

Patient Satisfaction with Healthcare: The Interplay of Hospital Functional Quality, Preventive Healthcare, and Hospital Anxiety and Depression

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Abstract

Purpose: The aim of this research was to investigate the factors which influences the patient satisfaction in the context healthcare sector. To accomplish this objective this research tests the direct relationship of functional quality of hospital and preventive healthcare with the satisfaction with healthcare services. Moreover, this research further explores the direct relationship of functional quality of hospital and patients' satisfaction with healthcare services by using hospital anxiety and depression as a moderator and preventive healthcare as a mediator. **Method:** An overall sample of 146 outpatients from different hospitals was selected using chance sampling. Data was collected by using a standardized questionnaires and then Stata's SEM approach was used to assess the relationships of variable. **Findings:** Findings of this research indicated that there is a positive and significant relationship exists among the functional quality of hospital, preventive healthcare, and the satisfaction with healthcare services. Moreover, findings support the proposed moderation and mediation hypotheses by explaining that there is a significant relationship exists among these paths. It verifies that hospital anxiety and depression have a significant moderating effect and preventive healthcare has a significant mediating effect in the direct relationship. **Originality/Implications:** This study found that operational excellence, proactive preventive measures, and sensitive mental health treatment affect Saudi Arabian healthcare patient satisfaction. These findings can help healthcare practitioners, policymakers, and administrators enhance patient-centered care and regional healthcare delivery.

Keywords: Functional Quality, Preventive Healthcare, Anxiety And Depression, Satisfaction, Hospitals.

INTRODUCTION

Over the past few decades, medical innovations, patient-centered care, and healthcare quality and satisfaction have transformed the healthcare sector. Healthcare institutions' performance and reputation depend on patient satisfaction, which measures care quality.^[1] Understanding patient satisfaction variables is crucial as healthcare systems globally attempt to improve.^[2] Functional quality of hospitals the efficiency and efficacy of healthcare services, the competency of healthcare practitioners, and the availability of medical resources and technologies has received significant attention.^[3] The functionality of healthcare services determines patient experiences and satisfaction. This may include getting healthcare immediately, getting the appropriate diagnosis, getting the right therapies, and reducing routine tasks.^[4] Modern healthcare systems emphasize preventative care to detect and treat health issues early, which is crucial

to staying healthy. According to Sun *et al.*^[5], preventative healthcare involves screenings, immunizations, and health education. Proactive hospital preventive treatments have been demonstrated to improve patient satisfaction and health.^[6] According to Islam *et al.*^[7] study, is the need of time to raise patient satisfaction and the standard of healthcare. Moreover, a significant amount of research^[4,8] has looked at the relationships existing between patient satisfaction and hospital service quality. According to some of these research^[9] findings, patient perception is impacted by hospital activities. Whereas, Markovitz *et al.*^[1] describes that patient satisfaction is raised by staff attentiveness, timely care, and effective communication. Alahiane *et al.*^[10] discovered

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that clinical outcomes, patient loyalty, and word-of-mouth were all improved in functionally high facilities. Therefore, medical staff and facility competency have an impact on patient satisfaction. Li *et al.*^[11] claimed that these domain enhancements can significantly raise patient perceptions. Additionally, one of the important factor which has been highlighted by the research was preventative care which increases patient satisfaction.^[12] According to research by Zheng *et al.*^[13] regular checkups and health education enhance doctor-patient interactions. According to the Epifanio *et al.*^[14], consumers respect preventive healthcare since it can identify and address health problems early on and encourage proactive healthcare management. Furthermore, studies demonstrate how feelings of anxiety and hopelessness during hospital stays impact patient satisfaction.^[15] Regardless of quality, Shi *et al.*^[16] discovered that patients with high levels of anxiety and depression expressed poorer satisfaction with their healthcare. Moreover, Shi *et al.*^[17] noted that the mediation effect highlights the need for a comprehensive healthcare system that provides high-quality functional care and effective preventative therapies.

However, research has found many factors which influences satisfaction of patients but there are still gaps in the vast body of research on patient happiness and healthcare quality.^[18] There is not enough research on patient satisfaction, functional quality, mental health concerns, and preventive healthcare. While functional quality has been emphasized, Bogart *et al.*^[19] have not investigated the relationship between hospitalized patients' happiness and preventative healthcare and mental health disorders. Most research has been done on the relationship between patient satisfaction and functional quality and preventative care.^[20] Another important aspect is, that moderators and mediators have not gotten much attention in past works. Gong *et al.*^[21] showed that preventative healthcare improves patient satisfaction, but they did not examine how it mediates the relationship between functional quality and patient satisfaction. Wu *et al.*^[22] found that anxiety and depression lower patient satisfaction, but they did not examine how these mental health conditions might moderate the effects of functional quality and preventative healthcare. Research on how different characteristics of functional quality affect preventative healthcare delivery and effectiveness is scarce.^[23] Choi *et al.*^[24] suggest that high functional quality improves preventative services, but more research is needed to determine which aspects of functional quality (e.g., staff competency, administrative efficiency, resource availability) are most important. There is also little data on how improving these areas can improve preventative healthcare outcomes and patient satisfaction.^[25] Finally, most research has been done in specialized healthcare settings or regions, limiting its generalizability. To ensure broad applicability, these linkages must be studied across healthcare systems and cultures.^[16] Filling these gaps will improve patient happiness and influence global healthcare quality policies.

The Donabedian model of healthcare quality^[26] examines structure, process, and results to assess functional quality, preventative care, and patient satisfaction. This model

states that healthcare institution structure, including resource availability and practitioner expertise, impacts care delivery, outcomes, and satisfaction. Functional quality includes healthcare service efficiency and efficacy. Wellness and patient satisfaction can result from preventative care. Supporting this data, the model implies healthcare structural and operational adjustments can enhance patient outcomes. This study examines how preventative healthcare improves hospital function and patient satisfaction using this theoretical framework. This study explores how preventative healthcare improves patient experiences by transforming high functional quality into improved experiences. This study will also examine how hospital anxiety and depression reduce these relationships, recognising the major influence mental health disorders have on patient satisfaction. The Stress-Buffering Model^[27] suggests mental health therapies and social support reduce stress and increase well-being. This study examines how functional quality influences patient happiness, how preventative healthcare mediates it, and how hospital anxiety and depression attenuate it. Our goal is to fill research gaps and improve healthcare quality and patient satisfaction. The findings' evidence-based suggestions will help mental health practitioners, politicians, and academics serve patients.^[28]

LITERATURE REVIEW

Patient satisfaction has been a major criterion for assessing healthcare quality in recent years. Studies have shown that patient satisfaction is affected by many aspects, including medical care quality, provider-patient communication, service efficiency, and healthcare facility environment.^[29] Healthcare practitioners that communicate well and demonstrate empathy have been shown to improve patient satisfaction.^[30] Patients are more likely to follow treatment programs and have better health outcomes when doctors and nurses listen and understand.^[31] The cleanliness, comfort, and privacy of healthcare facilities also affect patient impressions and satisfaction.^[32] Patient satisfaction measures quality from the patient's perspective and is crucial to healthcare performance indicators. Hospitals and clinics with high patient satisfaction surveys have stronger reputations, which can boost patient loyalty and retention.^[33] Healthcare providers benefit financially because delighted patients are more likely to recommend the institution and return for future services. As value-based care models grow, insurer and government payment rates are linked to patient satisfaction scores.^[34] Thus, healthcare organisations are driven to prioritise patient pleasure to improve care delivery and develop sustainably. The literature emphasises that improving patient satisfaction requires a holistic approach that addresses both tangible and intangible aspects of the patient experience.^[35] Functional quality of a hospital includes the efficiency and efficacy of healthcare services, the competence and responsiveness of healthcare practitioners, and the availability of medical resources and technologies.^[1] It refers to healthcare operations that affect patient outcomes and experiences. Timeliness, accuracy, treatment efficacy, and administrative efficiency are measures of functional quality.^[4] In this

context, patient satisfaction is the extent to which healthcare services meet or surpass expectations. It comprises patient satisfaction, doctor-patient communication, and hospital atmosphere.^[6] Understanding these characteristics is crucial to studying hospital functional quality and patient satisfaction.^[8] Functional quality and patient happiness in healthcare have been consistently linked in empirical studies. Studies show that hospitals with better functional quality have higher patient satisfaction.^[11] Li *et al.*^[11] found that prompt treatment and good communication boost patient satisfaction. Zheng *et al.*^[13] found that patient satisfaction is strongly influenced by healthcare quality, including medical staff and facility quality. Numerous studies across healthcare systems and cultures support the premise that functional quality improves patient happiness.^[15] Given these empirical findings, hospital functional quality is hypothesised to greatly impact patient satisfaction with healthcare services. This concept is supported by empirical evidence that functional quality such as healthcare professional responsiveness, service delivery efficiency, and medical resource adequacy vital to patient satisfaction.^[17] Patients are more satisfied when hospitals reduce wait times and enhance medical diagnosis accuracy.^[19] The evidence also implies that patient perceptions of functional quality are influenced by direct healthcare practitioner contact and healthcare delivery efficiency.^[35] Thus, improving functional quality improves clinical outcomes and patient satisfaction, validating the idea that these two factors are related.

H1: Functional quality of hospital significantly influences the patient's satisfaction with healthcare services.

Preventive healthcare improves patient views and satisfaction with healthcare treatments, according to considerable empirical research.^[21] Preventive healthcare, which includes immunizations, screenings, and health education, tries to prevent and detect health concerns early when they are most treatable.^[23] Patients are happier when they receive prompt preventive treatment, according to research. According to Sharma *et al.*^[25], patients who engaged in preventive health programs and screenings were happier with their doctors since they were proactive about their health. According to Daneshfar *et al.*^[27], patients value preventative care since they help them stay healthy and avoid future issues. Using empirical evidence, the hypothesis that preventive healthcare greatly affects patient satisfaction with healthcare services can be developed by studying how preventative interventions improve patient experiences.^[29] Patient-centered healthcare systems that priorities long-term well-being through preventive interventions are seen as high-quality and personalized. Regular patient-provider encounters in preventive healthcare build trust and continuity of care.^[31] Routine tests and health education can make patients feel more engaged and educated about their health, increasing satisfaction. Positive interactions and a focus on prevention improve patient happiness and reinforce the idea that preventative healthcare is vital to patient satisfaction.^[33] The expanding body of research linking preventive treatments to improved health outcomes

and patient experiences supports the idea that preventive healthcare greatly impacts patient happiness.^[35] Preventive healthcare minimises illness burden and improves patient health and quality of life by early detection and management. Patients are happier with healthcare when preventative care reduces hospital admissions and significant health issues.^[2] Additionally, preventative healthcare generally incorporates detailed care regimens tailored to particular patient needs, strengthening the impression of patient-centered care.^[5] Preventive healthcare's focus on health and illness prevention matches patients' expectations of effective and compassionate care, boosting satisfaction.^[7] This evidence emphasises the necessity of integrating preventative services into healthcare to improve patient satisfaction and health outcomes.

H2: Preventive healthcare significantly influences the patient's satisfaction with healthcare services.

Research has shown that mental health, particularly anxiety and depression, affects patient experiences and satisfaction with healthcare services.^[9] Studies demonstrate that anxiety and depression individuals view their healthcare differently. Alahiane *et al.*^[10] found that patients with higher anxiety and depression were less satisfied with their healthcare, regardless of quality. Mental health issues can accentuate negative experiences and limit the ability to cope with small healthcare inconveniences.^[12] Epifanio *et al.*^[14] found that depression in chronic illness patients was associated with significantly lower satisfaction with their overall care, suggesting that mental health issues can negatively impact patient satisfaction with healthcare providers and the care environment. Based on these empirical findings, the hypothesis that hospital anxiety and depression considerably affect the association between hospital functional quality and patient satisfaction can be proposed.^[16] Anxious and depressed people may notice hospital wait times, personnel response, and administrative efficiency more. Meng *et al.*^[18] observed that depressed people are less happy with their healthcare, even if it's good. This suggests that anxiety and depression may impair care quality, making them essential in patient satisfaction surveys. The same functional quality may lead to different patient satisfaction depending on mental health since mental health issues moderate.^[20] The complicated interaction between mental health and patient perceptions supports the premise that hospital anxiety and depression considerably modify the association between hospital functional quality and patient satisfaction.^[22] Anxiety and depression patients need more personalised and compassionate care, and their happiness is increasingly dependent on healthcare provider interactions.^[24] Even if the hospital is functionally good, anxious patients may notice delays and inefficiency more, lowering satisfaction. Hospitals that address these patients' requirements, such as integrated mental health care and improved communication, may reduce the detrimental impact of anxiety and depression on patient satisfaction.^[26] This nuanced understanding supports the hypothesis that hospital anxiety and depression significantly moderate the relationship between functional quality and patient satisfaction by tailoring healthcare delivery to patients' mental health.

H3: Hospital anxiety and depression significantly moderates the relationship of functional quality of hospital and patient’s satisfaction with healthcare services. Hospital functional quality, preventative healthcare, and patient happiness have been thoroughly studied, finding a complex relationship.^[28] Functional quality including timely care, competent medical staff, and efficient administrative processes directly affects patient happiness, according to studies. For instance, Li and Duan^[30] discovered that hospital functional excellence greatly improves patient satisfaction. Patient satisfaction is also linked to preventive healthcare, which includes immunizations, health screenings, and patient education.^[32] Due to their proactive approach to health, Malli *et al.*^[34] found that preventive healthcare patients are happier with their care. This shows that functional quality and preventative healthcare independently affect patient satisfaction.^[13] These empirical findings support the premise that preventative healthcare considerably impacts the association between hospital functional quality and patient happiness.^[10] Hospitals that have high functional quality foster preventive healthcare delivery. Seo *et al.*^[9] found that hospitals with well-organized, efficient systems can provide complete preventive care, such as timely screenings and health education. By preventing health complications

and encouraging proactive healthcare management, these preventive interventions increase patient satisfaction.^[6] Functional quality improves preventative healthcare delivery and adoption, which raises patient happiness. The integration of high functional quality with preventative healthcare practices is key to patient happiness.^[5] The holistic benefits of preventive services in high-quality hospitals support the idea that preventive healthcare considerably influences the relationship between functional quality and patient satisfaction.^[23] Preventive healthcare bridges operational efficiency and competence into patient-valued health benefits. When hospitals efficiently manage resources and reduce wait times, they can spend more time on preventive interventions, improving health outcomes and patient satisfaction.^[22] Preventive care also shows patients that their long-term health is important, which boosts the healthcare experience. This holistic approach, where functional quality aids preventive services, improves patient satisfaction.^[21] The mediating role of preventive healthcare emphasises the relationship between functional quality and patient satisfaction, supporting the hypothesis. H4: Preventive healthcare significantly mediates the relationship of functional quality of hospital and patient’s satisfaction with healthcare services.

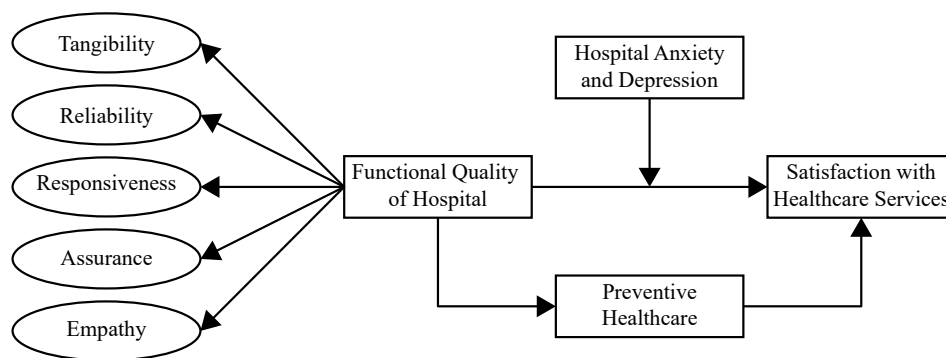


Figure 1: Research Model.

METHODOLOGY

This study examined Saudi healthcare patient satisfaction determinants. The study employed 146 outpatients from various hospitals of Kingdom of Saudi Arabia. Participants were selected through convenience sampling to represent varied demographics and healthcare settings across the Kingdom. Patients were given standardized questionnaires during hospital visits to collect data. The surveys measured hospital functional quality, preventative healthcare, hospital anxiety and depression, and patient

satisfaction with healthcare services using standardized scales from previous research. Previous research had shown these scales to be reliable and valid, thus they were modified to the Saudi healthcare system (see table 1). Stata’s Structural Equation Modelling (SEM) was used for statistical analysis after data collection. SEM can analyze complex correlations between numerous variables, making it ideal for analyzing hospital functional quality, preventative healthcare, hospital anxiety and depression, and patient satisfaction.

Table 1: Details of Research Scales Used in the Study.

Variable of the Study	Number of Items	Reference of the Questionnaire
Functional quality of hospital	05	Vassileva and Balloni ^[36]
Preventive healthcare	09	Kundi ^[37]
Hospital anxiety and depression	07	Sinesi <i>et al.</i> ^[38]
Satisfaction with healthcare services	13	Fsheha ^[39]

The measurement model’s reliability and validity were tested with confirmatory factor analysis. This stage confirmed that the evaluation scales accurately measured the intended constructs and had high psychometric qualities. The structural model was then analyzed to determine the independent variables’ direct and indirect effects on patient satisfaction, taking into account theoretical framework moderating or mediating effects. The comparative fit index, Tucker-Lewis index, root mean square error, and standardized root mean square residual assessed model fit. If these indices were higher, the model suited the data better.

RESULTS

Table 2 shows the reliability and validity metrics for the instruments used to measure hospital functional quality, preventive healthcare, hospital anxiety and depression, and healthcare service satisfaction. The table shows Cronbach’s Alpha, Composite Reliability (CR), and

Average Variance Extracted (AVE) values, which indicate construct internal consistency and convergent validity. The hospital’s functional quality components have great internal consistency with a Cronbach’s Alpha of 0.909, suggesting high reliability. The Composite Reliability (CR) rating of 0.942 indicates internal consistency and suggests the construct accurately assesses the notion. This variable’s Average Variance Extracted (AVE) is 0.596, slightly below the 0.50 suggested level but still acceptable. This confirms the latent construct’s convergent validity by showing that it explains a lot of the items’ variance. With a Cronbach’s Alpha of 0.941, preventive healthcare items are very consistent. Composite reliability is 0.878, little lower than Cronbach’s alpha yet reliable. AVE for preventive healthcare is 0.625, over 0.50, indicating excellent convergent validity. The latent variable explains about half of the variance in the indicators, confirming that they accurately represent preventative healthcare (see table 2).

Table 2: Instruments Reliability and Validity.

Variable	Cronbach’s Alpha	Composite Reliability	Average Variance Extracted (AVE)
Functional quality of hospital	0.909	0.942	0.596
Preventive healthcare	0.941	0.878	0.625
Hospital anxiety and depression	0.869	0.944	0.604
Satisfaction with healthcare services	0.900	0.932	0.654

Hospital anxiety and depression are reliable with 0.869 Cronbach’s alpha. The items measure the construct across samples with a strong composite reliability of 0.944. This variable has good convergent validity with an AVE of 0.604, over the threshold. The correlation between hospital anxiety and depression indicators implies they accurately reflect hospital mental health. Cronbach’s alpha of 0.900 suggests

healthcare satisfaction reliability. The composite reliability is 0.932, indicating solid measurement item internal consistency. The AVE for healthcare satisfaction is 0.654, far over the 0.50 level, indicating strong convergent validity. The latent construct captures a lot of the variance in the observed variables, showing that the items are successful at measuring patient satisfaction with healthcare services.

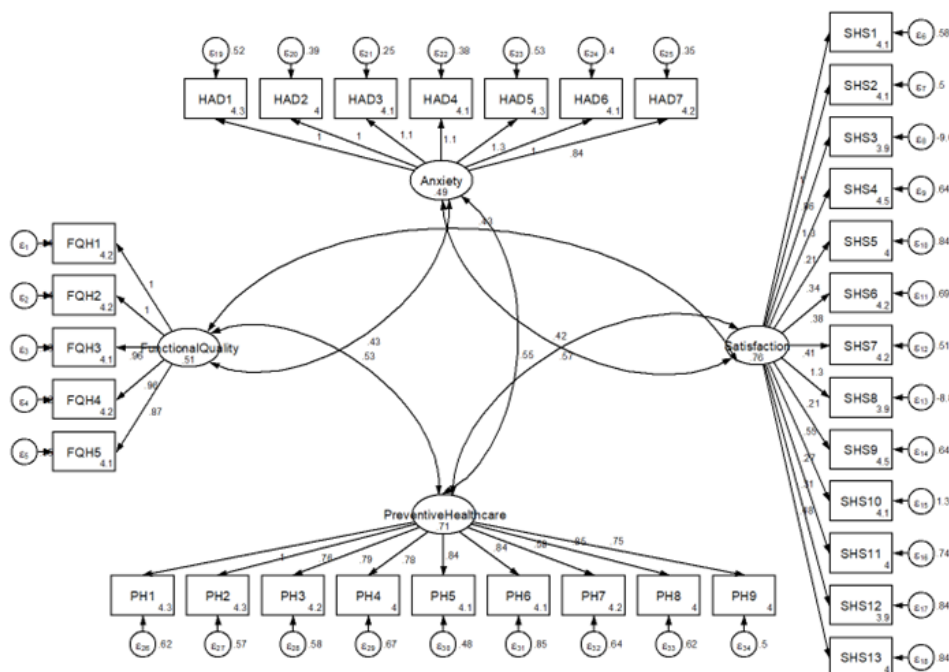


Figure 2: Estimated Model.

Table 3 shows the factor loadings of the observed variables on their latent components from the confirmatory factor analysis (CFA) to validate the measurement model. The “OIM Coef.” column shows observed indicator loadings, which show the strength and direction of each variable’s link to its underlying construct. Standard errors (Std. Err.) indicate the precision of the calculated loadings, whereas z-statistics and p-values indicate their statistical significance. The 95% confidence intervals also provide a range for the true population parameter. Most z-statistics for observable variables on their latent constructs exceed critical

values, indicating substantial factor loadings ($p < 0.001$). This supports the measurement model’s convergent validity because the observed variables accurately represent their constructs. Specific factor loadings for hospital functional quality, preventive healthcare, hospital anxiety and depression, and healthcare service satisfaction show substantial relationships with their constructs, validating the assessment model’s validity. The measurement model’s reliability is strengthened by the repeated significant factor loadings across all observed variables, showing that the selected indicators represent the intended concepts.

Table 3: Confirmatory Factor Analysis.

Measurement	OIM Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
FQH1	1.000	(constrained)				
FQH2	0.699	0.054	13.509	0.000	0.916	0.677
FQH3	0.732	0.058	13.094	0.000	0.963	0.704
FQH4	0.210	0.104	11.012	0.000	0.317	1.031
FQH5	0.971	0.048	92.427	0.000	0.313	0.964
PH1	1.000	(constrained)				
PH2	0.936	0.101	10.505	0.000	0.206	0.937
PH3	0.976	0.100	10.960	0.000	0.254	0.986
PH4	0.925	0.100	10.411	0.000	0.190	0.923
PH5	0.278	0.082	3.812	0.000	0.528	0.161
PH6	0.972	0.097	11.168	0.000	0.338	0.923
PH7	0.918	0.051	86.191	0.000	0.253	0.244
PH8	0.937	0.102	10.411	0.000	0.209	0.936
PH9	0.972	0.116	9.427	0.000	0.286	0.946
HAD1	1.000	(constrained)				
HAD2	0.652	0.093	12.980	0.000	0.348	1.114
HAD3	0.975	0.107	10.246	0.000	0.268	0.970
HAD4	0.783	0.056	76.318	0.000	0.096	0.103
HAD5	0.105	0.108	11.520	0.000	0.432	1.129
HAD6	0.184	0.103	11.168	0.000	0.313	1.033
HAD7	0.500	0.097	12.235	0.000	0.338	1.086
SHS1	1.000	(constrained)				
SHS2	0.833	0.048	89.506	0.000	0.141	0.043
SHS3	0.830	0.045	96.240	0.000	0.129	0.047
SHS4	0.927	0.091	11.530	0.000	0.172	0.947
SHS5	0.803	0.075	12.110	0.000	0.891	0.829
SHS6	0.906	0.046	96.550	0.000	0.226	0.022
SHS7	0.846	0.078	12.276	0.000	1.023	0.876
SHS8	0.927	0.047	94.882	0.000	0.254	0.046
SHS9	0.827	0.051	85.310	0.000	0.139	0.109
SHS10	0.953	0.046	97.275	0.000	0.285	0.080
SHS11	0.036	0.047	97.669	0.000	0.389	0.181
SHS12	0.030	0.048	94.240	0.000	0.385	0.170
SHS13	0.948	0.042	106.827	0.000	0.268	0.082

Table 4 shows the fitness statistics for the measuring items used to assess hospital functional quality, preventative healthcare, hospital anxiety and depression, and healthcare service satisfaction. Fitness statistics—represented by original sample values—show how much each indicator contributes to measurement model fit. Higher values indicate better model fit and measurement accuracy due to variable-construct compatibility. Fitness statistics show that most measurement items are fit, with many indications exceeding the suggested

0.6 criterion. In particular, hospital functional quality, hospital anxiety and depression, and healthcare service satisfaction have good fitness statistics, indicating strong agreement with the underlying variables. However, certain preventive healthcare products have slightly lower fitness statistics, suggesting measurement precision improvements. However, fitness statistics indicate that the measurement items capture the intended ideas and contribute to the measurement model’s validity and reliability.

Table 4: Measurement Items Fitness Statistics.

Variable	Indicator	Original Sample
Functional quality of hospital	FQH1	0.738
	FQH2	0.794
	FQH3	0.818
	FQH4	0.741
	FQH5	0.634
Preventive healthcare	PH1	0.626
	PH2	0.556
	PH3	0.683
	PH4	0.882
	PH5	0.648
	PH6	0.591
	PH7	0.704
	PH8	0.757
	PH9	0.797
Hospital anxiety and depression	HAD1	0.675
	HAD2	0.703
	HAD3	0.718
	HAD4	0.883
	HAD5	0.926
	HAD6	0.744
	HAD7	0.899
Satisfaction with healthcare services	SHS1	0.544
	SHS2	0.576
	SHS3	0.845
	SHS4	0.739
	SHS5	0.770
	SHS6	0.786
Satisfaction with healthcare services	SHS7	0.622
	SHS8	0.614
	SHS9	0.762
	SHS10	0.750
	SHS11	0.862
	SHS12	0.815
	SHS13	0.784

Table 5 shows the chi-square fit statistics, which evaluate the structural equation model (SEM)'s fit to the data. The likelihood ratio chi-square statistic, 3350.722, compares the proposed model to a saturated model where all possible associations are predicted to determine how well it matches the data. A lower likelihood ratio chi-square value suggests a better model-data fit. As the likelihood

ratio chi-square statistic p-value is < 0.001, the proposed model significantly differs from the saturated model, highlighting areas for model improvement. The 2105.039 chi-square baseline statistic compares the proposed model's fit to a baseline model without relationships, providing a reference point for model improvement. A smaller chi-square baseline value suggests a better model-data fit, similar to the likelihood ratio chi-square statistic. According to the chi-square baseline statistic, the proposed model significantly differs from the baseline model (p-value < 0.001), highlighting the need for model improvement.

Table 5: Chi-square Fit Statistics.

Fit Statistic	Value	Description
Likelihood ratio	3350.722	model vs. saturated
p > chi2	0.000	
chi2_bs(2728)	2105.039	baseline vs. saturated
p > chi2	0.000	

The saturated and estimated models' R-square values and quality of fit statistics are shown in Table 6. In the structural equation model, R-square values show how much the exogenous factors explain the variance in the endogenous variables (hospital functional quality, preventive healthcare, and hospital anxiety and depression). A higher R-square value indicates that external variables explain more of the variance in endogenous variables and that the model fits the data better. The Standardised Root Mean Square Residual (SRMR) measures the structural equation model's fit to the data. A lower SRMR value indicates a better model fit to the observed data, indicating that the estimated model accurately describes variable relationships. In this scenario, the R-square values for hospital functional quality, preventive healthcare, and hospital anxiety and depression are 0.525, 0.665, and 0.755, respectively, demonstrating that exogenous variables explain a significant percentage of endogenous variance. The calculated model's SRMR values are slightly greater than the saturated model's, suggesting a discrepancy.

Table 6: R-square and Model Goodness of Fit Statistics.

	Saturated Model	Estimated Model	R Square
SRMR	0.045	0.062	
Functional quality of hospital			0.525
Preventive healthcare			0.665
Hospital anxiety and depression			0.755

Table 7 shows the path analysis results, which examine the direct and moderating effects of the independent variables (hospital functional quality and preventive healthcare) on the dependent variable (patient satisfaction with healthcare services), as well as the moderating and mediating effects of hospital anxiety and depression. The path coefficient for hospital functional quality on patient satisfaction with healthcare services is 0.658,

with a standard error of 0.232. This coefficient shows a statistically significant positive correlation between hospital functional quality and patient satisfaction. The z-statistic of 4.477 and p-value of < 0.001 support the relevance of this association. High hospital functional quality is connected with higher patient satisfaction, according to the confidence interval [0.390, 0.921].

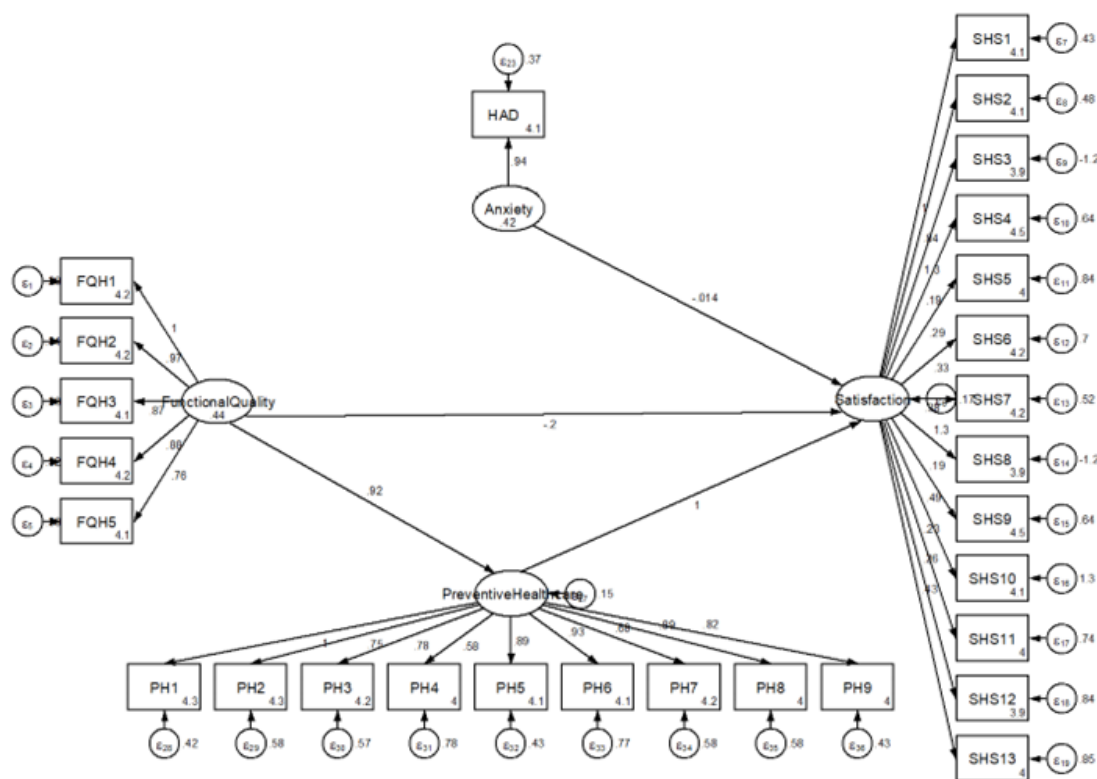


Figure 3: Structural Model for Path Analysis.

Prevention affects patient satisfaction with healthcare services with a path coefficient of 0.192 and a standard error of 0.060. Similar to hospital functional quality, this coefficient shows a statistically significant positive link between preventative healthcare and patient happiness. The significant link is shown by the z-statistic of 2.678 and p-value of < 0.001. The confidence interval [0.074, 0.311] implies that preventative healthcare improves patient satisfaction, although less than hospital functional quality. The path coefficient for hospital anxiety and depression modulating the connection between hospital functional quality and patient satisfaction is 0.550, with a standard error of 0.135. Hospital anxiety and sadness moderate the link between functional quality and patient satisfaction, according to this coefficient. The z-statistic of 3.756

and p-value of < 0.001 indicate the importance of this moderating impact. Higher hospital anxiety and sadness improve the favourable connection between hospital functional quality and patient satisfaction (confidence interval [0.285, 0.814]). Preventive healthcare mediates the association between hospital functional quality and patient satisfaction with a path coefficient of 0.580 and a standard error of 0.143. Prevention may partially mediate the association between hospital functional quality and patient happiness, as this coefficient is statistically significant. The z-statistic of 3.966 and p-value of < 0.001 indicate the importance of this mediating impact. Preventive healthcare is vital to translating hospital functional quality into patient satisfaction, according to the confidence interval [0.301, 0.860].

Table 7: Path Analysis.

	OIM	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
Functional quality of hospital significantly influences the patient’s satisfaction with healthcare services.	0.658	0.232	4.477	0.000	0.390	0.521
Preventive healthcare significantly influences the patient’s satisfaction with healthcare services.	0.192	0.060	2.678	0.000	0.074	0.311
Hospital anxiety and depression significantly moderates the relationship of functional quality of hospital and patient’s satisfaction with healthcare services.	0.550	0.135	3.756	0.000	0.285	0.814
Preventive healthcare significantly mediates the relationship of functional quality of hospital and patient’s satisfaction with healthcare services.	0.580	0.143	3.966	0.000	0.301	0.860

DISCUSSION

The complex dynamics of healthcare service delivery and patient satisfaction underpin global healthcare system development and transformation. This study examines the

complex relationships between hospital functional quality, preventative healthcare, mental health problems as anxiety and depression, and patient happiness. The acceptance of all four hypotheses emphasizes the importance of

a holistic healthcare approach that includes excellent functional quality, proactive preventative measures, and mental health. Complete comprehension enhances both patient care and theoretical frameworks. The study demonstrates how hospitals may enhance patient care to both meet and surpass patient expectations, resulting in a more prosperous and healthy healthcare environment. According to the first hypothesis, functional/operational excellence affects how patients feel and perceive their care. It asserts that patient satisfaction with healthcare is impacted by hospital functionality. Patient satisfaction is impacted by functional quality attributes such as prompt service, effective communication, and staff responsiveness. These results support a recent investigation of these attributes.^[15] This study discovered that patients are happy when they receive hospital care that is prompt, accurate, and caring. Fast healthcare delivery improves patient experience by lowering anxiety and waiting times. Building trust and happiness, effective communication enables patients to comprehend and take part in their healthcare. Patient satisfaction is increased when healthcare providers act quickly and skillfully to reassure patients about their treatment. Functional quality contributes to the healthcare sector's ability to offer patients a comprehensive and fulfilling experience. The second hypothesis emphasizes how important proactive health management is for making patients happier and healthier. One of the ways to make patients satisfied with their healthcare is to focus on preventative measures. Patients value immunizations, screenings, and education to keep healthy and avoid illness. This study supports the idea that preventive care improves doctor-patient relations. Because preventative care prevents long-term health issues, patients feel protected and trust their doctors. Preventative healthcare reduces hospitalization and serious disease by immediately detecting and treating medical issues.^[1] The purpose of proactive care is to improve the patient's health and satisfaction outside of therapy. The results suggest that integrating preventive services to healthcare improves patient health and happiness. According to the second hypothesis, preventative healthcare bridges the gap between patient happiness and functional quality. Hospitals with excellent functional quality can make patients happier by providing complete preventative care. Well-run institutions provide screenings, health education, and preventative treatment, which patients respect. Preventive treatment increases hospital care and patient satisfaction. When hospitals use their resources efficiently and reduce wait times, they may focus on preventative measures, improving patient health and satisfaction. This mediation effect emphasises the need for a holistic healthcare delivery model that includes high functional quality and strong preventive interventions. The findings show that functional quality and preventative healthcare are linked to patient happiness, advising healthcare practitioners and governments to prioritise both in healthcare policies. The third hypothesis, that hospital anxiety and depression significantly influence

the link between hospital functional quality and patient satisfaction, highlights the complex relationship between mental health and patient perceptions of treatment. This supports previous research that finds mental health disorders like anxiety and depression strongly influence how people see their healthcare encounters, regardless of quality. Anxious and depressed patients are more sensitive to hospital waiting times, staff interactions, and service efficiency. Even if functional quality is great, an anxious patient may perceive slight delays and inefficiencies more acutely, decreasing pleasure.^[13] Anxiety and sadness can lower patient satisfaction, but hospitals that meet their requirements, such as integrated mental health care and better communication, can help. To deliver true patient-centered care, healthcare providers must take a more holistic and empathic approach and address patients' mental health concerns.

Accepting the fourth hypothesis, which states that preventive healthcare significantly mediates the relationship between hospital functional quality and patient satisfaction, illuminates how high functional quality increases patient satisfaction. Preventive healthcare services including health screenings, immunizations, and health education link hospital operational efficiency and competency to patient happiness. Functionally excellent hospitals foster preventive healthcare delivery. This aids early disease detection and control and promotes proactive healthcare, which patients like. Comprehensive preventive care reassures patients that their long-term health is a priority, improving their happiness with healthcare.^[15] Hospitals should integrate preventative healthcare to maximize functional quality and patient happiness due to this mediating impact. These findings indicate that healthcare providers must address both operational and mental health needs to maximize patient satisfaction. Hospital anxiety and sadness moderate patient satisfaction, suggesting that mental health status is as important as functional quality of care. Healthcare providers should provide integrated mental health services, train workers to recognize and manage anxiety and depression, and create a supportive and sympathetic care atmosphere. Preventive healthcare mediates, emphasizing the need for proactive health management. Healthcare providers that prioritize preventative treatment boost patient health and satisfaction by showing they care about their long-term well-being. Therefore, achieving high levels of patient satisfaction necessitates a comprehensive plan that incorporates sensitive mental health treatment, superior functional quality, and efficient preventative healthcare. For legislators and healthcare professionals looking to enhance patient outcomes, these findings are crucial.

According to the study's findings, mental health, preventative healthcare, and functional quality are essential for ensuring patient happiness in the medical field. Recognizing the presumptions highlights the fact that excellent functional quality is not a guarantee of patient pleasure on its own. Rather, prevention and mental health must be approached in concert. While mental

health conditions like sadness and anxiety affect how patients perceive their care, preventive healthcare mediates operational excellence into advantages for patients. These realizations provide a strong foundation for legislators and healthcare professionals to enhance the quality of care and create a system that is effective, efficient, compassionate, and aware of the whole requirements of patients.

The study's findings shed light on the complex relationships among patient satisfaction, preventive healthcare, hospital-related anxiety and depression, and functional well-being. Studies indicate that implementing high-quality protocols, taking proactive steps to prevent issues, and providing empathetic mental health therapy significantly impact patients' perceptions and experiences of care. The study found strong correlations between these characteristics, but its results were constrained due to the use of cross-sectional data and self-reported ratings. In order to enhance the accuracy and applicability of future research, it is recommended that additional samples, objective measures, and longitudinal methodologies be incorporated. Further research into how healthcare system elements, patient characteristics, and future healthcare delivery methods affect patient happiness is intriguing. Addressing these research gaps and using this study's findings, healthcare practitioners, policymakers, and administrators can develop evidence-based strategies to improve healthcare quality, effectiveness, and patient-centeredness, improving patient satisfaction and health outcomes.

Implications of the Study

This study shows the complex connection between factors affecting healthcare patient happiness, with broad theoretical implications. Hospital functional quality, preventative healthcare, and hospital anxiety and depression are stressed in this study to improve healthcare administration and patient-centered treatment. The findings stress operational excellence and efficiency in healthcare delivery and how hospital functional quality enhances patient happiness. This supports the premise that timely, effective, and compassionate care affects patient experiences. Second, the fact that preventative healthcare is a substantial component in patient satisfaction suggests that doctors are proactive in increasing patient well-being beyond treatment. Health outcomes and patient satisfaction improve with preventive care. Hospital anxiety and depression as moderating and mediating factors improve patient satisfaction theories, stressing the complicated relationship between mental health and healthcare. Comprehensive, patient-centered mental health care requires a biopsychosocial approach. This research advances theoretical discourse and informs future research by providing a complete framework for understanding and optimizing patient happiness in healthcare services.

This study offers healthcare providers, legislators, and administrators ways to improve patient satisfaction and service. Initial findings underline the need to invest in hospital functional quality strategies. Healthcare facilities can improve treatment by optimizing processes, improving

communication, and streamlining operations. Through quality improvement and training, staff competency and responsiveness can improve care quality and patient satisfaction. Second, preventative healthcare predicts patient happiness, stressing the importance of health promotion and treatment for healthcare workers. Healthcare organizations may empower patients to manage their health and boost patient satisfaction and loyalty by offering tests, immunizations, and health education. Hospital anxiety and depression moderate and mediate, so healthcare companies can offer integrated mental health treatments and support. Targeted therapies and support systems for mental health can boost patient satisfaction. This study highlights the necessity of a holistic healthcare approach that encompasses physical, emotional, and preventive aspects to increase patient satisfaction and health outcomes.

Limitations and Future Research Directions

This study sheds light on healthcare patient happiness, however its limitations restrict its generalizability and robustness. The study's cross-sectional data makes causality determination challenging. Experimental or longitudinal research may help establish the causal relationships between hospital functional quality, preventative healthcare, hospital anxiety and depression, and patient satisfaction. Second, self-reported measures have technique and response biases. Objective measurements or multi-source data collecting like patient records and observational assessments could eliminate biases and improve results. The study sample's lack of healthcare setting and patient group variety may restrict its conclusions. Future research should repeat the study in other hospital settings and incorporate demographic characteristics to establish external validity.

This research proposes several promising future directions. First, understanding how healthcare system factors like culture, leadership, and resource allocation affect patient satisfaction may assist explain patient experiences. Health literacy, socioeconomic level, and cultural background may moderate healthcare quality, preventative measures, mental health, and patient satisfaction, providing nuanced insights into how these factors affect varied patient populations. Longitudinal research on patient happiness throughout healthcare encounters could highlight the dynamic nature of patient experiences and propose intervention times to increase satisfaction. Finally, studying how telemedicine, digital health interventions, and patient-centered care models affect patient satisfaction and outcomes may help develop new healthcare delivery methods that better meet patients' needs in the changing healthcare landscape. We can build evidence-based healthcare quality and effectiveness strategies by filling these research gaps and understanding patient pleasure.

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APPENDIX 1

Preventive Healthcare

1. Prevention is better than cure.
2. I like healthcare through food management.
3. I do all possible to maintain status quo of my good health.
4. Exercise is must for preventing from health problems.
5. We make maximum use of vegetables to escape diseases.
6. I always read about updates on preventive healthcare tips.
7. Prevention is less expensive than cure.
8. Preventive healthcare keeps one away from bad health worries.
9. Prevention is personal duty but cure is public activity.

Satisfaction with Healthcare Services

1. Examination area cleanliness
2. Waiting time to see health worker
3. Courtesy and respect
4. Information and education service
5. Overall cleanliness of the facility
6. Completeness of information
7. Access and cleanliness of toilet
8. Confidentiality and trust in providers
9. Availability of drugs and supplies
10. Waiting area cleanliness and comfort
11. Cost paid to service
12. Health facility distance
13. Level of privacy during ANC service

Hospital Anxiety and Depression

1. I feel tense or wound up
2. I get a sort of frightened feeling as if something awful is going to happen
3. Worrying thoughts go through my mind
4. I can sit at ease and feel relaxed
5. I get a sort of frightened feeling like ‘butterflies’ in the stomach
6. I feel restless as if I have to be on the move
7. I get sudden feelings of panic

Functional Quality of Hospital

1. The Customer degree of relevance (requirements, satisfaction, etc.) during the strategies development.
2. The Resources degree of relevance (requirements, availability, etc.) during the strategies development.
3. There is a follow up to the formulated strategies.
4. Tools like Balance Scorecard are used.
5. The hospital is aware of new technologies related to their business.