ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

DEPARTMENT OF MARKETING MANAGEMENT

ASSESSMENT OF THE LEVEL OF RELATIONSHIP AMONG SERVICE QUALITY, CUSTOMER SATISFACTION AND CUSTOMER LOYALTY: THE CASE OF PAULOS HOSPITAL.

A Research Report Submitted to the School of Graduate Studies of Addis Ababa University In Partial Fulfillment of the Requirements for the Degree of Masters of Marketing Management.

By: Tesfaye G/giorgis

Advisor: Shimelis Zewdie (Dr)

June, 2014

Addis Ababa, Ethiopia

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By: Tesfaye G/giorgis

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Approved by Board of Examiner

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Declaration

I, **Tesfaye G/giorgis Beyene,** declared that this research paper entitled "Assessment of the level of relationship among service quality, customer satisfaction and customer loyalty: The case of Paulos hospital" is my own **original research work**. I have been produced it independently through the use of significant contribution of my research advisor and all sources of information in the study has been appropriately acknowledged.

Declared by

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Confirmed by

Shimelis Zewdie (Dr) ---------- June, 2014

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Abstract

Purpose- to assess the extent of association between each of the service quality dimensions with satisfaction and loyalty as well as among loyalty, service quality and satisfaction. To assessed the level of change on satisfaction and loyalty per unit change of each dimensions of service quality, and to assess the level of change on loyalty per unit change of service quality and satisfaction.

Methodology/approach_ this report was done from empirical evidence drawn from descriptive and explanatory study. Primary and secondary data were collected randomly from 384 samples through questionnaire and analyzed through SPSS 16.0 statistical packages.

Findings: Empathy, tangibility, assurance and reliability were positively and significantly but responsiveness was positively and non-significantly associated with satisfaction. Assurance responsiveness and reliability were positively and significantly but, tangibility and empathy were positively and non-significantly associated with loyalty. Loyalty was positively and significantly associated with both service quality and satisfaction in the health care service of Paulo's. A unit amount of change on assurance, empathy, tangibility, reliability and responsiveness brought a change of 0.639, 0.319, 0.240, 0.122 and 0.051 on satisfaction respectively, of which assurance was the largest and responsiveness was the smallest and 98.40% of satisfaction was explained jointly by these dimensions significantly. A unit amount of change on assurance, tangibility, empathy, responsiveness and reliability brought a change of 0.576, 0.413, 0.267, 0.164, and 0.01 on loyalty respectively, of which assurance was the largest and reliability was the smallest and 98.20% of loyalty was explained jointly by these dimensions significantly. In both satisfaction and loyalty assurance was the largest predictor. A unit amount of change on satisfaction and service quality brought a change of 0.801 and 0.196 on the loyalty respectively and 98.80% of loyalty was explained jointly by service quality and satisfaction significantly.

Practical implications_ Paulo's hospital's corporate strategies should emphasize and allocate better resources to improve service quality dimensions that have most impact on service quality and patients' satisfaction thereby to achieve high overall medical health care services. These findings also used as bases for academic researchers in the contexts of health care in Ethiopia.

Originality: The researcher declared that this research was his original work.

Key words: Service quality (dimensions), patients' satisfaction and patients' loyalty

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CHAPTER ONE

Introduction

This chapter presented the clear back ground of this study, the statement of the problem that showed the gap to be studied, the basic research questions that stated the questions which got their answers from this research and the objective of the study which included the general and specific objectives. The hypothesis of this study that showed some hypotheses to be tested, scope of the study that stated the boundary of this research to which extent it included different aspects of issues in the research and the significance of the study that showed the scientific and application importance of this study at a time and in the future were included. The limitations that showed some of the problems that this research faced and the operational definitions that provided the definitions for some words used frequently in this research were also presented.

1.1. Back ground of the study

Nowadays, as people need to live without any illness, quality healthcare was crucial to any health system anywhere in the world. Many researchers have suggested that the quality health care service was ability to meet the patients' expectation (Pui-Mun Lee, 2006). The effectiveness of healthcare depends on the patients' satisfaction with the services provided by the hospitals which was supported by many studies and concluded that satisfied patients would only follow the advice given by the doctors, follow the information provided by the doctors and would continue using the services provided by the hospitals (Andaleeb, 2000 and 2007). Patient satisfaction considered as one of the most important quality dimensions and key success indicators in health care (Pakdil and Harwood, 2005).

Research showed that good service quality leads to the loyalty of existing customers and the attraction of new customers, reduced costs, enhanced corporate image, enhanced positive word-of-mouth and enhanced profitability (Berry 1989, Reichheld and Sasser 1990, Rust and Zahorik 1993, Cronin 2000, Kang and James 2004, Yoon and Suh 2004). Therefore, service quality could be used as a strategic differentiation weapon to build a distinctive advantage which competitors would find difficult to copy and many service sector organizations have begun to saw service quality as a potential source of sustainable competitive advantage (Lim and Tang 2000 and Kuei

1998). The evaluation of service quality would enable management to better allocate financial resources to improve hospital operations in those areas that have the most impact on customer perceptions of service quality. This evaluation was essential in today's competitive and cost-conscious healthcare market (Pakdil and Harwood 2005). Thus, service quality has become an important research topic in view of its significant relationship to costs (Crosby 1979), profitability (Buzzell and Gale 1987, Rust and Zahorik 1993, Zahorik and Rust 1992), customer satisfaction (Bolton and Drew 1991, Boulding 1993) customer loyalty (Reichheld and Sasser 1990) and service guarantee (Kandampully and Butler 2001). In hospital as stated by Andaleeb (1998) empirically evaluating the perceived service quality was highly relevant research question, since healthcare providers consider customer satisfaction as a key component of strategy and a significant determinant of long-term viability and success under competitive situation. Although it was widely acknowledged that there was the need for service quality indicators of patients' satisfaction with medical health care services, very little research in this area exists (Berman-Brown and Bell, 1998).

A number of studies have addressed the relationship between service quality and patients' satisfaction and it was generally believed that higher levels of service quality lead to higher levels of customer satisfaction (Gotlieb 1994, Kang and James 2004 and Oliver 1997, Pollack 2008). The increasing number of service quality and patient satisfaction studies over the past few years indicated that the concept of quality improvement has become more important year by year in the service industry and stressed the importance of patients' views as an essential tool in the processes of monitoring and improving quality of healthcare services (Thi 2002, Hiidenhovi 2002, Hall and Doran 1988, Lim and Tang 2000, DeMan 2002, Pakdil and Harwood 2005, Badri 2008).

Patients' service quality perceptions were believed to influence patients' satisfaction positively; positive patient satisfaction in turn positively influences the patient's decisions to choose a specific healthcare provider (Andaleeb 2001, Taylor 1994). In early study Donabedian (1988) indicated that patient satisfaction was a key outcome of quality health care (Lin and Kelly 1995) and patient satisfaction enhanced hospital image, the enhanced hospital image in turn translated into increased service use and market share (Andaleeb 1988). The emerging health care literature suggested that patient satisfaction was a dominant concern that was linked with strategic decisions in the health services (Gilbert, Lumpkin and Dant 1992). Donabedian (1988) thus,

suggested that patient satisfaction was very essential to the assessments of quality as to the design and management of health care systems.

On the other hand, customer loyalty was significance because it was closely related to the company's continued survival and its strong future growth (Fornell 1992). Similarly, maintaining and expanding customer loyalty was significant for any service company's long term success (Kandampully 1998). Moreover, securing and increasing loyalty was central to many corporate strategies because obtaining new customers was costly and customer retention was connected to long term profitability (Anderson and Mittal 2000, Bruhn and Grund 2000, Reichheld 1996, Davis-Sramek 2009).

Several studies indicated that customers in different countries evaluated good service in different ways. The earlier works suggested that patient's expectations and priorities vary among countries and were highly related to cultural background and to the healthcare system (Eiriz and Figueiredu 2005). Differences in service quality perceptions between customers and measurement scales developed in one culture may not always work as well in the other cultures. Due to the differences in response styles and interpretation of the items, not all measures of service quality and satisfaction were equivalent across different cultures (Kueh and Ho Voon 2007, Winsted 1997, Mattila 1999, Stauss and Mang 1999, Kanousi 2005, Winsted 1997, Liu and McClure, 2001, Poon 2004, Laroche 2004, Tsoukatos and Rand 2007, Malhotra 1994, Malhotra 2005). Therefore SERVQUAL Scales that work in western cultures may not performed comparably in other cultures (Malhotra 1996, Smith and Reynolds 2001, Ueltschy and Krampf 2001, Ueltschy 2002) and SERVQUAL as a measurement of service quality therefore required ongoing validation in different cultural settings. In order to overcome these cultural and health care system differences, many researchers have called for empirical cross-cultural studies of healthcare service quality and patient satisfaction (Gurdal 2000, Choi 2004, Zineldin 2006, Andaleeb 2001, Brady and Robertson 2001, Badri 2008).

Among several instruments, the most popular model used for evaluation of service quality was SERVQUAL, a well-known scale developed by Parasuraman (1985, 1988). SERVQUAL scale used to measure service quality using the difference between service perceptions and service expectations. Most healthcare patients, have certain expectations about the service they demand prior to their visit to the hospital. Consumer's satisfaction, choice of service provider and service quality evaluation were influenced by these expectations of the consumer (O'Connor, Trinh et al.

2000). Yet, 18-42% of the time health service provider fails to recognize or address these expectations of the patients (Jackson, Chamberlin et al. 2001). SERVQUAL has been used for designing questions related to service quality Gremler and Brown's tool (1996) for evaluating the loyalty and for customer satisfaction evaluation, a tool developed by Bitner and Hubbert (1994) has been used. The SERVQUAL instrument was empirically evaluated in the hospital environment, and was shown to be a reliable and valid instrument in that setting (Babakus and Mangold 1992). SERVQUAL has been applied to the healthcare field in numerous studies (Brown and Swartz 1989, Carman 1990, Babakus and Mangold1992, Headley and Miller 1993, O'Connor, Shewchuk 1994, Lam 1997, Lee, Delene 2000). Scardina (1994) and Arikan (1999), for example, reported that SERVQUAL was superior in validity and reliability for evaluating patient satisfaction in medical care. Although there was criticism on SERVQUAL that SERQUAL focused only on measuring service process (Gronroos 1990, Mangold and Babakus 1991), SERQUAL was appropriate for measuring healthcare service because patients were unable to evaluate technical quality of service. Therefore, their evaluations were based on service process or functional quality of service (Friedman 1979).

On the other hand, SERVPERF based on the performance or perception perspective only operationalized service quality as customers' evaluation of service encounter was used to measure service quality. Cronin and Taylor (1992) showed that service quality could be measured based on the perception of the service quality only without subtraction of the expected service quality from perceived service quality. As a result SERVPERF used only the performance items of the SERVQUAL scale.

Many low and middle-income countries have developed and determined health policies and strategies to improve their medical health care service delivery and attain the health related Millennium development goals, but they have difficulty in matching their implementation with their goals. For example Ethiopia has one primary strategy and seven corollary strategies. One of the seven corollary strategies developed and adopted by federal government of Ethiopia based on the context of decentralization to implement at the sub national level to improve its health service delivery was health service delivery and quality of care. Although, the above and other several attempts were done, Ethiopian medical health care service quality and patients' satisfaction in particular and the service sector in general were not evenly improved to the

required level ((Ministry of Health 2000-2001). This was mainly due to the features of service quality that made it differ from manufactured products such as intangibility, variability, inseparability and perishability. These and other features of the health care services made research difficult in Ethiopia. The lack of research on health care services particularly on health care service quality, patients' satisfaction, patients' loyalty and their relationship in turn created the bottlenecks for the development of medical health care services.

This research assessed the association of the five dimensions of service quality with patients' satisfaction and patients' loyalty in Paulo's hospital. It also assessed the association of patients' loyalty, service quality and patients' satisfaction. The relative importance of the service quality dimensions in relation to patients' satisfaction and patients' loyalty as well as the relative importance of service quality and patients' satisfaction in relation to patients' loyalty were assessed. Thus this study provided clear insights on the relative importance of each of the five dimensions of the service quality in relation to patients' satisfaction and in relation to patients' loyalty as well as the relative importance of service quality and patients' satisfaction in relation to patients' loyalty. Based on these clear insights this research was provided important recommendations that could brought significant change on its application in the medical health care services of Paulo's hospital given the resources. The recommendations were very important to improve service quality, patients' satisfaction, patients' loyalty thereby to improve the medical health care services in Paulos hospital.

1.2. Statement of the problem

The switching of patients' from one hospital to other hospital in search of better service quality was observed from the word of mouth of patients. As observed from patients' words of mouth, there were some patients who were unsatisfied with the health care services in our hospitals in Addis Ababa city. The searching of other hospitals for better service quality and patient satisfaction has very high switching costs to patients. From day to day observations and from patients' word of mouth the cause of these problem assumed to be: the difficult nature of services**,** existence of small number of hospitals in this city compared to the number of patients, lack of research on (service quality, patients' satisfaction, patients' loyalty and their relationship) and unsatisfied employee of hospitals.

More specifically, the development of health care service quality and patients' satisfaction were mainly caused by the features of service quality such as intangibility, variability, inseparability and perishability. These features of the medical health care service made research difficult in health care sector of Ethiopia. The lack of research on health care service particularly on health care service quality, patients' satisfaction, patients' loyalty and their relationship in turn created the bottlenecks for the development of health care sector in Ethiopia. These major bottlenecks were: lack of a clear knowledge on the relative importance of the dimensions of service quality that could brought the best change on patients' satisfaction which need to be optimized, lack of a clear knowledge on the relative importance of the dimensions of service quality that could brought the largest change on patients' loyalty and the lack of clear knowledge about the extent of the relationship of service quality, patients' satisfaction and patients' loyalty that could maximized each of these variables.

Thus in medical health care services, the variables such as service quality, patients' satisfaction, patients' loyalty and variables related to these variables need to be emphasized based on their relative importance because they could be optimized just like other input resources through research. Therefore, understanding and knowing these variables and their optimal level of relationships were critically very important in medical health care services.

1.3. Basic research questions

The research questions of this study were running around the very important medical health care variables such as service quality dimensions, patients' satisfaction, patients' loyalty and their relationship in paulos hospital:

To what extent patients' satisfaction was explained by five service quality dimensions?

To what extent patients' loyalty was explained by the five service quality dimensions?

To what extent patients' loyalty was explained by service quality and satisfaction?

Which dimensions' coefficient of service quality brought a largest and a smallest level of change on patients' satisfaction and patients' loyalty per unit change of dimensions?

1.4. Objective of the study

1.4.1 General objective

- To assess the level of relationship between each of the five dimensions of the service quality with patients' satisfaction and patients' loyalty
- To assess the level of relationships of patients' loyalty with service quality and patients' satisfaction
- To bring improvement on the service quality, patient satisfaction and patient loyalty in Paulos hospital
- To encourage similar research in Ethiopia

1.4. 2. Specific objectives

I. To assess the extent of association between patients' satisfaction and each of the service quality dimensions.

II. To assess the extent of association between patients' loyalty and each of the service quality dimensions.

III. To assess the extent of the association among patients' loyalty, service quality and patients' satisfaction.

IV. To assess the level of change on patients' satisfaction and patients' loyalty per unit change of service quality dimensions

V. To assess the level of change on patients' loyalty per unit change of service quality and patients' satisfaction

1.5. Hypothesis of this study

H1: Each dimension of the service quality was positively associated with patients' satisfaction and patients' loyalty.

H2: Patient loyalty was positively associated with both service quality and patient satisfaction.

H3: Among the service quality dimensions', the largest level of change on both patients' satisfaction and patients' loyalty was brought by a unit change of the coefficient of assurance.

H4: The largest level of change on the patients' loyalty was brought by patients' satisfaction than service quality per unit change of patients' satisfaction and service quality.

1.6. Scope of the study

This study was mainly scoped to the assessment of the level of relationship between patients' satisfaction and the dimensions' of service quality, patients' loyalty and the dimensions' of service quality as well as the assessment of the joint effects of service quality and patients' satisfaction on patients' loyalty. It was scoped to the use of descriptive and explanatory research to undertake this study. This research was scoped to the use of SPSS 16.0 statistical package to data analysis and the outputs from the analysis included the outputs from the multiple linear regressions and from the multiple partial correlations. Geographically it was scoped to Paulos hospital and to Ethiopian statistical Authority in Addis Ababa city to collect the primary and secondary data respectively. It also scoped to 18 _80 aged and non mental respondents from the whole mainly by considering the patients in the hospital as they have more contact with Paulos hospital. This study also scoped to the use of Check list and SERVQUAL items in SERVPERF questionnaire with five service quality dimensions such as tangible, reliability, responsiveness, assurance, empathy with the use of five-point Liker scale for their items. The questionnaire of this research was scoped to Amharic and English language but the proposal and the report were scoped to only to English language.

On the other hand this research was never assessed the type of diseases, the types of medicines for different diseases, the compositions of different medicines, the types of treatments for different diseases and other technical quality of the services provided by Paulos hospital.

1.7. Significance of the study

This study provided insights and recommendations on the level of relationship among service quality dimensions, patients' satisfaction, and patient loyalty in Paulos hospitals. These insights and recommendations could improve the service quality dimensions, patients' satisfaction, and patient loyalty in their application in Paulo's hospital. This study could add some knowledge on existing knowledge of health care service patients' satisfaction, and patient loyalty in hospitals. This study could also provide the key to open the door for similar studies in the future that could improve the Ethiopian functional medical health care services.

1.8. Limitations

The key limitation in this research was the existences of unequal spaces among strongly disagree, disagree, neutral, agree, and strongly agree of the likert scale measurements. That was the interval between strongly agree and agree may not equal to the interval between agree and neutral and the same was true to the others. Multicollinearity which was the existence of high degree of correlation between independent variables was also another limitation. Similarly, financial shortage, unwillingness of patients to provide response about their hospital and biased responses were also serious limitation of this research.

1.9. Operational definitions

Operational definitions were specific for particular study. That was, different operational definitions were given to the same terms, concepts and phrases when they were used in different researches. Thus it was necessary to put the operational definitions for those key terms, concepts and phrases which were used most frequently in this research as follows: Service quality was the functional service quality provided to the patients' (Gronroos, 1984). Service quality dimensions were factors that could determine the service quality namely tangibility, reliability, responsiveness, assurance and empathy (Parasuraman 1985). Patients' satisfaction was an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipated and what they received, regarding the fulfillment of some needs, goals or desire (Hansemark and Albinson (2004)). Customer loyalty was a very strong commitment to repatronize a preferred product or service consistently in the future and a resistance in switching, although having powerful situational influences and marketing efforts (Oliver, 1999).

CHAPTER TWO
Literature review

2.1. Introduction

This chapter presented the theoretical framework that was made from the literature reviewed, what services means and its major features, service quality clarification, service quality measurement and limitations of service quality measurements. The patients' satisfaction and its relationship with service quality and patient loyalty were adequately discussed and presented too. In the same way, service expectations that clarified what expectation means and the service quality models that discussed a few of relevant models were presented. The gap model of service quality discussed the service provider and the service receivers' gaps and the service quality dimensions were discussed. The role of service sector in the economy and Ethiopian medical health care environment were also discussed and presented. Finally, empirical review that gave the shortest summary of some of relevant studies and the conceptual frame work ,which clearly conceptualized what to be done in this research were clearly discussed and presented.

2.2. Theoretical framework

The aims of this section were to summarize the theoretical framework from the literature reviewed on the relationships of service quality, patients' satisfaction, patients' loyalty. In this framework there were theoretical relationships and these theoretical relationships were supported by the literatures reviewed from the past studies. The main emphases in these literatures were the key variables such as service quality, patients' satisfaction and patients' loyalty and their relationships. In the relationships of these variables, the dimensions of these variables that able to measure service quality, patients' satisfaction and patients' loyalty might or might not be varied from country to country, from research to research and from countries' context to the countries' context.

Service quality, according to Babakus and Boller (1992) was specifically seen as an umbrella construct with distinct dimensions, although there was no real consensus as to what these dimensions might be. Yee (2010) found that service quality has a positive influence on customer satisfaction and Parasuraman (1988) and Naeem and Saif (2009) found that customer satisfaction was the outcome of service quality.

Research conducted in Indian health care using primary data that was analyzed by one sample t - test and regression analysis, indicated that responsiveness, empathy, reliability and tangible as service quality dimensions were positively related to patient's loyalty (Kumar, Manjunath and Chethan *2012*). In the same way, a research conducted in eight private hospitals of Tehran using 24 items for service quality, 3 items for patient's loyalty. Exploratory factor analysis was used to extract dimensions of service quality and regression analysis was used to determine the relative importance of the service quality dimensions in predicting the patient's loyalty. The result clearly indicated that, the mean score of service quality and patient's loyalty was 3.99 and 4.16 out of 5 respectively and about 29% of the loyalty variance was explained by the service quality dimensions namely costing, process quality, interaction quality and environment quality were found to be the key determinants of the patient's loyalty (Arab, Tababaei, Rashidian, Rahimi Forushani and Zarei (2012). This research clearly put the average relationship between service quality and patients' loyalty. It also clearly indicated that the joint power of service quality dimensions on patients' loyalty. Similarly Cronin and Taylor (1994) found that service quality has a significant effect on repurchase intentions and other studies support that repurchase intentions were positively influenced by service quality Zeithaml, Berry and Parasuraman (1996), Cronin and Taylor (1992, 1994), Cronin, Brady and Hult (2000), and Choi, (2004).

Hong and Goo (2004) stated that satisfaction was a necessary prerequisite for loyalty but was not sufficient on its own to automatically lead to repeat purchases. Overall satisfaction was a more fundamental indicator of the firm's past, current, and future performance this was because customers make repurchase evaluations and decisions based on their purchase and consumption experience but not just on a particular transaction (Johnson, 2001; Aydin, 2005). Similarly, loyalty was developed over a period of time from a consistent record of meeting, and sometimes even exceeding customer expectations (Teich, 1997). A research conducted in four private hospitals in Iran using six dimensions of patients' satisfaction namely nursing care, operating room, admission and administrative service, meal, cost and patient room showed that, patients' overall satisfaction was mostly affected by the nursing care, meal, patient room as well as admission and administrative services respectively and further, the author found that patients' overall satisfaction and loyalty were positively correlated so that one unit increase in patient overall satisfaction increases patient loyalty by 54% to 77% (Mortazavi1, Kazemi, Shirazi and Aziz-Abadi1 2009). This research attempted to show that patients' satisfaction and patients'

loyalty were positively related although loyalty affected by different dimensions of patients' satisfaction differently. It also attempted to show that the joint effects of the dimensions of patients' satisfaction on patients' loyalty. On the same way, the practice of excellent service quality has been proven that customer satisfaction will significantly lead to customer loyalty (Caruana, 2000; Caruana, 2002) and customer satisfaction has frequently been suggested to be the leading determinant of loyalty (Lam and Burton, 2006). In a clear way, a recent study made known that customer satisfaction was a better predictor of intentions to repurchase than service quality (Ravald and Gronroos, 1996). Cronin and Taylor (1992) found that a much stronger relationship between customer satisfactions and repurchase intentions than the relationship between service qualities and repurchase intentions. Parasuraman, Zeithaml and Berry (1994) also made known that customer satisfaction was achieved a greater level of statistical significance when both service quality and customer satisfaction have a significant effect on repurchase intentions.

Research conducted in five private hospitals in Bangkok that obtained results through factor and multiple regression analysis, indicated that service quality dimensions significantly affect corporate image, customer satisfaction, and customer loyalty more specifically, the doctor concern dimension was affecting customer satisfaction and customer loyalty but the tangible dimension was affecting corporate image (Laohasirichaikul.B, Chaipoopirutana and Combs 2011). Similarly, study in Thailand in three private hospitals showed that, patients' perceived service quality was positive at all hospitals but it tends to be different at different hospital and for each of the hospitals the analysis provided insights for corporate strategy as to which dimensions should be improved to affect customer loyalty, customer satisfaction or corporate image (Zhigunova, 2012).

2.3. Service

Services were economic activities that created value and provided benefits for customers at specific times and spaces that provided a desired change in the recipient of the service (Christopher Lovelock). Services were not tangible thing that could be touched, seen, and felt but rather were intangible deeds and performances (Zeithaml and Bitner). Service included all economic activities whose output were not a physical product, were generally consumed at the time it was produced and provided added value in forms that were essentially intangible concerns

of its first purchaser (Quinn, Baruch and Paquette). Gronroos (1983) defined service as an activity or series of activities normally having intangible natures but not necessarily that took place in interactions between the customer and service employees or physical resources or goods or systems of service provider, which were provided as solutions to customer problems. Sasser (1978) defined service as a package of explicit / open and implicit / hidden benefits performed with a supporting facility and using facilitating goods. Service was any primary or complementary activity that did not directly produce a physical product that was the non-goods part of the transaction between customer and provider (Payne, 1993). Kotler (1999) defined service as any activity or benefit that one party offered to another party which was essentially intangible and did not resulted in the ownership of anything, and it may or may not be tied to a physical product.

Customers were becoming more sophisticated in their requirements and were increasingly demanding higher relative standard of service quality. To customers, service means customer satisfaction, customer delight, service delivery, customer relationships that were why the interest of managing service was very important. Very important managing efforts of services were required to set the customer service objectives in terms of relative importance of the customer service quality elements. In other words, while considering the level of performance in setting customer service objectives, service firms need to take in to account the relative importance of service quality variables such as reliability, responsiveness, assurance, empathy and tangible (payne, 1995). Customer service initiatives or plans, were, thus closely related to the quality improvement initiatives or plans. Brown and Smartz (1989) reported that the consistent delivery of superior service was the strategy that was increasingly being offered a key to service providers to position themselves more effectively in the market place of that particular service.

2.4. Characteristics of services

Recognition of the differences between manufacturing products and service products through the dimensions of intangibility, inseparability, heterogeneity and perishability of service products (Buttle 1996, Berry and Parasuraman 1991 and Zeithaml 1990) has enabled service quality managers to develop approaches that have proved effective in improving the service quality. These attributes of the service quality was identified and clarified by Al-Allaq and Al-Tai (2009).

Most services were intangible (Bateson 1977, Berry 1980, Lovelock 1981, Shostak 1977) because they were performances rather than objects then precise manufacturing specifications concerning uniform quality could rarely be sat. That was services' results were difficult to standardize because human element was very much involved in providing and rendering services. Most services could not be counted, measured, inventoried, tested, and verified in advance of purchase to assure quality. Intangibility of services means that most services did not have a material and tangible nature to the recipient that they could judged through their senses of smell, touch, taste, hear and watch prior to purchase (Zeithaml and Bitner). Because of intangibility, the firm might found it difficult to understand how consumers perceived their services and evaluated service quality (Zeithaml 1981). Services were less communicable because their features could not be displayed, illustrated, compared and were unique to each buyer. Ownership transfer, keeping patent right and taking inventories also were difficult in services. But services created value and provided benefits for customers at specific time and place on specific activity as a result desired changes were brought about on the recipient of the services (Lovelock 1981).

Production and consumption of many services were inseparable (Carmen and Langeard 1980, Gronroos 1978, Regan 1963, Upah 1980). As a result, quality in services were not produced at manufacturing plant and then delivered all to the customer. Inseparability of services means producing and consuming of services occurred at the same time. Some services were considered for the customer as an integral part of the production of the services and therefore the customers of services must be in the same location of the services production. Customers of services were part of the production process of services. So the services' delivery system must go to the customers to deliver services or the customers must come to the delivery system to receive the services. This was applied to the medical health care services, where services' delivery required patients in the same place of production of the health care services. Services consumed at the time they were produced and provided added value in forms that were essentially intangible concerns of their first purchaser (Quinn, Baruch, and Paquette). The services' firm may also have less managerial control over quality in services where consumer participation was strong, because the customers' input was critical to the quality of services' performance. Thus the services' provider should know how the services were evaluated by the consumers, to be able to suggest how to influence these evaluations in a desired direction (Gronroos 1982). Because

quality occurred during services delivery was found in the interaction between the customer and the contact person from the service firm (Lehtinen and Lehtinen 1982). Lehtinen (1982) supported that service quality was produced in the interaction between customers and elements such as physical quality, which includes the physical aspects of the service or equipment or building, corporate quality, which involves the company's image or profile, and interactive quality which derives from the interaction between contact personnel and customers as well as between some customers and other customers in the service organization.

Services, especially those with high labor involved were heterogeneous that was, the performance of services were varied from producer to producer, from customer to customer, and from day to day. Consistency of behavior from services' personnel that was uniform quality was difficult to assure (Booms and Bitner 1981) because what the firm planed to deliver might be entirely different from what the consumer received. Heterogeneity or Variability of services was the inability to produce uniform services from producer to producer, from customer to customer, and from time to time. That was difficult to homogenize particular service and therefore difficult to maintain a consistent quality level of services. Services were more complex than goods because they were composed of a bundle of different attributes, not all of them would be offered to every buyer in a consistent level on each purchase. Time perishability of services was also another feature of services that was services could not be stored and services were time perishable.

2.5. Service Quality

Service quality was the result of the comparison that customers made between their expectations about a service and their perception of the way the service has been performed (Lehtinen & Lehtinen, 1982; Lewis & Booms, 1983, Gronroos, 1984; Parasuraman 1985; 1988; Caruana, 2002). Service quality was defined as the degree of discrepancy between customers' expectation for service and their perceptions of service performance (Parasuraman 1985). The definition of service quality was further developed as "the overall evaluation of a specific service firm that results from comparing that firm's performance with the customer's general expectations of how firms in that industry should perform (Parasuraman 1988). A popular definition of service quality proposed by Berry (1988) was 'conformance to customer specifications' that was the customer's definition of quality that matters, not that of management. Ducker (1991) defined

service quality as “what the customer got out and was willing to pay for” rather than “what the supplier of the service put in”. Hence, service quality was often “conceptualized as the comparison of service expectations with actual performance perceptions” (Bloemer, Ruyter 1999; Kara, Lonial 2005). Arnauld (2002) defined perceived quality “whether in reference to a service” as “the consumers’ evaluative decision about an entity’s overall superiority in providing preferred benefits”. Gronroos (1984) and Parasuraman (1985) looked at perceived quality of service as the difference between customers’ expectation and their perceptions of the actual service received. Several studies have proposed that significant variation exists between patient expectation of treatment quality and the perceived service quality of the treatment received, and this was due to a number of factors related to the service quality of the treatment delivered (Strasser 1995; Butler, 1996; Kandampully, 1997).

The qualities of service both technical and functional were key ingredients in the success of service organizations (Gronroos, 1984). Technical quality in health care was defined primarily on the basis of the technical accuracy of the diagnosis and procedures. Functional quality, in contrast, related to the manner of delivery of health care services. Carson (1998) have stated that some professionals contend that consumers’ perception of quality service in health care was distorted due to the inability of patients to judge the technical competence of the medical practitioner with any accuracy. To sum up, because patients were often unable to assess the technical quality of medical services accurately, thus, functional quality was usually the primary determinant of patients’ perceptions of quality (Donabediam, 1980, 1982). There was growing evidence to suggest that this perceived quality was the single most important variable influencing consumers’ perceptions of value, and this, in turn, affects their intention to purchase services (Bolton and Drew, 1988; Zeithaml, 1998).

With competitive pressures and the increasing necessity to deliver patient satisfaction, the elements of quality control, quality of service, and effectiveness of medical treatment have become vitally important (Friedenberg, 1997). According to some researchers, although true level of service quality could be quite low or high the main key was how consumers perceive the quality of service and the efficiency of the health care (Petersen 1988) thus consumer’s perception was the main indicator of quality in health care service (O’Connor, Shewchuk & Carney, 1994; Cronin & Taylor, 1992).

Parasuraman, Zeithaml, and Berry (1988) found that satisfaction was related to a specific transaction, whereas, service quality was a global judgment relating to the service's superiority. Kumar (2009) stated that high quality of service would resulted in high customer satisfaction and increases customer loyalty and Yee (2010) found that service quality has a positive influence on customer satisfaction. Most of the researchers found that service quality was the antecedent of customer satisfaction (Bedi, 2010; Kassim and Abdullah, 2010; Kumar, 2010; Naeem and Saif 2009; Balaji, 2009; Lee and Hwan, 2005; Athanassopoulos and Iliakopoulos, 2003; Parasuraman 1988). Similarly, Parasuraman (1988) and Naeem and Saif (2009) found that customer satisfaction was the outcome of service quality. But, Bitner (1990) and Bolton and Drew (1991) pointed out that customer satisfaction was the antecedent of service quality. Therefore, Nguyen and LeBlanc (1998) explained that the collective perception of service quality from repeated service encounters was expected to form the overall corporate image of the company. Kurtz and Clow (1998) defined the corporate image or firm image as "the overall or global opinion customers have of a firm or organization" and Gronroos (1984) discovered that corporate image was extremely important for service organizations because customers could typically saw the firm and its resources when they used service as it required.

2.6. Service quality measurements

There were three methods of measuring service quality: The first attributed to Parasuraman et al (1985) and which was based on customer expectations of service level and understanding of the level of service already provided or the perception of service delivered. It then selected the gap or match between these expectations and perceptions using the five service quality dimensions which were reliability, responsiveness, empathy, assurance and tangible. This method of service quality measurement was measurement of gap or SERVQUAL scale, the focus in service quality measurement model was the gap between the perception of the actual performance level of customer service and the customer expectations about the quality of this service.

The second method to measure the service quality (Cronin and Taylor 1992) focused on measuring the actual performance of the service provided to the customer based on that the quality of service was expressed as a kind of trends and this method in measuring quality of service was actual performance measure or SERVPERF scale. As it was seen by the founders of this scale it was distinct from earlier measurements by simplicity and ease of the use, as well as

its higher degree of credibility and realism because it excluded the subtraction of customers' service expectations from customers' service perceptions.

The third method, to measure the service quality developed by Zeithaml, Berry, Parasuraman (1993) which combined insights from the past conceptualizations with finding from a multi-sector study to develop an interactive model of customers' service expectations. It was zone of tolerance that separated the desired service and adequate service levels that indicated the range of service performance a customer would consider satisfactory.

2.7. Service quality measurements' limitations (SERVQUAL Scale)

Parasuraman (1985, 1988, 1991) proposed SERVQUAL model based on the confirmation/ disconfirmation theory (SQ = P – E). Despite the wide application of SERVQUAL, as an instrument for measuring service quality, it has been subjected to several criticisms regarding its conceptual and operational aspects.

Since then, many marketing researchers have argued that neither disconfirmation theory nor expectation scores have any effect on customer satisfaction (Carman 1990, Cronin and Taylor 1994, Teas 1994 and Buttle 1996). Instead, the perception scores SERVPERF have been mainly recommended for measuring service quality as it has higher predictive validity of customers' satisfaction (Cronin and Taylor 1992, Babakus and Mangold 1992, Cadott, Woodruff and Jenkins 1987, Lee and Yoo 2000, Luk and Layton 2004 and Baumann 2007).

SERVQUAL model has also come under extensive criticism because of the difficulty in replicating its dimensions (Babakus and Boller 1992, Carman 1990, Cronin and Taylor 1992). Cronin and Taylor (1992) criticized Parasuraman's (1988) conceptualization of service quality and they nullified the expectation portion from the SERVQUAL. They argued that only performance dimensions could predict behavioral intensions and they termed it as SERVPERF. In the same way, Brown (1993) argued that the difference score (perception minus expectation) has some operational problems. Therefore, he suggested that a non-difference score measure was superior to difference score measure.

Carman (1990) suggested that the five service quality dimensions were inconsistent in cross sectional analysis that they were inconsistent across different sectors. He found that some of the items captured different components when compared to different service providers. Carman

(1190) also noted that the difference between expectations and perceptions concept was operationally difficult. Babakus and Boller (1992) supported Carman's (1990) idea about the

2.8. Patients' satisfaction

Kotler and Keller (2006) saw that customer satisfaction can be measured by many ways: Customer interview and by being asked directly, periodic observation through the distribution of questionnaires or via websites and secret client or one of the members of the administration to costume as a customer and ask customer's questions on their satisfaction and identified the degree of satisfaction.

Patients' satisfaction appeared to be a major device in order to take critical decisions in the health care services (Gilbert, Lumpkin and Dant 1992). Therefore, service providers, took the customers' satisfaction into account as a main goal of the strategies of their firms (Zeithaml and Bitner 2000). Service firms, which included hospitals, should focus on achieving customer satisfaction and loyalty by delivering superior value an underlying source of competitive advantage (Woodruff,1997). Customer satisfaction as an attitude was like a judgment following a purchase act or based on customer and product interactions (Yi, 1989). On the other hand, Oliver (1981) summarized the transaction-specific nature of satisfaction, and differentiated it from attitude, as attitude was the consumer's relatively enduring affective orientation for a product, store, or process while satisfaction was the emotional reaction following a disconfirmation experience which acted on the base attitude level and was consumption-specific. Oliver (1981) also stated satisfaction as a summary of psychological state resulted when the emotion surrounding disconfirmed expectations was coupled with the consumer's prior feelings about the consumption experience. Similarly, Kotler (2000) stated satisfaction as a person's feelings of pleasure or disappointment resulted from comparing a product perceived performance or outcome in relation to his or her expectations.

Customer satisfaction has been defined in two ways, either as an outcome or as a process. The outcome definitions characterized satisfaction as the end state resulting from the consumption experience (Churchill and Surprenant, 1982). Churchill and Surprenant (1982: 493) defined customer satisfaction as "an outcome of purchase and used results from the buyer's comparison of the rewards and the costs of the purchase in relation to the anticipated consequences". On the other hand, satisfaction could be considered as a process, emphasizing the perceptual, evaluative and psychological processes that contribute to satisfaction (Wilton, 1988). Hunt (1977: 459)

defined customer satisfaction as "an evaluation rendered that the experience was at least as good as it was supposed to be". More specifically, customer satisfaction has traditionally been defined as the interaction between the consumer's pre-purchase expectations and post purchase evaluation (Cadotte, 1987).

Wilton's (1983) definition, three antecedents of satisfaction could be identified: 1. Customer expectations, or expected performance, 2. Actual performance or perceived performance, 3.The discrepancy or confirmation/disconfirmation was the gap between the expected performance and perceived performance. Patterson (1993) found that consumers compare between perceived performance (P) and prior expectation (E), which resulted in negative confirmation (when P<E), confirmation (when P=E), and positive confirmation (when P>E). Negative confirmation often tends to lead to a patient's dissatisfaction and positive confirmation lead to a patient's satisfaction. Evans and Lindsay (1999) proposed the view that customer satisfaction resulted from the provision of goods and services that met or exceeded customer needs.

Gronroos (1984) and Parasuraman (1985) looked at perceived quality of service as the difference between customers' expectation and their perceptions of the actual service received and Consumer's perception was the main indicator of quality in health care service (O'Connor, Shewchuk and Carney, 1994; Cronin and Taylor, 1992). Most of the researchers believe that there was a relationship between the perception of the consumers on the quality of the services and their satisfaction (Cronin and Taylor 1994, Alexander, Kaldenberg and Koenig 1994).

According to Fahd Al-Mailam (2005), quality leadership in health care organizations helped to foster an environment that provides quality care which was linked with patient satisfaction. The concept of internal marketing in the health care sector suggested that the best way to satisfy patients was by viewing employees as internal customers and that by understanding and meeting employees' needs, wants, expectations, and concerns their level of satisfaction will increase thereby leading to better quality of care and higher patient satisfaction (O'Neill, 2005; Bitner, 1990; Hesket, 1997; Testa, 1998). Atkins, (1996) showed that hospital employee dissatisfaction negatively impacts the quality of care and ultimately has an adverse effect on patient loyalty and in turn hospital profitability. Quality improvement initiatives were shown to have a positive correlation with employee satisfaction as well as client satisfaction in a study of Swedish healthcare (Kammerlind, 2004). Most of the researchers on that issue believe that there was a relationship between the perception of the customers on the quality of the services and their

satisfaction (Cronin &Taylor, 1994; McAlexander, Kaldenberg & Koenig, 1994). Consumer satisfaction appears to be a major device in order to take critical decisions in the health care services (Gilbert, Lumpkin & Dant, 1992). Service quality studies were mainly based on the satisfaction of patients or their judgment about service quality (Babakus & Mangold,1992; Carman, 1990; Parasuraman, Zeithaml, & Berry, 1985; Parasuraman, Zeithaml, & Berry, 1988; Zeithaml, Berry, & Parasuraman, 1993;Reidenbach & Sandifer-Smallwood, 1990).Therefore, service providers, as a matter of fact, take the satisfaction of customers into account as a main goal of the strategies of their firms (Zeithaml & Bitner, 2000) and medical service leaders became accountable for assisting their staff to meet patient satisfaction improvement goals and to decrease the barriers to quality patient care (Tang and Cheng, 2001).In measuring customer satisfaction, there were generally two methods: a single item and multiple items: i.e., measuring customer satisfaction with general scale and summing up for the overall satisfaction (Yu, 2006).

2.9. Relationship of service quality and patients' satisfaction

In a hospital environment, patients were in a state of physiological or psychological discomfort Manaf and Nooi (2009). Most commonly, the nature of the service quality and customer satisfaction link was viewed as linear, indicating that higher levels of service quality lead to higher levels of satisfaction (Pollack 2008)**.** Service quality and customers' satisfaction were considered as two sides of the same coin Al-Hawari (2011) and Oliver (1980) proposed that customer satisfaction was a function of the disconfirmation of performance from expectation. Although there was a debate in the literature about the antecedent relationship of service quality and customer satisfaction, it was generally agreed that service quality resulting customer satisfaction Cronin and Taylor (1992), Oliver (1980), Qin and Prybutok (2009) and Jamal and Anastasiadou (2009). The basis of this perspective was attributed to the appraisal, emotional response (affect), coping framework of Natalisa and Subroto (1998) and Yeh (2009) which suggested that service quality, as a cognitive appraisal, leads to an emotional assessment of satisfaction. Service quality studies were mainly based on the satisfaction of patients or their judgment about service quality (Babakus and Mangold 1992, Carman 1990, Parasuraman, Zeithaml and Berry 1985, Parasuraman, Zeithaml and Berry 1988, Zeithaml, Berry and Parasuraman 1993, Reidenbach and Sandifer-Smallwood 1990).

2.10. Patient's loyalty

A common approach in defining customer loyalty was to distinguish between a customer's behavioral loyalty and attitudinal loyalty Parasuraman, Zeithaml, and Berry (1991) and Gronroos (1982). Behavioral loyalty was expressed as repeated transactions and could be measured simply with observational techniques. Attitudinal loyalty was defined as positive affect toward both continuance of the relationship and the desire to remain the relationship, and was defined as equivalent to relationship commitment Kassim, Abdullah (2010), Sheng and Liu (2010), Wu. (2011) and Morgan, Robert and Hunt(1994). Strong attitudinal loyalty made customers more resistant to attempts by other marketers to take them away Kassim and Ismail (2009) and more resistant to oppose the influence or to search for the alternatives.

Three questions were developed by Zeithaml (1996) to measure the loyalty of patients which were adapted to this research as a measurement of patients' satisfaction in Paulos hospital.

In addition, for the purposes of measuring satisfaction and loyalty the scale used by Aydin (2005) was implemented.

Oliver (1999) suggested that true loyalty existed at all three decision making phases: (1) beliefs (cognitive); (2) affect (affective); and (3) intention (conative), were pointed toward a single preference. Cognitive loyalty occurs when consumer belief in one brand was preferable to alternatives because of the knowledge or information about brand attributes. Affective loyalty occurs when the consumer like and has good attitudes toward one specific brand. At this stage, the consumer has both cognition and affective loyalty in their mind. Conative loyalty occurs when consumer has behavioral intention toward a specific brand. Oliver defined loyalty as "A deeply held commitment to re-buy or re-patronize a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause switching behavior" (cited by Kotler,2000). Loyalty was defined as the likelihood that a customer of a healthcare service provider expects to do transactions with the organization in the future and engaged in positive word-of-mouth communications about the service (Zeithaml, Berry et al. 1996). According to Bloemer & Kasper (1995), loyalty was interpreted as true loyalty rather than repeat purchasing behavior, which was the actual re-buying of a brand, regardless of commitment. Zeithaml (1996) stated loyalty was a multi-dimensional construct and included both positive and negative responses. However, a loyal customer may not necessarily be a satisfied customer. This may be due to switching costs, lack of perceived differentiation of

alternatives, location constraints on choice, time or money constraints, habit or inertia which were not related to loyalty (Bitner, 1990; Ennew & Binks, 1996).

Loyalty was developed over a period of time from a consistent record of meeting, and sometimes even exceeding customer expectations (Teich, 1997). The practice of excellent service quality has been proven that customer satisfaction will significantly lead to customer loyalty (Caruana, 2000; Caruana, 2002). Similarly, customer satisfaction has frequently been suggested to be the leading determinant of loyalty (Lam & Burton, 2006). Customer loyalty measurement was mainly carried out by customers' intentions to repeat transactions, or to recommend to others through positive word of mouth (WOM) (Yu, 2006).

2.11. Relationship of service quality, patient satisfaction and patient loyalty

Caruana (2002) concluded in his meditational model, that customer satisfaction played a mediator role in the effect of service quality on service loyalty. Akbar and Prevaez (2009) found a significant positive relationship between service qualities, trust or belief, customer satisfaction and customer loyalty and their findings also supported that customer satisfaction mediated service quality and customer loyalty. The interaction between service quality and customer satisfaction **explained** more of the variance in customers' loyalty than the direct influences of either service quality or satisfaction alone (Peyrot, 1993, Soderlund 2006, Turk and Avcilar 2009, Akbar and Prevaez 2009).

Service quality was an antecedent of customer satisfaction (Gotlieb 1994, Buttle 1996, Zeithaml and Bitner 1996, Lee 2000) and the relationship between service quality and customer loyalty was mediated by customer satisfaction (Caruana 2002, Fullerton and Taylor 2002). The quality of service was an antecedents / background to customer satisfaction and loyalty Kandampully and Juwaheer (2009), Herington and Weaven (2009) and Mohamad and Awang (2009). Eisingerich and Bell (2007) found that service quality had a significant effect on customer loyalty and customer belief, and belief or trust had a significant effect on customer loyalty. Zanzo, (2003) found that, satisfaction acts as an antecedent to trust, and trust as an antecedent to affective promise or commitment, and trust and affective commitment directly affect loyalty.

2. 12. Service expectations

According to Oliver (1981) expectations were consumer's defined probabilities of the occurrence of positive or negative events if the consumer engaged in some behavior. Customers form their

expectations from their past experience, friends' advice, and marketers' and competitors' information and promises (Kotler, 2000). Expectations serve as reference points in customer's assessment of performance (Cronin& Taylor, 1992). Organizations in order to keep expectations from rising, they have to perform services properly from the first time (Parasuraman, 1988).

Service expectations were pretrial beliefs a customer has about the performance of a services that were used as the standard or reference against which service performance was judged.

According to Zeithaml and Bitner (1996) customer held two types of expectations: The first was desired service expectation which was defined as the level of service the customer hoped to receive that was the 'wished for' level of performance of service. Desired service was a mix of what the customer believed 'can be' and 'should be'**.** This customer expectation was higher expectation than adequate service expectation. According to Teas (1997) desired service expectation was the level of feasible area to provide the 'can be' and 'should be' service or the maximum service assumed that the service firms could provide to the customers. The second customer expectation was adequate service which was the lower level of customer expectation for the threshold of acceptable services. Adequate service represented the minimum tolerable expectation or it was the bottom level of performance acceptable to the customer or the level at which consumer stitched or accepted service by hopping it will be improved. Zone of tolerance was the extent to which customers recognized and were willing to accept the variation between desired and adequate service expectations.

Therefore, according to conceptual model of zone of tolerance of PZB(1993): If the performance was below adequate level of service expectation, the customer will be frustrated and their satisfaction with the service provider will be undermined. On the other hand, when the performance exceeded the desired service expectation, the customers will be delighted. Thus, zone of tolerance was the range in which customers did not notice service performance. The usefulness of zone of tolerance was laid in determining the service dimensions' importance and thereby in allocating service improvement resources most optimally. Zone of tolerance was narrow for very importance service quality dimension. That was zone of tolerance used to determine the relative importance of service quality dimensions specifically when performances only were measured. But in gap model relative importance of the service quality was determined from the coefficients of dimensions in regression line.

2.13. Service quality models

There were several service quality models at different time designed by different authors that were working for suitability and modification of service quality based on the current context:

Technical and functional quality model (Gronroos, 1984), in this service quality model, a firm in order to compete successfully must have an understanding of consumer perception of the quality and the way service quality was influenced. Managing perceived service quality means that the firm has to match the expected service and perceived service to each other so that consumer satisfaction was achieved. In this model, the author identified three components of service quality namely technical quality, functional quality and image .The Technical quality was the quality of what consumers actually received as a result of their interaction with the service firms and were important to their evaluation of the quality of service. The functional quality was how customers got the technical outcome. The image can be expected to build up by technical and functional quality of service including the other factors such as tradition, ideology, word of mouth, pricing and public relations. GAP model (Parasuraman, 1985) in this model, Parasuraman (1985) proposed that service quality was a function of the differences between expectation and performance along the quality dimensions through the use of SERVQUAL scale to measure service quality. Attribute service quality model (Haywood-Farmer, 1988). This model stated that a service organization has "high quality" if it met customers' preferences and customers' expectations consistently. In this model services have three basic attributes namely physical facilities and processes, people's behavior, and professional judgment. This model suggested that special care must be taken to make sure that equipment was reliable and easy for customer to use. Synthesized model of service quality (Brogowicz,1990). This model was attempted to integrate traditional managerial framework, service design and operations and marketing activities. The purpose of this model was to identify the dimensions associated with service quality in a traditional managerial framework of planning, implementation and control. The model considered three factors namely company image, external influences and traditional marketing activities as the factors influencing technical and functional quality expectations of service.

Performance only model (Cronin and Taylor, 1992). The authors investigated the conceptualization and measurement of service quality and its relationship with consumer satisfaction and purchase intentions. They compared computed difference scores with perception

to conclude that perceptions only were better predictor of service quality. They argued on the framework of Parasuraman (1985), with respect to conceptualization and measurement of service quality and developed performance only measurement of service quality called SERVPERF by illustrating that service quality was a form of consumer attitude and the performance only measure of service quality was an enhanced means of measuring service quality. They stated that service quality could be conceptualized as "similar to an attitude", and can be operationalzed by the adequacy-importance model. In particular, they maintained that performance instead of "Performance-Expectation" determines service quality. Ideal value model of service quality (Mattsson,1992). This model argued for value approach to service quality and modeling it as an outcome of satisfaction process. This value-based model of service quality suggested the use of a perceived ideal standard against which the experienced service quality was compared. Evaluated performance and normed quality model (Teas, 1993). According to these author the conventional disconfirmation model has conceptual, theoretical and measurement problems. The author proposed two frameworks for service quality which were the evaluated performance framework and the normed quality model. The evaluated performance framework with the assumption that an individual evaluated object ''I'' with perceived certainty and that the object ''I'' has a constant amount of each attribute. In the normed quality model if the object ''I'' was defined as the excellence norm that was the focus of revised SERVQUAL concept, could be used to define the perceived quality of excellence norm in terms of the similarity between the excellence norm and the ideal object with respect to attributes.

IT alignment model (Berkley and Gupta, 1994). According to this model it was important that service quality and information system strategies must be tightly coordinated and aligned. This model described in detail where IT could be used to improve specific service quality dimensions including reliability, responsiveness, competence, access, communications, security, understanding and knowing the customers. Model of perceived service quality and satisfaction (Spreng and Mackoy,1996). This model attempted to enhance the understanding of the constructs of perceived service quality and consumer satisfaction. This model highlighted the effect of expectations, perceived performance desires, desired congruency and expectation disconfirmation on overall service quality and customer satisfaction. PCP attribute model (Philip and Hazlett, 1997). The model took the form of a hierarchical structure based on three main classes of attributes namely pivotal, core and peripheral. According to the model every service

consists of three overlapping areas where the vast majority of the dimensions and concepts which have used to define service quality. These ranked levels were defined as pivotal (outputs), core and peripheral (jointly representing inputs and processes). Retail service quality and perceived value model (Sweeney,1997). Value was the difference between benefits and sacrifices. The influence of service quality on value and willingness to buy in a specific service encounters could be described by two alternative models. The first model highlighted that in addition to product quality and price perceptions, functional service quality and technical service quality perceptions both directly influence value perceptions. The second model highlighted that functional service quality perceptions directly influence consumers' willingness to buy. Functional service quality perceptions also influence technical service quality perceptions and in turn it influenced the product quality perceptions.

Service quality, customer value and customer satisfaction model (Oh, 1999). The author proposed an integrative model of service quality, customer value and customer satisfaction. The model focused mainly on post purchase decision process. The model incorporated key variables such as perceptions, service quality, consumer satisfaction, customer value and intentions to repurchase. In this model word of mouth communication intention was conceptualized as a direct, combined function of perceptions, value, satisfaction and repurchases intentions. The model provided evidence that customer value has a significant role in customer's post-purchase decision-making process. Customer value was an immediate antecedent to customer satisfaction and repurchase intentions. Perceived price has a negative influence on perceived customer value and no relationship with perceived service quality. Internal service quality model (Frost and Kumar, 2000).This model has developed based on the concept of GAP model (Parasuraman, 1985). The model evaluated the dimensions, and their relationships, that determine service quality among internal customers (front-line staff) and internal suppliers (support staff) within a large service organization. The internal gap 1 focused the difference in support staff's perception of front-line staff's expectation. Internal gap 2 was the significant difference between service quality specifications and the service actually delivered resulting in an internal service performance. Gap3 focused the difference between front-line staff's expectations and perceptions of support staff's service quality. Antecedents and mediator model (Dabholkar, 2000). This model of service quality included an examination of its antecedents, consequences, and mediators to provide a deeper understanding of conceptual issues related to service quality.

This model examined the relevant factors related to service quality better conceived as components or antecedents and the relationship of customer satisfaction with behavioral intentions.

2.14. Gap model of service quality

The first service quality model was presented by Parasuraman, Zeithaml and Berry (2002) **a**nd the authors explored that customer perception about the service quality was influenced by five gaps and this model was also known as gap model.

The principles relied on a gap model (Parasuraman, Zeithaml, 1985) was that every gap in SERVQUAL has a unique role: **Gap one** showed the difference between customer expectations and management perception of customer expectations or it was provider gap that provider did not know what customers expected. **Gap two** was the difference between management perceptions about service quality and service quality specifications. This provider gap was the inability of provider to select the right service designs and the right service standards. **Gap three** was the difference between service quality specifications and the service actually delivered. This provider gap was not delivering the service to the level of its standards. **Gap four** was the difference between the delivered service and the promised service. This provider gap was not matching performance to promises. Finally **gap five** was the difference between customers' expectations and customers' perceptions of service quality.

SERVQUAL model which was developed by Parasuraman, Berry and Zeithmal in (1985) that contains 97 items within ten service quality dimensions, was based on gap five that was based on the difference between customers' expectations and customers' perceptions of service quality. This fifth gap was influenced by the first four gaps. Earlier, service quality was measured by comparing customer expectations with customer perceptions on the basis of ten dimensions namely: reliability, tangibility, communication, security, credibility, competence, understanding, access, understanding/knowing customers, and responsiveness. This model was refined by (Parasuraman and Zeithaml 1988) and that service quality could be measured on the basis of the five dimensions. Parasuraman, Zeithaml and Berry (1988), were identified that customers considered five dimensions that contains 22 items in their assessment of service quality namely: **Reliability** which was the ability to perform the promised service consistently, dependably and accurately. **Responsiveness** was the degree of willingness to help customers and facilitate the

customers by providing prompt services to the customers. **Assurance** was employee's knowledge, skill and expertise of the employees in delivering services and courtesy of employees and their ability to create trust and confidence among the customers. **Empathy** was caring individualized attention given to individual customer. Finally **tangibles** were the appearance of physical facilities, equipment, personnel appearance, labs, and written materials and involved in delivering the services.

Therefore, the provider gaps one to four must be required to be filled, in order to overcome the gap between customers' perceptions and customers' expectations which were gap five. The gap model thus critically helped in finding or identifying out this gap or the service quality problems and the gap model critically helped in finding the ways to close the gap or the way to overcome the service quality problems.

2.15. Service quality dimensions

Building upon Rust and Oliver (1994) work, Brady and Cronin (2001) advanced the hierarchical conceptualization of service quality consists of three dimensions: outcome quality that referred to the customer's assessment of the core service, interaction quality which referred to the customer's assessment of the service delivery process and physical environment quality that referred to the consumer's evaluation of any tangible aspect related to the service.

Sasser, Olsen, and Wyckoff (1978) discussed three different dimensions of service performance: levels of material, facilities, and personnel. Gronroos, for example, postulated that two types of service quality existed: technical quality, which involves what the customer was actually receiving from the service, and functional quality, which involves the manner in which the service was delivered (Gronroos 1982). .

From literature reviewed, it was seen that different authors used different number and type of dimensions of service quality to measure the service quality of service sector. This implied that there was lack of uniformity of the measurements of service quality, customers' satisfaction and customers' loyalty in service sector. That might be created difficulty in summarizing different research out puts in this sector. Some of the dimensions as stated by different authors: Service quality, according to Babakus and Boller (1992) was specifically seen as an umbrella construct with distinct dimensions, although there was no real consensus as to what these dimensions might be. Sasser (1978) listed seven service quality dimensions namely security, consistency,

attitude, completeness, condition, availability and training. Gronroos (1978, 1982, and 1984) suggested that service quality comprises of three dimensions namely the technical quality of the outcome of the service encounter, the functional quality of the process itself and the corporate image and Lehtinen and Lehtinen (1982) defined service quality as a three dimensional construct consisting of interactive, physical and corporate quality dimensions. In the same way, Haywood-Farmer (1988) stated three service quality dimensions namely the degree of Contact, the degree of labor intensity and the degree of service customization. Parasuraman, (1985, 1988) with his gap model also developed SERVQUAL that have ten dimensions namely tangibles, reliability, responsiveness, competency, courtesy, assurance, credibility, security, access, understanding and later he reduced these ten dimensions into five namely tangible, reliability, responsiveness, assurance and empathy.

Some other important studies were conducted by, Johnston (1995) suggested 18 determinants of service quality most of them are quality dimensions developed previously by Parasuraman et al. (1985, 1988). Similarly, Harte and Dale (1995) summarized six general attributes that were required by customers as quality dimensions developed from SERVQUA L. On the other hand, Babakus and Boller (1992) concluded that service quality was probably a uni-dimensional dimension depending on the types of service under study and different measures designed for different service industries may prove to be a more viable and useful research strategy to pursue.

2.16. Ethiopian medical health care environment

Ethiopia developed and determined medical health care policies and strategies to improve its health service delivery and attain the health related millennium development goals, but it has some difficulty in achieving higher medical health care services quality and patients' satisfaction uniformly across hospitals. For example Ethiopia has one primary strategy and seven corollary strategies: The primary strategy was decentralization of the authority to the regional level in 1996 and to the district (woreda) level in 2002 (Sameh El-Saharty, Sosena Kebede, Petros Olango Dubusho, and Banafsheh Siadat 2009). The primary strategy used for improving health services in Ethiopia was the decentralization of authority and accountability of managing health services to sub national levels which was part of a broader government decentralization policy across sectors. Decentralization provided citizens channels to communicate their preferences and to voiced local governments and they should have information about the government policies

and activities that was played by media (World Bank 2001). Thus decentralization provided authority to respond to local demand of health service and accountability to local governments to increase allocative efficiency thereby to improve public service delivery.

The seven corollary/result oriented strategies developed and adopted by the federal government of Ethiopia based on the context of decentralization to implement at the sub national level to improve its health service delivery were (Sameh El-Saharty, Sosena Kebede, Petros Olango Dubusho, and Banafsheh Siadat 2009): Health service delivery and quality of care, health facility rehabilitation and expansion, human resource development, pharmaceutical supply and management, information, education and communication, health sector management and health management information systems and better health care financing.

Besides, Ethiopian health expenditure was improved, for example between 1989 and 1996 it rose from 2.8 % to 6.2% of the total budget and between 1991 and 1996 the Ethiopian government health budget increased from 1% to 2.7% of GDP of Ethiopia but Ethiopia has one of the poorest health status indicators in the world, World Bank (2002), UNICEF (2001), Ministry of Health (2000-2001) and the health service coverage was generally low (Ministry of Health 2000-2001).

As indicated by the world development indicators database, despite the above encouraging trends, Ethiopia still has several poor key health outcome indicators (Sameh El-Saharty, Sosena Kebede, Petros Olango Dubusho, and Banafsheh Siadat 2009). For example life expectancy at birth was 43 years for females and 42 years for males have been stable in recent years. It was lower than the Sub-Saharan African average of 47 years for females and 46 years for males. Similarly, Ethiopian health care service quality and patients' satisfaction in particular and the service sector in general were not evenly improved to the required level. This relative variation in the improvement of health care quality and its uneven allocation in turn could create uneven distribution of the quality health care services and patients' satisfaction across Ethiopian patients. This implied that, the one who has better money and the one who was located near the area of quality of medical health care services got better services quality than the one who has no enough money and the one who was located far from the location of quality medical health care services.

Thus, accessibility and price were among the most important factors affecting utilization of health facilities in Ethiopia (Kloos, Geleta, Shewarga, Wondimu, Gete, Habtamu 1987, Kloos,

Chama, Abemo, Tsadik, Belay 1986, Russell, Abdella, 2002). On the other hand, there were also reports suggested that usage of health facilities was sensitive to the distance to the facility and to the distance to the quality of health care provided (Federal Ministry of Health of Ethiopia 2001, Collier, Dercon, and Mackinnon 2002).

2.17. Role of service sector in the economy

Ethiopia was one of the least urbanized countries in the world with an urban population of only 16 percent (World Bank 2006). Ethiopia's economy depends heavily on the agricultural sector which accounts for 83.4% of the labor force, 42% of the GDP and 80% of exports (Ethiopian Journal of health science 2011) and its growth was 6.6% in real terms. Industrial sector was the fastest growing sector that grew by about 7% in real terms that gave industrial sector 11% share of Ethiopian GDP and the leading subsectors education and health in service sector grew by about 7% in real terms that gave service sector 47% share of Ethiopian GDP (OECD, African Economic Outlook 2005/2006). This implied that the rate of growth of service and industrial sector were greater than agricultural sectors in Ethiopia.

The international scenario showed the contribution of services sector to GDP in comparison to agriculture and industry in various countries across the globe. The service sector includes the services of tourism, finance, telecom, medical health care, bank, transport, hotel and information communication. Today services were increasingly being used by corporate as well as household level. The explosive growth in this sector was started after the end of World War II to bring the war torn economies back to strength and globalization. This growth of the service sector indicated that increase in service demand at increasing quality and sophistication. This tremendous growth of service sector has resulted in its increased importance to the world economies. For example as early as in 1948, US service sector contributed 54% of its GDP and with the increasing trend its service sector now contributed 80% of its GDP (*World Fact Book 2003*). In similar ways the sectoral distribution of GDP estimated in 2002:

Table1.The relative proportions of service sector, industry and agriculture in the countries' GDP.

Country	**G D P %**		
	Services	**Industry**	**Agriculture**
Denmark	**71**	**26**	**3**
France	**71**	**26**	**3**
Germany	**68**	**31**	**1**
India	**50**	**25**	**25**
South Korea	**54**	**41.6**	**4.4**
Russia	**59.60**	**34.60**	**5.8**
Ethiopia	**47**	**11**	**42**
Nigeria	**35**	**20**	**45**
Switzerland	**64**	**34**	**2**
U.S.A	**80**	**18**	**12**
Taiwan	**67**	**31**	**2**

Source*: World Fact Book 2003, www.cia.gov and* OECD*, African Economic Outlook 2005/2006.*

As countries developed, the role of agricultural sector in the economy declined and the role of service sector increased. Highly developed countries all have more than 50% of GDP and employment derived from services. The service sector was the fastest growing part of the economy in many developing countries, with the World Bank reporting that services account for 54 per cent of their GDP.

2.18. Empirical Review

Different studies were conducted by different scholars at different times on medical health care service in different countries with different objectives and were shortly summarized as follows:

Sohail (2003) study entitled: " Service Quality in Hospitals: More favorable than you might think". The study examined and measured quality of services provided by private hospitals in Malaysia through the determination of patients' expectations and perceptions using SERVQUAL model. The results from tested mean differences between expectations and perception indicated that patients' perceived value of services exceed expectations for all variables measured. Aykaç, Aydın, Ates and Cetin (2007) study entitled: "effect of service quality on customer satisfaction and customer loyalty: Marmara university hospital ". The study employed six dimensions of

service quality namely tangibility, reliability, responsiveness, assurance, courtesy and empathy that was developed by Carman (2000) and Kara (2005) with five Point likert scale to better understand the factors underlying healthcare customers' perceptions of service quality. Healthcare patents' expectations of a perfect service provider were compared with practices of Marmara University Hospital to see if there were gaps. Service quality of Marmara University Hospital's healthcare services quality was analyzed together with its effects on customer satisfaction and customer loyalty through regression analysis. The result indicated that Marmara University hospital's service quality was perceived to deviate from the perfect hospital on all SERVQUAL dimensions and the largest gap was detected for tangibility, while the least was for courtesy. Mortazavi1, Kazemi1, Shirazi and Aziz-Abadi1 *(*2009) study entitled: "the relationships between patient satisfaction and loyalty in the private hospital industry, Iran ". The study tried to determine whether there was a relationship between patient satisfaction and loyalty to service provider in four private hospitals using six satisfaction dimensions namely nursing care, operating room, admission and administrative service, meal, cost and patient room. The results showed that, patient overall satisfaction was mostly affected by the nursing care, meal, patient room as well as admission and administrative services, respectively. Further, the authors found that patients' overall satisfaction and loyalty were positively correlated so that one unit increase in patient overall satisfaction increases patient loyalty by 54% to 77%.

Peltier and Dahl (2009) study entitled: "the relationship between employee satisfaction and hospital patient experiences" in New York. The study explored the satisfaction of employees in hospital to determine the extent to which employee satisfaction related to the quality of the patient experience. The result indicated that there were a direct and positive relationship between the satisfaction of employees and the quality of the patient experience in a major urban hospital.

Hu1, Cheng, Chiu, and Hong (2011) study entitled. "A study of customer satisfaction, customer loyalty and quality attributes in Taiwan's medical service industry". The study examined how overall customer satisfaction and customer loyalty associated with medical service quality attributes offered in Taiwan using Kano's integrated model by using one-dimensional, must-be, attractive, indifferent, and reverse quality attributes and customer satisfaction index model. Results showed that customer satisfaction was influenced by one-dimensional and attractive attributes, and negatively affected by customer complaints. But must-be attributes could not predict customer satisfaction. Customer loyalty proved to be independent of customer

satisfaction and customer complaints, which may have been due to the barriers erected to patients from changing to a new provider. The major finding suggested that hospital managers should identify and emphasize the relevant one-dimensional and attractive dimensions or attributes so as to increase patient satisfaction levels. Laohasirichaikul, Chaipoopirutana and Combs (2011) study entitled: " effective customer relationship management of health care: a study of hospitals in Thailand " .This study investigated effects and relative importance of four perceived service quality dimensions on corporate image, customer satisfaction, and customer loyalty. Results were obtained through factor analysis and multiple regression techniques for data from outpatients of five largest private hospitals in Bangkok. The findings indicated that the four dimensions significantly affect corporate image, customer satisfaction, and customer loyalty. More specifically, the doctor concern dimension was the most important factor affecting customer satisfaction and customer loyalty. The tangible dimension was the most important factor affecting corporate image.

Kumar, Manjunath, Chethan (*2012*) study entitled: "service quality at hospital – a study of Apollo hospital in Mysore, India ". The study examined the service quality influence on patient loyalty in Apollo hospital of Mysore, service quality measures were based on the four dimensions of the SERVQUAL namely responsiveness, empathy, reliability and tangible. The study were purely based on primary data and analyzed by using one sample t -test and regression analysis and the results revealed that all the four dimensions were positively related to patient's loyalty. Irfan, Ijaz and Farooq *(2012)* study entitled: "*p*atient satisfaction and service quality of public Hospitals in Pakistan". At that time, healthcare system in Pakistan was comprised of public hospitals, healthcare units and dispensaries, which were not sufficient to meet the healthcare requirements of 169.9 million people. The study aimed to investigate, quality of services delivered to patients by public hospitals in Pakistan using modified 'SERVQUAL' five service quality dimensions namely empathy, tangibles, timeliness, responsiveness and assurance. The results of this study indicated that public hospitals were not making visible efforts to deliver quality of services to their patients and were not making any visible efforts to meet patient's needs and wants. Arab, Tababaei, Rashidian, Forushani, and Zarei (2012) study entitled "the effect of service quality on patient loyalty: a study of private hospital in Tehran, Iran". The study aimed at the determination of hospital service quality from the patients' viewpoints and the relative importance of quality dimensions in predicting the patient's loyalty in eight private

general hospitals in Tehran using 24 items for service quality and 3 items for patient's loyalty. Exploratory factor analysis was used to extract dimensions of service quality and regression analysis was used to determine the relative importance of the service quality dimensions in predicting the patient's loyalty. The result showed that, the mean score of service quality and patient's loyalty was 3.99 and 4.16 out of 5, respectively. About 29% of the loyalty variance was explained by the service quality dimensions. The four quality dimensions (Costing, Process Quality, Interaction Quality and Environment Quality) were found to be the key determinants of the patient's loyalty in the private hospitals of Tehran.

Zamil, Areiqat, and Tailakh, (2012) study entitled: " impact of health service quality on patients' satisfaction over private and public hospitals in Jordan: A Comparative Study ". The study took a random sample of inpatients from within and used **SERVPERF to** measure quality of service. The results indicated that: There was health service quality impact on patient's satisfaction, there was significant statistical difference of impact of health service quality on patient's satisfaction between hospitals of public and private, the impact of health service quality on patient's satisfaction in private hospitals was better than public hospitals and the responsiveness diminution of health service quality has the lowest mean out of other service quality diminutions in both public and private hospitals. Zhigunova (2012) study entitled: "perceived service quality of private hospitals in Thailand -Impact on Customer Satisfaction, Customer Loyalty and Corporate Image". This study investigated the impact of perceived service quality at three private leading hospitals in Thailand on customer satisfaction, customer loyalty and corporate image. The result indicated that patients at all hospitals in the sample generally perceived service quality positively. Perceived service quality tends to be different at different hospital. The analysis of different demographic subgroups revealed that preferences regarding service quality differ according to age and area of residence. No differences were found for different gender. The empirical analysis revealed that the different dimensions of service quality not always have an impact on customer loyalty, customer satisfaction and corporate image. For each of the hospitals the analysis provided insights for corporate strategy as to which dimensions should be improved to affect customer loyalty, customer satisfaction or corporate image

2.19. Conceptual frame work

The aims of this section was to summarize the ideas that I got from the literature reviewed on the nature and strength of relationship between service quality, patients' satisfaction and patients'

loyalty. This section assessed, examined and clearly showed the status of research conducted and the gap to be studied in the service sector specifically in medical health care by focusing the relationship between service quality, patients' satisfaction and patients' loyalty. This section also was stated the expected contributions of this study to fill the gap identified based on contexts in Ethiopia:

(I).The relationship between patients' satisfaction as dependent variable and the service quality dimensions as independent variables: The service quality dimensions as independent variables or factors such as reliability, responsiveness, assurance, empathy, and tangible determined patient's satisfaction although all of them have no equal determining ability. The state of research on this particular relationship was low. That was the relative importance of the service quality dimensions namely reliability, responsiveness, assurance, empathy, and tangible that predicted the patient's satisfaction were not cleanly identified and emphasized by the research. This implied that, there was lack of researches that provided insights for corporate strategy as to which dimensions of service quality should be focused and improved to improve patients' satisfaction. Thus the gaps in this relationship were two: The **first** gap was lack of knowledge on the relative importance of reliability, responsiveness, assurance, empathy and tangible … of service quality dimensions as independent variables that could bring improvement on patients' satisfaction as dependent variable. The second gap was the lack of knowledge at what combination of reliability, responsiveness, assurance, empathy, and tangible … as service quality dimensions that gave the maximum possible amount of patients' satisfaction. These two gaps were the base and the problem statements of this research. This research attempted to contribute on the first gap to provide the level of relationship between each service quality dimensions and patients' satisfaction that could show the relative importance of each independent variable on determining the dependent variable.

(II).The relationship between patients' loyalty as dependent variable and the service quality dimensions as independent variables: The service quality dimensions namely reliability, responsiveness, assurance, empathy, and tangible as independent variables could determined patient's loyalty as dependent variables, although all of the service quality dimensions have no equal power to determine patient's loyalty. There were few researches conducted on the relationship between loyalty and the service quality dimensions in different countries. For example research conducted in Indian health care sector showed that responsiveness, empathy,

reliability and tangible of service quality dimensions as independent variables positively affect patient's loyalty as dependent variables. On the same way research conducted in eight private hospitals of Tehran gave that 29% of the loyalty variance as dependent variable was explained jointly by the service quality dimensions as independent variables. Beside, this research showed that the mean score of service quality and patient's loyalty of 3.99 and 4.16 out of 5 respectively. Although these research were very important they were not clearly indicated the relative importance of each service quality dimension that determined patients' loyalty for maximizing very important independent variable/s to get the maximum possible dependent variable.

Thus the gaps in this relationship were two: The **first** gap was lack of information on the relative importance of reliability, responsiveness, assurance, empathy and tangible of service quality dimensions as independent variables that could brought the highest amount of improvement on patients' loyalty as dependent variable. The **second** gap was the lack of information at what combination of reliability, responsiveness, assurance, empathy and tangible of service quality dimensions as independent variables that gave the maximum possible amount of patients' loyalty as dependent variable. These two gaps were the base and the problem statements of this research. This research attempted to contribute on the first gap to provide the level of relationship between each service quality dimensions and patients' loyalty that showed the relative importance of each independent variable on determining the dependent variable.

(III). Patients' loyalty as dependent variable, both services quality and patients' satisfaction as independent variables were related: Patients' satisfaction and service quality affect patients' loyalty although they have no equal power to affect patients' loyalty. Some studies were conducted on these particular relationships for example, research conducted in four private hospitals of Iran indicated that one unit increase in patient overall satisfaction as independent variable increases patient loyalty as dependent variable by 54% to 77% and a study conducted in Indian hospital indicated that service quality as independent variable influence patient loyalty as dependent variable positively. In addition to these, Customer satisfaction was better predictor of intentions to repurchase than service quality (Ravald and Gronroos, 1996) and Cronin and Taylor (1992) found stronger relationship between customer satisfactions and repurchase intentions than the relationship between service qualities and repurchase intentions. These findings showed that relative importance of customer satisfactions and service quality on determining customer loyalty. Still there were lack of clear information on the size of the relative

importance of service quality and patients' satisfaction in determining the patients' loyalty. Thus, the **first** gap was lack of information on size of the relative importance of service quality and patients' satisfaction in determining patients' loyalty. The **second** gap was the lack of information on optimum combination of service quality and patients' satisfaction that gave the highest level of patients' loyalty. These two gaps were still the base and the problem statements of this research. This study attempted to contribute on the first gap to provide insight on the relative level of importance of service quality and patients' satisfaction in determining patients' loyalty.

Services as an economic activities need to be optimized to provide the highest possible output to the recipients of services. This optimization was achieved mainly through optimizing the dimensions or factors that determined the quality of services and through optimizing the relationship between the factors that determine the service quality. These were achieved by conducting research in this sector that was the reason why this study was attempted to conduct.

CHAPTER THREE

Research methodology

3.1. Introduction

This chapter presented the overview of the research area that summarized some facts about the study area and it also described what type of research this research was. The sampling method and the sample size were also clearly described in line with the objectives of this research and nature of the service sector. Similarly data sources and the data collection methods of this research were discussed adequately in relation to their purpose in this research. In the same way, the ethical procedures that were practically followed and kept during the conduction of this research were stated and summarized. Finally, the data analysis methods were discussed in detail in line with the basic research questions, the hypothesis and the objective of this research.

3.2. Overview of the research area

This study was conducted in Ethiopia which was found at the spot from 3º to 15º north latitudes and from 33º to 48º east longitudes with a total land area of 1,104,300km². Ethiopia was the second most populous country in sub-Saharan Africa, with a population of over 82.8 million people. The country introduced a federal government structure in 1994 composed of nine regional States namely: Tigray, Afar, Amhara, Oromia, Somali, Benishangul Gumuz, Southern Nations Nationalities and Peoples Region (SNNPR), Gambela and Harrari and the two city Administrations (**Addis Ababa** and Dire Dawa). The regional states were administratively divided into 78 Zones and 710 Woredas.

More specifically this study was conducted in St.Paulos general specialized hospital in Addis Ababa city. Addis Ababa is the capital city of Ethiopia which was found at a spot of 8º85 latitude and 39º25′ longitude (Ethiopian metrological agency) with a total land area of 526.99km² (CSA July 2013 report) and it was 2371m height above sea level(www.date and time. info/city coordinates). Addis Ababa has also a total people of 3,103,999 (CSA July 2013 report) in 10

sub-city as well as in 99 kebele (Addis Ababa city administration) and Addis Ababa has 10 public hospital as well as 31 private hospital (FMOH 2011).

St. Paulo's hospital millennium medical college was found half way between the west of Arada St. Giorgis church and east of Asko St. Gebriel church. St. Paulo's hospital millennium medical college was one of the largest general referral specialized hospital in Addis Ababa city that provided a medical health care services for a long period of time since its establishment. Currently (March, 2014) St. Paulo's hospital millennium medical college has the total employees of 1481. Out of these 593 (40.04%) employees were male and 888 (59.60%) employees were female. In the same way, the total number of doctors were 134 out of them 94 (70.15%) were male and 40 (29.85%) were female and it has 376 nurses, out of them 101 (26.86%) were male and 275 (73.14%) were female. Similarly, St. Paulo's hospital millennium medical college has 7 yetena redat 6 (85.71%) of them were male and 1 (14.29%) of them was female.

3.3. The types of research

This research was descriptive and explanatory research. This research described the outputs from the descriptive analysis. The outputs from descriptive analysis such as the demographic profile of respondents (table 2), the summary of responses in the questionnaire (table 3 and appendix 1-7), the responses in service quality (table 4), the responses in patients' loyalty (table 4) and the responses in patients' satisfaction (table 4) were analyzed, summarized and described. It also described and compared issues and features of the relevant variables of this research in medical health care services of Paulos hospital.

This explanatory research explained the analyzed outputs from the multiple partial correlation and outputs from the multiple linear regression model which were analyzed through the use of SPSS16.0 statistical package. It explained the level of relationships between patients' satisfaction and each of the five service quality dimension based on the relative size of the coefficients of the service quality dimensions (table9). It also explained the level of relationships of patients' loyalty with each of the five service quality dimension based on the relative size of the coefficients of the service quality dimensions (table 15). Similarly, it explained the level of relationships of patients' loyalty with service quality and patients' satisfaction based on the relative size of the coefficients of the service quality and patients' satisfaction (table 18).

This explanatory research explained and compared the type and strength of associations among the service quality dimensions, patients' satisfaction and patients' loyalty (table 7 and 8). In the same way, it explained and compared the type and strength of associations among the patients' satisfaction, service quality and patients' loyalty (table 9). On the other hand, this explanatory research explained the extents of the change on patients' satisfaction and on patients' loyalty that were brought by the joint effect of the five service quality dimensions. It also explained the extents of the change on patients' loyalty that was brought by the joint effect of service quality and patients' satisfaction.

3.4. Sampling method and sample size

The total patients in Paulos hospital were infinite because there were infinite numbers of patients served by this hospital since its establishment. Then the appropriate formula to determine sample size in the infinite population was $n = z^2 p.q/ e^2$ C.R. Kothari (1990, P179-18o). Where, **n** = sample size, **z** = the value of confidence level of 95%, **p** = Sample proportion (o.50), **q** = 1-p or (1-o.50 = 0.50), **e** = acceptable error (5 %). Thus the sample size was, **n** = $(0.96)^2$ x .50 x .50***/(***$0.05)^2$ = **384** patients.

The sample representatives were selected from the patients' of this hospital mainly by considering the patients in the hospital as they have more contact with the hospital. In order to avoid some biased responses during data edition and in order to compensate unreturned questionnaires or lost questionnaires 430 questionnaires were randomly distributed to patients. The 405 questionnaires were collected, edited and only 384 of them were used for the purpose of this research.

3.5. Data source and data collection method

Primary and secondary data was used in this research. The primary data was collected through the questionnaire from the patients in Paulos hospital. These primary data was used mainly in the multiple linear regressions and multiple partial correlation analysis to assess the level of relationship among service quality, patients' satisfaction and patients' loyalty. Check list was also used to collect primary data specifically from visually observable of the targeted hospital and this information was used to describe some service related variables in this hospital. In the

same way secondary data was collected through the use of data sheet from Ethiopian national statistical Authority as required by the study and these data was used to write some overviews of the study areas.

Since SERVQUAL model that used perception-expectation to measure service quality was relatively difficult to patients' to give unbiased response to both variables than perception only model. The performance only model or SERVPERF model (Cronin and Taylor, 1992) was used to measure service quality and its relationship with patients' satisfaction and patients' loyalty in this research. Because this model concluded that perception only was better predictor of service quality and it maintained that performance instead of "Performance-Expectation" determined service quality or Cronin and Taylor (1992) showed that service quality can be measured based on the perception of the service quality without subtraction of the expected service quality. According to the SERVPERF model the performance items of the SERVQUAL scale were only used.

The questionnaire of this research has two parts: In the first part, four questions related to patients' age, gender and educational status were included. In the second part, the 22-items spread in the five dimensions of service quality: tangible, reliability, responsiveness, assurance, and empathy which were adopted from the work of (Parasuraman, Zeithaml, and Berry, 1988). These 22 SERVQUAL items' distributed by the five dimensions of service quality such as Tangible (4items), Reliability (5 items), Responsiveness (4 items), Assurance (4 items), Empathy (5 items) was included. The second part, 8 separate questions (items) that measured patients' satisfaction (4 items) and patient loyalty (3 items) were included. These items were measured on a five-point Liker scale, where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. This five point Likert scale was initially developed by Parasuraman (1985, 1986, and 1988) and adapted by Carmen (2000) for further use within the context of healthcare and further improved by Kara, (2005) towards a better use at Turkish hospitals, was employed to measure service Quality. The questionnaire in this research was written both in English and Amharic language to avoid language barriers but the report was written in English.

3.6. Ethical research procedure

The study protocol of this research was submitted to and approved by the advisor of this research then submitted to the marketing management department of Addis Ababa University School of

Commerce. This study protocol was also submitted to the institutional review board of St. Paulo's Hospital Millennium Medical College and it was reviewed then approved by this institutional review board of Paulos hospital. The institutional review board informed to use written consent attached with the questionnaire to obtain from all respondent patients. The respondents' consent form was translated into and administered in Amharic, and the other consent forms were administered in English. Thus patients could not be respondents if he/she was too ill or unconscious and unwilling to give consent.

The data collection procedures were started from explaining the objectives (the academic purpose) of this study to the administrative bodies of this hospital to get permission for data collection. Similarly, these academic purposes of this study were explained to the patients and promised to keep patients' secrete to get unbiased responses. Sample patients were selected randomly from the whole considered the patients in the hospital as they have more contact with the hospital. The questionnaires attached with the consent form was distributed in well sound manner to respondents and collected as they were completed within that day. The consent form contained the willingness or agreements of the respondents to provide correct response and the respondents assured it by their signature. The sample patients in this hospital were non-mental, male or female and illiterate or literate. This research gave the greatest possible ethical considerations for each and every step during the conduction of this research. These ethical considerations were practically followed with regard to this hospital and its patient's conditions in full life of this research at each step. The ethical considerations was also practically kept and followed with regard to the information collected, analyzed, summarized and interpreted. That was the true data collected were analyzed, summarized and interpreted in line with the objective, basic research questions and the hypotheses of this study. **Thus** the ethical considerations which were adequately and accurately kept and followed in practice at every step of this study ensured the ethicality of this research.

3.7. Data analysis

The collected, summarized and organized data were analyzed through multiple linear regression analysis and multiple partial correlation analysis using SPSS 16.0 statistical package. In multiple regression analysis the outputs were the estimates of the coefficients of the independent variables, the multiple correlation coefficients (R), the analysis of variance (ANOVA) and the

coefficient of multiple determinations (R^2) in each of the three relationships among the targeted variables.

(I) Patients' satisfaction as dependent variable regressed on the five service quality dimensions as independent variables: The estimates of the coefficients of the independent variables were indicated the relative level of change on patients' satisfaction per unit change of each of the five service quality dimension (table12). Whereas the coefficients of multiple determinations (R^2) (table 10) explained the extents of variability created on patients' satisfaction jointly by the five service quality dimensions. The multiple correlation coefficient (R) (table 10) explained the strength of the association of patients' satisfaction with each of the service quality dimension in pair and it was also explained the strength of the association among each service quality dimension in pair.

(II) Patients' loyalty as dependent variable regressed on the five service quality dimensions as independent variables: The estimates of the coefficients of the independent variables as outputs were indicated the relative level of change on patients' loyalty per unit change of each of the five service quality dimension (table 15). In the same way, the coefficients of multiple determinations (R^2) (table13) as an output explained the extents of variability created on patients' loyalty jointly by the five service quality dimensions. The multiple correlation coefficients (R) (table 13) indicated the strength of the associations of patients' loyalty with each of the service quality dimension in pair and it was indicated the strength of the association among each pairs of service quality dimension themselves.

(III) Patients' loyalty as dependent variable regressed on service quality and patients' satisfaction both the later two as independent variables: The estimates of the coefficients of the independent variables as out puts was indicated the relative level of change on patients' loyalty per unit change of service quality and patients' satisfaction (table 18). The coefficients of multiple determinations (R^2) (table 16) explained the extents of variability created on patients' loyalty jointly by service quality and patients' satisfaction. The multiple correlation coefficients (R) (table 16) explained the strength of the associations among patients' loyalty, service quality and patient satisfaction.

The analysis of variance (ANOVA) indicated the proportion of variances in the dependent variable created by independent variables and random variables in each of the above three relationships(I, II, and III see table 11, 14 and 17). For all the above estimates of the coefficients

of the independent variables, the effect of a single independent variable was computed by keeping the effects of other independent variables constant and the relative level or size of each estimate was very important to make decisions on each variables of health care by the management of this hospital.

On the other hand, in multiple partial correlation analysis, the out puts were the relative sizes and direction of: The associations in patients' satisfaction and each of the service quality dimensions in pair and among each service quality dimension in pair(table 7), the associations in patients' loyalty and each of the service quality dimensions in pair and among each service quality dimension in pair(table8) and the associations among patients' loyalty, service quality and patients' satisfaction(table 9).

CHAPTER FOUR

Data analysis and interpretation

4.1. Introduction

This section attempted to present the outputs of analyzed information and their interpretation. The analyzed data were summarized under descriptive and inferential analysis. The descriptive analysis described the demographic profile of respondents, the summary of responses in each item, the responses in service quality, the responses in patients' loyalty and the responses in patients' satisfaction in Paulo's hospital. On the other hand the inferential analysis was attempted to present the sample tests, the multiple partial correlation outputs and the multiple linear regression outputs.

4.2. Descriptive analysis

In this section, the demographic profile of respondents of this research and their responses in service quality, patients' loyalty and patients' satisfaction were summarized and presented .The summarized responses of these respondents were also described in line with the basic research questions and the objective of this research.

4.2.1. Demographic profile of respondents

Table2. Respondents' profile

Respondents' type	Respondents' detail and specific profiles	Relative size			
		Frequency	Percentage	Largest %	Smallest %
The use of this hospital by the respondents	For first time	117	30.47		
	For second time	105	27.34		27.34
	More than two times	162	42.19	42.19	
	Total	384	100		
Gender	Male	224	58.33	58.33	
	Female	160	41.67		41.67
	Total	384	100		
Age groups	18 to 30 years old	136	35.41		
	31 to 46 years old	150	39.06	39.06	
	47 to 65 years old	87	22.67		
	Above 65 years old	11	2.87		2.87
	Total	384	100		
Educational Status	Grade 1 to 6	35	9.12		
	Grade 7 to 8	53	13.80		
	Grade 9 to12	172	44.79	44.79	
	Diploma- first degree	119	30.99		
	MSc/MA to Dr	5	1.30		1.30
	Total	384	100		

Source: Raw data collected from St. Paul's hospital for this research from 12/06/2006-19/08/2006E.C.

The demographic profiles of the respondents were presented in Table 2 above. The largest group of respondents 162 (42.19%) were respondents who were used this hospital for more than two times. These respondents were expected to know more about the service provided by St. Paul's hospital and provided more accurate data than those respondents who were used this hospital for the first and the second time. The smallest group of respondents 105 (27.34%) were respondents who were used this hospital for the second times. These respondents were expected to know about the service provided by St. Paulo's hospital and provided more accurate information than

those respondents who were used this hospital for the first time. The medium sized percentage of respondents 117(30.47%) were respondents who were used this hospital for the first times. These respondents were expected to know relatively less about the service provided by St. Paulo's hospital than those respondents who were used this hospital for more than two times and for more than the second times.

With regard to the age distribution of the respondents, the largest age group of respondents 150 (39.06%) were respondents who were in the age group of 31 to 46 years. This relatively large numbers of respondents indicated that the medium age group patients' number were larger than patients' who have more than 46 years old and respondents who have less than 31years old. On the other hand the smallest age group of respondents 11 (2.86%) were respondents who were in the age group of above 65 years. This relatively smallest numbers of respondents indicated that the older patients' number were smallest than patients' who have less than 65 years old patients. The next larger age group of the respondents 136 (35.41%) were respondents who were found in the age of 18 years to 30 years old. This second largest number of age group of respondents indicated that the youngest patients' numbers were larger than other age group patients next to the medium age group patients of this hospital. The third larger numbers of age group of respondents 87(22.67%) were respondents who were found in the age of 47 to 65 years old respondents. This implied that the number of patients from the age group 47years to 65 years were larger next to the age group of 31 to 46 years and 18 years to 30 years patients' numbers.

The gender distribution of the respondents indicated that there were smallest differences between the number of male and female respondents. The number of male respondents were 224 (58.33%) where as the number of female respondents were 160 (41.67%). With regard to the educational status of the respondents, the largest group of educational status of the respondents 172 (44.79%) were respondents who have 9-12 grade educational status. On the other end the smaller number of respondents 5(1.30%) were respondents who have MSc, MA and doctorate degree. The other educational statuses of the respondents were found between these two extreme as seen in table 2 above.

4.2.2. Summary of responses in the items

The outputs of the analyzed information in table 3 below were with regard to the total responses of each item of the questionnaire in this study. The minimum score (strongly disagree = 1) and

maximum score (strongly agree = 5) for each item were summarized for the questionnaire in this study. The mean score and the standard deviation of the responses were also presented.

Table 3.Summary of responses per items in the questionnaire

	N	Minimum	Maximum	Mean	Std. Deviation
Reliability item 1	384	1	5	3.22	1.367
Reliability item 2	384	1	5	3.18	1.293
Reliability item 3	384	1	5	3.34	1.281
Reliability item 4	384	1	5	2.99	1.356
Reliability item 5	384	1	5	3.45	1.284
Responsiveness item 6	384	1	5	3.49	1.278
Responsiveness item 7	384	1	5	3.23	1.346
Responsiveness item 8	384	1	5	3.19	1.314
Responsiveness item 9	384	1	5	3.14	1.290
Assurance item 10	384	1	5	3.15	1.319
Assurance item 11	384	1	5	3.24	1.281
Assurance item 12	384	1	5	2.92	1.373
Assurance item 13	384	1	5	3.36	1.299
Empathy item 14	384	1	5	3.11	1.291
Empathy item 15	384	1	5	2.90	1.324
Empathy item 16	384	1	5	3.16	1.330
Empathy item 17	384	1	5	2.94	1.279
Empathy item 18	384	1	5	2.90	1.320
Tangibility item 19	384	1	5	3.23	1.254
Tangibility item 20	384	1	5	2.92	1.282
Tangibility item 21	384	1	5	3.o8	1.265
Tangibility item 22	384	1	5	3.02	1.244
Loyalty item 23	384	1	5	3.03	1.339
Loyalty item 24	384	1	5	3.12	1.353
Loyalty item 25	384	1	5	3.21	1.353
Satisfaction item 26	384	1	5	3.18	1.309
Satisfaction item 27	384	1	5	3.06	1.327
Satisfaction item 28	384	1	5	3.17	1.369
Satisfaction item 29	384	1	5	2.99	1.336
Valid N (list wise)	384				

Source: Data collected for this study*12/06/2006-19/08/2006E.C.*

The analyzed information in table 3 above provided the mean score of each item of the questionnaire. Out of (29) items, 7 items or (24.14%) of the items have the mean score below the neutral score or have score of strongly disagree and disagree. Six of the seven were service quality items and one of the seven was satisfaction's item. The other scores of 22 items (75.86) have the mean score above the neutral score or have scores of strongly agree and agree for the items of the questionnaire in this research.

The standard deviation of the responses of each item was also indicated the deviation of each response of each item from its corresponding mean score as shown in table 3 above. The relative highest standard deviations 1.373, 1.369 and 1.367 were for assurance item 12, satisfaction item 28 and reliability item1 respectively. These relative higher standard deviations clearly indicated that the individual responses of the 384 respondents were relatively far from their corresponding mean response of the items stated. On the other hand the relative the lower standard deviation (1.244) was for tangibility item 22. This lower standard deviation clearly indicated that the individual responses of the 384 respondents for tangibility item 22 were relatively closer to mean responses of item 22. This implied that there was relative highest precision of the responses for this item than the responses to other items.

The items or the questions of the questionnaire of this research were all positively and significantly correlated each other at 0.01 significant level. These facts were tested and proved by the outputs of linear multiple correlations matrix of items of the questionnaire in this research. But these outputs were too large to display on this paper. Similarly, the items within in each dimension of service quality, patients' satisfaction and patients' loyalty were also found positively and significantly correlated at 0.01 significant levels. These positive and significant associations were displayed in **appendix 1-7** from the analyzed facts of linear multiple correlation through the use of SPSS 16.0 statistical package.

As clearly seen in **appendix1,** the items of the reliability were positively and significantly correlated or associated with each other. The first highest relative correlation or associations (0.975) was found between reliability item 2 and reliability item 1, and the second highest correlation (0.970) was found between reliability item 5 and reliability item 3.The third highest correlation strength (0.967) was found between reliability item 3 and reliability item 1. **Appendix2** indicated that the items of the responsiveness were positively and significantly correlated with each other. The highest relative correlation between responsiveness item 2 and responsiveness 1 (0.988), responsiveness item 5 and responsiveness item 3 (0.980), and responsiveness item 3 and responsiveness item 1 (0.970) were found first, second and third respectively. The linear multiple correlation matrix in **appendix 3** indicated that the positive and significant correlations among the items of assurance. The correlation between assurance item 13 and assurance item 11 (0.956) and between assurance item 13 and assurance 10 (0.946) were

found the first and the second strong correlation. The third strong correlation (0.944) was found between assurance item 11 and assurance item 10.

The items of the empathy were positively and significantly correlated or associated each other as shown in **appendix 4.** The correlation between empathy item 18 and empathy item 15 (0.993), empathy item 17 and empathy item 15 (0.985), and empathy item 18 and empathy item 17 (0.983) were first, second and third respectively. Positive and significant correlations were found among the tangibility items as shown in **appendix 5.** The correlation between tangibility item 22 and tangibility item 21 (0.981), tangibility item 22 and tangibility item 20 (0.971), and tangibility item 21 and tangibility item 19 (0.961) were first, second and third respectively as shown on **appendix 5.** Similarly, there were positive and statistically significant correlations or associations among items of loyalty as shown on **appendix 6**. The items of the satisfaction were also positively and statistically significantly associated each other as clearly seen in **appendix7**.

Generally, there were positive and statistically significant correlations among all questions of the questionnaire of this research. There were also positive and statistically significant correlations within the questions' of each service quality, patients' loyalty and patients' satisfaction although their strengths were different. These positive and significant correlations implied that all the items on the questionnaire of this research could capture information that were significantly associated and complementarily related in medical health care service quality, repeated use of the medical health care service and the satisfaction of patients in Paulo's hospital.

4.2.3. Responses in service quality, patients' loyalty and patients' satisfaction

The responses in the items of service quality, patients' loyalty and patients' satisfaction were analyzed, summarized and presented for each actual question that capture information from Paulos hospital about its medical health care services delivered (table 4). The analysis was done through SPSS16.0 statistical package.

Table4. Summary of responses per questions in the questionnaire

No	Actual questions	N	Mean	Std. D
	Reliability			
1	This hospital provided services as promised	384	3.22	1.367
2	This hospital handled patients' service problems dependably	384	3.18	1.293
3	This hospital performed service right the first time	384	3.34	1.281
4	This hospital provided services at promised time	384	2.99	1.356
5	This hospital kept patients' records accurately	384	3.45	1.284
	Responsiveness			
6	Patients informed by this hospital when their services performed	384	3.49	1.278
7	This hospital provided prompt/timely service to patients	384	3.23	1.346
8	Employees of this hospital were willing to help patients	384	3.19	1.314
9	Employees of this hospital were ready to respond patients' requests	384	3.14	1.290
	Assurance			
10	Employees of this hospital created confidence in patients	384	3.15	1.319
11	This hospital made patients feel safe in their transaction	384	3.24	1.281
12	Employees of this hospital were consistently courteous/polite	384	2.92	1.373
13	Employees of Paulos had knowledge to answer patients' questions	384	3.36	1.299
	Empathy			
14	This hospital gave individual attention to patients	384	3.11	1.291
15	Employees of this hospital dealt with patients in caring fashion	384	2.90	1.324
16	This hospital had patient's best interest at heart	384	3.16	1.330
17	Employees of this hospital understood the needs of their patients	384	2.94	1.279
18	This hospital created convenient treatment hours to patients	384	2.90	1.320
	Tangibility			
19	This hospital had modern equipments for patients' service delivery	384	3.23	1.254
20	This hospital had visually appealing facilities	384	2.92	1.282
21	Employees of this hospital had neat professional appearance	384	3.o8	1.265
22	This hospital had visually appealing materials associated with service	384	3.02	1.244
	Loyalty			
23	I was happy with services of this hospital & it was better than others	384	3.03	1.339
24	I was recommended this hospital to others	384	3.12	1.353
25	This hospital provided me exact service as I expect, so I was willing to reuse the services of this hospital	384	3.21	1.353
	Satisfaction			
26	I talk about this hospital positively with friends & family	384	3.18	1.309
27	I advised people who I knew to use this hospital	384	3.06	1.327
28	I preferred this hospital even if other hospitals were cheaper	384	3.17	1.369
29	If I need to go to hospital again, I will go to this hospital	384	2.99	1.336

Source: Data collected for this study*12/06/2006-19/08/2006E.C.*

4.2.3.1. Responses in service quality

As clearly seen in table 4 above, the responses in the items of service quality were analyzed, summarized and presented. More specifically the mean score and the standard deviation were analyzed and presented for each question of service quality. The mean score indicated that each question's average score from the 384 responses in the likert scale measurement namely, **s**trongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). Whereas, the standard deviations indicated that the deviations of each score of each question from its corresponding mean score. The analysis was done through SPSS16.0 statistical package.

The highest mean score in the service quality questions was the mean score of question which said ''patients informed by Paulos hospital when their services performed'' with a mean score of 3.49 and a standard deviations of 1.278. This implied that Paulos hospital informed its patients well about when it performed the medical health care services and each score of this question were spread closely around its mean score. This indicated that it was commendable for Paulos hospital to inform its patients well about when it performed the medical health care services. Whereas, the smallest mean score in the service quality questions was the mean score of questions which said ''employees of this hospital dealt with patients in caring fashion'', and "this hospital created convenient treatment hours to patients" with the same mean score of 2.90. This implied that Paulos hospital's employees did not dealt with patients in caring fashion and Paulos hospital did not created convenient treatment hours to its patients. This indicated that employees of Paulos hospital should handle their patients in caring fashion/ helpful manner, and the hospital should also improve the treatment hours to its patients. The standard deviations of these questions were almost similar, which were 1.324 and 1.320 from the former to the later questions respectively. This indicated that the individual scores of these questions were spread relatively far from their corresponding mean score.

Generally, as clearly seen in table 4 above, for all the questions of service quality which had mean score greater than 3.00, Paulos hospital was commendable and for questions which had the mean score less than 3.00, Paulos hospital was recommended to improve. More specifically, Paulos hospital was commendable for questions 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 3, 14, 16, 19, 21 and 22 (table 4). On the other hand Paulos hospital was recommended to improve questions 4, 12, 15, 17, 18, and 20 (table 4).

4.2.4.2. Responses in patients' loyalty

In table 4 above, the responses in the questions of patients' loyalty in Paulos hospital were analyzed, summarized and presented. Specifically the mean score and the standard deviation were analyzed and presented for each question of patients' loyalty in this hospital. The mean score was taken as an average score from the 384 responses in the likert scale measurement namely, **s**trongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5).

The mean score in the question of patients' loyalty which said '' I was happy with services of this hospital & it was better than others'' was 3.03 with standard deviation of 1.339 (table 4). Similarly, the mean score in the question of patients' loyalty which said '' I was recommended this hospital to others'' was 3.12 with standard deviation of 1.353 (table 4). Finally, the mean score in the question of patients' loyalty which said '' this hospital provided me exact service as I expect, so I was willing to reuse the services of this hospital'' was 3.21 with standard deviation 1.353 (table 4).

In conclusion, all the mean score of questions of patients' loyalty in Paulos hospital were greater than 3.00. Thus Paulos hospital was commendable for all questions of patients' loyalty.

4.2.5.3. Responses in patients' satisfaction

As clearly seen from the table 4 above, the responses in the questions of patients' satisfaction in Paulos hospital were analyzed, summarized and presented. The total number of the responses, mean score and the standard deviation were analyzed and presented for each question of patients' satisfaction in Paulos hospital. The mean score was an average score from the 384 responses in the likert scale measurement namely, **s**trongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). The analysis was done through SPSS16.0 statistical package.

The highest mean score in the patients' satisfaction questions was the mean score of question which said '' I talk about this hospital positively with friends & family'' with a mean score of 3.18 and a standard deviations of 1.309. This implied that more than 50% of patients in Paulos hospital had positive attitude towards the medical health care services provided in this hospital. So that these patients discussed about Paulos hospital's medical health care services positively with their friends & family. The individual response scores of this question were deviated from the mean score of this question was 1.309. Since the mean score of this question was greater than

3.00, paulos hospital was commendable to this question because patients were satisfied on this aspect. On the other hand, the smallest mean score in the patients' satisfaction questions was the mean score of question which said '' If I need to go to hospital again, I will go to this hospital '' with the mean score of 2.99 and the standard deviation of 1.336. This implied that patients in Paulos hospital had no high satisfaction in comparison to other hospital because the mean score for this question was less than 3.00. This indicated that Paulos hospital should improve its competitive advantage through improvements of patients' satisfaction in this question base.

Generally, as clearly seen in table 4 above, for all the questions of patients' satisfaction all the questions' mean scores were greater than 3.00 except one question. Thus, Paulos hospital was commendable for questions 26, 27, and 28 (table 4). On the other hand Paulos hospital was recommended to improve questions 29 (table 4).

4.3. Inferential analysis

4.3.1. One- sample tests

The total number of respondents, the mean score of the responses, the standard deviation of the scores and the standard error mean of the mean score were analyzed, summarized and presented in table 5 below. The analysis was done through the use of SPSS16.0 statistical package.

Table5. One- sample test

	N	Mean	Std. Deviation	Std. error mean
Service quality	384	3.14	1.310	0.067
Patients' loyalty	384	3.12	1.347	0.069
Patients' satisfaction	384	3.10	1.337	0.068

The mean difference was significant at the 0.01 level of significance

The total number of respondents was 384 as presented on the second column of table 5. As shown from the analyzed information in table 5 above, 3.14, 3.12, and 3.10 were the mean score of service quality, patients' loyalty and patients' satisfaction respectively. The standard deviation of service quality, patients' loyalty and patients' satisfaction were 1.310, 1.347 and 1.337 respectively. These deviations clearly indicated the deviation of each individual score from their corresponding mean. The higher the deviation of individual score (1.347) from its mean score (3.12) was patients' loyalty's score and the second higher deviations was patients' satisfaction's

score. The least spread and the best fit score was the individual score of service quality. Because each individual score of service quality was much closer to their mean than patients' loyalty and patients' satisfaction scores to their corresponding means.

The standard error of the mean in table 5 above clearly indicated the variability of the mean of service quality, patients' loyalty and patients' satisfaction from sample to sample. The standard error mean (0.067) of service quality indicated that the mean score of service quality (3.14) varied from sample to sample by the amount of 0.067. The variability of the mean score of patients' loyalty (3.12) from sample to sample was 0.069 and the variability of the mean score of patients' satisfaction (3.10) from sample to sample was 0.068. The smaller the standard error mean or the relative least variability (0.067) of the mean of service quality indicated that the greater the uniformity of sampling distribution and hence the greater the reliability and precision of sampling procedure for service quality than for patients' loyalty and patients' satisfaction.

The T-value, degree of freedom, p-value, mean difference, lower and upper confidence interval were analyzed and presented in table 6 below. The analysis was done through the use of SPSS16.0 statistical package.

Table6. One -sample test summary

	T	DF	Sig (2-tailed)	Mean difference	95 % confidence interval of the difference	
					Lower	Upper
Service quality	46.926	383	0.000	3.138	3.01	3.27
Patients' loyalty	45.400	383	0.000	3.120	2.98	3.25
Patients' satisfaction	45.445	383	0.000	3.102	2.97	3.24

The mean difference was significant at 5% level of significance.

The mean scores for service quality, patients' loyalty and patients' satisfaction in Paulo's hospital medical health care were compared and proved that they have statistically significant differences at 5% level of significance. The confidence intervals of the means also indicated that the true mean or the population mean scores of service quality, patients' satisfaction and patients' loyalty were found between the lower and upper values.

As clearly seen in table 6 above, the true mean score of service quality was found between 3.01 and 3.27 in 95% of the time. This implied that the researcher has 95 % confidence that the true

mean score for service quality was found between 3.01 and 3.27. In 95% of the time the true mean score of patients' loyalty was found between 2.98 and 3.25. Similarly, the true mean score of patients' satisfaction was found between 2.97 and 3.24 in 95% of the time.

4.3.2. Correlations among reliability, responsiveness, assurance, empathy, tangibility and patients' satisfaction.

Correlation was symmetrical relationship when the two variables vary together but neither variable was varied due to the other. It was also reciprocal relationships that existed when the two variables mutually influenced or reinforced each other. The five dimensions of service quality namely reliability, responsiveness, assurance, empathy and tangibility as well as patients' satisfaction were correlated among each other by controlling the effects of respondents' educational status, gender, age and patients' loyalty as shown in table 7 below. In this section the outputs of multiple partial correlation analysis was presented in table 7 as analyzed from the information collected from St. Paulo's hospital millennium medical college, through the use of SPSS 16.0 statistical package. The 2-tailed test analysis was appropriate and used throughout this research because the hypotheses of this study were all non directional. The analyzed facts were interpreted, summarized and presented in line with the hypothesis, basic research questions and the objective of this study (table 7).

Table7. Multiple partial correlations matrix among five dimensions and satisfaction

Controlled variables		Relia	Resp	Assu	Emp	Tang	Sat
	Relia correlation	**1.00**	0.858	0.488	0.315	0.320	0.186
Loyalty	Sign (2-tailed)	**.**	0.000	0.000	0.000	0.000	0.000
	DF	**0**	378	378	378	378	378
	Resp correlation	0.858	**1.00**	0.398	0.226	0.325	0.126
Education	Sign (2-tailed)	0.000	**.**	0.000	0.000	0.000	0.014
	DF	378	**0**	378	378	378	378
	Assu correlation	0.488	0.398	**1.00**	0.189	0.422	0.356
Gender	Sign (2-tailed)	0.000	0.000	**.**	0.000	0.000	0.000
	DF	378	378	**0**	378	378	378
	Emp correlation	0.315	0.226	0.189	**1.00**	0.635	0.420
Age	Sign (2-tailed)	0.000	0.000	0.000	**.**	0.000	0.000
	DF	378	378	378	**0**	378	378
	Tang correlation	0.320	0.325	0.422	0.635	**1.00**	0.391
	Sign (2-tailed)	0.000	0.000	0.000	0.000	**.**	0.000
	DF	378	378	378	378	**0**	378
	Sat correlation	0.186	0.126	0.356	0.420	0.391	**1.00**
	Sign (2-tailed)	0.000	0.014	0.000	0.000	0.000	**.**
	DF	378	378	378	378	378	**0**

Correlations were significant at 0.01 levels of significant except satisfaction and responsiveness.

The multiple partial correlations matrix in table 7 above showed that the type and strength of the correlation or associations among patients' satisfaction and the five service quality dimensions namely reliability, responsiveness, assurance, empathy and tangibility. The amount of correlation of each of the particular service quality dimension with itself was one. Thus the diagonal from the upper left to the bottom right of this multiple partial correlation matrix has a value of one which clearly showed that the correlation of any variable with itself was one or the variable correlated perfectly with itself. The outputs of this correlation matrix above the diagonal and below the diagonal were identical because the variables in the first row and the variables in the first column of this matrix were identical. Thus it was possible to put half of the matrix either

above the diagonal or below the diagonal to get sufficient information about the correlation of the given variables.

From this correlation matrix of table 7 above , it was clearly seen that the correlation between responsiveness and reliability, assurance and reliability, assurance and responsiveness, tangibility and reliability, tangibility and responsiveness, tangibility and assurance, empathy and reliability, empathy and responsiveness, empathy and assurance, empathy and tangibility, patients' satisfaction and reliability, satisfaction and assurance, satisfaction and tangibility, satisfaction and empathy were found 0.858, 0.488, 0.396, 0.315, 0.262, 0.189, 0.320, 0.325, 0.422, 0.635, 0.186, 0.356, 0.420 and 0.391 (table 7) respectively. These outputs stated above were statistically significantly and positively correlated or associated at 0.01 significant levels. Similarly, the correlation between satisfaction and responsiveness was found 0.126 (table 7) and it was correlated positively but they were correlated non-significantly at the 0.01 significant level.

From the analyzed information in table 7, the correlations among all the variables were different in magnitude and all were positive in their sign. That was all the outputs of the correlation have the same direction which was positive but there were different size or strength of the correlation among the correlating variables in the medical health care service provision of St. Paulo's hospital. The relative highest magnitude of correlation (0.858) was found between responsiveness and reliability of the service quality dimensions. The second highest magnitude of correlation (0.635) was found between empathy and assurance of the service quality dimensions and the third relative highest magnitude of correlation (0.488) was found between assurance and reliability of the service quality dimensions. On the other hand, the relative lowest magnitude of the correlation (0.126) was found between satisfaction and responsiveness dimension of the service quality. The other magnitudes of correlations were between these two extremes.

The satisfaction of patients on the medical health care provided by this hospital in day to day activities and its associations with each of the five service quality dimensions were very important to evaluate the service quality in this hospital. Thus the relative strength of the correlation between patients' satisfaction and empathy (0.420), patients' satisfaction and tangibility (0.391), patients' satisfaction and assurance (0.356), patients' satisfaction and reliability (0.186), patients' satisfaction and responsiveness (0.126) were compared. From these analyzed facts it was concluded that the strength of the associations of patients' satisfaction with

empathy, tangibility, assurance, reliability and responsiveness were given from higher strength to lower strength respectively in Paulo's hospital. Empathy, tangibility, assurance and reliability were positively and significantly associated with the satisfaction of patients in Paulos hospital. But a responsiveness dimension of service quality was associated positively and non-significantly with the satisfaction of patients in Paulo's Hospital.

Generally, in the case of St. Paulo's hospital millennium medical college's medical health care service provision the patients' satisfaction and the five service quality dimensions namely reliability, responsiveness, assurance, empathy and tangibility were positively associated or correlated as clearly seen from the out puts of multiple partial correlation analysis in table 7 above. Therefore Paulo's hospital should evaluate and emphasize the five service quality dimensions to address the satisfaction of its patients. Thus the ''hypothesis (H1): "Each dimension of the service quality was positively associated with **patients' satisfaction** and patients' loyalty'', was **found true** ((Table 7 and 8))**.**

4.3.3. Correlations among reliability, responsiveness, assurance, empathy, tangibility and patients' loyalty.

In table 8 bellow, the five dimensions of service quality namely reliability, responsiveness, assurance, empathy and tangibility as well as patient' loyalty were correlated among each other by controlling the effects of respondents' educational status, gender, age and patients' satisfaction. The results of the multiple partial correlation analysis were presented in table 8 bellow. These analyzed facts were done from the information collected on the medical health care service of St. Paulo's hospital. The analysis was done through the use of SPSS 16.0 statistical package. The analyzed facts were interpreted, summarized and presented in line with the hypothesis, basic research questions and the objective of this study (table8).

Table8. Multiple partial correlations matrix among five dimensions and loyalty

Controlled variables		Relia	Resp	Assu	Emp	Tang	Loy
Satisfaction	Relia correlation	**1.00**	0.867	0. 511	0. 257	0. 269	0. 268
	Sign (2-tailed)	**.**	0.000	0.000	0.000	0.000	0.000
	DF	**0**	378	378	378	378	378
Education	Resp correlation	0.867	**1.00**	0. 444	0224.	0. 296	0. 284
	Sign (2-tailed)	0.000	**.**	0.000	0.000	0.000	0.000
	DF	378	**0**	378	378	378	378
Gender	Assu correlation	0.511	0.444	**1.00**	0. 045	0.312	0. 380
	Sign (2-tailed)	0.000	0.000	**.**	0. 383	0.000	0.000
	DF	378	378	**0**	378	378	378
Age	Emp correlation	0.257	0.224	0.045	**1.00**	0. 564	0. 005
	Sign (2-tailed)	0.000	0.000	0.383	**.**	0.000	0.920
	DF	378	378	378	**0**	378	378
	Tang correlation	0.269	0.296	0.312	0.564	**1.00**	0.022
	Sign (2-tailed)	0.000	0.000	0.000	0.000	**.**	0. 662
	DF	378	378	378	378	**0**	378
	Loy correlation	0.268	0.284	0.380	0.005	0.022	**1.00**
	Sign (2-tailed)	0.000	0.000	0.000	0.920	0.662	**.**
	DF	378	378	378	378	378	**0**

Correlations were significant at 0.01 significant levels except assurance and empathy, loyalty and empathy as well as loyalty and tangibility.

Table 8 above was presented the analyzed and summarized outputs that indicated the direction and strength of the correlation or the associations among patients' loyalty, reliability, responsiveness, assurance, empathy and tangibility by controlling the effects of patients' satisfaction, respondents' educational status, respondents' gender and age.

From this correlation matrix of table 8, the analyzed output indicated that the correlation between: responsiveness and reliability (0.867), assurance and reliability (0.511), assurance and responsiveness (0.444), empathy and reliability (0.257), empathy and responsiveness (0.224), tangibility and reliability (0.269), tangibility and responsiveness (0.296), tangibility and

assurance (0.312), tangibility and empathy (0.564), loyalty and reliability (0.268), loyalty and responsiveness (0.248), loyalty and assurance (0.380) (table 8), were positively and significantly correlated or associated at 0.01 significant levels.

On the other hand, the correlation between: empathy and assurance (0.045), loyalty and tangibility (0.022), loyalty and empathy (0.005) were positively correlated or associated but they were correlated non-significantly at 0.01 level of significant. The highest magnitude of correlation (0.867) was found between responsiveness and reliability of the service quality dimensions. The second highest magnitude of correlation (0.564) was found between tangibility and empathy of the service quality dimensions and the third relative highest magnitude of correlation (0.511) was found between assurance and reliability of the service quality dimensions. These high magnitude of correlation indicated that the existence of higher strength of correlation between the correlated variables. Similarly, the relative lowest magnitude of correlation (0.005) was found between loyalty and tangibility that indicated the existence of lower relative strength of correlation between the correlated variables. The magnitudes of the other correlations were between these two extreme values.

The patients' loyalty to the medical health care provided by this hospital in day to day activities and its associations with each of the five service quality dimensions were very important to evaluate the service quality in this hospital. Thus the relative strength of the correlation between patients' loyalty and assurance (0.380), patients' loyalty and responsiveness (0.284), patients' loyalty and reliability (0.268), patients' loyalty and tangibility (0.022), patients' loyalty and empathy (0.005), were compared. From these analyzed facts it was concluded that the strength of the associations of patients' loyalty with assurance, responsiveness, reliability, tangibility and empathy were given from higher strength to lower strength respectively in Paulo's hospital. Assurance and reliability were positively and significantly associated with the loyalty of patients in Paulos hospital. Whereas, responsiveness, tangibility and empathy dimensions of service quality were associated positively and non-significantly with the loyalty of patients in Paulo's Hospital.

Generally, in the case of St. Paulo's hospital millennium medical college's medical health care service provision the patients' loyalty of this hospital and the five service quality dimensions namely assurance, responsiveness, reliability, tangibility and empathy were positively associated or correlated as clearly seen from the out puts of multiple partial correlation analysis in table 8

above. Therefore Paulo's hospital should evaluate and emphasize the five service quality dimensions to get the loyalty of its patients. Thus the **hypothesis (H1):** "Each dimension of the service quality was positively associated with patients' satisfaction and patients' loyalty, was **proved true** (Table 7 and 8).

4.3.4. Correlations among service quality, satisfaction and loyalty.

Health service quality, patients' loyalty and patients' satisfactions were correlated among each other as shown in table 9 bellow by controlling the impacts of respondents' gender, age and respondents' educational status on the correlated variables in Paulo's hospital. The outputs from the multiple partial correlation analysis were presented in table 9 bellow. These analyzed facts were done from the information collected from St. Paulo's hospital millennium medical college on its medical health care services. The analysis was done through the use of SPSS16.0 statistical package. The analyzed facts were summarized, interpreted and presented in line with the hypothesis, basic research questions and the objective of this study.

Table9. Multiple partial correlations matrix among quality, loyalty and satisfaction

Controlled variables		Quality	Loyalty	Satisfaction
	Quality correlation	**1.00**	0.904	0.912
Gender	Sign.(2-tailed)	**.**	0.000	0.000
	DF	**0**	379	379
	Loyalty correlation	0.904	**1.00**	0.957
Education	Sign.(2-tailed)	0.000	**.**	0.000
	DF	379	**0**	379
	Satisfaction correlation	0.912	0.957	**1.00**
	Sign.(2-tailed)	0.000	0.000	**.**
Age	DF	379	379	**0**

The correlation was significant at the 0.01 level of significant (2-tailed test)

As clearly seen in table 9 above, the correlation among service quality of medical health care service in Paulos hospital and the repeated use of this hospital by patients was found 0.904. On the other hand the correlation between medical health care service quality and the satisfaction of patients by the medical health care service provided in Paulos hospital was found 0.912. Lastly the correlation between the patients' loyalty to this hospital or the repeated use of this hospital by

patients and that of the satisfaction of patients by the medical health care services provided by this hospital was found 0.957.

Based on the analyzed facts in table 9 above, all these variables were positively and significantly correlated or associated each other, that was the three variables namely service quality, patients' satisfaction and patients' loyalty have positively correlated or associated in Paulos hospital. These three variables were also significantly correlated or significantly associated, that was the correlation among service quality, patients' satisfactions and patients' loyalty were significantly correlated at 0.01 level of significant. This implied that, the researcher was confident that 99% of the time the service quality, patients' satisfactions and patients' loyalty were positively and significantly correlated in this hospital or there were the probability of less than 1 times in 100 that service quality, patients' satisfactions and patients' loyalty have no positive and significant association**.**

Therefore, it was concluded that patients' loyalty has very strong correlation or association with patients' satisfaction than it has with service quality although both of the associations were positive and significant. **Thus**, St. Paulo's hospital millennium medical college should evaluate and emphasize the service quality and patients' satisfaction of the hospital to keep up the loyalty of patients in a better way through the improvement of service quality thereby patients' satisfaction. This was because the existence of the repeated use of this hospital by patients implied the existence of service quality and the satisfaction of patients in this hospital. Thus the "**hypothesis (H2)**: Patients' loyalty was positively associated with both service quality and patients' satisfaction" was **proved true** (Table 9).

4.3.5. Satisfaction regressed on the five service quality dimensions

4.3.5.1. Multiple regressions model -patient satisfaction at quality dimensions

Regression was asymmetrical relationships among variables which was cause and effect relationships. In this section the multiple linear regression model in table 10 below, the correlation coefficient (R), the squared value of R (R^2), the adjusted R^2 and the standard error were presented. The analysis was done through the use of SPSS 16.0 statistical package. The collected information were analyzed, summarized, interpreted and presented in line with the hypothesis, basic research questions and the objective of this study.

Table10. Regression model summary-patient satisfaction at service quality dimensions

Model	R	R square	Adjusted R square	Std. Error of estimate
1	0.992	0.984	0.984	0.171

In this multiple linear regression analysis, the predictors' variables or the independent variables were tangibility, responsiveness, empathy, assurance and reliability dimensions of the service quality and the dependent variable was patients' satisfaction. The outputs of the multiple linear regression analysis given in table 10 above was indicated some facts about the five independent variables and one dependent variable as well as their relationships. The multiple correlation coefficients (R = 0.992) in table 10 above indicated the highest strength of the association of patients' satisfaction or dependent variable with each of the service quality dimension in pair and it was also indicated the highest strength of the association among each service quality dimension or predictor variables themselves in Paulo's hospital medical health services.

The squared value of *R* or the coefficients of multiple determinations ($R^2 = 0.984$) as an output of the multiple regression analysis indicated that the extents of variability on patients' satisfaction from medical health care services received by patients that were created jointly by the five service quality dimensions of Paulos hospital. The value of R^2 (0.984) described the goodness-of-fit of the information which were used in the sample regression line to the population regression line. The value of R^2 (0.984) explained the amount of patients satisfaction jointly explained by the set of predictor or independent variables namely reliability, responsiveness, assurance, empathy and tangibility in Paulos hospital. The value of R^2 (0.984) indicated that 98.40% of the variability or variance created on the patients' satisfaction in Paulo's hospital or on the dependent variable that was explained jointly by the five independent variables namely reliability, responsiveness, assurance, empathy and tangibility in this hospital.

Thus R^2 (0.984) was the ratio between the explained variability to the total variability both of them created on the dependent variable or on patients' satisfaction. The variability 100 % _98.40% = 1.60% was explained by the variables other than incorporated variables in the model. The effects of these random variables could represented by (e) in the multiple regression equation and it was the ratio of the unexplained variability in patients' satisfaction to the total variability created in patients' satisfaction. The standard error of the estimate (0.171) indicated the variability of the coefficients' value from sample to sample or its consistency or accuracy of the sampling and it could measure the reliability or precision of the estimators. This smaller

standard error (0.171) in table 10 above indicated, the smaller general variability, the greater uniformity of sampling distribution and hence, the greater was the reliability or precision of the sample.

4.3.5.2. ANOVA of satisfaction when it regressed on quality dimensions

The table 11 below displayed the outputs of the multiple linear regressions. The sum squares due regression, the residual sum square, the total sum squares and their corresponding degree of freedom were clearly displayed in table11. This table also displayed the mean square of regression and the residual as well as the computed F-value. The analyzed facts were summarized, interpreted and presented in line with the hypothesis, basic research questions and the objective of this study. These outputs of the multiple linear regressions told us the facts about patients' satisfaction as dependent variable and the five dimensions of service quality as independent variables as well as their relationship.

Table11.ANOVA of satisfaction when it regressed on service quality dimension

Model	Sum of squares	DF	Mean square	F	Sig
Regression	674.003	5	134.801	4.617	0.000
Residual	11.036	378	0.029		
Total	685.039	383			

R^2 was significant at 0.01level of significance.

The outputs in table11 above were the results of the multiple linear regression analysis through the use of SPSS 16.0 statistical package. The five service quality dimensions such as tangibility, responsiveness, empathy, assurance and reliability were the predictor or independent variables and the patients' satisfaction in Paulos hospital was dependent variables. The sum of squares of regression (674.003) was the variations created on the patients' satisfaction due to the independent variables or due to the predictor variables or total variations explained jointly by the independent variables or the five service quality dimensions. When the ratio of sum square of regression (674.003) to the total sum of squares (685.039) was taken the result was exactly equal to R^2 (0.984) which was the ratio of explained variation to the total variation created in the satisfaction of patients in Paulo's hospital. The sum of squares of the residual (11.036) was the variation created in patients' satisfaction due the random error or it was unexplained variation.

The ratio of sum of squares of the residual (11.036) to total sum square (685.039) was equal to the (e) value given above which was 100 % _98.40% = 1.60%.

The sum squares of total (685.039) were the total variations created in patients' satisfaction jointly by the random errors and by the independent variables or was the sum of explained and unexplained variations. 5, 387, and 383 were degree of freedom (DF) for the regression, residual and total respectively, which were the number of values that can vary in any calculation of the statistics for variables.

The mean square of the regression (134.801) was the variation in the regression (674.003) divided by its corresponding degree of freedom (5). The mean square of the regression (134.801) thus was the explained variation per its degree of freedom. In the same way, the mean square of the residual (0.029) was the variation in the residual (11.029) that was the unexplained variation per its degree of freedom.

The F-value (4.617) in table11 was the ratio of **explained variation to unexplained** variation after they were divided by their corresponding degree of freedom. This ratio tested the goodness of fit of the coefficients of determination (R^2) that was it tested how well the five service quality dimensions explained the satisfaction of the patients in Paulo's hospital. The computed F-value (4.617) in table11 above was compared with the tabulated F-value or critical value. Since the computed F-vale (4.617) was greater than the tabulated F-value, the coefficient of determination (R2) was significant. This i**mplied** that, the five service quality dimensions namely tangibility, responsiveness, empathy, assurance and reliability jointly predicted or explained significantly the patients' satisfaction in Paulo's hospital.

4.3.5.3. Co**efficients of dimensions when satisfaction regressed on them**

In the table 12 below the coefficient table, the coefficients and significance test were presented in line with the hypothesis, basic research questions and the objective of this study. The coefficients of reliability, responsiveness, assurance, empathy and tangibility as independent variables in the multiple linear regressions model were clearly displayed. The corresponding significant tests were also displayed for each coefficient of the five service quality dimensions as well for the constant parameter. The standardized and unstandardized coefficients were separately presented and the standard error also given for each variables.

Table12. Co**efficients of dimensions when patients' satisfaction regressed on them**

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error	Beta		
1 (constant)	-0.040	0.024		-1.649	0.100
Reliability	0.119	0.025	0.122	4.769	0.000
Responsiveness	0.052	0.056	0.051	0.920	0.358
Assurance	0.633	0.036	0.639	17.38	0.000
Empathy	0.325	0.036	0.319	8.970	0.000
Tangibility	0.249	0.030	0.240	8.206	0.000

In the above regression model the service quality dimensions such as reliability, responsiveness, assurance, empathy and tangibility were independent or predictor variables. On the other hand patients' satisfaction was dependent variable which was predicted jointly by the independent variables. The coefficient of each independent variable such as the coefficients of reliability, responsiveness, assurance, empathy and tangibility clearly indicated the amounts of change on the dependent variable for the unit change on each independent variable. To observe the change on the dependent variable created by a unit change on one independent variable the other independent variables held constant in the model and the same was true for the other variables. The two most multicolianear dimensions responsiveness and empathy with reliability and tangibility respectively were also held constant.

The problem with the interpretation of unstandardized coefficients was that their values were dependent on the scale of the variables for which they were calculated, which made it difficult to assess the relative level of effect of independent variables through a comparison of unstandardized coefficients. But the values of standardized coefficients or Beta coefficients were based on data expressed in standardized or Z- score form and thus, all the variables expressed in the same units of measurement. When the variables expressed in the same scale they could be better predictor of the dependent variables than when variables expressed in different scale of measurements. Thus this research used the standardized coefficients of the independent variables to compare the level of relationship between the effects of each independent variable and the dependent variable of this research.

From the outputs of analyzed facts shown in table 12 above, the relative standardized coefficients for reliability, responsiveness, assurance, empathy and tangibility of the service quality dimensions in the multiple linear regressions model were 0.122, 0.051, 0.639, 0.319 and 0.240 respectively. The multiple linear regression equation could be given through the use of standardized coefficients such as 0.122, 0.051, 0.639, 0.319 and 0.240 as the coefficients for reliability, responsiveness, assurance, empathy and tangibility respectively and through the use of the unstandardized coefficient value (-0.040) of the constant term as the intercept of the equation and by using (e) to represent unexplained variance in the patients' satisfaction in the equation.

As clearly seen in table 12 above, the standardized coefficient of reliability (0.122) as an independent variable indicated that a unit change on reliability could bring a change of 0.122 on patients' satisfaction when responsiveness, assurance, empathy, and tangibility were held constant. As reliability increased by a unit amount patients' satisfactions increased by 0.122 and when reliability decreased by a unit amount patients' satisfactions decreased by 0.122. The standard error of reliability (0.025) indicated that the amounts of variability of the coefficients of reliability (0.122) from sample to sample. The T-test value (4.769) for reliability dimension of service quality was significant at 0.01 significant levels. Because the computed T-value was greater than the tabulated T-value at 1% level of significant. **Thus** the reliability dimension of service quality was significantly influenced or predicted the satisfaction of the patients' in Paulos hospital with the standard error of 0.025.

The standardized coefficient of responsiveness (0.051) with standard error (0.056) was indicated that a unit change on responsiveness could bring a change of 0.051 on patients' satisfaction when reliability, assurance, empathy, and tangibility held constant. As responsiveness increased by a unit amount patients' satisfactions increased by 0.051 and when responsiveness decreased by a unit amount patients' satisfactions decreased by 0.051. The standard error (0.056) showed the amounts of variability of the coefficient of responsiveness (0.051) from sample to sample. The T-test value (0.920) for responsiveness dimension of service quality was non-significant at 0.01 significant levels. Because the computed T-value was less than the tabulated T-value at 1% level of significant. **Thus** the responsiveness dimension of service quality was non-significantly

influenced or predicted the satisfaction of the patients' in Paulos hospital with the standard error of 0.056.

The standardized coefficient of assurance (0.639) with the standard error (0.036) indicated that a unit amount of change on assurance brought a change of 0.639 on patients' satisfaction when responsiveness, reliability, empathy, and tangibility held constant. As assurance (as independent variable) increased by a unit amount, patients' satisfactions increased by 0.639. As assurance decreased by a unit amount patients' satisfactions decreased by 0.639. The standard error (0.036) of assurance indicated the amount of change in the standardized coefficients of assurance (0.639) from sample to sample. The T-test value (17.380) for assurance dimension of service quality was significant at 0.01 significant levels. Because the computed T-value was greater than the tabulated T-value at 1% level of significant. **Thus** the assurance dimension of service quality was significantly influenced or predicted the satisfaction of the patients' in Paulos hospital with the standard error of 0.036.

The standardized coefficient of empathy (0.319) with standard error (0.036) indicated that a unit amount of change on empathy brought a change of 0.319 on patients' satisfaction when responsiveness, assurance, reliability, and tangibility held constant. As empathy increased by a unit amount, patients' satisfactions increased by 0.319 and when empathy decreased by a unit amount, patients' satisfactions decreased by 0.319. The standard error (0.036 of empathy indicated that the amount of change in the standardized coefficients of empathy (0.319) from sample to sample. The T-test value (8.970) for empathy dimension of service quality was significant at 0.01 significant levels. Because the computed T-value was greater than the tabulated T-value at 1% level of significant. **Thus** the empathy dimension of service quality was significantly influenced or predicted the satisfaction of the patients' in Paulos hospital with standard error 0.036.

The standardized coefficient of tangibility (0.240) with standard error (0.030) indicated that a unit amount of change on tangibility brought a change of 0.240 on patients' satisfaction when responsiveness, assurance, empathy, and reliability held constant. As tangibility increased by a unit amount patients' satisfactions increased by 0.240 and when tangibility decreased by a unit amount patients' satisfactions decreased by 0.240. The standard error (0.030) of tangibility indicated that the amount of change in the standardized coefficients of tangibility (0.240) from

sample to sample. The T-test value (8.206) for tangibility dimension of service quality was significant at 0.01 significant levels. This was due to the fact that, the computed T-value was greater than the tabulated T-value at 1% level of significant level. Thus the tangibility dimension of service quality was significantly influenced or predicted the satisfaction of the patients' in Paulos hospital with the standard error of 0.030.

From the analyzed facts in table12 above, the largest level of change (0.639) on the satisfaction of patients was brought by a unit change on assurance of the service quality dimension. The probability of obtaining a T-value of 17.380 or greater was about 0.000. This indicated that the coefficient of assurance in this multiple regression model was statistically significant at 0.01 levels of significance. That was the assurance dimension of service quality was significantly influenced or predicted the satisfaction of Paulos hospital's patients with the medical health care services provided by the hospital. This relative highest level of relationship (0.639) between patients' satisfaction as dependent variable and assurance as an independent variable should got the g**reatest emphasis** by the management of the hospital to optimize the patients' satisfaction in this hospital, which were the base and the problem statements of this research.

The second largest level of change (0.319) on the satisfaction of patients was brought by the empathy of the service quality dimension. The probability of obtaining a T-value of 8.970 or greater was about 0.000. This indicated that the coefficient of empathy in this multiple regression model was statistically significant. That was the empathy dimension of service quality was significantly influenced the satisfaction of Paulos hospital's patients with the medical health care services provided by the hospital next to assurance. This relative second highest level of relationship (0.319) between patients' satisfaction as dependent variable and empathy as an independent variable should got the second **greatest emphasis** next to assurance by the management of the hospital to optimize the patients' satisfaction in this hospital, which was the base and the problem statements of this research..

The third largest level of change (0.240) on the satisfaction of patients was brought by the tangibility of the service quality dimension. The probability of obtaining a T-value of 8.206 or greater was about 0.000. This indicated that the coefficient of tangibility in this multiple regression model was significant at 0.01 levels of significance. That was the tangibility dimension of service quality was significantly influenced the satisfaction of Paulos hospital's patients with the medical health care services provided by the hospital. This relative third highest

but significant level of relationship (0.240) between patients' satisfaction as dependent variable and tangibility as an independent variable should got the third greatest emphasis next to assurance and empathy by the management of the hospital to optimize the patients' satisfaction in this hospital. **Thus**, as shown in table 12 above, assurance, empathy and tangibility as independent or predictor variables with standardized coefficients of 0.639, 0.319 and 0.240 respectively found the greater predictor of patients' satisfactions in St. Paulo's hospital. On the other hand, the smallest level of change (0.051) on the satisfaction of patients was brought by a unit change on responsiveness of the service quality dimension.

In conclusion, as clearly seen in table 10 above, 98.40% of patients' satisfaction was explained jointly by the five service quality dimensions. F-vale (4.617) (table11) of 98.40% was significant at 0.01 levels of significance. On the other hand, among the service quality dimensions, the largest level of change on patients' satisfaction was brought by a unit amount of change of the coefficient of assurance (0.639) (table 12) and it was statistically significant with a t-value of 17.380 ((table 12)) at 0.01 level of significance. The smallest level of change on patients' satisfaction was brought by a unit amount of change of the coefficient of responsiveness (0.051) as it also clearly seen from table12 above.

Thus, the **hypothesis H3:** "Among the service quality dimensions', the largest level of change on both patients' satisfaction and patients' loyalty was brought by a unit change of the coefficient of assurance" was **proved true,** that was the largest level of change on patients' satisfaction brought by a unit change of assurance was 0.639 (table 12) and the largest level of change on patients' loyalty brought by a unit change of assurance was (0.576) (Table15). Similarly, the basic research question **(1)** that said, " to what extent patients' satisfaction was explained by the five service quality dimensions?'' was **addressed**, that was 98.40% of patients' satisfaction was jointly explained by the five service quality dimensions (Table 10).

4.3.6. Loyalty regressed on the five service quality dimensions

4.3.6.1. Regression model when loyalty regressed at quality dimensions

This section of the multiple linear regression models in table 13 below, the analyzed facts were summarized, interpreted and presented in line with the hypothesis, basic research questions and the objective of this study. The correlation coefficient (R), the squared value of R (R^2), the

adjusted R^2 and the standard error of the estimates were presented. The analysis was done through the use of SPSS 16.0 statistical package.

Table13. Regression model summary-patient loyalty at service quality dimensions

Model	R	R square	Adjusted R square	Std. Error of estimate
1	0.991	0.983	0.982	0.179

For this multiple linear regression analysis, the predictors' or independent variables were tangibility dimension, responsiveness dimension, empathy dimension, assurance dimension and reliability dimension of the service quality and the dependent variable was patients' loyalty. The outputs of the multiple linear regression analysis given in table 13 above were indicated facts about the five independent variables and dependent variable as well as their relationships. The multiple correlation coefficients (R = 0.991) in table 13 above indicated the relative highest strength of the association of patients' loyalty or dependent variable with each of the service quality dimension in pair and it was also indicated the highest strength of the association among each service quality dimension or predictor variables themselves.

The adjusted squared value of *R* or the coefficients of multiple determinations (R^2 = 0.982) as an output of the multiple regression analysis indicated that the extents of variability created on patients' loyalty that was the variability of repeated use of the medical health care services of the hospital by patients. The value of R^2 (0.982) explained the goodness-of-fit of the information which were used in the sample regression line in comparison to the population regression line. The value of R^2 (0.982) explained the amount of patients loyalty jointly explained by reliability, responsiveness, assurance, empathy and tangibility in Paulos hospital. The value of R^2 (0.982) indicated that 98.20% of the variability or variance created on the repeated use of the hospital by patients or on the dependent variable was explained jointly by reliability, responsiveness, assurance, empathy and tangibility.

Thus R^2 (0.982) was the ratio between the explained variability to the total variability both of them created on the dependent variable or on the repeated use of the hospital by patients. The variability 100 % _98.20% = 1.80% was explained by the variables other than incorporated variables in the regression model. The effects of these random variables could represented by (e) in the multiple regression equation and it was the ratio of the unexplained variability in patients' loyalty to the total variability created in patients' loyalty. The standard error (0.179) of the estimate (0.982) indicated the variability of the coefficients' value from sample to sample or

their consistency or accuracy of the sampling and it could measure the reliability or precision of the estimators.

4.3.6.2. ANOVA of loyalty when it regressed on quality dimensions

In this section table14 below displayed, the sum of squares due to regression, the residual sum square, total sum squares and their corresponding degrees of freedom. This table14 also displayed the mean square of regression and the residual as well as the computed F-value. The analyzed and summarized facts were also interpreted and presented.

Table14. ANOVA of loyalty when it regressed on service quality dimensions

Model	Sum of squares	DF	Mean square	F	Sig
Regression	682.428	5	136.486	4.277	0.000
Residual	12.062	378	0.032		
Total	694.490	383			

The results in table14 above were the results of the multiple linear regression analysis through the use of SPSS 16.0 statistical package. The five service quality dimensions: tangibility, responsiveness, empathy, assurance and reliability were the independent variables and the patients' loyalty was the dependent variable.

The sum of squares of regression (682.428) was the variations created on the repeated use of Paulo's hospital by specific patients that were explained jointly by the independent variables or by the five service quality dimensions. When the ratio of the sum square of regression (682.428) to the total sum of squares (694.490) was taken, its result was equal to R^2 (0.982). It was the ratio of explained variation to the total variation created in the repeated use of this hospital by specific patients. The sum of squares of the residual (12.062) was the variation created in patients' loyalty due the random error or it was unexplained variation. The ratio of sum of squares of the residual (12.062) to total sum square (694.490) was equal to the (e) value which was 100 % _98.20% = 1.80%. The total sum squares (694.490) were the total variations created in patients' loyalty jointly by the random errors (e) and by the independent variables or the total sum squares (694.490) were the sum of explained and unexplained variations.

The mean square of the regression (136.486) was the variation in the regression (682.428) divided by its corresponding degree of freedom that was mean square of the regression (136.486) was the

explained variation per degree of freedom. In the same way, the mean square of the residual (0.032) was the variation in the residual (12.062) that was the unexplained variation per its degree of freedom.

The F-value (4.277) in table14 was the ratio of **explained variation to unexplained** variation after they were divided by their corresponding degree of freedom. This ratio tested the goodness of fit of the coefficients of determination (R^2) that was it tested how well the five service quality dimensions explained the repeated use of Paulo's hospital by specific groups of patients. The computed F-value (4.277) in table14 above was compared with the tabulated F-value. Since the computed F-vale (4.277) was greater than the tabulated F-value, the coefficients of determination (R^2) were significant at 0.01 level of significant. This **implied** that, the five service quality dimensions namely tangibility, responsiveness, empathy, assurance and reliability jointly predicted or **explained significantly** the patients' loyalty in Paulo's hospital.

4.3.6.3. Coefficients of dimensions when patients' loyalty regressed on them

In the table 15 below the coefficient table, the coefficients and significance test were presented. The coefficients of reliability, responsiveness, assurance, empathy and tangibility as independent variables in the multiple linear regressions model were clearly displayed. The corresponding significant tests were also displayed for each coefficient of the five service quality dimensions as well for the constant parameter. The standardized and unstandardized coefficients were separately presented and the standard error also given for each coefficient.

Table15. Co**efficients of the dimensions when patients' loyalty regressed on them**

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error	Beta		
1 (constant)	-0.054	0.025		-2.153	0.032
Reliability	0.010	0.026	0.010	0.373	0.710
Responsiveness	0.168	0.059	0.164	2.857	0.005
Assurance	0.586	0.030	0.576	14.825	0.000
Empathy	0.275	0.038	0.267	7.245	0.000
Tangibility	0.423	0.032	0.413	13.384	0.000

The five service quality dimensions reliability, responsiveness, assurance, empathy and tangibility were independent or predictor variables. On the other hand patients' loyalty was

dependent variable which was predicted jointly by the independent variables. The coefficient of each independent variable clearly indicated the amounts of change on the dependent variable for the unit change on each independent variable. The change on the dependent variable per unit change on one of the independent variable was observed by holding other variables constant. The two most Multicollinearity dimensions responsiveness and empathy with reliability and tangibility respectively were also held constant. From the outputs of analyzed facts shown in table 15 above, the relative standardized coefficients for reliability, responsiveness, assurance, empathy and tangibility of the service quality dimensions were 0.010, 0.164, 0.576, 0.267 and 0.413 respectively.

The standardized coefficients of reliability which was 0.010 as independent variable indicated that a unit amount change on reliability could brought a change of 0.010 on patients' loyalty when responsiveness, assurance, empathy and tangibility held constant. As reliability increased by a unit amount patients' loyalty increased by 0.010 and when reliability decreased by a unit amount patients' loyalty decreased by 0.010. The standard error of reliability (0.026) indicated that the amounts of variability of the coefficients of reliability (0.010) from sample to sample. The T-test value (0.373) for reliability dimension of service quality was non-significant at 0.01 significant levels. Because the computed T-value was less than the tabulated T-value at 1% level of significant. **Thus** the reliability dimension of service quality was positively but non-significantly influenced or predicted the repeated use of this hospital by specific patients' group.

The standardized coefficient of responsiveness (0.164) with standard error (0.059) was indicated that a unit amount change on responsiveness could bring a change of 0.164 on patients' loyalty when reliability, assurance, empathy, and tangibility held constant. As responsiveness increased by a unit amount patients' loyalty increased by 0.164 and when responsiveness decreased by a unit amount patients' loyalty decreased by 0.164. The standard error (0.059) showed the amounts of variability of the coefficient of responsiveness (0.160) from sample to sample. The T-test value (2.857) for responsiveness dimension of service quality was non-significant at 0.01 significant levels. Because the computed T-value was less than the tabulated T-value at 1% level of significant. **Thus** the responsiveness dimension of service quality was non-significantly influenced or predicted the repeated use of this hospital by the patients' in Paulos hospital.

The standardized coefficients of assurance (0.576) with the standard error (0.030) indicated that a unit amount of change on assurance brought a change of 0.576 on patients' loyalty when responsiveness, reliability, empathy, and tangibility held constant. As assurance (as independent variable) increased by a unit amount patients' loyalty increased by 0.576. As assurance decreased by a unit amount patients' loyalty decreased by 0.576. The standard error (0.030) of assurance indicated the amount of change in the standardized coefficients of assurance (0.576) from sample to sample. The T-test value (14.825) for assurance dimension of service quality was significant at 0.01 significant levels. Because the computed T-value was greater than the tabulated T-value at 1% level of significant. **Thus** the assurance dimension of service quality was significantly influenced or predicted the patients' loyalty in Paulos hospital with the standard error of 0.030.

The standardized coefficients of empathy (0.267) with standard error (0.038) indicated that a unit amount of change on empathy brought a change of 0.267 on patients' loyalty when responsiveness, assurance, reliability, and tangibility held constant. As empathy increased by a unit amount, patients' loyalty increased by 0.267 and when empathy decreased by a unit amount, patients' loyalty decreased by 0.267. The standard error (0.038 of empathy indicated the amount of change in the standardized coefficients of empathy (0.267) from sample to sample. The T-test value (7.245) for empathy dimension of service quality was significant at 0.01 significant levels. Because the computed T-value was greater than the tabulated T-value at 1% level of significant. **Thus** the empathy dimension of service quality was significantly influenced or predicted the repeated use of this hospital by patients.

The standardized coefficients of tangibility (0.413) with standard error (0.032) indicated that a unit amount of change on tangibility brought a change of 0.413 on patients' loyalty when responsiveness, assurance, empathy, and reliability held constant. As tangibility increased by a unit amount patients' satisfactions increased by 0.413 and when tangibility decreased by a unit amount patients' satisfactions decreased by 0.413. The standard error (0.032) of tangibility indicated the amount of change in the standardized coefficients of tangibility (0.413) from sample to sample. The T-test value (13.384) for tangibility dimension of service quality was significant at 0.01 significant levels. This was due to the fact that, the computed T-value was greater than the tabulated T-value at 1% level of significant level. **Thus** the tangibility dimension

of service quality was significantly influenced or predicted the repeated use of Paulos hospital by specific patients.

From the analyzed facts in table 15 above, the largest level of change (0.576) on the satisfaction of patients was brought by a unit amount of change on assurance of the service quality dimension. The probability of obtaining a T-value of 14.825 or greater was about 0.000. This implied that that the coefficient of assurance in this multiple regression model was significant at 0.01 level of significant. That was the assurance dimension of service quality was statistically significantly influenced or predicted the loyalty of patients of Paulos hospital. This relative highest level of relationship (0.576) between patients' loyalty as dependent variable and assurance as an independent variable should got the **greatest emphasis** by the management of Paulo's hospital to optimize the repeated use of this hospital by patients, which were the base and the problem statements of this research.

The second largest level of change (0.413) on the patients' loyalty was brought by the tangibility of the service quality dimension. The probability of obtaining a T-value of 13.384 or greater was about 0.000. This indicated that the coefficient of tangibility in this multiple regression model was significant. That was the tangibility dimension of service quality was significantly influenced the patients loyalty in Paulos hospital. This relative second highest level of relationship (0.413) between patients' loyalty as dependent variable and responsiveness as an independent variable should got the second **greatest emphasis** next to assurance and empathy by the management of Paulo's hospital to optimize the patients' loyalty in this hospital.

The third largest level of change (0.267) on the patients' loyalty was brought by the empathy of the service quality dimension. The probability of obtaining a T-value of 7.245 or greater was about 0.000. This indicated that the coefficient of empathy in this multiple regression model was significant. That was the empathy dimension of service quality was significantly influenced the patients' loyalty in this hospital next to assurance. This relative third highest level of relationship (0.267) between patients' loyalty as dependent variable and empathy as an independent variable should got the second **greatest emphasis** next to assurance by the management of the Paulos hospital to optimize the patients' loyalty in this hospital, which was the base and the problem statements of this research.

Thus, as shown in table 15 above, assurance, tangibility and empathy as independent or predictor variables with standardized coefficients of 0.576, 0.413 and 0.267 respectively found the greater

predictor of patients' loyalty in St. Paulo's hospital. On the other hand, the smallest level of change (0.010) on patients' loyalty was brought by a unit change on reliability of the service quality dimension.

In conclusion, as clearly seen in table 13 above, 98.20% of patients' loyalty was explained jointly by the five service quality dimensions. The F-vale 4.277 (table14) of 98.20% was significant at 0.01 levels of significance. Similarly as it was seen in table 13 above, 98.20% of patients' loyalty was explained jointly by the five service quality dimensions. On the other hand, among the service quality dimensions, the largest level of change on patients' satisfaction (0.639) was brought by a unit amount of change in assurance and the smallest level of change on patients' satisfaction (0.051) was brought by a unit amount of change in responsiveness as they were seen from table 12 above. Similarly, the largest level of change on patients' loyalty (0.576) was brought by a unit amount of change in assurance and the smallest level of change on patients' loyalty (0.010) was brought by a unit amount of change in reliability as it clearly seen from table 15 above.

Thus, the hypothesis "**(H3)**: Among the service quality dimensions', the largest level of change on both patients' satisfaction and patients' loyalty was brought by a unit change of the coefficient of assurance" was **proved true,** that was the largest level of change on patients' satisfaction (0.639) and on patients' loyalty (0.576) was brought by a unit change of assurance (Table 12 and 13 respectively). On the other hand, the basic research question **(1)** that said, '' to what extent patients' satisfaction was explained by the five service quality dimensions?'' **was addressed**, that was the five service quality dimensions explained patients' satisfaction by **98.40%** (Table 10). The basic research question **(2)** that said, **''**to what extent patients' loyalty was explained by the five service quality dimensions? '' **was addressed**, that was the five service quality dimensions explained patients' loyalty by **98.20%** (Table13). Similarly, the basic research question **(4)** that said, ''which dimensions' coefficient of service quality was brought the largest and smallest level of change on patients' satisfaction and patients' loyalty per unit change of dimensions?'' **Was addressed,** that was the largest level of change was brought by assurance (0.639) and the smallest was brought by responsiveness (0.051) on patients' satisfaction (Table12). In the same way, the largest level of change was brought by assurance (0.576) and the smallest was brought by reliability (0.010) on patients' loyalty (Table15).

4.3.7. Loyalty regressed on patients' satisfaction and service quality

4.3.7.1. Regressions model- when loyalty regressed on satisfaction & quality.

In this section in table 16 below, the analyzed facts were summarized, interpreted and presented in line with the hypothesis, basic research questions and the objective of this study. More specifically the multiple correlation coefficient (R), the squared value of R (R^2), adjusted R^2 and the standard error of the estimates were analyzed, summarized and presented in table 16 below and the analyzed facts were interpreted.

Table16. Regression model summary-patient satisfaction at service quality & satisfaction

Model	R	R square	Adjusted R square	St. error of estimate
1	0.994	0.988	0.988	0.146

For this multiple linear regression analysis, the predictors' or independent variables were patients' satisfaction and service quality but the dependent variable was patients' loyalty. The outputs of the multiple linear regression analysis given in table 16 above were indicated facts about the patients' satisfaction, service quality and patients' loyalty as well as their relationships. The multiple correlation coefficients (R = 0.994) in table 16 above indicated the relative highest strength of the association of patients' loyalty or dependent variable with independent variables and it was also indicated the highest strength of the association among independent variables.

The adjusted squared value of *R* or the coefficients of multiple determinations ($R^2 = 0.988$) as an output of the multiple regression analysis indicated that the extents of variability created on patients' loyalty that was the variability of repeated use of the medical health care services by patients. These received medical health care services were explained jointly by patients' satisfaction and service quality of Paulos hospital. The value of R^2 (0.988) was the amount of patients loyalty jointly explained by patients' satisfaction and service quality in Paulos hospital. The value of R^2 (0.988) indicated that 98.80% of the variability or change created on the repeated use of the hospital by patients that was explained jointly by patients' satisfaction and service quality in Paulo's hospital.

Thus R^2 (0.988) was the ratio between the explained variability to the total variability both of them created on the dependent variable or on the repeated use of the hospital by patients. The variability 100 % _98.80% = 1.20% was created by the variables other than incorporated variables in the regression model. The effects of these random variables could represented by (e)

in the multiple regression equation and it was the ratio of the unexplained variability in patients' loyalty to the total variability created in patients' loyalty. The standard error (0.146) of the estimate indicated the variability of the coefficients' value from sample to sample or their consistency or accuracy of the sampling and it could measure the reliability or precision of the estimators.

4.3.7.2. ANOVA of loyalty when it regressed on quality and satisfaction

In this section in the table17 below, the analyzed facts were summarized, interpreted and presented in line with the hypothesis, basic research questions and the objective of this research. Specifically, the sum squares due regression, the residual sum square, the total sum squares and the mean square of regression, the mean square of the residual; the computed F-value and the p-value were analyzed, summarized, interpreted and presented.

Table17. ANOVA of loyalty when it regressed at service quality & satisfaction

Model	Sum of squares	DF	Mean square	F	Sig
Regression	686.372	2	343.186	1.611	0.000
Residual	8.118	381	0.021		
Total	694.490	383			

The results in table17 above were the results of the multiple linear regression analysis through the use of SPSS 16.0 statistical package. The patients' satisfaction and service quality were independent variable. The repeated use of Paulo's hospital by specific group of patients or patients' loyalty was dependent variable.

The sum of squares of regression (686.372) was the variations created on the repeated use of Paulo's hospital by specific patients that were explained jointly by patients' satisfaction and service quality. When the ratio of sum square of regression (686.372) to the total sum of squares (694.490) was taken, its result was equal to R^2 (0.988). It was the ratio of explained variation to the total variation created in the repeated use of this hospital by specific group of patients. The sum of squares of the residual (8.118) was the variation created in patients' loyalty due the random error or it was unexplained variation. The ratio of sum of squares of the residual (8.118) to total sum square (694.490) was equal to the (e) value which was 100 % _98.80% = 1.20%. The total sum squares (694.490) were the total variations created in patients' loyalty jointly by the

random errors (e) and by the independent (service quality and patients' loyalty) variables or they were the sum of explained and unexplained variations.

The mean square of the regression (343.186) was the variation in the regression (686.372) divided by its corresponding degree of freedom that was the mean square of the regression (343.186) was the explained variation per its corresponding degree of freedom. In the same way, the mean square of the residual (0.021) was the variation in the residual (8.118) per its corresponding degree of freedom that was the unexplained variation per its degree of freedom.

The F-value (1.611) in table17 was the ratio of **explained variation to unexplained** variation after they were divided by their corresponding degree of freedom. This ratio tested the goodness of fit of the coefficients of determination (R^2 = 0.988) (table 16) that was it tested how well the patients' satisfaction and service quality explained the repeated use of Paulo's hospital by specific group of patients. The computed F-value (1.611) in table17 above was compared with the tabulated F-value. Since the computed F-vale (1.611) was greater than the tabulated F-value, the coefficient of determination (R^2) was significant at 0.01 level of significant. This **implied** that, patients' satisfaction and service quality jointly predicted or explained significantly the patients' loyalty in Paulo's hospital.

4.3.7.3. Coefficients of satisfaction and quality when loyalty regressed on them

In this section table 18 below, the coefficients of service quality and patients' satisfaction and their corresponding standard error and t-value were clearly displayed. Unstandardized and standardized coefficients were separately presented and finally the interpretations from the analyzed facts were presented in line with the hypothesis, basic research questions and the objective of this research.

Table18. Co**efficients of satisfaction & quality when loyalty regressed on them**

Model	Unstandardized coefficients		Standardized coefficients		
	B	Std. Error	Beta	T	Sig.
1 (constant)	-0.012	0.019		-0.602	.547
Service quality	0.201	0.034	0.196	5.950	.000
Satisfaction	0.806	0.033	0.801	24.374	.000

In the above table 18 patients' satisfaction and service quality were independent or predictor variables. On the other hand patients' loyalty or the repeated use of Paulo's hospital by specific group of patients was dependent variable. The coefficients of patients' satisfaction and service quality clearly indicated the amounts of change on the dependent variable for a unit change on each independent variable. The change on the patients' loyalty per unit change on one of the independent variable was observed by holding other independent variables constant.

From the outputs of analyzed facts shown in table 18 above, the relative standardized coefficients for patients' satisfaction and service quality were 0.801 and 0.196 respectively. The multiple linear regression equation could be given through the use of standardized coefficients such as 0.801 and 0.196 as the coefficients for patients' satisfaction (0.801) and service quality (0.196) and through the use of the unstandardized coefficient value (-0.012) of the constant term as the intercept of the equation and by using (e) to represent unexplained variance in the patients' loyalty.

The standardized coefficients of service quality (0.196) with standard error (0.034) as independent variable indicated that a unit amount of change on service quality could bring a change of 0.196 on patients' loyalty when patients' satisfaction held constant. As service quality increased by a unit amount patients' loyalty increased by 0.196 and when service quality decreased by a unit amount patients' loyalty decreased by 0.196. The standard error of service quality (0.034) indicated that the amounts of variability of the coefficients of service quality (0.196) from sample to sample. The T-test value (5.950) for service quality was significant at 0.01 significant levels. Because the computed T-value was greater than the tabulated T-value at 1% level of significant. Thus service quality was **significantly influenced** or predicted the repeated use of Paulo's hospital by specific group of patients or patients' loyalty with the standard error of 0.034.

The standardized coefficient of patients' satisfaction (0.801) with standard error (0.033) was indicated that a unit change on patients' satisfaction could bring a change of 0.801 on patients' loyalty when service quality held constant. As patients' satisfaction increased by a unit amount patients' loyalty increased by 0.801 and when patients' satisfaction decreased by a unit amount patients' loyalty decreased by 0.801. The standard error (0.033) showed the amounts of change of the coefficient of patients' satisfaction (0.801) from sample to sample. The T-test value

(24.374) for patients' satisfaction was significant at 0.01 significant levels. Because the computed T-value was greater than the tabulated T-value at 1% level of significant. Thus patients' satisfaction was **significantly influenced** or predicted patients' repeated use of Paulo's hospital with the standard error of 0.033.

From the analyzed facts in table 18 above, the largest level of change (0.801) on patients' loyalty was brought by a unit change on patients' satisfaction. The probability of obtaining a T-value of 24.374 or greater was about 0.000. This indicated that the coefficient of patients' satisfaction in this multiple regression model was significant at 0.01 level of significant. That was patients' satisfaction was significantly influenced or predicted the patients' loyalty in Paulos hospital. This relative highest level of relationship (0.801) between patients' loyalty as dependent variable and patients' satisfaction as an independent variable should got the **greatest emphasis** by the management of the hospital to optimize the patients' loyalty in this hospital, which were the base and the problem statements of this research.

The second large level of change (0.196) on the patients' loyalty was brought by service quality. The probability of obtaining a T-value of 5.950 or greater was about 0.000. This indicated that the coefficient of service quality in this multiple regression model was significant. That was the service quality of Paulo's hospital was significantly influenced the patients' loyalty of Paulos hospital. This relative second highest level of relationship (0.196) between patients' loyalty as dependent variable and service quality as an independent variable should got the second **greatest emphasis** next to patients' satisfaction by the management of Paulo's hospital to optimize the patients' loyalty, which was the base and the problem statements of this research.

In conclusion, as clearly seen in table 16 above, 98.80% of patients' loyalty was explained jointly by the service quality and patients' satisfaction. On the other hand, the level of change brought by patients' satisfaction (0.801) was largest than the level of change brought by service quality (0.196) on patients' loyalty per unit change of service quality and patients' satisfaction (table 18).

Thus, the hypothesis **''H4:** "The largest level of change on the patients' loyalty will bring by patients' satisfaction than service quality per unit change of patients' satisfaction and service quality'' was **proved true (**Table18**)**. The basic research question (**3)** that said "to what extent patients' loyalty will be explained jointly by service quality and patients' satisfaction? " was

addressed that was 98.80% of patients' loyalty was explained jointly by service quality and patients' satisfaction(Table18).

The objective of this research **(4)** that said, **"**to assess the level of change on patients' satisfaction and patients' loyalty per unit change of service quality dimensions, and to assess the level of change on patients' loyalty per unit change of service quality and patients' satisfaction'' was **addressed,** that were: The level of change on patients' satisfaction per unit change of service quality dimensions were (reliability (0.122), responsiveness (0.051), assurance (0.639), empathy (0.319) and tangibility (0.240)) (table 12). Similarly, the level of change on patients' loyalty per unit change of service quality dimensions were (reliability (0.010), responsiveness (0.164), assurance (0.576) empathy (0.267) and tangibility (0.413)) (table 15). Finally, the level of change on patients' loyalty per unit change of service quality and patients' satisfaction were 0.196 and 0.801 respectively (Table18).

4.4. The summary of findings

4.4.1. Major findings of this research

Empathy, tangibility, assurance and reliability dimensions of service quality were positively and significantly associated with the satisfaction of patients but the responsiveness dimension of service quality was associated positively and non-significantly with the satisfaction of patients in Paulo's Hospital (Table 7). Assurance, responsiveness, and reliability of the service quality dimensions were positively and significantly associated with the loyalty of patients. Whereas tangibility and empathy dimensions of service quality were associated positively and non-significantly with the loyalty of patients in Paulo's Hospital (Table 8). Over all patients' loyalty was positively and significantly correlated or associated with both over all service quality and over all patients' satisfaction in the medical health care service of Paulos hospital (Table 9).

A unit amount of change on the assurance, empathy, tangibility, reliability and responsiveness dimensions of service quality brought a change of 0.639, 0.319, 0.240, 0.122 and 0.051 on patients' satisfaction respectively (Table 12) and 98.40% of patients' satisfaction was explained jointly by these dimensions significantly (Table 10). The largest and the smallest level of change were brought by assurance and responsiveness on patients' satisfaction respectively (Table 12).

A unit amount of change on the assurance, tangibility, empathy, responsiveness and reliability dimension of service quality brought a change of 0.576, 0.413, 0.267, 0.164, and 0.01 on

patients' loyalty respectively (Table 15) and 98.20% of patient loyalty was explained jointly by these dimensions significantly (Table13). A largest and a smallest level of change were brought by assurance and reliability on patients' loyalty respectively (Table 15). Table 12 and 15 indicated that the largest levels of change on both patients' satisfaction and patients' loyalty were brought by assurance.

A unit amount of change on the overall patients' satisfaction and overall service quality brought a change of 0.801 and 0.196 on the overall patients' loyalty respectively (Table 18) and 98.80% of patient loyalty was explained jointly by service quality and patient satisfaction significantly (Table16). The largest level of changes on patient loyalty was brought by patients' satisfactions than service quality per unit change of them (Table 18).

4.4.2. Comparison of findings in this research and in previous researches

Empathy, tangibility, assurance and reliability dimensions of service quality were positively and significantly associated with the satisfaction of patients but the responsiveness dimension of service quality was associated positively and non-significantly with the satisfaction of patients in Paulo's Hospital (Table 7). These findings were supported by Lai (2004) tangibility and by Mengi (2009) responsiveness were positively related to customer satisfaction and Zim, (2010) who stated that reliability was important factors of customer satisfaction.

Assurance and reliability of the service quality dimensions were positively and significantly associated with the loyalty of patients. Whereas responsiveness, tangibility and empathy dimensions of service quality were associated positively and non-significantly with the loyalty of patients in Paulo's Hospital (Table 8). This finding was supported by Kumar, Manjunath and Chethan (*2012)* who found that responsiveness, empathy, reliability and tangible as service quality dimensions were positively related to patient's loyalty.

Over all patients' loyalty was positively and significantly correlated or associated with both over all service quality and over all patients' satisfaction in the medical health care service of Paulos hospital (Table 9). This finding was supported by Yee (2010) who found that service quality has a positive influence on customer satisfaction and Parasuraman (1988) who found that patients' service quality perceptions were believed to influence patients' satisfaction positively; positive patient satisfaction in turn positively influences the patient's decisions to choose a specific healthcare provider (Andaleeb 2001,

The unit amount of change on the assurance, empathy, tangibility, reliability and responsiveness dimensions of service quality brought a change of 0.639, 0.319, 0.240, 0.122 and 0.051 on patients' satisfaction respectively(Table 12) and 98.40% of patients' satisfaction was explained jointly by these dimensions significantly (Table 10). The largest and the smallest level of change were brought by assurance and responsiveness on patients' satisfaction respectively (Table 12). The findings of this research were supported or opposed by other findings for example. Kumar, (2010) and Lai (2004) who pointed out that assurance was one of the important factors for customer satisfaction which support it. On the other hand, Baumann, (2007) found that tangibles were not related to customer satisfaction and Ahmed, (2010) found out that empathy was negatively related to customer satisfaction; both of them were different from the findings in this study. In this study, the magnitude of the level of change on patients' satisfaction indicated the relative contribution of the five factors / dimensions of service quality to patients' satisfaction. This implied that the higher level of each dimension could provided the higher level of overall service quality that could brought the higher level of patients' satisfaction. These were supported by previous studies: The higher levels of service quality lead to the higher levels of customer satisfaction (Gotlieb 1994, Kang and James 2004 and Oliver 1997, Pollack 2008) and the higher levels of quality lead to the higher levels of customer satisfaction (Kotler & Keller.2009,169). Similarly, Cronin and Taylor (1992), Oliver (1980), Qin and Prybutok (2009) and Jamal and Anastasiadou (2009) stated that service quality resulting customer satisfaction and Naeem and Saif (2009) found that customer satisfaction was the outcome of service quality. Thus from the service quality dimensions evaluated, those brought the higher relative level of change on patients' satisfaction should got emphases by the management of Paulo's hospital to optimize overall patients' satisfaction. The evaluation of service quality would enable management to better allocate resources to improve hospital operations in those areas that have the most impact on customer perceptions of service quality and this evaluation was essential in today's competitive and cost-conscious health care market (Pakdil and Harwood 2005).

A unit amount of change on the assurance, tangibility, empathy, responsiveness and reliability dimension of service quality brought a change of 0.576, 0.413, 0.267, 0.164, and 0.01 on patients' loyalty respectively (Table 15) and 98.20% of patient loyalty was explained jointly by these dimensions significantly (Table13). A largest and a smallest level of change were brought by assurance and reliability on patients' loyalty respectively (Table 15). Table 12 and 15

indicated that the largest levels of change on both patients' satisfaction and patients' loyalty were brought by assurance. In this research, the magnitude of the level of change on patients' loyalty indicated the relative contribution of the five factors / dimensions of service quality to patients' loyalty. This implied that the higher the level of each dimension could provided the higher the level of overall service quality that could brought the higher level of patients' loyalty which was supported by Kumar (2009) who stated that high quality of service resulted in high customer satisfaction and increases customer loyalty.

A unit amount of change on the overall patients' satisfaction and overall service quality brought a change of 0.801 and 0.196 on the overall patients' loyalty respectively (Table 18) and 98.80% of patient loyalty was explained jointly by service quality and patient satisfaction significantly (Table16). The largest level of changes on patient loyalty was brought by patients' satisfactions than service quality per unit change of them (Table 18).These findings of this research were supported by previous studies for example, Ravald and Gronroos (1996) found that customer satisfaction was a better predictor of intentions to repurchase than service quality, and Cronin and Taylor (1992) found that a much stronger relationship between customer satisfactions and repurchase intentions than the relationship between service qualities and repurchase intentions. Similarly, Bowen and Chen (2001) pointed out that a small increase of customer satisfaction leads customer loyalty dramatically and the emerging health care literature suggested that patient satisfaction was a dominant concern that was linked with strategic decisions in the health services (Gilbert, Lumpkin and Dant 1992). **Thus**, patients' satisfaction appeared a major device in order to take critical decisions in the health care services (Gilbert, Lumpkin and Dant 1992). Therefore, service providers, took the customers' satisfaction into account as a main goal of the strategies of their firms (Zeithaml and Bitner 2000).

Hong and Goo (2004) stated that satisfaction was necessary to loyalty but was not sufficient to lead to loyalty. This implied that, the interaction between service quality and satisfaction explained more of the variance in loyalty than influences of either service quality or satisfaction alone (Peyrot 1993, Soderlund 2006, Turk and Avcilar 2009, Akbar and Prevaez 2009). Similarly, Mortazavi1, Kazemi1, Shirazi, Aziz-Abadi1 *(*2009) in Iran found that a unit increase in patient overall satisfaction increased patient loyalty by 54% to 77% in comparison to this study (80.10%). Arab, Tababaei, Rashidian, Forushani and Zarei (2012) also found 29% of loyalty variance explained by service quality dimensions in comparison to this study (19.60 %).

CHAPTER FIVE

Conclusion and Recommendation

5.1. Introduction

This section attempted to conclude some relevant issues in this research based on the empirical evidence which were collected analyzed, interpreted and summarized in this study. It also attempted to provide relevant recommendations that were brought significant improvement on the medical health care services of St. Paulo's hospital millennium medical college which was one of the largest general referral specialized hospital in Addis Ababa.

5.2. Conclusion

The conclusions of this research were provided mainly based on the objectives and objective related analyses. The five service quality dimensions were correlated with patients' satisfaction in Paulos hospital. From the outputs of this multiple partial correlation analysis, it was concluded that there were positive associations between the five service quality dimensions and patients' satisfaction. Similarly, the five service quality dimensions were correlated with patients' loyalty. The results from this multiple partial correlation analysis were concluded that there were positive associations between five service quality dimensions and patients' loyalty. Overall patients' loyalty was correlated with overall patients' satisfaction and overall service quality. From these results it was concluded that overall patients' loyalty, patients' satisfaction and overall service quality were positively and significantly associated.

On the other hand, patients' satisfaction was regressed on the five service quality dimensions. Through this analysis the relative importance of each dimension to patients' satisfaction was determined and it was concluded that the five service quality dimensions had different importance to patients' satisfaction. In the same way, patients' loyalty was regressed on the five service quality dimensions and the relative importance of each dimension to patients' loyalty was determined. From this it was concluded that the five service quality dimensions had different relative importance to patients' loyalty and they need different emphases and priority accordingly. Overall patients' loyalty in Paulo's hospital were regressed on overall service quality and patients' satisfaction and the relative importance of patients' satisfaction and service

quality to patients' loyalty was determined. From this it was concluded that patients' satisfaction have more relative importance than service quality to patients' loyalty in Paulos hospital.

5.3. Recommendations

- The size of the relative importance of the service quality dimensions to patients' satisfaction indicated that which dimensions to be emphasized by the medical health care services delivery strategy of Paulo's hospital and got better attention in the strategy. **Thus**, this study recommended that Paulo's hospital should emphasized and set the first priority to assurance, second to empathy, third to tangibility, fourth to reliability and fifth to responsiveness dimensions of service quality in its strategy to improve patients' satisfaction in Paulo's hospital.
- The size of the relative importance of the service quality dimensions to patients' loyalty indicated that which dimensions to be emphasized and got better attention by the medical health care services delivery strategy of Paulo's hospital. **Thus**, this study recommended that Paulo's hospital should emphasized and set the first priority to assurance, second to tangibility, third to empathy, fourth to responsiveness and fifth to reliability dimensions of service quality in its strategy to improve patients' loyalty in Paulo's hospital.
- The size of the relative importance of the service quality and patients' satisfaction to patients' loyalty indicated that which variable either patient's satisfaction or service quality needs to be emphasized and got better attention by the medical health care services delivery strategy of Paulo's hospital. **Thus**, this study recommended that Paulo's hospital should emphasized and set the first priority to patients' satisfaction and the second priority to service quality in its strategy to improve patients' loyalty in Paulo's hospital.
- **Finally**, this research recommended that patient satisfaction, service quality, patients' loyalty and their relationship should be viewed as important issues to improve medical health care services in Paulos hospital.

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APPENDIX

Appendix 1. Correlations among reliability items.

		Reliability item 1	Reliability item 2	Reliability item 3	Reliability item 4	Reliability item 5
Reliability item 1	Pearson Correlation	**1**	.975**	.967**	.935**	.951**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	384	384	384	384	384
Reliability item 2	Pearson Correlation	.975**	**1**	.959**	.951**	.938**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	384	384	384	384	384
Reliability item 3	Pearson Correlation	.967**	.959**	**1**	.891**	.970**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	384	384	384	384	384
Reliability item 4	Pearson Correlation	.935**	.951**	.891**	**1**	.871**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	384	384	384	384	384
Reliability item 5	Pearson Correlation	.951**	.938**	.970**	.871**	**1**
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	384	384	384	384	384

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

Appendix 2. Correlations among responsiveness items.

		Responsiveness item 6	Responsiveness item 7	Responsiveness item 8	Responsiveness item 9
Responsiveness item 6	Pearson Correlation	**1**	.918**	.910**	.894**
	Sig. (2-tailed)		.000	.000	.000
	N	384	384	384	384
Responsiveness item7	Pearson Correlation	.918**	**1**	.988**	.970**
	Sig. (2-tailed)	.000		.000	.000
	N	384	384	384	384
Responsiveness item 8	Pearson Correlation	.910**	.988**	**1**	.980**
	Sig. (2-tailed)	.000	.000		.000
	N	384	384	384	384
Responsiveness item9	Pearson Correlation	.894**	.970**	.980**	**1**
	Sig. (2-tailed)	.000	.000	.000	
	N	384	384	384	384

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

Appendix 3. Correlations among assurance items.

		Assurance item 10	Assurance item11	Assurance item12	Assurance item13
Assurance item 10	Pearson Correlation	**1**	.944**	.905**	.946**
	Sig. (2-tailed)		.000	.000	.000
	N	384	384	384	384
Assurance item11	Pearson Correlation	.944**	**1**	.937**	.956**
	Sig. (2-tailed)	.000		.000	.000
	N	384	384	384	384
Assuranceitem12	Pearson Correlation	.905**	.937**	**1**	.893**
	Sig. (2-tailed)	.000	.000		.000
	N	384	384	384	384
Assurance item13	Pearson Correlation	.946**	.956**	.893**	**1**
	Sig. (2-tailed)	.000	.000	.000	
	N	384	384	384	384

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

Appendix 4. Correlations among empathy items.

		Empathy item 14	Empathy item15	Empathy item16	Empathy item 17	Empathy item 18
Empathy item 14	Pearson Correlation	**1**	.951**	.981**	.956**	.951**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	384	384	384	384	384
Empathy item15	Pearson Correlation	.951**	**1**	.945**	.985**	.993**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	384	384	384	384	384
Empathy item16	Pearson Correlation	.981**	.945**	**1**	.950**	.945**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	384	384	384	384	384
Empathy item 17	Pearson Correlation	.956**	.985**	.950**	**1**	.983**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	384	384	384	384	384
Empathy item 18	Pearson Correlation	.951**	.993**	.945**	.983**	**1**
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	384	384	384	384	384

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

Appendix 5. Correlations among tangibility items.

		Tang. item 19	Tang. item 20	Tang. item 21	Tang. item 22
Tang. item 19	Pearson Correlation	**1**	.934**	.961**	.947**
	Sig. (2-tailed)		.000	.000	.000
	N	384	384	384	384
Tang. item 20	Pearson Correlation	.934**	**1**	.958**	.971**
	Sig. (2-tailed)	.000		.000	.000
	N	384	384	384	384
Tang. item 21	Pearson Correlation	.961**	.958**	**1**	.981**
	Sig. (2-tailed)	.000	.000		.000
	N	384	384	384	384
Tang. item 22	Pearson Correlation	.947**	.971**	.981**	**1**
	Sig. (2-tailed)	.000	.000	.000	
	N	384	384	384	384

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

Appendix 6. Correlations among patients' loyalty items.

		Loyalty item 23	Loyalty item 24	Loyalty item 25
Loyalty item 23	Pearson Correlation	**1**	.975**	.959**
	Sig. (2-tailed)		.000	.000
	N	384	384	384
Loyalty item 24	Pearson Correlation	.975**	**1**	.978**
	Sig. (2-tailed)	.000		.000
	N	384	384	384
Loyalty item 25	Pearson Correlation	.959**	.978**	**1**
	Sig. (2-tailed)	.000	.000	
	N	384	384	384

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

Appendix 7. Correlations among patients' satisfaction items.

		Satisfaction item 26	Satisfaction item 27	Satisfaction item 28	Satisfaction item 29
Satisfaction item 26	Pearson Correlation	**1**	.969**	.984**	.956**
	Sig. (2-tailed)		.000	.000	.000
	N	384	384	384	384
Satisfaction item 27	Pearson Correlation	.969**	**1**	.971**	.982**
	Sig. (2-tailed)	.000		.000	.000
	N	384	384	384	384
Satisfaction item 28	Pearson Correlation	.984**	.971**	**1**	.960**
	Sig. (2-tailed)	.000	.000		.000
	N	384	384	384	384
Satisfaction item 29	Pearson Correlation	.956**	.982**	.960**	**1**
	Sig. (2-tailed)	.000	.000	.000	
	N	384	384	384	384

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

Appendix8. Frequency of responses in each question (item)

Items per dimensions	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	Fr	%	Fr	%	Fr	%	Fr	%	Fr	%
Reliability(1920)	**258**	**13.44**	**430**	**22.40**	**135**	**7.03**	**792**	**41.25**	**305**	**15.88**
1.Provide services as promised	62	16.15	75	19.53	28	7.29	155	40.36	64	16.67
2.Handling patients' problems dependably	51	13.28	89	23.18	34	8.85	160	41.67	50	13.02
3.Performing service right the first time	44	11.46	78	20.31	26	6.77	175	45.57	61	15.89
4.Provide service at promised time	62	16.14	116	30.21	19	4.95	136	35.42	51	13.28
5.Keep patient's record accurately	39	10.16	72	18.75	28	7.29	166	43.23	79	20.57
Responsiveness(1536)	**195**	**12.70**	**341**	**22.20**	**116**	**7.55**	**635**	**41.34**	**249**	**16.21**
6.Inform patients when services performed	44	11.46	58	15.10	23	5.99	184	47.92	75	19.53
7.Provide prompt service to patients	52	13.54	91	23.70	23	5.99	152	39.58	66	17.19
8.Employees willingness to help patients	51	13.28	92	23.96	30	7.81	155	40.36	56	14.58
9.Employees readiness to patients' requests	48	12.50	100	26.04	40	10.42	144	37.50	52	13.54
Assurance(1536)	**207**	**13.48**	**384**	**25.00**	**167**	**10.87**	**539**	**35.09**	**239**	**15.56**
10.Employees create confidence in patients	50	13.02	111	28.90	40	10.42	136	35.42	47	12.24
11.Make patients feel safe in their transaction	40	10.42	94	24.48	48	12.50	137	35.68	65	16.93
12.Employees' consistently courteous/polite	69	17.97	115	29.95	34	8.85	110	28.65	56	14.58
13.Employees knowledge to patient question	48	12.50	64	16.67	45	11.72	156	40.63	71	18.48
Empathy (1920)	**294**	**15.31**	**528**	**27.50**	**221**	**11.51**	**636**	**33.13**	**241**	**12.55**
14.Provide individual attention to patients	50	13.02	99	25.78	44	11.46	140	36.46	51	13.28
15.Employees deal patients in caring fashion	69	17.96	108	28.13	42	10.94	123	32.03	42	10.94
16.The hospital have patient's best interest	54	14.06	88	22.92	48	12.50	131	34.11	63	16.41
17.Employees understand needs of patients	56	14.58	116	30.21	50	13.02	120	31.25	42	10.94
18. Creating convenient treatment hours	65	16.92	117	30.47	37	9.64	122	31.77	43	11.20
Tangibles(1536)	**200**	**13.03**	**397**	**25.85**	**231**	**15.04**	**522**	**33.98**	**186**	**12.11**
19.Modern equipments for patients	42	10.94	83	21.61	62	16.15	139	36.20	58	15.10
20.Existance of visually appealing facilities	61	15.88	110	28.65	49	12.76	126	32.81	38	9.90
21.Employees' neat professional appearance	48	12.50	102	26.56	50	13.02	138	35.94	46	11.98
22.Use of Visually seen materials to service	49	12.76	102	26.56	70	18.23	119	30.99	44	11.46
Loyalty(1152)	**179**	**15.54**	**262**	**22.74**	**141**	**12.24**	**382**	**33.16**	**188**	**16.32**
23.Thi hospital was better than others	62	16.15	98	25.52	45	11.72	125	32.55	54	14.06
24.Recommending this hospital to others	63	16.41	80	20.83	49	12.76	131	34.11	61	15.89
25.Willing to reuse the services	54	14.06	84	21.88	47	12.24	126	32.81	73	19.01
Satisfaction(1536)	**234**	**15.23**	**370**	**24.09**	**174**	**11.33**	**527**	**34.31**	**231**	**15.04**
26.Talking positively with friends & family	51	13.28	88	22.92	45	11.72	141	36.72	59	15.36
27.I advise people to use this hospital	58	15.11	99	25.78	44	11.46	129	33.59	54	14.06
28.I prefer this hospital regardless of cost	60	15.63	84	21.88	40	10.42	132	34.37	68	17.70
29.I will go again to this hospital	65	16.93	99	25.78	45	11.72	125	32.55	50	13.02

*Source: Data collected from St. Paul's hospital for this research **from** 12/06/2006-19/08/2006E.C.*

***Appendix9*. <u>Questionnaire to collect data from Paulos hospital patients</u>.**

This questionnaire has two parts .Part one contains questions to collect data on personal detail of age, gender and educational status of the patients. Part two contains questions to collect data on the opinion of the hospital patients about their service experience in Paulos hospital.

Part I. <u>Personal details</u>

Would you please <u>circle</u> the one you are involved in?

1. For how many times did you came to this hospital? A. First time B. Second time C. More than two time.

2. Gender: A. Male B. Female

3. Age: A. 18_30 years B. 31 _46 years C. 47 _65 years D. Above 65 years

4. Educational status: A. Grade 1—6 B. Grade 7—8 C. Grade 9--12 D. Diploma –First degree E. MSc / MA -- Dr

Part II. <u>The opinion of the hospital patients' service experience.</u>

<u>Note:</u> In this part of the questionnaire there are 29 items to collect patients' opinion on the Paulos hospital service experience. Each question has 5 alternatives choices: Strongly Agree is equal to 5, Agree is equal to 4, Neutral is equal to 3, Disagree is equal to 2 , and Strongly Disagree equal to 1. **Would you please put '' √ '' in the box to represent your opinion?**

No	Items of the questionnaire	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	Reliability	**1**	**2**	**3**	**4**	**5**
1	This hospital provided services as promised					
2	This hospital handled patients' service problems dependably					
3	This hospital performed service right the first time					
4	This hospital provided services at promised time					
5	This hospital kept patients' records accurately					
	Responsiveness	**1**	**2**	**3**	**4**	**5**
6	Patients were informing by this hospital when their services was performed					
7	This hospital provided prompt service to patients					
8	Employees of this hospital were willing to help patients					

9	Employees of this hospital were ready to respond patients' requests					
	Assurance	**1**	**2**	**3**	**4**	**5**
10	Employees of this hospital created confidence in patients					
11	This hospital made patients feel safe in their transaction					
12	Employees of this hospital were consistently courteous					
13	Employees of this hospital had knowledge to answer patients' questions					
	Empathy	**1**	**2**	**3**	**4**	**5**
14	This hospital gave individual attention to patients					
15	Employees of this hospital dealt with patients in caring fashion					
16	This hospital had patient's best interest at heart					
17	Employees of this hospital understood the needs of their patients					
18	This hospital created convenient treatment hours to patients					
	Tangibles	**1**	**2**	**3**	**4**	**5**
19	This hospital had modern equipments for patients					
20	This hospital had visually appealing facilities					
21	Employees of this hospital had neat professional appearance					
22	This hospital had visually appealing materials associated with service					
	Loyalty	**1**	**2**	**3**	**4**	**5**
23	I was happy with services of this hospital & it was better than other hospitals					
24	I was recommended this hospital to others					
25	This hospital provided me exact service as I expect, so I was willing to reuse the services of this hospital					
	Satisfaction	**1**	**2**	**3**	**4**	**5**
26	I talk about this hospital positively with friends & family					
27	I was advised people who I knew to use this hospital					
28	I preferred this hospital even if other hospitals were cheaper					
29	If I need to go to hospital again, I will go to this hospital					

Thank you very much!!!

Appendix10. Checklist

This checklist will include questions that will be used to collect information from patients and employees of Paulos hospital through face to face interviews then observation. The questions of this checklist will be partially open ended that attempted to collect detail information about the observables of this hospital. Patients and employees will be selected by considering the patients in the hospital as they have more contact with the hospital and by considering employees in the hospital as they have more contact with the patients.

1. Are there clean bath rooms in this hospital for patients?

If you say 'yes' to what extent the bath rooms are clean? _____

_____

If you say 'no' why the bath rooms are not clean? _____

_____

2. Are there clean toilets in this hospital for patients?

If you say 'yes' to what extent the toilets are clean? _____

_____

If you say 'no' why? _____

_____

3. Are patients' rooms clean in this hospital?

If you say 'yes' to what extent the rooms are clean? _____

_____

If you say 'no' why? _____

4. Are patients' rooms quiet in this hospital?

If you say ‘yes’ to what extent the rooms are quiet? _____

_____

If you say ‘no’ why the rooms are not quiet? _____

_____

5. Are there up to date equipment employed in this hospital?

If you say ‘yes’ what are they? _____

_____

If you say ‘no’ why? _____

_____

6. Are there up to date technology employed in this hospital?

If you say ‘yes’ what are they? _____

_____

If you say ‘no’ why? _____

_____

7. Are foods delivered to patients at their right time in this hospital?

If you say ‘yes’ why? _____

_____

If you say ‘no’ why? _____

_____

8. Are foods delivered to patients at their right temperature in this hospital?

If you say ‘yes’ why? _____

_____

If you say ‘no’ why? _____

_____

9. Are the laboratories of this hospital neat?

If you say ‘yes’ to what extent they are neat? _____

_____

If you say ‘no’ why they are not neat? _____

_____

10. Are the laboratories of this hospital well equipped?

If you say ‘yes’ to what extent they are well equipped? _____

_____

If you say ‘no’ why? _____

_____

11. Is there convenient parking in this hospital?

If you say ‘yes’ to what extent it is convenient? _____

_____

If you say ‘no’ why it is not convenient? _____

_____

12. Are there neat waiting places for patients’ in this hospital?

If you say ‘yes’ to what extent they are neat? _____

_____

If you say ‘no’ why they are not neat? _____

_____

13. Does this hospital have good physical images?

If you say 'yes' why? _____

_____

If you say 'no' why? _____

_____

14. Is the wearing of the employees of this hospital look good?

If you say 'yes' to what extent they are good?_____

_____

If you say 'no' why? _____

_____

Appendix11. በጳውሎስ ሆስፒታል በታካሚዎች የሚመለሱ መጠይቆች

ይህ የመጠይቅ ፎርም ሁለት ክፍሎች ሲኖሩት እነሱም የመጀመሪያው የታካሚዎችን የግል ሁኔታዎች ማለትም የታካሚውን እድሜ ፣ ፃታ እና የትምህርት ጀረጃ ሲይዝ ሁለተኛው ክፍል ደግሞ ስለ ሆስፒታሉ የህክምና አገልግሎት አሰጣጥ የታካሚዎችን አስተያየት ለመሰብሰብ የሚያስችል መጠይቆችን ይይዛል።

ክፍል I. በጳውሎስ ሆስፒታል የታካሚዎች የግል ሁኔታ

ከዚህ በታች ከ1 እስከ 4 ለተሰጡት መጠይቆች ለእርስዎ ትክክል የሆነውን ፊደል በማክበብ መልስ ይስጡልን ፤

1. ለስንተኛ ጊዜ ነው በእዚህ ሆስፒታል እየታከሙ ያሉት? ሀ. ለመጀመሪያ ገዜ ነው ለ. ለሁለተኛ ገዜ ነው ሐ. ከሁለተኛ ጊዜ በላይ ነው

2. ፃታ ሀ. ወንድ ለ. ሴት

3. እድሜ ሀ. ከ18_30 ዓመት ለ. ከ 31 _46 ዓመት ሐ. ከ47 _65ዓመት መ. ከ 65 ዓመት በላይ

4. የትምህርት ደረጃ ሀ. ከ1–6ኛ ክፍል ለ. ከ7–8ኛ ክፍል ሐ. ከ9–12ኛ ክፍል መ. ከዲፕሎማ- መጀመሪያ ዲግሪ ሠ. ከኤም.ኤስሲ/ኤም.ኤ--ዶክትሬት

ክፍል II. ታካሚዎች ከጳውሎስ ሆስፒታል ለሚያገኙት የህክምና አገልግሎት የሚሠጡት አስተያየት

በዚህ መጠይቅ ወስጥ 29 መጠይቆች ከዚህ ሆስፒታል ከታካሚዎች የታካሚዎችን የህክምና አገልግሎትን በተመለከተ መረጃዎች ለመሰብሰብ ቀርበዋል። 5 አማራጮች ያሉት ሲሆን እነሱም ፤ 5 ማለት በጣም

እስማማለሁ ፤ 4 ማለት እስማማለሁ ፤ 3 ማለት ግልል (ኒውትራል) ነኝ ፤ 2 ማለት አልስማማም እና 1 ማለት በጣም አልስማማም ማለት ናቸው። ስለዚህ የመረጡትን (√) ይህንን ምልክት በቁጥሩ አቅጣጫ በማድረግ ያመልክቱ::

ቁ.	መጠይቆች (አይተሞች)	በጣም አልስማማም	አልስማማም	ኒውትራል	አስማማለሁ	በጣም አስማማለሁ
	Reliability	1	2	3	4	5
1	ሆስፒታሉ ለታካሚዎች በገባው ቃል መሠረት የህክምና አገልግሎቱን ይሰጣል።					
2	ሆስፒታሉ የታካሚዎችን ችግሮች በትትክክለኛ መንገድ ይፈታል።					
3	ሆስፒታሉ የህክምና ግልጋሎቱን በመጀመሪያው የህክምና ጊዜ በትክክል ለታካሚዎች ይሠጣል።					
4	ሆስፒታሉ ህክምናው እንዲሰጥበት በታዘዘበት ሰዓት ህክምናውን ለታካሚዎች ይሰጣል።					
5	ይህ ሆስፒታል የታካሚዎችን የህክምና መዛግብት በትክክል ይይዛል።					
	Responsiveness	1	2	3	4	5
6	ሆስፒታሉ ታካሚዎች የህክምና አገልግሎቱ መቼ እንደሚሠጣቸው በቅድሚያ ያሣውቃቸዋል።					
7	ሆስፒታሉ የህክምና አገልግሎቱ መሠጠት ባለበት ትክክለኛ ጊዜ አገልግሎቱን ለታካሚዎች እየሠጠ ነው።					
8	የሆስፒታሉ ሠራተኞች ታካሚዎችን ለመርዳት ሙሉ ፈቃደኛ ናቸው					
9	የሆስፒታሉ ሠራተኞች የታካሚዎችን ጥያቄዎች ለመመለስ ዝግጁነት አላቸው።					
	Assurance	1	2	3	4	5
10	የዚህ ሆስፒታል ሠራተኞች በታካሚዎች አዕምሮ ውስጥ በራስ መተማመንን ፈጥረዋል።					
11	የዚህ ሆስፒታል የህክምና አገልግሎት አስተማማኝነቱን ታካሚዎች ያውቃሉ።					
12	የዚህ ሆስፒታል ሠራተኞች ለታካሚዎች የህክምና አገልግሎት የሚሠጡት ሁል ጊዜ በትህትናና በአክብሮት ነው።					
13	የዚህ ሆስፒታል ሠራተኞች የታካሚዎችን ጥያቄዎች ለመመለስ እውቀቱ አላቸው።					

	Empathy	1	2	3	4	5
14	ደህ ሆስፒታል ለሁሉም ታካሚዎች ለያንዳንዳቸው ልዩ ትኩረት በመስጠት የህክመና ግልጋሎቱን ይሰጣል ።					
15	የሆስፒታሉ ሠራተኞቸች ለታካሚዎች የህክምና አገልግሎት የሚሰጡት ታካሚዎችን ለመርዳት ፍላጎትን ፤ ፍቅርን እና ረህሩህነትን በተላበሰ መንገድ ነው።					
16	ታካሚዎች ከልብ የሚፈልጉት ስጋነት የህክምና አገልግሎት በዚህ ሆስፒታል ውስጥ አለ።					
17	የሆስፒታሉ ሠራተኞቸች የታካሚዎችን የህክምና አገልግሎት ፍላጎት በትክክል ይረዳሉ።					
18	ሆስፒታሉ ለታካሚዎች አመች የህክምና ሰዓታትን መርጦ ያመቻቻል።					
	Tangibles	1	2	3	4	5
19	ሆስፒታሉ ዘመናዊ የህክምና መሣሪያዎችን ለህክምና አገልግሎቱ ተገባር እየተጠቀመ ነው።					
20	ሆስፒታሉ በግልፅ የሚታዩ ውብ ፤ ማራኪ እና የሚመጸዱ የህክምና አመችነቶች እና አገልግሎቶች አሉት።					
21	የዚህ ሆስፒታል ሠራተኞች በሙሉ ንፁህ እና ሙያዊ አቋም አላቸው					
22	ደህ ሆስፒታል በአካል የሚታዩ ከህክምና አገልግሎቱ ጋር ተያያዥነት ያላቸው ውብ እና ማራኪ የህክምና መሣሪያዎች አሉት።					
	Loyalty	1	2	3	4	5
23	በዚህ ሆስፒታል የህክምና አገልግሎት አሰጣጥ በጣም ደስተኛ ከመሆኔም በላይ ሆስፒታሉ ከሌሎች ሆስፒታሎች የበለጠ መሆኑንም እመሰክራለሁ።					
24	ደህንን ሆስፒታል ሌሎችም ታካሚዎች እንዲታከሙበት እመርጥላቸዋለሁ።					
25	ደህ ሆስፒታል ይሰጠኛል ብየ የጠበቅሁትን ያህል የህክምና አገልግሎት በትክክል የሠጠኝ በመሆኑ ወደፊትም የሆስፒታሉን የህክምና አገልግሎት እንደገና ለመጠቀም ከፍተኛ ፍላጎት አለኝ።					
	Satisfaction	1	2	3	4	5
26	ስለዚህ ሆስፒታል ጥሩነት ከሌተሰብ እና ከምቀርባቸው ሰዎች ጋር ውይይት አድርጌአለሁ።					
27	የማቃቸውን ሠዎች ሁሉ በዚህ ሆስፒታል እንዲታከሙ እመክራለሁ።					

28	የሴሎች ሆስፒታሎች የመታከሚያ ዋጋ ከዚህ ሆስፒታል የመታከሚያ ዋጋ በጣም ቅናሽ እንኳን ቢሆን ለመታከም ምርጫዩ ይህ ሆስፒታል ነው።					
29	ወደ ሆስፒታል እንደገና መሔዴ አስፈላጊ ቢሆን የምሔደው ወደዚህ ሆስፒታል ብቻ ነው።					

አመሰግናለሁ !!!

Appendix12: **ለጥናቱ ተሳታፊዎች የተዘጋጀ የፈቃደኝነት መግለጫ ቅፅ (ኮንሰንት)**

እኔ._____የጳውሎስ ሆስፒታል ህክምና አሰጣጥ ግልጋሎትን በተመለከተ ለምጠየቀው ጥያቄ ትክክለኛ መረጃ ለመስጠት ፈቃደኝነቴን አገልፃለሁ። በጥናቱ ወቅትም ከመጀመሪያ እስከ መጨረሻ ምንም አይነት እኔን የሚጎዳ ሁኔታ እንደሌለ ተረድቻለሁ። ጥናቱም እኔ ለምታከምበት ጤና ድርጅት ብቻ ሳይሆን ለሌሎችም ተመሳሳይ ድርጅቶች በተለይም የጤና አሰጣት አገልለሎትን በተመለከተ ጠቃሚ እንደሆነ ተረድቻለሁ።

የተሳታፊ ስም_____ፊርማ_____ ቀን _____

የተመራማሪ ስም_____ፊርማ_____ ቀን _____

ለዚህ ጠቃሚ ጥናት ስለተባበራችሁኝ አመሰግናለሁ።

ማሳሰቢያ፡ ስለጥናቱ ተጨማሪ መረጃ ከፈለጉ በሚቀጥለው ስልክ ይደውሉ

የተመራማሪ፡- 0910604936

***Appendix13*: Consent form to confirm the willingness of participants**

Name _____ Iam willing to provide correct information about the medical services provided in Paulos hospital. I proved that this research has no harm on me from its beginning to its end and I also understand that this research will be very important to this hospital and other similar organization with regard to the service to be provided.

Name of respondent:_____Signature_____date_____

Researcher name: _____ Signature_____date_____

Thank you very much for your participation on this very important research!!

Note: For additional information you will call on the following phone: