Perception of Service Quality during COVID-19 Pandemic in Relation to Patients' Satisfaction

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Abstract: -

Aim of the study: The aim of this study is to estimate patients' perception of service quality during COVID-19 pandemic and its relation to their satisfaction with the service. **Design**: Descriptive cross-sectional study was conducted through a hospital-based survey. **Methods**: A convenience sample of 161 patients with history of attending hospitals for any service and fulfill the inclusion criteria were selected. Tools: 1) Structured questionnaire for patients (a) Demographic data (b) Service Quality (SERVQUAL) questionnaire, 2) Patient satisfaction scale. **Results:** The negative service quality perception was mainly in responsiveness domain (55.3%) followed by empathy (50.3%) and the negative perception of the total quality score was (56.5%). Correlation and linear regression analysis revealed positive correlation between all quality dimensions' scores and patient satisfaction. **Conclusion**: COVID-19 pandemic significantly affected patients' perception of service quality and patients' satisfaction. So it is important to declare the underlying causes of such results and promote for formulating a plan for health care quality management during Health pandemics as a mandatory need for Egyptian hospitals in the future. **Recommendations**: Hospital administrators, accrediting agencies, insurers, and regulators should take action to sustain the quality of health care during crisis and health pandemics. It is important to note that a stronger modern managerial orientation should be introduced in hospitals to assist in maintaining the quality of health care services.

Keywords: Perception, Service quality, COVID-19, Patients' Satisfaction

1. INTRODUCTION

The COVID-19 pandemic continues to be a major public health threat globally which affected the entire world. Rapidly increasing number of cases of COVID-19 created a load on the healthcare system. More and more, this pandemic and its impact have grown constantly. This pandemic has highly affected many nations and their healthcare systems have reached the point of exhaustion [1]. In developing nations with long neglected and underfunded public health sectors, the pandemic is leading to disorder. However, the situation is comparatively worse in the countries having weak healthcare strategies and system [2]. The pandemic is going to be difficult for this vulnerable health system in developing countries due to weak healthcare infrastructure, lack of medical and paramedical staff and lack of personal protective equipment (PPE). In this regard, the major challenges facing health care system in XXX during COVID-19 lied in the secondary hospitals as it was not equipped or manpowered both qualitatively and quantitatively enough to deal with the crisis [3].

The burning truth realized in the organizations today is that the perceived service quality is getting significant importance and becoming the most crucial competitive factor in this high technology driven world. As a result, many of the researchers call service quality as the organization's life-giving blood and the most powerful weapon for competition. Understanding how to cope with an organization service quality will bring about proper competitive strategies and increase satisfaction of patients [4].

Quality in health services includes technical (clinical) quality and functional (non-clinical) quality. The former includes the skills, accuracy of procedures and medical diagnosis while the latter refers to the way that health services are provided to the patients [5]. Measuring health service quality from patients' perception as an important element in the assessment of service quality has attracted much attention in recent year [6]. It was documented that a customer's expectation serves as the basis for appraising service quality because quality is high when the actual performance exceeds customer's expectation and quality is low when performance does not meet the expectation [7].

Before the emergence of the COVID-19 pandemic globally, access to healthcare has been seen to vary as various countries have different healthcare provisions. For certain areas, the shortage of adequate health services is exacerbated by the prevalence of inequalities in the allocation of public health institutions. Most health systems don't have the infrastructure, the network, and the capacity to communicate with patients when they leave the hospital or the outpatient clinics [2]. Outside a pandemic, this long-ignored gap makes it close to impossible to follow patients in their care and treatment. Healthcare access is a complex notion and providing services (health workers, organizations, policies) and finding expression in the affordability (financial access), availability (geographical/physical access) and acceptability (sociocultural access) of care were more difficult [8].

Patient satisfaction is the psychological state of patient involving their positive or negative feelings or attitudes toward their experience and some specific aspects in the service encounter [9]. The term customer/patient satisfaction is the degree to which customer feels gratified with service offered by organization which is a tool for shaping customer's intention to seek the services again, customer loyalty, enhancing customer lifetime value, and discouraging customer churn [10].

Assessment of the current service quality is considered a corner stone to declare weak points and plan for improvement especially in the current situation of the global health pandemic. Thus, the purpose of this study was to estimate patients' perception of service quality during COVID-19 pandemic and its relation to their satisfaction with the service.

CONCEPTUAL RESEARCH MODEL

Considerable number of research studies verified that service quality and satisfaction are interrelated with each other. According to Gupta and Rokade [12], service quality dimensions have significant impacts on outpatient satisfaction. Similarly, another study by Alghamdi [13], found statistically significant impacts of service quality factors on patient satisfaction. They have complementary relationship between satisfaction and service quality and positive linear triple effects relationship with organizational performance that satisfaction cannot be achieved without the delivery of quality of service and without customer satisfaction; business cannot realize its success. Similarly, Agarwal and Singh [14], also found significant relationships between service quality dimension and patient satisfaction. Another study by Chang et al., [15] also found significant relationships between service quality and patient satisfaction in interpersonal – based medical services encounters. The results stated that perceptions of interpersonal-based medical service encounters positively influence service quality and patient satisfaction. Perception of service quality among patients positively influences their trust. Perception of trust among patients positively influences their satisfaction.

AIM OF THE STUDY

The purpose of this study is to estimate patients' perception of service quality during COVID-19 pandemic and its relation to their satisfaction with the service.

Research questions:

1. What is the relationship between the COVID-19 pandemic and the patients' perception of service quality?

2. What is the relationship between the patients' perception of service quality and patients' satisfaction with the service during the COVID-19 pandemic?

MATERIALS AND METHOD

Research design: Descriptive cross-sectional study was conducted through a hospital-based survey**.**

Setting: The selection of the study setting was based on certain criteria set by the researchers as follows:

- Hospitals that provide health care services to patients with chronic conditions (secondary healthcare facilities).

- Hospitals that provide health care services to COVID-19 patients too.

- Hospitals that accept to be part of the study.

The study was conducted at Delta region of Egypt. Tertiary healthcare facilities included were a large University Hospital, Teaching Hospital, Health Insurance Hospital and one private hospital (selected by simple random sample out of 10 private hospitals in Menoufia).

Subjects: A convenience sample of 166 patients out of 181 fit patients with response rate 91.7%, after exclusion of 5 invalid questionnaires; the collected sample was 161 patients. The participants were the attendants of outpatient clinics in the selected hospitals who fulfill the following criteria:

1. A history of attending the same hospital for health care service or inpatient services (from July 2020 to December 2020). This was the time when hospitals at Egypt began to receive patients at their outpatient clinics and inpatient departments (after the first wave of COVID-19).
2. An adult patient aged from 16-70 years old.
3. Accept to participate in the study.

Tools of data collection: The data were collected through a questionnaire consisted of three parts:

Part (1) contained the socio-demographic characteristics such as (age, gender, marital status, qualification, occupation, hospital type, type of service, length of hospital stay).

Part (2): Modified Assessment of Service Quality (SERVQUAL) questionnaire. This questionnaire was developed by Parasuraman et al., [16] and used to assess service quality. It included 5 dimensions: tangible, reliability, responsiveness, assurance, and empathy. The response was recorded on a 5-point Likert scale wherein "one" indicates "strongly disagree" and "5" indicates "strongly agree". Thus, the score ranges from 18-90. A score less than 50% (< 45) means having negative perception of service quality, a score from 50% - less than 70% (45- <63) means fair perception, and a score more than 70% (> 63) means having positive perception of service quality. The instrument was tested for validity and reliability and the Cronbach Alpha values for each subscale and for the total scale is illustrated as follows:

Dimension	*Perception*
Tangibles	0.65
Reliability	0.96
Responsiveness	0.94
Assurance	0.94
Empathy	0.93
Combined scales: 0.67	

Source: Gheorghe, I.R. (2012) Marketing Communications in Health Care Services. An Electronic Word-of-Mouth Approach (Doctoral thesis). Academy of Economic Studies, Bucharest, p. 153. [17]

Part (3): Patient satisfaction questionnaire. It was developed by the researchers after reviewing relevant literature [18]. The questionnaire consisted of 18 items that examine four factors; price, image, perceived quality and convenience. The response was recorded on a 5-point scale wherein "one" indicates "strongly disagree" and "5" indicates "strongly agree". A score of less than 50% indicates low degree of satisfaction, a score from 50% to less than 70% indicates average degree of satisfaction, and a score from 70% or more indicates high degree of satisfaction [18]. The instrument was tested for validity and reliability and the Cronbach Alpha values for each subscale and for the total scale is illustrated as follows:

Dimension	*Perception*
Price	0.69
Image	0.76
Perceived quality	0.67
Convenience	0.87
Combined scales: 0.75	

Ethical Considerations: -

Approval to conduct the study was obtained from the Ethics and Research Committee at the Faculty of Nursing, Menoufia University. Administrative permission was taken to collect data from the study setting. Informed consent was obtained from all study participants after explaining the purpose of the study.

Data Collection:-

A pilot study was conducted to test the clarity, relevance, applicability, and to estimate the time required to fill the study questionnaire to plan the data collection schedule. The questionnaire was tested on a sample of thirty patients who were not included in the main study sample. The time required to fill the questionnaire was 10-15 minutes. Data were collected from December 2020 to January 2021. The researchers and researchers' assistants collected the data of the study. The structured questionnaire was self-administered to literate patients while it was used as interview questionnaire for illiterate patients.

Statistical analysis: The data were collected, tabulated, and analyzed by SPSS (statistical package for social science) version 20.0 on IBM compatible computer (SPSS Inc., Chicago,

IL, USA). Qualitative data were described as frequency and percentage and compared using chi square testing while quantitative one was presented as mean ± standard deviation and compared using Kruskal Wallis test. Spearman correlation was used to assess correlation of satisfaction with service quality perception, P value was considered significant at a value less than (0.05).

RESULTS:

This study was conducted on 161 clients with age ranged from 19 to 70 years, majority of them (88.2%) were married, they were mostly of low level of education (illiterate and basic) (41% and 36.6%) respectively and about two thirds of them were not working. Regarding health facility criteria, the studied hospitals were 50.9% university hospital, 28% teaching hospital, 11.8% insurance hospitals and 8.3% were private hospitals, the length of hospital stay ranged from 1 – 30 days **(table 1).**

The highest percentage of the study participants had negative perception of service quality (56.5%) while (8.1%& 35.4% respectively) perceived it as fair and positive. The highest percentage of negative perception was for the responsiveness domain (55.3%). As for patients' satisfaction, it was of low degree in 56.5%, average degree in 19.3% and high degree in only 24.2% of customers **(table 2).**

Spearman correlation of patient satisfaction with service quality domains declared significant positive correlation with all dimensions as well as total service quality score while multivariate linear regression analysis for independent predictors of customers' satisfaction among different service quality domains and its total score revealed that total score of service quality was independent predictor for client satisfaction **(table 3).**

When assessing the relationship between service quality perception and socio-demographic data and service criteria, negative service quality perception was noticed more in older aged patients (79%) while the positive quality perception was in younger aged (57.1%). Regarding education, low education level was significantly associated with negative perception of service quality. Also, the university hospital, it has the highest percentage of negative service quality perception, and the positive perception was mainly in private hospital followed by insurance hospital. According to type of hospital, the quality perception was better in private hospital than governmental ones. Best perception of quality was noticed also in outpatient and inpatient services, but the reverse occurs with emergency and critical care services **(table 4).**

Low degree of satisfaction was observed more in older aged patients (79%) while the high degree of satisfaction was among younger aged (32.7%). Regarding education, low education

level was significantly associated with low satisfaction (72.7%) whilst high satisfaction was related to high education (39.3 %). The highest percentage of low satisfaction was at the teaching hospital (71.1%) but high satisfaction was mainly reported in private hospital (46.7%) followed by insurance hospital (31.6 %) **(table 5).**

Table 1:- Socio-demographic Characteristics and Criteria of Health Services among the Studied Group.

Demographic characteristics	The studied group N = 161	
	No.	**%**
Age		
19 – 34	49	30.4
35 – 49	50	31.1
50 – 70	62	38.5
Marital status		
Single	8	5.0
Married	142	88.2
Widow	11	6.8
Education		
Illiterate	66	41.0
Basic education	59	36.6
Secondary education	8	5.0
High education	28	17.4
Occupation		
Working	54	33.5
Not working	107	66.5
Hospital		
University Hospital	82	50.9
Teaching Hospital	45	28.0
Health Insurance Hospital	19	11.8
Private Hospital	15	9.3
Type		
Governmental	156	96.9
Private	5	3.1
Type of service received		
In patient	39	24.2
Out patient	30	18.6
Emergency	71	44.1
Critical care	21	13.0
Length of hospital stay (days)		
X ±SD	4.48±4.48	
Range	1 – 30	

X = mean, SD = standard deviation

Table 2:- Total Scores of Service Quality Perception among the Studied Group (N = 161).

Total scores	The studied group	Levels of Service Quality Perception	No (%)
Reliability score		**Reliability score**	
Mean ±SD	8.85±3.21	Negative	70 (43.5)
Median	8	Fair	39 (24.2)
Range	3 – 15	Positive	52 (32.3)
Responsiveness		**Responsiveness**	
Mean ±SD	8.08±3.23	Negative	89 (55.3)
Median	7	Fair	20 (12.4)
Range	4 – 15	Positive	52 (32.3)
Assurance		**Assurance**	
Mean ±SD	11.11±4.46	Negative	61 (37.9)
Median	10	Fair	51 (31.7)
Range	4 – 20	Positive	49 (30.4)
Empathy score		**Empathy score**	
Mean ±SD	8.05±3.39	Negative	81 (50.3)
Median	8	Fair	30 (18.6)
Range	3 – 15	Positive	50 (31.1)
Tangibles		**Tangibles**	
Mean ±SD	13.90±5.01	Negative	78 (48.4)
Median	13	Fair	38 (23.6)
Range	6 – 24	Positive	45 (28.0)
Service quality score		**Service quality perception**	
Mean ±SD	49.99±17.36	Negative	91 (56.5)
Median	42	Fair	13 (8.1)
Range	27 – 85	Positive	57 (35.4)
Total satisfaction score		**Satisfaction level**	
Mean ±SD	10.18±4.25	Low degree	91 (56.5)
Median	9	Average degree	31 (19.3)
Range	4 – 18	High degree	39 (24.2)

Table 3:- Univariate analysis (spearman correlation) and multivariate regression analysis for different Service quality questionnaire domains as predictors for patient satisfaction.

Service quality dimensions	R		Satisfaction score P value				
Reliability score	0.79		<0.001				
Responsiveness score	0.74		<0.001				
Assurance score	0.83		<0.001				
Empathy score	0.77		<0.001				
Tangibles score	0.81		<0.001				
Total score	0.88		<0.001				
	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	0.46	0.50		0.92	.36	0.44	1.53
Reliability	0.13	0.15	0.10	0.89	.37	0.03	0.26
Responsiveness	0.11	0.10	0.08	1.045	0.30	0.001	0.79
Assurance	0.10	0.12	0.10	0.82	0.41	0.04	0.63
Empathy	0.02	0.12	0.02	0.18	0.86	0.002	0.46
Tangibles	0.03	0.15	0.06	0.21	0.81	0.03	1.01
Service quality	0.23	0.07	0.93	3.38	0.001	0.10	1.36

r=correlation coefficient

Table 4:- Service Quality Perception in Relation to Demographic Characteristics among the Studied Group.

Demographic characteristics	Service quality perception N = 161						Test	P value
	Negative N=91		Fair N=13		Positive N=57			
	No	%	No	%	No	%	X^2	
Age								
19 – 34	16	32.7	5	10.2	28	57.1	27.2	<0.001
35 – 49	26	52.0	3	6.0	21	42.0		
50 – 70	49	79.0	5	8.1	8	12.9		
Marital status								
Single	3	37.5	2	25.0	3	37.5	8.20	0.09
Married	85	59.9	10	7.0	47	33.1		
Widow	3	27.3	1	9.1	7	63.6		
Education								
Illiterate	49	74.2	3	4.5	14	21.2	19.5	0.003
Basic	30	50.8	5	8.5	24	40.7		
Secondary	3	37.5	2	25.0	3	37.5		
High	9	32.1	3	10.7	16	57.1		
Occupation								
Working	36	66.7	3	5.6	15	27.8	3.5	0.17
Not working	55	51.4	10	9.3	42	39.3		
Hospital								
University	46	56.1	8	9.8	28	34.1		
Teaching	34	75.6	3	6.7	8	17.8	19.4	0.004
Insurance	8	42.1	1	5.3	10	52.6		
Private	3	20.0	1	6.7	11	73.3		
Type								
Governmental	90	59.2	12	7.9	50	32.9	8.4	0.02
Private	1	11.1	1	11.1	7	77.8		
Type of service needed								
In patient	9	23.1	8	20.5	22	56.4		
Out patient	13	43.3	2	6.7	15	50.0	40.4	<0.001
Emergency	49	69.0	3	4.2	19	26.8		
Critical care	20	95.2	0	0.0	1	4.8		
Length of hospital stay (days)							K	
X ±SD	4.56±5.46		3.92±2.29		4.47±2.87		2.12	0.35
Median	3		4		4			
Range	1 – 30		1 – 7		1 – 15			

X^2 = Chi squared test, K = Kruskal Wallis test

Table 5:- Patient Satisfaction in Relation to Demographic Characteristics among the Studied Group.

Demographic characteristics	Patient satisfaction N = 161						Test	P value
	Low N=91		Average N=13		High N=57			
	No	%	No	%	No	%	X^2	
Age								
19 – 34	19	38.8	14	28.6	16	32.7	23.3	<0.001
35 – 49	23	46.0	14	28.0	13	26.0		
50 – 70	49	79.0	3	4.8	10	16.1		
Marital status								
Single	5	52.5	1	12.5	2	25.0	11.1	0.03
Married	85	59.9	26	18.3	31	21.8		
Widow	1	9.1	4	36.4	6	54.5		
Education								
Illiterate	48	72.7	6	9.1	12	18.2	21.7	0.001
Basic	30	50.8	17	28.8	12	20.3		
Secondary	4	50.0	0	0.0	4	50.0		
High	9	32.1	8	28.6	11	39.3		
Occupation								
Working	34	63.0	10	18.5	10	18.5	1.71	0.43
Not working	57	53.3	21	19.6	29	27.1		
Hospital								
University	47	57.3	18	22.0	17	20.7		
Teaching	32	71.1	4	8.9	9	20.0	12.8	0.04
Insurance	8	42.1	5	26.3	6	31.6		
Private	4	26.7	4	26.7	7	46.7		
Type								
Governmental	89	58.6	28	18.4	35	23.0	4.57	0.10
Private	2	22.2	3	33.3	4	44.4		
Length of hospital stay (days)							K	
X ±SD	4.52±5.45		3.87±2.74		4.87±2.82		5.49	0.06
Median	3		3		5			
Range	1 – 30		1 – 11		1 – 15			

K:Kruskal Wallis test

DISCUSSION

The COVID-19 pandemic has imposed many prompt changes in the provision and delivery of health care in hospitals. This study aimed at estimating patients' perception of service quality during COVID-19 pandemic and its relation to their satisfaction with the service. This study was conducted on 161 clients with age ranged from 19 to 70 years, majority of them were married, they were mostly of low level of education and about two thirds of them were not working. Regarding health facility criteria, the studied hospitals were 50.9% university hospital, 28% teaching hospital, 11.8% insurance hospitals and 8.3% were private hospitals, and the length of hospital stay ranged from 1 – 30 days.

The findings of the current study revealed that the highest percentage of the study participants had negative perception of service quality. These findings were in accordance with Lim [19] who illustrated that the COVID-19 crisis revealed that there are major defects in public Egyptian hospitals as they were not equipped both qualitatively and quantitatively enough to deal with the crisis. Furthermore, the global risk report of World Economic Forum [20] added that health systems in many parts of the body are failing to adapt their quality of services even as healthcare spending soars to unsustainable levels after COVID 19. Such disaster caused severe undermining of the economic, social, and the current lifestyle of the whole people.

Furthermore, the report of the World Economic Forum added that health systems around the world are at risk of becoming unfit for purpose. Changing societal, environmental, demographic, and technological patterns is straining their capacity. Not only that but, longevity, lifestyle, and climate changes are transforming disease burdens. Health systems need new infrastructure, resources, and skills, but in many parts of the world, they are failing to adapt – even as healthcare spending soars to unsustainable levels [20].

The highest element of SERVQUAL questionnaire with negative perception was the health care provider responsiveness followed by empathy. From the researchers' point of view, the COVID 19 pandemic had placed additional challenges on already overwhelmed nurses as front-line health care providers are faced with dangerous physical and psychological problems due to spread of COVID-19 virus. They must work under tense conditions where there is marked lack of proper protective equipment. All these may have contributed to delayed responsiveness to patients' needs. In addition, all health systems were hit unexpectedly by the COVID-19 pandemic leading to panic and confusion and additional pressure is placed on already strained health systems across the world especially at developing countries [8].

In agreement, a study conducted by Gab Allah, 2021 [21]. reported that health care facilities are fronting massive crises trying to maintain high quality care, whereas managers are making very difficult decisions about how to allocate scarce resources.

From the researcher point of view lack of disaster preparedness may have contributed to the high levels of stress, fear, anxiety and feeling unprepared to make difficult decisions reported in addition to feeling of uncertainty. Also, multiple conflicts emerge, and cooperation become more difficult. All these may have limited the sense of empathy nurses should have toward patients.

In relation to patient satisfaction with health care services provided the current study showed that more than half of the participants have low level of satisfaction with service introduced in the studied hospitals during COVD-19 pandemic. Compared to other studies in the same line was Deriba et al., [22] who concluded that satisfaction level of patients with chronic disease was very low during the COVID-19 pandemic at North Shoa Health Care Facilities. In addition, other studies performed on patient satisfaction in Jimma Specialized Hospital [13], Debre Berhan Hospital [14] found that the overall patient's satisfaction level was low. In contrast was the results of Jour et al., [15] performed on patient satisfaction in a tertiary care teaching hospital in India and showed that more than two thirds of patients were satisfied by the received services by the hospital. Moreover, Parizad et al., [16] and Purcărea et al., [17] declared that most COVID-19 patients in their studies were satisfied with the inpatient service of the studied facilities. Possible explanations for these differences may be related to that the Indian study was performed before COVID-19 pandemic in outpatient departments only and Purcărea et al., study was performed in private hospitals while the current study assessed quality services during COVID 19 at public and private hospitals at different medical departments at different types of hospitals.

In the current study, patient satisfaction has significant positive correlation with all service quality domains and the overall service quality. This result is congruent with Al-Azzam [18], who investigated the effect of service quality on patient satisfaction in Irbid city private hospital and found significant positive correlation between patient satisfaction and each dimension of service quality and overall service quality. In the same line were the findings of lim et al., [19] and Swain and Kar [20] which indicated that service quality perception directly influences patients' satisfaction level with health-care services provided. Also, Ampaw et al., [23] identified tangible and perceived quality as significant predictors for patients' satisfaction. Mohiuddin [24] added that patient satisfaction is a useful measure for providing a quality benchmark for healthcare services.

According to the study results, the perception of service quality differed with socio-demographic characteristics of the study participants as it was revealed that negative service quality perception was more noticed in old, aged patients and those with low educational level. These results contradict with that of John [25] who found that older patients reported more positive quality perception compared to younger patients.

Moreover, Purcărea et al., [17] found that socio-demographic characteristics of the patients aren't predictors for patients' satisfaction. From the researchers' point of view, the current study results may be related to that Egyptian older age group (50-70) is always the most likely to have chronic diseases and hence their health needs are very complex. At the same time, low level of education is frequently associated with low socio-economic status and poverty, so those people tend to approach the governmental hospital with limited resources and decreased health services quality than private sector.

Furthermore, the findings of the current study revealed that positive perception was reported mainly in private hospitals. In the same line was Al-Azzam [18] who indicated that private hospitals in Irbid city provide high quality services as compared to public ones. In contradiction were Ullah et al., [26] who indicated that high quality of health care services provided by public teaching hospitals in Pakistan were better than private ones. From the researchers' point of view, the large number of Egyptian public health services users with their broad and different needs may have affected the quality of their services and hence patients' satisfaction in addition to the availability of resources and better working conditions in private hospitals.

LIMITATION OF THE STUDY

Data collection was quite difficult due to difficulty to collect data from the health care settings in accordance with COVID-19 social distancing guidelines and the researchers had to collect data over a longer time period and depend on researchers' assistants to provide clarifications if required. The sample size was somewhat small as the target population attending hospitals was small due to the COVD-19 pandemic limitations. Also, convenience sampling technique and small sample size may limit the generalization of results. It would be more beneficial to replicate the study on a larger sample chosen randomly. Because of time constraints, collection of data about patient satisfaction was held with patients visiting the hospital, since exit interview is preferred to reduce information biases (social desirability bias).

CONCLUSION:

In conclusion, more than half of the study participants had negative perception of service quality. The highest percentage of negative perception was for the responsiveness domain followed by the empathy domain. Patient satisfaction with service quality dimensions was mainly of low

degree and was positively correlated with all quality dimensions. Furthermore, service quality perception and patient satisfaction were lower in older aged non educated patients and in governmental hospitals than private ones. Best perception of quality was noticed also in outpatient and inpatient services, but the reverse occurs with emergency and critical care services. So, data generated from this study could be considered as a baseline data for areas of quality gap during pandemics that should be improved to promote sustainable development health care goals.

IMPLICATIONS OF THE STUDY:

Hospital administrators, accrediting agencies, insurers, and regulators should take action to sustain the quality of health care during crisis and health pandemics. It is important to note that a stronger modern managerial orientation should be introduced in hospitals to assist in maintaining the quality of health care services. Also, health care settings should provide additional training for their health care providers on how to maintain quality of care during hard times and health pandemics. Nurses need additional support both structural and psychological in order to keep staff moral and at the same time help them work at their best and full capacity. In addition, health care providers including nurses had to involve patients more in planning and implementing their care so as to increase their satisfaction with care and improve their sense of shared responsibility about the quality of care. Also, patient centered care is important during pandemics so as to improve both nurses' and patient outcomes.

Conflicting of Interests: None declared

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