

Effect of Service Delivery on Patient Satisfaction in Case of Nekemte Referral Hospital, East Wollega, Oromia Region of Ethiopia

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Abstract

The purpose of the study was to investigate the effect of public health service delivery on patient satisfaction in case of Nekemte Referral Hospital. This study has employed explanatory research design in order to estimate the cause effect relation of public health service delivery on patient satisfaction. Also it was designed to evaluate the relationship between public health service delivery and patient satisfaction. In order to meet the objective, the researcher has used stratified sampling techniques and 327 participants were selected. The five type Likert scale questionnaires was the main data gathering tool. The collected data have been analyzed using mean, standard deviation; correlation and multiple regression analysis. The R square result of the model has shown that all the explanatory variables have significantly explained patient satisfaction and from these explanatory variables the reliability was found to be the main predictor of patient satisfaction in the study area. The correlation coefficient finding has shown that the three explanatory variables (responsiveness, reliability and assurance) have strong and positive relation with patient satisfaction in the study area. As per the descriptive report finding patient satisfaction, responsiveness and empathy were recorded as less mean scoreless, which shows there was poor practices of responsiveness and empathy in the study area. Therefore, the employees of Nekemte Referral Hospital should improve their practices concerning responsiveness & empathy for better patient satisfaction by developing strategy & tactics to narrow their gap concerning responsiveness and empathy practices in the study area.

Keywords: Assurance, Empathy, Reliability, Responsiveness and Patient Satisfaction

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1. Introduction

Health is fundamental dimension of wellbeing and key component of human capital development (WBAR 2013). This wellbeing of human capital is attained through the delivery of quality health care services to the society at the health sectors. Health care service delivery is a systematic arrangement of activities in service giving institutions with the aim of fulfilling the needs and expectations of service users with optimum use of resources (Srinivasan & Saravanan, 2015). Good public health services delivery is a fundamental dimension of well-being and is attained through the provision of quality care. Quality of care refers to all aspects of treatment that are beneficial to the patient (Amporfu, Nonvignon, & Ampadu, 2013). A quality health care service have positive effect on economic activity since it raised the quality of human capital, improved productivity, creates jobs, encourages scientific research and stimulates technological innovation (WHO, 2013). Healthcare service is an intangible product and cannot physically be touched, felt, viewed, counted, or measured like manufactured goods (Mosadeghrad, 2014). In addition to the intangible factors, quality of services is often defined by perceptual factors. These include responsiveness to customer needs, courtesy and friendliness of staff, promptness in resolving complaints, and atmosphere (Srinivasan & Saravanan, 2015). Patients are constantly looking for quality healthcare services. Despite noticeable improvements on the expansion of healthcare infrastructure, there are still cases of not fully equipped by laboratories, poor maintenance and inadequate medical supplies (IOM, 2014). There are high rates of morbidity and mortality from preventable causes, high disparity in uptake and coverage of interventions amongst different regions. The quality of health care in terms of improving patient safety, effectiveness, and patient centeredness, in both public and private facilities, is often inconsistent and unreliable (MoH, 2015). Like other hospital in the country, Nekemte Referral Hospital also faces similar constraints in provision of service quality for customers as the level of health care demand at its establishment varies in relation to the current health service demand and populating size. For instance, when one suddenly visits Nekemte Referral Hospital, sometimes there are patients that are lying on a gust table due to lack of bed rooms for them where provision of medical care is inconvenient for service providers. Therefore, this study tries to assess the health care service delivery level of the hospital with clients' satisfaction and identify the major factors that contribute towards clients' dissatisfaction. Thus the findings of the study is useful for decision makers and health services providers to focus on the areas of problems encountered and come up with alternative problem solving methods for better achievement.

1.2. Statement of the Problem

In healthcare industry, service quality has become an imperative in providing patient satisfaction as delivering quality service directly affects the patient's satisfaction (Wangari, Anyango, & Wanjau, 2013). Service provided in the public health services was constrained by many problems, which are associated with the provision of the services in the sector. These may include the inability of the government to maintain or improve the quality of the services due to resource constraints in face of the fast growing population and the rising cost of providing the services (WHO, 2013). The poor state of customer service in public hospitals has resulted in high turnover and weak morale among staff, making it difficult to guarantee 24-hour coverage resulting in problems with patients care, increased cost of operations due to inefficiencies (Wangari, Anyango, & Wanjau, 2013). That is health services which include supply of drugs, ethical condition of service providers and education level of care provider are the critical issues (WHO., 2014).

As a result of the above differences, hospitals provide similar services with different quality (Zarei, 2012).

For example, the study by (Srinivasan & Saravanan, 2015) on Ethiopian government run health institutions showed low client satisfaction because of long waiting time, unavailability of basic drugs, under staffed and less equipped, problems relating to accommodating patients for treatments coming from rural areas (Srinivasan & Saravanan, 2015). The reason they cited is that most of the zonal hospitals in Ethiopia are 40 or more years oldest and the hospital capacity and facilities are not correspondingly changing through time to meet the significant increase in population growth as resulted in an extremely increased demand for health services. As Nekemte Referral Hospital is one that is established in 1983 E.C, it also faces similar constraints like sufficiency of bed room, chronic shortage of hospital supplies, long waiting time in provision of healthcare services and other related factors in the delivery of service quality to customer.

In an investigation conducted by (Shahin, Arash, 2017) on a framework for determining and prioritizing critical factors in delivering quality services in case a catering company with the total of 140 customers and the data obtained were analyzed using only descriptive statistics. A study on customers' perception of service quality in Ethiopia banking sector by (Yonatan, 2010) and he has employed exploratory research design and also he was used descriptive analysis. The SERVQUAL model is used as main concept to assess service quality and customer satisfaction. This means that customer satisfaction could be measured using the various service quality dimensions. This is because it is important to be aware of how customers perceive service quality in hospital and the factors that affect these perceptions. The SERVQUAL model has apparently not been used to measure service quality and customer satisfaction in the Nekemte Referral Hospital, it is necessary for us to close this research gap. To implement the national health programs, Oromia Regional State has given due attention to strengthen health institutions in the region in order to meet the health care service needs of the people through improved service delivery.

In this regard, Nekemte Referral Hospital has been working to improve its service delivery level through implementation of reform programs, include business process reengineering and health management information system. Regardless of these efforts, the health care service expectation of the people is not well addressed by the hospital as information from health service users of the hospital indicates. Mostly they are complaining the existing service level of the hospital during discussion on community level meetings related to health facilities and the overall service delivery process of the hospital. In addition, for some health problems like malaria case, patients have preferred to visit private clinics and pharmacies in Nekemte rather than going to the hospital. On the other hand, according to 2007 Ethiopian budget year report of the hospital, high budget constraint, lack of adequate experienced specialists, and limitation of wards rooms were indicated as the major challenges that facing the hospital while delivering the service. Thus, this study will try to assess the effect of service quality on Patient satisfaction in Nekemte Referral Hospital.

Since the primary needs and expectations of patients is to be satisfied with the health care service delivery of the hospital, the above indicated challenges might be resulted in clients' dissatisfaction which is the problem area that would be checked through evidence based assessment. As per the researcher review effort, there is no research conducted on clients' satisfaction and service delivery at Nekemte Referral Hospital. In sum, all of the above methodological and empirical gaps, support the importance of undertaking study on the service delivery and patient/clients' satisfaction at Nekemte Referral Hospital. Therefore this study aimed to fill this gap by assessing the service delivery and patient/clients' satisfaction at Nekemte Referral Hospital that can be used as an input for further improvement of health care services at Nekemte Referral Hospital.

1.2.1. Research Question

The study would seek to answer the following research questions.

1. To what extent do the assurance and empathy predict patient satisfaction?
2. To what extent do the reliability and responsiveness predict patient satisfaction?

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of the study is to investigate the effect of service delivery on patient satisfaction in Nekemte Referral Hospital.

1.3.2. Specific Objectives

The specific objectives of the study was;

- ✓ To examine the extent in which assurance and empathy do predicts patient satisfaction.
- ✓ To investigate the extent in which reliability and responsiveness do predicts patient satisfaction.

1.4. Significance of the Study

The public health sector should ensure patients receive the best health services. It will serve policy makers to know these critical factors that affect provision of service to formulate effective plan for public health service financing that brings better health service utilizations. The study will help top hospital management to come up with appropriate solution in solving the identified factors for customer focused care service delivery and for the preparation of appropriate guidelines for the provision of service quality delivery. Finally, the study will add to body of knowledge and scholarly fields of factors associated with service in health sector in terms of findings and theoretical review.

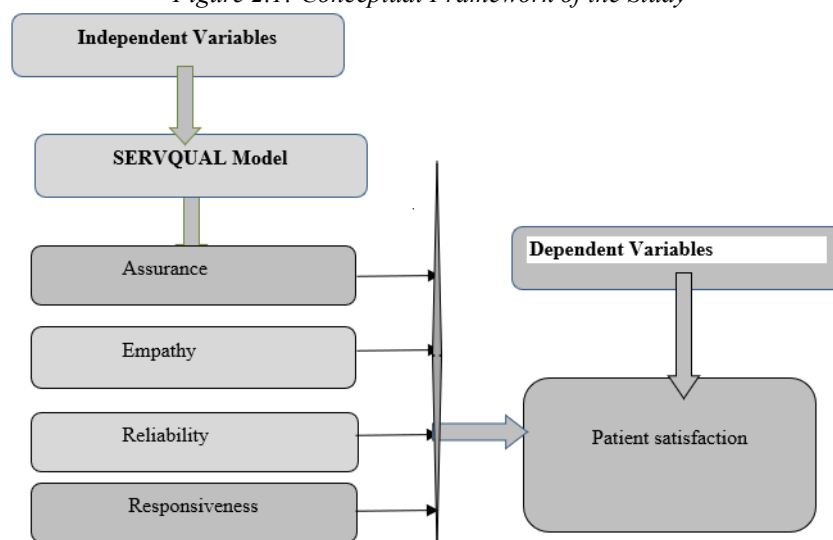
2. REVIEW LITERATURE

The degree of patient satisfaction play a vital tool in the assessment of service quality care provided. Since healthcare is growing rapidly and patients' knowledge level about their rights is increased, they are demanding that hospitals meet their needs (Ross & Venkatesh, 2015).The study conducted by (Alrubaiee & Alkaa'ida, 2011) investigated the relationship between patient perception of healthcare quality, patient satisfaction, and patient trust and the mediating effect of patient satisfaction. The efficiency of services refers to promptness of the care given to patients, including issues like waiting time. Short waiting time and long consultation time were associated with high satisfaction. There was a significant relationship with longer waiting time associated with low level of client satisfactions (Sajid, 2007). Most behavioral studies that examined the relationship between service qualities on customer satisfaction have not incorporated government role in their models for predicting customer satisfaction. It is argued that the government role has a possibility to directly influence customer satisfaction (Mwinyi, 2012). Customer quality care has become an important aspect in the development of healthcare services. Patient satisfaction on healthcare service quality plays a vital part on the assessment of healthcare frequently. A critical challenge for health service providers is to find ways to make them more clients oriented. All healthcare providers should realize the fact, that the main beneficiary of healthcare system is clearly the patient (Ross & Venkatesh, 2015) indicating quality healthcare is a subjective, complex, and multi-dimensional concept (Mosadeghrad, 2014).

2.1. Conceptual Framework of the Study

This study was investigated the level of public health service delivery for patient satisfaction in Nekemte Referral Hospital using SERVQUAL model using four dimensions namely assurance, empathy, reliability and responsibility. Hence the next diagram illustrates the conceptual frame work of the study.

Figure 2.1: Conceptual Framework of the Study



Source: Adopted from (Munhurrun, Bhiwajee, & amp; Naidoo, 2010)

3. Research Design and Methodology

Research design employed for this study was both descriptive and explanatory research design. Because explanatory research design explains the cause effect relation of service delivery (assurance, empathy, reliability and responsiveness) with patient satisfaction. Hence, this explanatory research design helps to investigate the cumulative effect of service delivery on patient satisfaction in case of Nekemte Referral Hospital. The study targets patient, taking service in Nekemte Referral Hospital per month. In 2020 G.C. in average Nekemte Referral Hospital has served 206 per day. The total of number of patient served in Nekemte Referral Hospital per month were $206 \times 30 = 6,180$. According to (Watson, 2001) the correct sample size in a study is dependent on the nature of the population and the purpose of the study. This study was conducted with 5 percent marginal error and 95 percent confidence interval and 5 percent non response rate. Then the following formula will be used the calculation of the sample size since it is relevant to studies and sampling method (Watson, 2001).

$$\left(\frac{P(1-P)}{\frac{A^2}{Z^2} + \frac{P(1-P)}{N}} \right) = \left(\frac{0.5(1-0.5)}{\frac{0.05^2}{1.96^2} + \frac{0.5(1-0.5)}{6180}} \right) = \left(\frac{0.25}{\frac{0.0025}{3.86} + \frac{0.25}{6180}} \right) = \left(\frac{0.25}{\frac{0.0006914531}{0.95}} \right) = 381, \text{ Where:}$$

n = sample size required

N = Total number of one month patient in Nekemte Referral Hospital (6,180)

P = estimated variance in population, as a decimal :(0.5 for 50-50)

A = Precision, expressed as a decimal 0.05 for 5%,

Z = based on confidence level: 1.96 for 95% confidence,

R = Estimated Response rate, as a decimal 0.95% response will be return.

Researchers using the random selection procedure first define the population of interest and then randomly select the required number of participants from the population. For this study simple random sampling was used to collect primary data which would be collected from one month Nekemte Referral Hospital patient. The primary data were collected through self-administrative structure. The Nekemte Referral Hospital, sample patient are accessed through self-administration, since the entire one month patients are included. In addition, the primary data were gathered from the hospital by the researcher personal visit.

3.1. Model Specification

Multiple regression analysis is the study of how a dependent variable y is related to two or more independent variables. The regression equation that describes how the dependent variable y is related to the independent variables X_1, X_2, \dots, X_n and (e) error term is called the multiple regression model. Hence, the assumption of multiple regression model takes the following form (David R. Anderson, 2008).

The patient satisfaction multiple regression model before estimation was:

$$PS = \alpha + \beta_1(Ass.) + \beta_2(Emp.) + \beta_3(Rel.) + \beta_4(Resp.) + (e)$$

Where; PS=Patient satisfaction

Ass=Assurance

Emp. =Empathy

Rel. =Reliability

Resp. =Responsiveness

α =Intercept of the equation of hospital, in survey

β_i =Coefficients of the explanatory variables

e= is the stochastic error term

4. Results, discussions and interpretations

4.1. Introduction

4.2. Background Characteristics of Respondents

The background characteristics of this study were gender, educational qualification and age of the respondents those participated to answered the questionnaires raised by the researcher regarding public health service delivery on patients' satisfaction in case of Nekemte Referral Hospital. Therefore it was described using table, frequency and percentage as follows.

Table 4.1: Demographic variable under study

Variable	Category	Frequency	Percent
Gender	Female	211	64.5
	Male	116	35.5
Educational Qualification	<=diploma	214	65.4
	Bachelor degree	113	34.6
Indicate your age	<=25 year	89	27.2
	26 to 45	182	55.7
	46 to 55	56	17.1

Source: Survey Data, 2020

The above Table 4.1, presents the general characteristics of respondents. Accordingly, the result of the study shows 211 (64.5%) of respondents were female, whereas 116 (35.5%) of them were male respondents. This indicates that most of the participants of this study were female respondents. The educational qualification of the study participants in table 4.1 shows that 214 (65.4) of respondents are less than or equal to diploma holder and 113 (34.6%) of respondents were bachelor degree holder in the study area. This finding shows that the educational status of most participants were less than or equal to diploma.

Concerning the age range of the study participants, about 89 (27.2%) of the respondents were less than or equal to 25 years age range, followed by 182 (55.7%) of the respondents have 26 to 45 years age range and 56 (17.1%) of the respondents have 46 to 55 years age range in the study area. This shows that the most of the study participant were less than or equal to 25 years of age range.

4.3. Descriptive Analysis of Study Variable

4.3.1. Assurance

Table 4.2: Assurance

N=327			
No	Assurance	Mean	SD
1	There is sufficient assurance of health, safety and welfare of patient in Nekemte Referral Hospital	2.96	1.53
2	Nekemte Referral Hospital employees has reflected good behavior while treating patient.	3.92	1.29
3	Nekemte Referral Hospital employees are courteous while reacting to patient queries	3.57	1.44
4	I am satisfied with the patient treating knowledge of the Nekemte Referral Hospital employees	2.64	1.28
5	I feel safe while getting medical treatment in Pawl hospital	2.86	1.56

Source: Survey Data, 2020

As presented in Table 4.2 The respondents were asked to rate the practices of assurance by Nekemte Referral Hospital and the participant rating mean result is ranging between 3.92 to 2.64, and it would be described from general to specific as follows. The participants' were asked whether the Nekemte Referral Hospital employees has reflected good behavior while treating patient and the result came to be (M=3.92 & SD=1.29); whether the Nekemte Referral Hospital employees are courteous while reacting to patient queries and the score was (M=3.57 & SD=1.44). This showed that participants' were agreed about the raised questions. This means the Nekemte Referral Hospital employees has reflected good behavior while treating their patient and they are courteous while reacting to patient queries.

On the contrary, the respondents were also asked the existence sufficient assurance of health, safety and welfare of patient in Nekemte Referral Hospital and the score was (M=2.96 & SD=1.53); whether the patients feel safe while getting medical treatment in Nekemte Referral Hospital and the score was (M=2.86 & SD=1.56) and the participants were asked whether the patients were satisfied with the patient treating knowledge of the Nekemte Referral Hospital employees and the score was (M=2.64 & SD=1.28). The result shows that participants' were disagreed about the item 1, item 4 and item 5 in the table above. This means there is no sufficient assurance of health, safety and welfare of patient in Nekemte Referral Hospital, the patients didn't feels safe while getting medical treatment in Nekemte Referral Hospital and they didn't satisfied with the patient treating knowledge of the Nekemte Referral Hospital employees.

4.3.2. Empathy

Table 4.3: Empathy

No	N=327		
	Empathy	Mean	SD
1	The Nekemte Referral Hospital employees have carried out effective communication with their patient.	2.61	1.59
2	The Employees of Nekemte Referral Hospital has provided me customized services.	2.46	1.40
3	Nekemte Referral Hospital employees are enthusiasm to understand their patient specific needs.	2.79	1.49
4	Nekemte Referral Hospital employees have considered patient needs in the first place	2.44	1.38
5	Nekemte Referral Hospital time management practices is convenient to help patient	3.18	1.58

Source: Survey Data, 2020

As illustrated in table 4.3, the participant response on the empathy practices by Nekemte Referral Hospital, mean score was range from (M=3.18 & SD=1.58) to (M=2.44 & SD=1.38) and it was described from the large mean result to small mean result as follows. The respondents were asked whether the Nekemte Referral Hospital time management practices is convenient to help patient and the mean score is (M=3.18 & SD=1.58). This showed that participants' were agreed about the item 5 in the table 4.3 above. This implies that the Nekemte Referral Hospital time management practices is convenient to help their patient.

On the contrary, the participants were also requested whether the Nekemte Referral Hospital employees are enthusiasm to understand their patient specific needs and the mean score come to be (M=2.79 & SD=1.49); whether the Nekemte Referral Hospital employees have carried out effective communication with their patient and the score was (M=2.61 & SD=1.59); whether the Employees of Nekemte Referral Hospital has provided him/her customized services and the score was (M=2.46 & SD=1.40) and finally the respondents were asked whether the Nekemte Referral Hospital employees have considered patient needs in the first place and the score was (M=2.44 & SD=1.38). The result shows that participants' were disagreed about the item 1, item 2, item 3 and item 4 in the table above. This means Nekemte Referral Hospital employees have no good practice regarding to those items mentioned above.

4.3.3. Reliability

Table 4.4: Reliability

No	N=327		
	Reliability	Mean	SD
1	I have confidence in the Nekemte Referral Hospital patient treatment services.	3.15	1.47
2	The Nekemte Referral Hospital service charge is fair and reasonable.	3.54	1.28
3	I have found Nekemte Referral Hospital booths in working orders.	3.28	1.56
4	Nekemte Referral Hospital has provided secure and accurate service to patients.	2.39	1.40
5	When patients are facing problem, Nekemte Referral Hospital employees show genuine interest in handling patient's problems.	3.47	1.43

Source: Survey Data, 2020

As presented in table 4.4, the mean value of reliability sub factors study result differs from (M=3.54, SD=1.28) to (M=2.39, SD=1.40) and it would be described from highest mean score to lowest mean score as follows. The respondents were asked whether the Nekemte Referral Hospital service charge is fair and reasonable and the score was (M=3.54 & SD=1.28). The result showed that participants' were agreed to the raised matter. This implies that the Nekemte Referral Hospital service charge is fair and reasonable. Also the respondents were asked when patients are facing problem and Nekemte Referral Hospital employees show genuine interest in handling patient's problems and the score was (M=3.47 & SD=1.43). These result revealed that the participants were agreed about item 5 practices by Nekemte Referral Hospital. The result indicates that when patients are facing problem the Nekemte Referral Hospital employees showed genuine interest to handle their patients' problem. Furthermore the respondents were asked whether they have found Nekemte Referral Hospital booths in working orders and the score was (M=3.28 & SD= 1.56). These result revealed that the participants were agreed about item 3 of the table above. It indicates that the patient have found Nekemte Referral Hospital booths in working orders. Also the respondents were asked whether they have confidence in the Nekemte Referral Hospital patient treatment services and the score was (M=3.15 & SD= 1.47). The result showed that participants' were agreed regarding to this sub-factors. The result indicates that patients have confidence in the Nekemte Referral Hospital patient treatment services. Finally the respondents were asked whether the Nekemte Referral Hospital has provided secure and accurate service to patients and the score was (M=2.39 & SD= 1.40). The result shows that participants' were disagreed about the practices of this item. These results shows that the Nekemte Referral Hospital didn't provided secure and accurate service to patients.

4.3.4. Responsiveness

Table 4.5: Responsiveness

No	N=327		
	Responsiveness	Mean	SD
1	Nekemte Referral Hospital employees' have delivered prompt and quick service for patient	2.54	1.45
2	Nekemte Referral Hospital employees are willing to help patient	2.80	1.54
3	The help service line of Nekemte Referral Hospital is efficient	2.63	1.40
4	The Nekemte Referral Hospital employees have informed to patient the right time when services will be provided	3.29	1.44

Source: Survey Data, 2020

As presented in table 4.5, the mean value of responsiveness sub factors study result differs from (M=3.29, SD=1.45) to (M=2.54, SD=1.45) and it would be described from highest mean score to lowest mean score as follows. The respondents were asked whether the Nekemte Referral Hospital employees have informed to patient the right time when services will be provided and the outcome has come to be (M=3.29 & SD=1.44). These result showed that there is good practices regarding to this item. This result also revealed that the Nekemte Referral Hospital employees have informed to patient at the right time when services will be provided. On the other hand the respondents were asked whether the Nekemte Referral Hospital employees are willing to help patient and the score was (M=2.80 & SD=1.54). According to the result the participants were disagreed about item 2 practiced by Nekemte Referral Hospital. It indicates that Nekemte Referral Hospital employees are not willing to help patient. Also the respondents were asked whether the help service line of Nekemte Referral Hospital is efficient and the score was (M=2.63 & SD=1.40). The result shows that participants' were disagreed about the practices of this item. It indicated that the help service line of Nekemte Referral Hospital is inefficient. Finally the respondents were asked whether the Nekemte Referral Hospital employees' have delivered prompt and quick service for patient and the score was (M=2.54 & SD=1.45). The result shows that participants' were disagreed about the practices of item 1 in the table 4.5. It indicated that the Nekemte Referral Hospital employees' didn't delivered prompt and quick service for patient.

4.3.5. Patient Satisfaction

Table 4.6: Patient Satisfaction

No	N=327		
	Patient Satisfaction	Mean	SD
1	I am satisfied with the Nekemte Referral Hospital employee cares for their patient	2.88	1.39
2	I am satisfied with the Nekemte Referral Hospital employee's commitment to treat patient	3.43	1.54
3	I am satisfied with the Nekemte Referral Hospital employee response when patient needs treatment	2.71	1.41
4	I am satisfied with the Nekemte Referral Hospital prioritization of customer satisfaction	2.77	1.43
5	I am satisfied with the services delivery of Nekemte Referral Hospital	2.57	1.61
6	I am satisfied with employee's willingness and ability to provide service	3.49	1.21
7	I am satisfied for the waiting time to receive medical treatment	2.99	1.41
8	I am satisfied with friendly treatment of Nekemte Referral Hospital employee	2.18	1.39

Source: Survey Data, 2020

As presented in table 4.6, the mean value of patient satisfaction sub factors study result differs from (M=3.49, SD=1.21) to (M=2.18, SD=1.39) and it would be described from highest mean score to lowest mean score as follows. The respondents were asked whether the patients satisfied with employee's willingness and ability to provide service and the score was (M=3.49 & SD=1.21). The result showed that participants' were agreed to the raised problem. This implies that the patients satisfied with employee's willingness and ability to provide service. Also the respondents were asked whether they satisfied with the Nekemte Referral Hospital employee's commitment to treat patient and the score was (M=3.43 & SD=1.54). As indicated by the result the participants were agreed about item 2 practiced by Nekemte Referral Hospital. It also shows that the Nekemte Referral Hospital employees have good commitment to treat their patient.

On the contrary, the participants were also asked whether the patients satisfied for the waiting time to receive medical treatment and the score was (M=2.99 & SD=1.41); whether the patients satisfied with the Nekemte Referral Hospital employee cares for their patient and the score was (M=2.88 & SD=1.39); whether the patients satisfied with the Nekemte Referral Hospital prioritization of customer satisfaction and the score was (M=2.77 & SD=1.43); whether the patients satisfied with the Nekemte Referral Hospital employee response when patient needs treatment and the score was (M=2.71 & SD=1.41); whether the patients satisfied with the services delivery of Nekemte Referral Hospital and the score was (M=2.57 & SD=1.61); and finally the respondents were asked whether the patients satisfied with friendly treatment of Nekemte Referral Hospital employee and the score was (M=2.18 & SD=1.39) respectively. The result shows that participants' were disagreed about the practices of item

1, item 3, item 4, item 5, item 7 and item 8 in the above table 4.7. These results shows that the Nekemte Referral Hospital patients are not satisfied for the waiting time to receive medical treatment and they are not satisfied with the Nekemte Referral Hospital employee cares for their patient, with the Nekemte Referral Hospital prioritization of patient satisfaction, with the Nekemte Referral Hospital employee response when patient needs treatment, with the services delivery of Nekemte Referral Hospital and with friendly treatment of Nekemte Referral Hospital employee.

Table 4.7: Comparison of overall study variable mean ranks

N=327				
No	The Study Variable	Mean	Rank Mean	Std. D
1	Assurance	3.19	1 st	.66
2	Empathy	2.69	5 th	.75
3	Reliability	3.17	2 nd	.68
4	Responsiveness	2.82	4 th	.93
5	Patient Satisfaction	2.88	3 rd	.68

Source: Survey Data, 2020

As shown in table 4.7, the overall mean score of the study variables was ranging from 3.19 to 2.69. Assurance have the highest mean score 3.19; followed by reliability with mean score 3.17; patient satisfaction was ranked third with a mean score of 2.88; responsiveness was ranked fourth with a mean score of 2.82 and finally, empathy was the last ranked with a mean score of 2.69. From this result, assurance and reliable have the higher mean result. It indicate that good practice of those items by employees of Nekemte Referral Hospital. However patient satisfaction, responsiveness and empathy were recorded mean score less than the average which shows poor practice of those items by employees of Nekemte Referral Hospital. Therefore, the employees of Nekemte Referral Hospital should give focus by improving their responsiveness, empathy & customer satisfaction by developing strategy & tactics to address patient need & want from the study hospital.

4.3.6. Correlation Analysis

With an objective of measuring the strength of relationship between (assurance, empathy, reliability and responsiveness) and patient satisfaction and the researcher has used correlation coefficients result as follows.

Table 4.8: Correlation Coefficients Result

N=327						
Study Variables		PS	Reli.	Resp.	Assu.	Emp.
Patient Satisfaction	Corr.	1				
	Sig.					
Reliability	Corr.	.696**	1			
	Sig.	.000				
Responsiveness	Corr.	.700**	.722**	1		
	Sig.	.000	.000			
Assurance	Corr.	.629**	.604**	.664**	1	
	Sig.	.000	.000	.000		
Empathy	Corr.	.586**	.570**	.560**	.534**	1
	Sig.	.000	.000	.000	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Survey Data, 2020

According to (Karl E, 2012) Correlation Coefficients, the strength of relation between independent and dependent variable value of (0.8 to 1.0), (0.6 to 0.8), (0.4 to 0.6); and (0.2 to .4); and below (0.0 to 0.2) have very strong, strong, moderate, weak and very weak respectively. Depending on mentioned value of Karl E. correlation coefficients, the strength of relation between dependent and independent variables were interpreted for each of the variables under the study. As it can be seen from table 4.8, there is significant relation between the dependent variable and all independent variables under study. Therefore, the responsiveness has strong and positive relationship with patient satisfaction accounting the first 70%; followed by reliability has a strong and positive relationship with patient satisfaction accounting the second 69.6% and the assurance has also a strong and positive relationship with patient satisfaction accounting the third 62.9%. Finally, the empathy has moderate and positive relationship with the patient satisfaction accounting the fourth 58.6%.

4.4. Regression Model Assumption Test

The variance inflation factor (VIF) values below 10 are acceptable and tolerance value should be higher than 0.1. As it is observed from Regression Coefficients result the multicollinearity problem does not exist in this study because the value of tolerance is higher than 0.39 and variance inflation factors value is also less than 10, (see

table 4.10 below).

The most commonly used test is "Durbin-Watson test for autocorrelation" is based on the assumption that the errors in the regression model are generated by a first-order autoregressive process observed at equally spaced time periods. The Durbin-Watson statistic ranges in value from 0 to 4. A value near 2 indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation. The result of this study was 2.237, so the value indicates non-autocorrelation (see table 4.8 below). Moreover, the researcher has tested the normality, linearity, scatter plot (homoscedasticity) and the visual examination of the Normal Probability Plot in Figure 4.2, indicate there was no violation of the linearity assumption, as it is observed from straight line the tendency of the points is straight line (see Appendix III). As observed from scatterplot of the standardized residuals in Figure 4.3 there are no serious assumption violations (see Appendix IV). Normality tests are used to determine if a data set is well-modeled by a normal distribution. With the normality assumption, ordinary least square estimation can be easily derived and would be much more valid and straight forward (see Appendix II of normality of data). This implies that the normality, linearity, autocorrelation, scatter plot (homoscedasticity), tolerance values and variance inflation factors assumption test were met. Depending on the assumption test met, the researcher has carried out the following regression analysis here under.

4.6. Regression Analysis

In order to predict the effect of public health service delivery on patient satisfaction, the regression model was used to predict the degree of public health service delivery on patient satisfaction. According to (Gujarati, 2004) the regression model is a powerful tool for summarizing the nature of relationship between variables and for making predictions of likely values of the dependent variable.

Table 4.9: Model Summary Result

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.780 ^a	.608	.604	.63769	2.237
a. Predictors: (Constant), Empathy, Assurance, Reliability, Responsiveness					
b. Dependent Variable: Patient Satisfaction					

Source: Survey Data, 2020

The model summary Table 4.9; above shows the degree of association that the stated independent variables have with the dependent in the study area. As such, it has been shown by R that the factor of service delivery (empathy, assurance, reliability and responsiveness) all together have strong positive association at a rate of 78%. This shows that the better these variables are treated the more these service delivery would be by Nekemte Referral Hospital. The R square indicates the strength of interpretation in multiple regression model as it is explained by 60.8 % variation in service delivery by Nekemte Referral Hospital but the remaining 39.2% variation of service delivery by Nekemte Referral Hospital are caused by other factors that are not included in the study. On the other hand, the R square 0.608 result of the model has shown that all the explanatory variables (empathy, assurance, reliability and responsiveness) have significantly explained service delivery of Nekemte Referral Hospital.

Table 4.10: ANOVA Result

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	203.424	4	50.856	125.062	.000 ^b
	Residual	130.940	322	.407		
	Total	334.364	326			
a. Dependent Variable: Patient Satisfaction						
b. Predictors: (Constant), Empathy, Assurance, Reliability, Responsiveness						

Source: Survey Data, 2020

The hypotheses of the study have been tested by using Ordinary Least Square Regression Model effect as seen in table 4.10. It can be noticed from table 4.10 the F statistics in the Ordinary Least Square model effect is 125.062 with probability (F= 0.000) which indicates a good fitness of the predictability of the model used. This indicates that the overall model is highly significant at $P < 0.05$ and that all the independent variables are jointly significant in causing variation in service delivery by Nekemte Referral Hospital.

Table 4.11: Regression Coefficients Result

Model		Coefficients					Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	.030	.037		.814	.416		
	Reliability	.298	.055	.291	5.45	.000	.43	2.35
	Responsiveness	.290	.059	.276	4.93	.000	.39	2.58
	Assurance	.183	.050	.179	3.65	.000	.50	1.98
	Empathy	.191	.051	.169	3.77	.000	.60	1.66

a. Dependent Variable: Patient Satisfaction

Source: Survey Data, 2020

As seen from table 4.11, the four factor of service delivery under study such as reliability ($t=5.45$, $p<0.05$), responsiveness ($t=4.92$, $p<0.05$), assurance ($t=3.65$, $p<0.05$) and empathy ($t=3.77$, $p<0.05$) significantly contributed for service delivery by Nekemte Referral Hospital. To identify the individual contribution of explanatory variable, unstandardized coefficient Beta value of the four factor of service delivery under study were used. The unstandardized coefficient Beta (β) of Reliability (.298), Responsiveness (.290), Empathy (.191) and Assurance (.183) respectively.

Henceforth, the reliability contribute more than responsiveness, empathy and assurance, since it had larger unstandardized coefficient. Consequently, it can be said that reliability was more determinant predictor of service delivery in the study area. That means as one unit increase in reliability will increase service delivery by 0.298; as one unit increase in responsiveness will increase service delivery by 0.290; as one unit increase in empathy will increase service delivery by 0.191; and as one unit increase in assurance will increase service delivery by 0.183 respectively. Here, the effect of assurance on service delivery is low as compared to reliability, responsiveness and empathy in the study area.

As the magnitude of weighted beta, it can be concluded that if all independent variables are ignored, then Nekemte Referral Hospital itself have the value of 0.030 on its service delivery. As per the regression analysis, the best fit for the data were defined by the following equation:

$$SD = 0.030 + 0.183(\text{Ass}) + 0.193(\text{Emp}) + .298(\text{Rel}) + .290(\text{Res}) + e$$

Where; SD is Service Delivery that used as dependent variable of the study and the explanatory variables used in regression analysis includes, Ass is assurance, Emp is empathy, Rel is reliability and Res is responsiveness are factor of service delivery, which are represented in the above regression model.

5. Summary, Conclusions & Recommendations

5.1. Conclusions

The study was conducted to investigate the effect of service delivery on patient satisfaction. In connection of the study objectives, the researcher has made detail analysis of service delivery for better patient satisfaction. As such here are the major conclusions made by the researcher. The overall descriptive statistics report of service delivery practices like assurance & reliability mean result indicates good practices in the study area. According to the overall descriptive statistics report empathy, responsiveness & patient satisfaction mean result indicates poor practices in the study area.

The regression coefficient result of (assurance, empathy, reliability and responsiveness) were significantly predicts patient satisfaction. From these reliability was find to be the dominant predictor of patient satisfaction. The correlation coefficient result of the three service delivery namely assurance, reliability, and responsiveness have strong and positive relation with patient satisfaction. Among the service delivery under study empathy, has moderate and positive relation with patient satisfaction.

5.2. Recommendations

Based on the findings and conclusions of the study, the researcher has forwarded the following recommendations to employees & management body of Nekemte Referral Hospital regarding the assurance, empathy, reliability, responsiveness and patient satisfaction as follows.

- As per the regression coefficient finding of the service delivery factor under study such as assurance, empathy, reliability and responsiveness are significantly predicted the patient satisfaction in the study area but they are not equally predict patient satisfaction. From these reliability was find to be the dominant predictor of patient satisfaction in the study area. Hence, it is advantageous, if the management of Nekemte Referral Hospital are more reliable for their patient, followed by responsiveness, empathy and assurance for better patient satisfaction.

- In order to provide right service as per patient expectation, the Nekemte Referral Hospital have to train its employees about customer (patient) handling so that the Nekemte Referral Hospital employees will delivery right service for their patient. In addition, Nekemte Referral Hospital have to work toward its staff to have good understanding of their patient need so as to provide right service for their patient. The hospital also have to provide the staff a devotion of personal attention and convenient time management for patient treatment as a result their patient expectation may be met.
- The management of Nekemte Referral Hospital has to show high commitment in the improvement of Hospital related factors that is capable of motivating employees through designing benefit packages that are critical in the delivery of right service. The Nekemte Referral Hospital management body has to closely follow up the status of its patient satisfaction of its service in the hospital regarding empathy and responsiveness of its employees in the study area in relation to its plan.
- The replicability of a research which is the likelihood that a similar research on the same population at another time will give the same results is very likely in cross sectional design to the degree that the procedure for carrying out the research were spelled out like respondents, designing measures of concepts, administration of research instruments and analysis of data which are most often specified in quantitative research that bases on cross sectional designs. In our case, we think if this study is carried out again, the same results will be collected because the methodology used was good in terms of collecting trustworthy data from respondents. However, it is still possible that results collected later could change because expectations from consumers are always changing.
- Suggestion to management of Nekemte Referral Hospital is that they should focus on this study dimensions of service quality and make efforts to improve them in order to have better performance that would lead to higher perceived service quality and customer satisfaction.
- Further research should be carried out in order to enhance the understanding of the concepts of service quality and customer satisfaction, how they are measured because they are very important for service organizations in terms of profitability and growth. A similar study could be conducted with a larger sample size so that results could be generalized to a larger population. This study can be carried out in other areas comprised of multiple cultures in order to find out the applicability of the SERVQUAL model in Nekemte Referral Hospital. Further studies could be carried out on service quality of Nekemte Referral Hospital specifically to assess consumers' service quality perceptions of Nekemte Referral Hospital with similar sizes.
- Based on the results of the study, additional research is needed to enhance the understanding about the effect of service delivery on patient satisfaction. Obviously, the scope of this study is limited in one special zone Hospital. The participants were from only one Hospital. Further research therefore needs to extend sampling to other Hospitals and cultural groups. Considering the Nekemte Referral Hospital as a case study, the study suggests that researchers examine the effect of service delivery on patient satisfaction. Additionally, future research might focus on the effect of mediating variables that underlie the effect of service delivery with its patient satisfaction.

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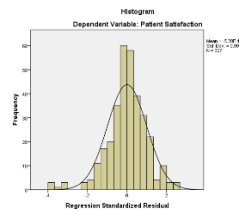
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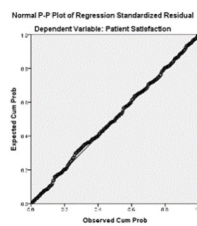
APPENDIX II: Normality of Data

Figure 4.1: Normality of Data



Appendix III: Linearity of p-p of Regression Standardized Residual

Figure 4.2: Linearity of Regression Standardized Residual



Appendix IV: Scatterplot of the Standardized Residuals

Figure 4.3: Scatterplot (homoscedasticity) of Regression Standardized Residual

