package for the social sciences (SPSS) software version 21. Continuous variables were summarized using means and standard deviations (SD) for normally distributed data. Chi square test was applied to evaluate the association between various demographic variables and satisfaction/dissatisfaction of patients towards nutrition and nutritional services provided inside dedicated COVID hospital. Statistical significance was evaluated using 95% confidence interval and a two tailed p value of <0.05.

RESULTS

In our study, which was conducted in the dedicated COVID hospital, packaged food was provided and it was provided 3 times a day which included breakfast in the morning and 2 meals, one in the afternoon and one in the evening. Food timings were followed strictly and there was no delay in the food service.

Total enrolled participants were 156 who were seeking treatment for COVID-19, mean age of participants was 41 with SD of ±6.5. Mean duration of hospital stay was 9.1 days with SD of ±2.5. Maximum i.e. 60% participants were in age group between 31 to 60 whereas only 3% participants were above 80 years of age (Table 1).

Maximum participants (59%) were male and participants coming from urban area were 85%. 55% participants were taking mix diet whereas 45% patients were taking veg diet. Maximum (54%) participants stayed for longer duration i.e. 8 to 10 days whereas only 9% participants stayed for more than 11 days. 58% of total enrolled participants were present with different co morbidities. 114 (73.07%) participants had normal diet during their stay in the hospital whereas 42 (26.9%) participants were given special diet.

Table 1: Distribution of study participants according to demographic variables (n=156).

Demographic variables	N	Percentage (%)
Age (years)		
Less than 30	22	14
31-45	48	31
46-60	45	29
61-80	36	23
80 and above	5	3
Gender		
Male	64	41
Female	92	59
Residence		
Rural	23	15
Urban	133	85
Food consumption pattern		
Veg	70	45
Mix	86	55
Hospital stay (days)		
5-7	58	37
8-10	84	54
11-14	14	9
Co morbidities		
Yes	66	42
No	90	58
Type of diet		
Normal diet	114	73.07
Special diet	42	26.9

When relation between age and feedback to nutritional services was studied (Table 2). It was seen that age was significantly associated with feedback to nutritional services (p=0.001). Residence of participants was not significant while assessing feedback to nutritional services.

In this study, it was seen that gender was significantly associated with feedback to nutritional services (p=0.000001) whereas food consumption pattern was not significant while assessing feedback to nutritional services.

Table 2: Feedback to nutritional services.

Variable	Response	N (%)
Rice properly cooked	Yes	152 (97.4)
	No	4 (2.56)
Vegetables properly cooked	Yes	153 (98.07)
	No	3 (1.92)
Softness of chapati	Soft	140 (89.7)
	Not soft	16 (10.2)

In our study, hospital stay (p=0.03) was significantly associated with feedback to nutritional services whereas co morbidities and type of diet provided to participants were not significant while assessing feedback to nutritional services.

Out of total enrolled participants in the study, 152 (97.4%) participants said that rice was properly cooked (Table 4), 153 (98.07%) participants said that vegetables were properly cooked whereas 140 (89.7%) participants said that the chapatis were soft.

Table 3: Relationship between sociodemographic variables and Feedback to nutritional services.

Sociodemographic variable	Satisfied (%)	Unsatisfied (%)	P value
Age (years)			0.00115
Less than 30	5 (35.7)	9 (64.3)	
31-45	25 (80.6)	6 (19.4)	
46-60	26 (89.6)	3 (10.4)	
61-80	19 (82.6)	4 (17. 4)	
80 and above	3 (100	0 (0)	
Gender			0.000001
Male	49 (76.5)	15 (23.4)	
Female	33 (35.8)	59 (64.1)	
Residence			0.40
Rural	13 (86.6)	2 (13.3)	
Urban	79 (92.9)	6 (7.05)	
Food consumption pattern			0.46
Veg	42 (93.3)	3 (6.66)	
Mix	49 (89.09)	6 (1.09)	
Hospital stay (days)			0.03
5-7	29 (90.6)	3 (9.37)	
8-10	102 (92.7)	8 (7.27)	
11-14	10 (71.4)	4 (28.57)	
Co morbidities			0.08
Yes	37 (88.09)	5 (11.9)	
No	109 (95.6)	5 (4.38)	
Type of food			0.09
Normal diet	112 (98.2)	2 (1.75)	
Special food	39 (92.8)	3 (7.1)	

Table 4: Determinants of satisfaction with hospital food and food services.

Determinants	Satisfied (yes)	Not satisfied (no)
Appearance of food	138 (88.4)	18 (11.5)
Variability of food	140 (89.7)	16 (10.2)
Warmth of food	150 (96.1)	6 (3.84)
Time of food distribution	144 (92.3)	12 (7.69)
Quantity of food	146 (93.5)	10 (6.41)
Quality of food	151 (96.7)	5 (3.20)

In present study, it was observed that, out of 156 participants 138 (88.4%) were satisfied with the appearance of food and 18 (11.5%) were not satisfied. 140 (89.7%) were satisfied with variability of food whereas 16 (10.2%) were not satisfied with variability of food.

In our study, 150 (96.1%) were satisfied with warmth of food and 6 (3.84%) and were not satisfied with warmth of food. 144 (92.3%) were satisfied with time of food distribution and 12 (7.69%) were not satisfied with time of food distribution.

In present study, 146 (93.5%) were satisfied with quantity of food distribution and 10 (6.41%) were not satisfied with quantity of food. 151 (96.7%) were satisfied with quality of food distribution and 5 (3.20%) were not satisfied with quality of food.

DISCUSSION

In our study, maximum participants (59%) were male and finding is consistent with the study conducted by Sahin et al.[4]

In the present study, maximum (54%) participants stayed for longer duration i.e. 8 to 10 days whereas only 9% participants stayed for more than 11 days whereas in a study done by Sahin et al it was observed that maximum patients were in hospital for more than two weeks.[4]

Participants age had been reported as a factor which has got relationship with the feedback to nutritional services provided to COVID-19 patients in the dedicated COVID hospital and satisfaction rate was higher among participants in the age group 46 to 60 years whereas study conducted by Sahin et al showed that satisfaction rate was higher among older participants which is dissimilar finding.[4]

We studied the relationship between the gender of the participants and feedback to nutritional services, it was seen that male participants were satisfied towards nutritional services as compared to female participants and this finding was inconsistent with the finding of Sahin et al who studied that satisfaction was higher among female participants (Table 3).[4]

Participants who stayed in the hospital for the period of 8-10 days were satisfied as compared to participants who stayed for duration less than 8 days and more than 10 days whereas in a study conducted by Sahin et al satisfaction rate was higher among participants who had one week hospital stay.[4]

In our study, patients satisfaction was assessed by various factors like, quality of food, quantity of food supplied, appearance, variability, warmth-ness, time of food distribution whereas study conducted by Maller et al considered customization of food and attitude to assess the patients satisfaction.[11]

Limitations

Assessment of nutritional services is not done as per the calorie requirement of patients. Though specific diet was provided to the patients having various co morbidities but calories supplied through that diet are not calculated. Association between nutrition of a patient and improvement in COVID status is not seen. Hospital staff involved in providing nutritional services were not included in the study. Serious patients taking oral feed are not included in the study.

CONCLUSION

Participants were satisfied towards nutrition and nutritional services provided in dedicated COVID hospital. Nutritional services were provided to the patients in various wards in timely manner. Quantity of food provided to young and adult patients needs to be increased, which can be managed if nutritional services are provided according to the calorie requirement of participants. In order to maintain the quality of services, regular supervision and monitoring of nutritional services provided needs to be done.

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