# EFFECT OF QUALITY TANGIBILITY ON PATIENT SATISFACTION IN NAROK COUNTY REFERRAL HOSPITAL, KENYA

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**Abstract:** *Patient satisfaction is a key indicator of healthcare quality, yet it has been historically neglected. This study explores the impact of service quality, specifically the role of tangibility, on patient satisfaction at Narok County Referral Hospital in Kenya. Tangibility refers to the physical evidence of service quality, such as equipment, signage, cleanliness, and patient room comfort. Using a quantitative research approach, a sample of 248 patients was surveyed using structured questionnaires, and data was analyzed through regression models. Results indicated that quality tangibility significantly contributes to patient satisfaction, accounting for 13.1% of the variation in satisfaction levels ($R^2 = 0.131$; $p < 0.05$). Key factors influencing satisfaction included state-of-the-art equipment, clear signage, cleanliness, and comfortable patient rooms. The findings suggest that improving the tangible aspects of healthcare services is critical to enhancing patient satisfaction. Public hospitals should prioritize tangible quality improvements to better meet patient needs and expectations.*

**Keywords**: *county referral hospital, healthcare service quality, patient satisfaction, quality tangibility*

## 1. Introduction

Patient satisfaction assessment has been widely deployed around the world (Jayantkumar & Dasharathbhai, 2019). Patient satisfaction has been considered as a situation when medical services meet the patient's expectations during treatment (Aga, Ferede, Mekonen, 2021). Aga et al., (2021) further noted that Patient satisfaction with the quality of the health service they receive is very important, reflecting the quality of the health facility, thereby proposing solutions to improve the quality of the hospital. Providing healthcare services to satisfy customers/patients is a key factor affecting the existence and development of health facilities.

Assessing patient satisfaction may provide valuable and unique insights about daily hospital care and quality. One widely accepts it as an independent dimension of care quality that includes internal aspects of hospital care.

Patient satisfaction is a concept that has long been neglected and cast aside, but is becoming gradually more important. Donabedian, (2017) includes it as an outcome of healthcare services; hence, it is of utmost importance to evaluate care quality. Several authors argue that satisfaction and the result in terms of the patient's health status are related terms. Thus, the present study sheds light on the factors that most influence

patient satisfaction. With this information, hospitals can more efficiently allocate resources to improve patients' experience and satisfaction.

The healthcare landscape in Kenya is characterized by significant disparities in service quality, which directly impacts patient satisfaction. Understanding the effect of quality tangibility—defined as the physical evidence of service quality, including facilities, equipment, and healthcare provider interactions—on patient satisfaction is crucial for improving healthcare delivery in the country. The World Health Organization emphasizes that patient satisfaction is a key indicator of healthcare quality and is essential for fostering trust and encouraging the utilization of health services (Kemei & Etowa, 2021). In Kenya, where healthcare access is often hindered by systemic challenges, enhancing the quality of tangible aspects of care can lead to improved patient experiences and outcomes.

Research indicates that the quality of healthcare services in Kenya varies widely, particularly between urban and rural settings. For instance, urban hospitals tend to offer more specialized services and better facilities compared to their rural counterparts, which often struggle with resource limitations (Bergen et al., 2023). This disparity can lead to patient dissatisfaction, as individuals in rural areas may perceive the quality of care to be inadequate, resulting in a reluctance to seek medical assistance (Qiu et al., 2019). Moreover, the integration of quality management practices, such as Total Quality Management (TQM), has been shown to positively influence service delivery in healthcare settings, thereby enhancing patient satisfaction (Omore & Misuko, 2023; MULWA, 2021, Patrick gudda, 2021). TQM practices emphasize continuous improvement and customer focus, which are vital for addressing the specific needs of patients and ensuring that healthcare services are responsive and effective.

Furthermore, the experiences of patients during their interactions with healthcare providers play a significant role in shaping their overall satisfaction. Studies have highlighted that compassionate care and effective communication are critical components of quality tangibility that can significantly enhance patient experiences (Embleton et al., 2021; Oluoch-Aridi et al., 2018). In Kenya, where cultural factors often influence patient-provider interactions, training healthcare workers to deliver culturally competent care can improve the perception of service quality among patients (Kemei & Etowa, 2021; Mutua et al., 2018). This is particularly important in maternal and child health services, where the quality of care directly affects health outcomes and patient satisfaction (Nair et al., 2014; Gitobu et al., 2018).

In conclusion, the interplay between quality tangibility and patient satisfaction in Kenya is complex and multifaceted. By focusing on improving the tangible aspects of healthcare delivery—such as facilities, provider interactions, and the implementation of quality management practices—there is potential for significant advancements in patient satisfaction levels. This manuscript aims to explore these dynamics further, providing insights that could inform policy and practice in the Kenyan healthcare system.

## 2. Problem statement

In Kenya, the healthcare system faces numerous challenges that significantly affect patient satisfaction, particularly concerning the quality of tangible aspects of care. Quality tangibility refers to the physical evidence of service quality, including the healthcare environment, equipment, and the demeanor of healthcare providers. Despite ongoing efforts to enhance healthcare services, many patients report dissatisfaction due to inadequate facilities, perceived neglect, and poor interpersonal interactions with healthcare staff. This dissatisfaction is

particularly pronounced among vulnerable populations, such as women during childbirth, who often experience mistreatment and a lack of dignity in care (Oluoch-Aridi et al., 2018).

Moreover, the disparities in healthcare quality between urban and rural settings exacerbate the problem, as patients in rural areas frequently encounter limited access to essential services and lower quality of care (Bergen et al., 2023). Such inequities not only diminish patient trust in the healthcare system but also hinder the overall effectiveness of health interventions aimed at achieving universal health coverage (Mulupi et al., 2013). The negative perceptions surrounding healthcare services in Kenya can lead to avoidance of necessary medical care, further complicating health outcomes for individuals and communities (Mulupi et al., 2013).

Additionally, the integration of patient-centered care practices, which emphasize effective communication and compassionate interactions, remains insufficiently addressed in many healthcare facilities (Embleton et al., 2021). This gap highlights the need for comprehensive training programs for healthcare providers that focus on soft skills, such as empathy and respect for patients, which are crucial for enhancing the quality of care and improving patient satisfaction (Embleton et al., 2021).

In summary, the interplay between quality tangibility and patient satisfaction in Kenya is marked by significant challenges that require urgent attention. Addressing these issues is essential for fostering a healthcare environment that prioritizes patient needs and enhances overall satisfaction with health services.

### 3. Study objectives

This study's main objective is to establish the effect of healthcare service quality and patients satisfaction in with a specific objective to examine the effect of quality tangibility on patient satisfaction in Narok County referral hospital.

The study is guided by hypothesis $H_0$: There was no significant effect of tangibility on patient satisfaction in Narok County referral hospital.

### 4. Research methodology

The study adopted a quantitative research approach using an explanatory research design and a case study to examine the effects of tangibility, reliability, empathy, assurance, and responsiveness on patient satisfaction. Quantitative data, which included numerical analysis using mathematical methods and statistics, was collected to explain the relationships between these variables. Regression models were used to explore the impact of each factor on patient satisfaction. The case study involved four wards at Narok County Referral Hospital.

The target population comprised 656 in-patients, and a sample size of 248 was determined using Taro Yamani's formula, ensuring that over 30% of the population was represented. Stratified and simple random sampling methods were employed to select respondents, with a focus on patients who had stayed at the hospital for more than a month. Data collection was done using structured questionnaires and secondary health records, with the SERVQUAL scale being applied to measure perceived service quality. A five-point Likert scale was used to capture respondents' opinions.

To ensure validity, the study employed face and content validity checks, involving two experts, and a validity coefficient of 0.84 was achieved. Reliability was assessed using Cronbach's alpha, with all objectives scoring above the acceptable threshold of 0.7, confirming the instrument's reliability. Data was analyzed using SPSS software, employing both descriptive and inferential statistics, with results presented in tables. The study's pilot phase involved 25 respondents, and any necessary adjustments were made to refine the research instruments before the actual study.

## 5. Descriptive analysis

This study adopted a descriptive analysis of the findings. The respondents were asked to indicate their level of agreement regarding the various statements that defined the objectives of the study based on a five Likert scale where; 1- *Strongly Disagree*; **2** -*Disagree*, **3**- *Not Sure;***4** -*Agree*; **5**- *Strongly Agree.* The results are presented as follows.

*Table 1: Effect of quality tangibility on patient satisfaction*

| | Tangibles | SD | D | NS | A | SA |
|---|---|---|---|---|---|---|
| 1 | Hospitals have state-art of equipment | 9 (4.5% | 16 (7.9% | 2 (1.0% | 116 (57.4% | 59 (29.2% |
| 2 | Service pays have clear signage/label | 11 (5.4% | 4 (2.0% | 6 (3.0% | 88 (43.6% | 93 (46.0% |
| 3 | Cleanliness of the hospital facility | 4 (2.0% | 5 (2.5% | 13 (6.4% | 54 (26.7% | 126 (62.4% |
| 4 | Patient rooms are comfortable enough and accord privacy | 9 (4.5% | 4 (2.0% | 3 (1.5% | 43 (21.3% | 143 (70.8% |

In order to assess response on quality tangibility, most of the respondents 116 (57.4%) and 59 (29.2%) agreed with the statement that Hospitals have state-art equipment in order to offer better services to the patients. Only 16 (7.9%) and 9 (4.5%) disagreed with the statement. This shows that with good state-art equipment service provision and delivery by the hospital will be of high quality.

The results also showed that 93 (46.0%) and 88 (43.6%) agreed that hospital service pays have clear signage/labels. Only 11 (5.4%) disagreed with the statement. This shows that the state –art equipment and other facilities had an effect on the level of satisfaction of the patient at the hospital. This also extends to the cleanliness of hospital facility enhances the quality of tangibility. This is noted by majority of the respondents 126 (62.4%) and 54 (26.7%) who agreed with the statement with only 4 (2.0%) and 5 (2.5%) disagreeing that the cleanliness of the hospital facility contributes to the quality of service at the hospital.

On whether Patient rooms are comfortable enough and accord privacy majority of the respondents 143 (70.8%) and 43 (21.3%) agreed with the statement while 9 (4.5%) and 4 (2.0%) disagreed. This implies that the state of the patient at the patients rooms enhance the quality of service delivery at the hospital defined by tangibility. This means that tangibility affects patient satisfaction and hence it should be enhanced. A study by Udurawana

(2017) and Kasa & Gedamu (2019) also considered the relationship between tangibility and patients satisfaction and they established that tangibility affected the level of satisfaction.

### 6. Correlation analysis

Correlation analysis is a test that shows the relationship that exists between the variables measured using correlation coefficients (r) as suggested by Cohen, West and Aiken, (2018). Correlation analysis helps to test the Linearity of the study variables in order to make inference. The study used Pearson correlation (r) to test whether there is a relationship between quality service and patients satisfaction. Whether the relationship is significant or not the 95% level of confidence was used. The relationship between the two variables were considered significant if the $p$ value was less than 0.05. It was considered to be weak if the correlation (r) is less than ($<$) 0.5 and it was considered to be strong if the correlation (r) was greater than ($>$) 0.5.

The regression equation used is;

$$Y = \alpha + \beta_1 X_1 + \varepsilon \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Y = patient satisfaction

$\alpha$ = Constant term

$X_1$ = Tangibility

$\varepsilon$ = Error term

The results are presented on Table 2.

*Table 2: Correlations analysis on the effect of quality service on patient satisfaction*

|  |  | X1 | Y |
|---|---|---|---|
|  | Pearson Correlation | 1 |  |
| X1 | Sig. (2-tailed) |  |  |
|  | N | 202 |  |
|  | Pearson Correlation | .362[**] | 1 |
| Y | Sig. (2-tailed) | .000 |  |
|  | N | 202 | 202 |

Y = patient satisfaction; $X_1$ = Tangibility

The results in Table 2 shows that, the independent variable X1 is linearly correlated with patient satisfaction. From the table, tangibility is seen to have a weak but very significant positive correlation ($r = 0.362$; $p < 0.05$) indicating that, when the patient's satisfaction highly depends on the level of tangibility and vice versa.

## 7. Simple Linear Regression Analysis

Simple linear regression analysis is an hypothesis test between quality service and patients' level of satisfaction. The regression analysis for the first objective was used to test the null hypothesis (HO) that *there is no statistically significant relationship between quality tangibility on patient satisfaction in Narok County referral hospital*. The results were presented in table 3.

*Table 3: Regression model summary on effect of quality tangibility on patient satisfaction in Narok County referral hospital*

| Model | R | Square | Adjusted Square | RSig. | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .362[a] | .131 | .127 | .000[b] | 1.732 |

The results in table 3 showed that $(R= .362^a; R^2=.131 ; \text{Adjusted } R^2=.127 ; \text{P value } = .000^b)$ implying that 13.1% variation in patient satisfaction contributed by quality tangibility. The results are in agreement with the findings of Kasa & Gedamu (2019) who also noted a similar trend in customer satisfaction as a result of tangibility.

The null hypothesis (HO) that there was no statistical relationship between quality tangibility and patient satisfaction, was tested using the results of the Analysis of Variance as presented in table 4.

*Table 4: ANOVA on effects of tangibility on patient satisfaction in public hospitals in Kenya*

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| | Regression | 19.489 | 1 | 19.489 | 30.199 | .000[b] |
| 1 | Residual | 129.075 | 200 | .645 | | |
| | Total | 148.565 | 201 | | | |

The results showed that the F statistic was statistically significant at a 95% level of significance implying that the model is a suitable predictor of the relationship between the variables. The results show that the F calculated, $F_{0.05, 1,200} = 30.199$, was greater than F-Critical, $F_{(0.05, 1, 200)} = 3.873$; it implied that the model fits well in explaining the relationship between tangibility and patients satisfaction in public hospitals in Kenya. Since the F calculated is greater than the F critical then the null hypothesis was rejected implying that there was a statistically significant relationship between the variables

In order to understand the contribution of tangibility as a determinant patients satisfaction, the regression coefficient were computed and presented in table 5.

This implies that tangibility was an important quality aspect that enhanced the level of patient's satisfaction among public hospitals. The findings appear to be consistent with other scholars such as Udurawana (2017) and Molina-Mula (2020) who also established a similar trend in patients level of satisfaction following tangibility.

*Table 5: Regression model Coefficients[a] on effect of quality tangibility on patient satisfaction in Narok County referral hospital*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | | |
| 1 | (Constant) | 1.751 | .314 | | 5.567 | .000 | | |
| | Tangibility | .386 | .070 | .362 | 5.495 | .000 | 1.000 | 1.000 |

The results showed that quality tangibility had a statistically significant contribution to patient satisfaction (*B* = .386, *p* =.000, t = 5.495). This implied that quality tangibility was critical contributor to patient satisfaction public hospitals in Kenya.

The results show that patients satisfaction tends to improve when tangibility is enhance by 1%. This model is statistically significant since the *t* statistic value (5.496) is more than 2 and the p-value < 0.05.

The results agree with the findings of Yarhands et al., (2016) and Panda and Das (2020) who also indicated that tangibility is statistically significant to the level of patient's satisfaction.

In addition the findings are aligned with the resource-based theory which states that there should be proper utilization of resources in order to achieve competitive advantage by having hospitals have state – art of equipment and service pays have clear signage/label.

## 8. Multiple Regression Coefficients

The regression model was developed using the regression coefficient as indicated in table 6.

*Table 6: Multiple Regression*

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 (Constant) | 1.335 | .286 | | 4.663 | .000 | | |
| Tangibility | .121 | .142 | .113 | .848 | .397 | .185 | 5.419 |

a. Dependent Variable: dept

Using the standardized beta values which have been corrected for any errors in the data, the results show that the four independent variables have a relationship with the dependent variable hence they can be used as good predictors. The results show that a unit change in Tangibility will improve patients' satisfaction level by 12.1%, however the change is not statistically significant since the P-value is $> 0.05$.

This model is statistically significant since the *t* statistic value is more than +2 and the p-value $< 0.05$.

From equation (1), the study model therefore will be as follows.

$Y = 0.1.335 + 0.121_{X1}$ …………………………………………………………………… (2)

The model clearly shows that when the dimensions of quality are combined, they have a high level of influence on improving the satisfaction among the patients.

## 9. Summary of the study

The results of the study objective that sought to assess the effect of tangibility on the patients level of satisfaction have indicated that most of the respondents agreed with the statements that defined tangibility, that is; Hospitals have good state-art of equipment; Physical facilities such service pays have good signage, cleanliness of the hospital facility and that Patient rooms are comfortable enough and accord privacy . The results show that there was a statistically significant effect between the predictor value tangibility (R= .362[a]; $R^2 = .131$ ; F = 30.199; $B = .386$; t = 5.495; P value = .000[b]) and the patients level of satisfaction . The null hypothesis was therefore rejected based on the results.

The study concludes that quality tangibility affects the level of satisfaction of the patients. The respondents noted that the state of the- art and cleanliness of the hospital contributed highly to the level of patient

satisfaction among the patients in the hospital. There is therefore need for the public hospitals to enhance the level of tangibility between patients and the staff in order to improve patients satisfaction.

The study therefore recommend that hospitals seeking to embrace patients satisfaction must consider the aspects of tangibility especially the state of –art in order to enhance the level of patients satisfaction.

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