

Evaluation of the Quality of Health Services at Turkish Palestinian Friendship Hospital in Gaza Strip, Palestine: Patients' Perspective

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Abstract: Evaluating the quality of healthcare service is very important, because it help healthcare managers to allocate resources more efficiently. Goal: The goal of the study is to evaluate the quality of health services at Turkey Friendship Hospital in Gaza Strip, Palestine from patients' perspective. Methodology: The study used a mixed method of quantitative and qualitative approach. The sample of the study consisted of 150 cancer patients who are admitted to the hospital during data collection period, and 10 patients for personal interviews. For data collection, the researcher used the 22-item SERVQUAL Questionnaire, and constructive interview. The researcher used SPSS version 25 for statistical analysis. Results: The results showed that 71 (47.3%) of study participants were male patients and 79 (52.7%) were female patients, their mean age 49.58 ± 11.691 years, mean days of admission was 3.67 ± 1.616 days, mean years of having the disease was 3.49 ± 2.160 years. 1.Regarding to quality of health services, the highest score was in assurance domain ($m = 4.17$, 83.4%), followed by tangibility ($m = 4.13$, 82.6%), and the lowest score was in empathy ($m = 4.03$, 80.6%). The overall mean score was 4.09 (81.8%). 2.Female patients expressed significant higher satisfaction with reliability ($p = 0.000$) and assurance ($p = 0.011$). 3.Patients with low education (prep school and less) expressed significant lower satisfaction with quality of health services compared to those who have secondary school and university education ($p < 0.001$). 4.Patients who have the disease for 2 years and less expressed significant lower satisfaction with quality of health services ($p < 0.001$). 5.Patients with prostatic cancer showed significant lower score in tangibility, reliability, and assurance, but no significant differences in the total score. 6.There were statistically no significant differences in patients' satisfaction with quality of health services related to age ($p = 0.053$), length of stay in the hospital ($p = 0.340$). Conclusion: The study reflected high satisfaction with the quality of health services at Turkish Friendship Hospital. Recommendations: The study recommended the need to pay more attention to the empathy and psychological aspects of care.

Keywords: Quality of Health Services, Cancer Patients, Turkish Friendship Hospital, Gaza Strip, Palestine.

تقييم جودة الخدمات الصحية في مستشفى الصداقة التركي في قطاع غزة، فلسطين من منظور المرضى

الدكتورة / ايمان سليمان حسونة

التعاون الدولي | وزارة الصحة | غزة | فلسطين

المستخلص: يعد تقييم جودة الخدمات الصحية أمراً بالغ الأهمية لأنه يساعد مديري الرعاية الصحية على تخصيص الموارد بكفاءة أكبر. هدف الدراسة: تقييم جودة الخدمات الصحية في مستشفى الصداقة التركي بقطاع غزة، فلسطين، من منظور المرضى. المنهجية: استخدمت الباحثة المنهج المختلط (الكمي والنوعي). تكونت عينة الدراسة من 150 مريض من مرضى الأورام المنومين في مستشفى الصداقة الفلسطينية التركي خلال فترة جمع البيانات، كما تم إجراء مقابلات شخصية مع 10 مريض. لجمع البيانات تم استخدام مقياس جودة الخدمة SERVQUAL يتكون من 22 فقرة. كما تم استخدام المقابلة الشخصية لتحليل البيانات تم استخدام برنامج الرزم الإحصائية SPSS version 25. نتائج الدراسة: بينت النتائج أن 71 (47.3%) من المشاركين في الدراسة كانوا من الذكور و79 (52.7%) كانوا من الإناث، بلغ متوسط أعمارهم 49.58 ± 11.691 سنة، وبلغ متوسط أيام المكوث في المستشفى 3.67 ± 1.616 يوم، وبلغ متوسط سنوات الإصابة بالسرطان 3.49 ± 2.160 سنة. 1. بالنسبة لجودة الخدمة الصحية فقد كانت أعلى الدرجات في بعد المأمونية ($m = 4.17$, 83.4%)، يليه بعد الجوانب المادية ($m = 4.13$, 82.6%)، في حين كانت أدنى الدرجات في بعد التعاطف ($m = 4.03$, 80.6%)، وبلغ المتوسط العام للدرجات 4.09 (81.8%). بينت النتائج أن المريضات الإناث أظهرن مستوى أعلى من الرضا في بعد الاعتمادية ($\alpha = 0.000$) وبعد المأمونية ($\alpha = 0.011$) مقارنة بالمرضى الذكور. 3. مستوى الرضى عن جودة الخدمات الصحية كان أدنى لدى المرضى ذوي التعليم المتدني (إعدادي فأقل) مقارنة بالمرضى الحاصلين على التعليم الثانوي والحاصلين على التعليم الجامعي ($\alpha = 0.001$). 4. مستوى الرضى عن جودة الخدمات الصحية كان أدنى لدى المرضى المصابين بالسرطان من سنتين فأقل ($\alpha = 0.001$). 5. مرضى سرطان البروستاتا أظهروا مستوى أدنى في الرضى عن الجوانب المادية، الاعتمادية، والمأمونية. 6. لم توجد فروق ذات دلالة إحصائية في درجة الرضى عن جودة الخدمات الصحية تعزى لكل من عمر المريض ($\alpha = 0.053$) ومدة المكوث في المستشفى ($\alpha = 0.340$). الخلاصة: خلصت الدراسة إلى أن مستوى الرضى عن جودة الخدمات الصحية في مستشفى الصداقة التركي كان بدرجة عالية. التوصيات: أوصت الدراسة بالحاجة إلى المزيد من الاهتمام بالجوانب ذات العلاقة بالتعاطف والجانب النفسي أثناء تقديم الرعاية الصحية لمرضى السرطان.

الكلمات المفتاحية: جودة الخدمات الصحية، مرضى السرطان، مستشفى الصداقة التركي، قطاع غزة، فلسطين.

Introduction

Quality of care (QoC) is defined as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with evidence-based professional knowledge. This definition of QoC spans promotion, prevention, treatment, rehabilitation and palliation, and implies that QoC can be measured and continuously improved through the provision of evidence-based care that takes into consideration the needs and preferences of service users – patients, families and communities (World Health Organization - WHO, 2020).

Systematic evaluation of the quality of services provided in healthcare institutions is the first step toward standardization, enhancement and improvement of their quality. In the hospital setting, patients are the most important group for evaluating the quality of hospital services (Chakravarty, 2011).

Patients' perspective on the quality of health care is important for several reasons; First, the high level of quality of services offered by health facilities is related to issues such as patient satisfaction, willingness to re-use services in the future, etc. Second, patient feedback and perceptions are significantly required in many health care quality assessment programs. Third, the perceived high level of service quality is positively related to the financial performance and efficiency of health care institutions (Hinson et al., 2019).

Measuring patients' perception about the QHS is an important element in the assessment of service quality, which has gained much attention in recent years. Therefore, this study will be conducted to find out how the patients evaluate service quality at the Turkey Friendship Hospital specialized for cancer treatment in Gaza Strip. The study utilized quantitative approach by using self-administered questionnaire and qualitative approach by conducting structured interviews with selected patients.

Research problem

Quality of health services is a crucial issue in health care settings. According to the WHO, between 5.7 and 8.4 million deaths are attributed to poor quality care each year in low- and middle-income countries (LMICs), which represents up to 15% of overall deaths in these countries, 60 percent of deaths in LMICs from conditions requiring health care occur due to poor quality care, whereas the remaining deaths result from non-utilization of the health system. Inadequate QoC imposes costs of US Dollar 1.4–1.6 trillion each year in lost productivity in LMICs. In high-income countries (HICs), 1 in 10 patients is harmed while receiving hospital care, and 7 in every 100 hospitalized patients can expect to acquire a health care-associated infection (WHO, 2020).

Evaluating the QHS is very important, as it help healthcare managers to allocate resources more efficiently and identifying managerial actions able to guarantee higher levels of healthcare quality that meets patients' expectations and needs. In the past, the process of quality assessment was conducted without considering the viewpoints and feedback of patients; but nowadays, emphasis is placed on the importance of patients' views in assessing the QHS (Peer & Mpinganjira, 2011). The feedback and opinions of patients affect the quality improvement and provides an opportunity for organizational learning (Carlucci et al., 2013).

Most of quality improvement frameworks are developed in high-income countries, but there is little information about its application in low-income countries and conflict zone areas like Gaza Strip. Lack of resources, poor infrastructures, and health system challenges are major challenges to provide quality care. Therefore, this study will high light the quality of health services and care provided to a special portion of patients (patients with cancer) in Gaza Strip which is considered a conflict zone with many obstacles that challenge the health care system.

Goal of the study

The goal of the study is to evaluate the quality of health services, and the factors that influence the quality of health services at Turkish-Palestinian Friendship Hospital in Gaza Strip.

Methodology

Study design

The researcher used a mixed method of quantitative and qualitative approach. In the quantitative part the researcher used descriptive, cross-sectional design.

The sample of the study consisted of 150 in-patients. Also, 10 patients were selected for personal interviews. The study started in September 2022 and completed in December 2024.

Instrument of the study

The researcher used two instruments SERVQUAL scale. The SERVQUAL scale is one of the most widely used surveys for capturing service quality. The SERVQUAL model was first developed by Parasuraman et al. in 1980s. This tool essentially measures 10 dimensions of service quality. It measures the gap between customer expectations and experiences. In subsequent studies, Parasuraman et al. reduced them into 5 major dimensions, including tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988).

The first domain is **Tangibility**: consists of (4) questions, that captures the physical attributes of the hospital, employees, and the delivery environment.

The second domain is **Reliability**: consists of (5) questions, that checks service delivery quality.

The third domain is **Responsiveness**: consists of (4) questions that captures the ability to respond to patients queries and resolve their problems.

The fourth domain is **Assurance**: consists of (4) questions, that covers the skills and trustworthiness of the staff.

The fifth domain is **Empathy**: consists of (5) questions that inquires about the level of empathy given to the patients.

The scale for each question ranges from 1 to 5. In addition to SERVQUAL, the study included questions about the sociodemographic characteristics of patients.

A pilot study was conducted on 30 participants in order to examine the reliability of the questionnaire. Cronbach alpha coefficient was 0.856, which is high. Also, correlation value by using split-half method was 0.757, and Guttman split-half coefficient was 0.756.

Data collection

The researcher collected data by himself with help of two assistants. The researcher met the patients during their stay in the hospital to fill the questionnaire. The researcher explained the purpose of the study to the eligible participants and gave them instructions about the questionnaire before filling it. The questionnaire was translated to Arabic language for easier understanding by the participants. The data was entered to the computer. For data analysis, the researcher used the SPSS program (version 25). Analysis of data included: coding the questionnaires, data entry, and data cleaning.

Statistical analysis included frequencies, percentage, mean scores. Also (t) test was used to compare the results between two groups (male and female), One-way ANOVA to compare between three groups and more (age) , and Pearson correlation test.

Ethical and administrative considerations

Before carrying out the study, the researcher got agreement to carry out the study from Albutana University. In addition, approval letter was obtained from Ministry of Health in Gaza. Confidentiality of collected information was assured. Each questionnaire have a consent form that asks for agreement to participate in the study voluntary. Time allocated for each questionnaire was about 15 minutes.

Literature review

Nursing as a profession has a mission to provide patients and their families with safe, holistic, and appropriate care during illness and wellness in different settings (Fukada, 2018). The scope of oncology nursing practice consists of many activities that play a significant role in cancer prevention, early detection, and treatment. Furthermore, as an active member of the healthcare system, Oncology nurses are often responsible for the care of patients with cancer at all stages of their disease (Kaasa et al., 2018).

Healthcare systems are under increasing pressure to meet and respond to ever-increasing public demands and demographic changes to improve their performance, and as the service risk of these organizations is high, the provided services should have an acceptable quality (Doshmangir et al., 2019).

Epidemiology and burden of cancer disease

Cancer is one of the public concerns, both in terms of the number of people affected and its burden. Globally, the incidence of new cancer cases is rapidly growing, at 18.1 million in 2020 and expected to reach 28 to 30 million by 2040 (Sung et al., 2021). On average, half of these cancers will be diagnosed in people over 65 years of age (Cancer Research UK, 2023). Cancer is one of the main causes of mortality, imposing a heavy burden on public health, and posing a major clinical challenge worldwide. Cancer mortality is increasing gradually, estimated to reach 16.38 million cases in 2040 (Cao et al., 2017). Cancer is a traumatic and life-threatening disease throughout the world. It was the third cause of mortality following cardiovascular diseases and injuries (Saadat et al., 2015). Currently, it is the second leading cause of death globally, and in the Arabian region as well (Wu et al., 2019).

Considering the increasing prevalence of cancer, major attention must be paid to its main casual factors as well as developing diagnostic and treatment modalities (Derisi et al., 2020).

Quality in healthcare service

Since the 1960s, health organizations have increasingly shown interest in how patients perceive the quality of their care. The traditional biomedical approach to health delivery views patients as passive receivers of care, and only evaluates service quality with standardized benchmarks such as medical efficacy. A “democratization of health care services” (Calnan, 1988) has phased out this approach and progressively values patients for their role in evaluating health care quality. When patients’ preferences are included in the evaluation and design of health services, their overall utilization of services, quality of life, access to care, and medical efficacy improve (Greene et al., 2012). The body of research concerning the patient perspective is growing as patients continue evolving into active participants of their care (Norman, 2010).

Quality care is a practice that ensures desired healthcare outcomes which are in line with professional knowledge and standards (Mosadeghrad 2014, WHO, 2021). Nowadays, improving the quality of healthcare service provision to meet the expectations of patients and to satisfy them, has become a major challenge for service providers (Gilavand & Mehralizadeh, 2020).

The quality of the healthcare system is a lumping parameter that reflects patient safety and satisfaction, service delivery efficiency, cost competitiveness, and aspects of sustainability (El-Jardali & Fadlallah, 2017). Therefore, measurement of quality care is an important practice in the healthcare system to ensure the continuous improvement of the quality parameters and maintain agility and responsiveness of the system according to the patients’ requirements (WHO, 2018).

Yesuf and Abdu (2023) reported that most patients had a positive perception of the quality of nursing care. Being elderly and feeling towards hospital costs have a negative influence whereas having paid for the treatment has a positive influence on the patients’ perception of nursing care. The increase in perceived care quality from the patients’ perspective are associated with improved environmental conditions, care quality related to the health care personnel, information-communication and technological development (Tarafer, 2024).

Measurement of quality health services

The **SERVQUAL model**, developed by Parasuraman et al. (1988), is one of the most widely used tools for measuring service quality across different sectors, including healthcare. SERVQUAL identifies five key dimensions of service quality: **tangibility**, **reliability**, **responsiveness**, **assurance**, and **empathy**. These dimensions provide a comprehensive framework for evaluating the various aspects of service quality, and have been extensively applied to healthcare services to gauge patient satisfaction and service effectiveness. This part discusses each of these dimensions in the context of healthcare services.

Tangibility

Tangibility refers to the physical aspects of the service environment, including the appearance of facilities, equipment, personnel, and communication materials. In healthcare, tangibility is critical as it affects first impressions and overall perceptions of the service quality (Sivakumar & Rajendran, 2013). Research has shown that the physical environment plays a significant role in patient satisfaction and trust. A clean, well-maintained, and comfortable healthcare facility positively influences patients’ perceptions of the service quality.

Choi et al. (2016) emphasized the importance of well-maintained physical infrastructure and professional appearance of staff in improving patient satisfaction. A pleasant and comfortable environment fosters a sense of trust and security, which is essential for patient well-being. However, the significance of tangibility may vary depending on the type of healthcare service. **Babakus et al. (2004)** suggest that the importance of tangibility is higher in settings where patient expectations are more about comfort and convenience, such as outpatient clinics or private practices, compared to more technical environments like hospitals.

Reliability

Reliability refers to the ability of the service provider to consistently deliver accurate, dependable, and trustworthy services. Several studies highlight that reliability is one of the most important dimensions of healthcare service quality. **Oliveira et al. (2014)** found that patients consistently rate reliability as a key driver of their overall satisfaction with healthcare services. They emphasized that when healthcare services fail to deliver on promises, such as timely diagnosis or treatment, patient trust and satisfaction decrease. **Rao et al. (2014)** similarly pointed out that the consistency of medical care, including follow-ups and appointment scheduling, significantly impacts patient satisfaction. Also, patients often evaluate healthcare providers based on their ability to provide consistent, accurate information and to meet their expectations for treatment outcomes. High reliability in service delivery can also enhance patients' confidence in the healthcare system, which is essential for improving compliance and overall treatment success.

Responsiveness

Responsiveness involves the willingness and ability of healthcare providers to help patients promptly and to respond to their needs and requests. This dimension is particularly important in healthcare settings where delays or failure to respond can have serious consequences for patient health and satisfaction (Parasuraman et al., 1988).

A significant body of research underscores the importance of responsiveness in patient satisfaction. According to **Berry et al. (2004)**, patients who perceive healthcare providers as responsive to their needs tend to rate their satisfaction higher. Waiting time is considered as part of responsiveness. Patients often spend significant time waiting for care from healthcare professionals. Their satisfaction and perceived quality of care are closely related to the waiting and service times they experience. The time patients spend waiting is a crucial factor in accessing care and utilizing health services at hospitals. Despite its importance, these factors remain understudied in developing countries (Seif et al., 2023). Responsiveness also linked to patient-provider communication. **Rosen et al. (2014)** argue that patients who feel that their healthcare providers listen to them and address their concerns quickly are more likely to be satisfied with their care. This highlights the importance of training healthcare professionals to be attentive to patients' needs and to provide timely responses, especially in emergency or urgent care contexts.

Assurance

Assurance refers to the healthcare provider's ability to inspire confidence in patients through the competency, politeness, and courtesy of staff, as well as their ability to instill trust and confidence in the service being delivered (Parasuraman et al., 1988). In healthcare, assurance is especially important because patients often feel vulnerable and need to trust the competence of healthcare providers.

Research consistently shows that assurance is a critical driver of patient satisfaction. Alrubaiee et al. (2011) reported that patient's perception of healthcare quality has a strong and positive impact on the patient satisfaction and patient trust, patient satisfaction has also significant impact on patient trust. Moreover, patient satisfaction appears to play an important mediating role in increasing the strength of the association between healthcare quality and patient trust in healthcare service provider.

Patients who perceived their healthcare providers as competent, courteous, and knowledgeable were more likely to feel assured about the treatment process and outcomes. Additionally, **Aydin and Sumer (2013)** noted that patient satisfaction is closely linked to the level of trust patients have in their healthcare providers, which is fostered through both technical competence and empathetic behavior. Furthermore, assurance is essential in mitigating patients' anxieties, especially in areas involving complex treatments or invasive procedures. Research has shown that effective communication between patients and healthcare providers is essential for the provision of patient care and recovery (Crawford et al., 2017; Madula et al., 2018).

Empathy

Empathy is the dimension that focuses on the provider's ability to provide individualized attention and care to patients. Numerous studies have highlighted the significant role of empathy in healthcare service quality. **Hojat et al. (2011)** demonstrated that patients who felt that their healthcare providers were empathetic were more likely to be satisfied with their care, especially in hospital settings where patients often experience significant emotional and psychological stress. **Bailey et al. (2013)** also found that empathy positively influences patient compliance and recovery rates, as patients are more likely to follow treatment regimens when they feel understood and supported by their healthcare providers. Empathy has been particularly emphasized in chronic disease management and palliative care, where patients may require both medical treatment and emotional support. **Al-Saadi et al. (2019)** argue that healthcare providers who engage in empathetic communication can alleviate patients' anxiety and foster a trusting relationship, leading to higher satisfaction.

In summary, The SERVQUAL model offers a comprehensive framework for assessing the quality of healthcare service. Each dimension contributes uniquely to patient satisfaction. **Reliability** and **assurance** are often prioritized by patients as they provide the foundation for trust in healthcare services, while **responsiveness** and **empathy** focus on the emotional aspects of care that are vital to the patient experience. **Tangibility**, although crucial, may have varying levels of significance depending on the type of care received. The SERVQUAL supports the idea that a holistic approach that addresses all five dimensions can significantly enhance patients' satisfaction and improve healthcare outcomes.

Challenges to quality of health services to cancer patients

The provision of high quality services is a prerequisite for the success of service organizations since service quality influences patients' perceived value, their satisfaction and faithful (Izadi et al., 2017), but several obstacles hinder the ability to provide quality health services to cancer patients. These obstacles are challenging the ability of health care providers to provide quality care especially in low and middle income countries with scarce resources.

In African countries, the quality of oncology services suffer from the shortage of medical equipment, research resources and epidemiological expertise. Despite the fact that cancer death rates have surpassed those of AIDS, malaria and tuberculosis altogether, there still remains a lack of unwavering commitment to fight against cancer. Out of 56 countries in Africa, only 22 of them were confidently known to have a radiotherapy machine—not more than 277 in the year 2015. And 60% of these were located in two countries: Egypt and South Africa. Overall, only 50% of the population had some access to radiation oncology services (Hamdi et al., 2021; Stefan, 2015).

Previous studies

Wasihun et al. (2024) conducted an institutional-based cross-sectional study design was conducted using the service quality (SERVQUAL) tool from March to April 2022 on a sample of 256 hospitalised patients with cancer at the oncology centre of Tikur Anbessa Specialized Hospital. The overall gap in service quality explained by the mean and SD is $-1.42 (\pm 0.41)$. The overall score for expectation and perception is $4.24 (\pm 0.31)$ and $2.82 (\pm 0.37)$, respectively. Being female, age greater than 65, having a college degree and above, being a patient with cervical cancer, patients with stage 4 cancer and patients who waited for more than 12 months for radiotherapy were found to have a statistically significant higher expectation compared with their perceived care in one or more dimensions of the SERVQUAL tool.

Alsubahi et al. (2024) conducted a systematic review of the literature to determine the perspectives of patients on healthcare quality in Gulf Cooperation Council (GCC) countries. Patients in GCC countries face common problems in the care delivery process, which contribute to negative perceptions of quality. These problems include diagnostic and medication errors, provider–patient communication problems, missed appointments with physicians, problems in emergency care access due to geographical distance and transportation barriers, long waiting times, and physical environments.

Rahman & Islam (2024) conducted a descriptive study to assess citizens' perceptions of the quality of health services in general hospitals in Bangladesh. The study involved 180 participants. The findings revealed significant gaps between participants' expectations and perceived health service quality across all SERVQUAL dimensions. Key issues include deficiencies in tangibility, particularly in modern medical equipment availability and hospital cleanliness, reliability in consistent advanced medical support, and responsiveness in emergency medical treatment and addressing patient feedback.

Launonen et al. (2024) performed a descriptive, cross-sectional study to assess the perceptions of older patients with cancer and family members about the quality of care received and evaluate differences between their perceptions. The results showed that family members had more negative perceptions of the quality of care than patients did. Dissatisfaction was related to professional practice, interaction between patient and health care professionals, cognition of physical needs, and human resources. Satisfaction with overall care was significantly lower among those patients and family members who perceived that they had not been involved in setting clear goals for the patient's care with staff.

Yesuf & Abdu (2023) carried out an institution-based cross-sectional study included 405 patients. The results showed that the overall percentage of positive perception was 76.3%. Clients aged 31–40 years were more likely and clients aged ≥ 51 years were less likely to perceive positively. Patients who had paid for receiving care were more likely to perceive it positively. The odds of positive perception towards the quality of nursing care were higher among patients who thought the hospital cost was medium, and uncertain.

Wakjira et al. (2023) carried out a study to investigate patients' perception of the quality of care given to patients at referral hospitals in Ethiopia. The results revealed that the majority of the patients were satisfied with the compassionate communication and clinical care they received at hospitals. Patients were dissatisfied with the poor communication and uncaring practice of caregivers found at treatment follow-up centers. Patients perceived that socio-economic difficulties challenged their ability to cope-up with the disease and its treatment.

Gilavand & Mehrizadeh (2022) carried out a systematic review (meta-analysis) study to evaluate the quality of services provided in hospitals and healthcare centers using SERVQUAL scale. The results showed that there was a quality gap in all 5 dimensions between the current status and desirable status of patients and based on a maximum score of 5, responsiveness (1.04), and assurance (0.99), empathy (0.95), reliability (0.91), and physical or tangible factors (0.86) were ranked first to fifth, respectively.

Sharour et al. (2021) found that moderate quality of oncology nursing care was reported by the participants. The overall mean for the quality of oncology care was highest in Oman (153.40; SD, 4.10), followed by Jordan (150.93; SD, 2.10) and then Egypt (148.0; SD, 3.80). The results were significantly different in the total score of the QONCS-Ar ($F = 45.20$, $P < .001$) among the 3 countries. The results also differed in all domains of oncology nursing care according to days of treatment and marital status.

Al Jabri and Turunen (2021) examined patients' perceptions of quality care and investigate the demographic factors related to the overall patients' perceptions. Overall patients' perceptions of quality of care were high, with professionalism being rated the highest, and cognition of physical needs and human resources rated the lowest. Significant differences in patients' perceptions between hospitals as well as in the subscales of interdisciplinary collaboration and outcome variables, between planned- and emergency-admitted patients were found.

Sharifi et al. (2021) evaluated the quality of health-care services provided in health centers in Mashhad, Iran. According to the results, the average scores of health service users' expectations and perceptions were 4.97 and 3.26, respectively, and the quality gap in the provided services was equal to -1.7 . Based on HEALTHQUAL questionnaire, the average scores of health service users' perception and expectations were 4.72 and 3.25, respectively, and the quality gap in the provided services was equal to -1.16 . Empathy was the highest quality dimension (-2.019) based on SERVQUAL model, and efficiency dimension was the highest based on HEALTHQUAL model (-1.761).

Results

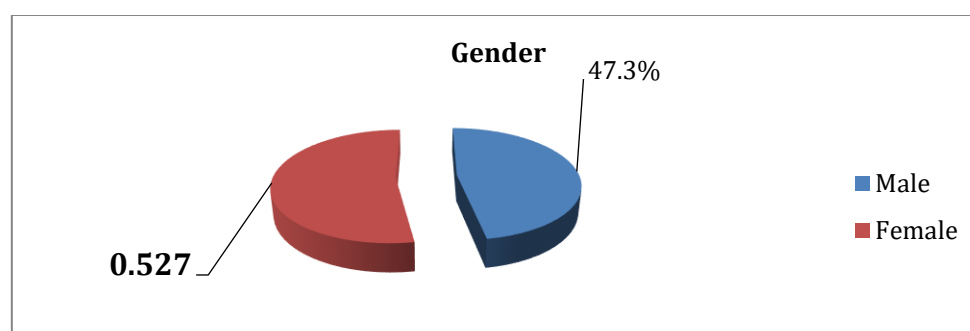


Figure (4.1): Distribution of patients by gender

Figure (4.1) showed that 71 (47.3%) of study participants were male patients and 79 (52.7%) were female patients.

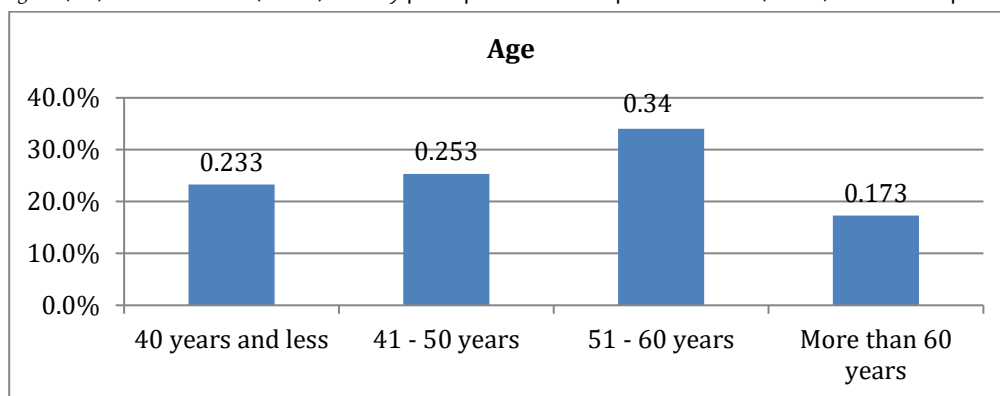


Figure (4.2): Distribution of patients by age

Figure (4.2) showed that 35 (23.3%) of patients 40 years old and less, 38 (25.3%) aged 41 – 50 years, 51 (34.0%) aged 51 – 60 years, and 26 (17.3%) aged more than 60 years. The mean age of the patients was 49.58 ± 11.691 years, and the median age was 51 years.

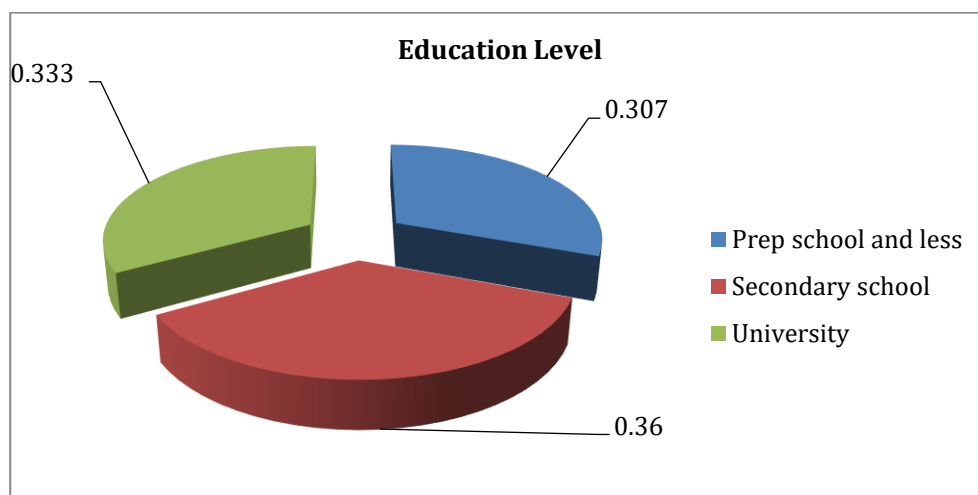


Figure (4.3): Distribution of study participants by education level

Figure (4.3) showed that 46 (30.7%) of study participants have prep school and less, 54 (36.0%) have secondary school education, and 50 (33.3%) have university education.

Table (1): Disease-related information (n= 150)

Variable	Number	Percentage (%)
Length of stay in the hospital (m= 3.67±1.616 days, median 4 days)		
3 – 5 days	111	74.0
6 - 8 days	39	26.0
Total	150	100.0
Number of years having the disease (m= 3.49±2.160 years, median 3 years)		
1 – 2 years	60	40.0
3 – 5 years	65	43.3
5 – 8 years	25	16.7
Total	150	100.0
Type of cancer disease		
Breast	40	26.7

Variable	Number	Percentage (%)
Colorectal	38	25.3
Uterus & Ovaries	23	15.3
Prostate	14	9.3
Others	35	23.4
Total	150	100.0

Table (1) showed that mean days of admission was 3.67 ± 1.616 days, the mean years of having the disease was 3.49 ± 2.160 years, 40 (26.7%) of study participants have breast cancer, 38 (25.3%) colo-rectal cancer, 23 (15.3%) uterus / ovarian cancer, 14 (9.3%) have prostate cancer, and 35 (23.4%) have other types of cancer.

Quality of health services

Quality of health services composed of 5 domains: tangibility, reliability, responsiveness, assurance, and empathy. The researcher calculated the response of patients to each item, mean score and weighted percent for each item and for the whole domain, as presented in the following tables.

Table (2): Overall quality of health services (n= 150)

No.	Domain	Mean	SD	%	Rank
1	Tangibility	4.13	0.573	82.6	2
2	Reliability	4.04	0.521	80.8	4
3	Responsiveness	4.11	0.540	82.2	3
4	Assurance	4.17	0.455	83.4	1
5	Empathy	4.03	0.702	80.6	5
Total		4.09	0.425	81.8	

Table (2) showed that the highest score was in assurance domain ($m = 4.17$, 83.4%), followed by tangibility ($m = 4.13$, 82.6%), responsiveness ($m = 4.11$, 82.2%), reliability ($m = 4.04$, 80.8%), and the lowest score was in empathy ($m = 4.03$, 80.6%). The overall mean score was 4.09 with weighted percent 81.8%.

Association between quality of health services and sociodemographic characteristics of patients

Table (3): Association between quality of health services and gender

Domain	Gender	n	Mean	SD	t	P value
Tangibility	Male	71	4.056	0.587	-1.671	0.097
	Female	79	4.212	0.553		
Reliability	Male	71	3.850	0.616	-4.522	0.000*
	Female	79	4.222	0.334		
Responsiveness	Male	71	4.081	0.716	-0.703	0.484
	Female	79	4.145	0.309		
Assurance	Male	71	4.073	0.469	-2.583	0.011*
	Female	79	4.262	0.425		
Empathy	Male	71	4.109	0.830	1.154	0.251
	Female	79	3.974	0.561		
Total	Male	71	4.029	0.529	-1.805	0.074
	Female	79	4.157	0.294		

*Significant at 0.05 Independent sample (t) test

Table (3) pointed out that there were statistically significant differences between male and female patients in reliability and assurance; female patients expressed significant higher satisfaction with reliability domain compared to male patients ($m = 3.850$ vs. 4.222 , $p = 0.000$). Also, female patients expressed significant higher satisfaction with assurance compared to male patients ($m = 4.073$ vs.

4.262, $p=0.011$). Whereas, there were statistically no significant differences between male and female patients in their satisfaction with tangibility ($p=0.097$), responsiveness ($p=0.484$), empathy ($p=0.251$), and the total score (0.074).

Table (4): Association between quality of health services and level of education

Education level		n	Mean	Std. Deviation	F	P value
Tangibility	Prep school and less	46	3.956	0.535	3.629	0.029*
	Secondary school	54	4.250	0.538		
	University	50	4.185	0.611		
	Total	150	4.138	0.573		
Reliability	Prep school and less	46	4.047	0.720	0.035	0.965
	Secondary school	54	4.059	0.381		
	University	50	4.032	0.437		
	Total	150	4.046	0.521		
Responsiveness	Prep school and less	46	3.896	0.775	5.936	0.003*
	Secondary school	54	4.240	0.322		
	University	50	4.180	0.397		
	Total	150	4.115	0.540		
Assurance	Prep school and less	46	4.000	0.555	5.495	0.005*
	Secondary school	54	4.213	0.288		
	University	50	4.290	0.461		
	Total	150	4.173	0.455		
Empathy	Prep school and less	46	3.826	1.001	3.399	0.036*
	Secondary school	54	4.085	0.476		
	University	50	4.184	0.517		
	Total	150	4.038	0.702		
Total	Prep school and less	46	3.944	0.618	4.450	0.013*
	Secondary school	54	4.160	0.259		
	University	50	4.168	0.307		
	Total	150	4.097	0.425		

*Significant at 0.05 One way ANOVA

Table (4) pointed out that there were statistically significant differences in tangibility ($p=0.029$), responsiveness ($p=0.003$), assurance ($p=0.005$), empathy ($p=0.036$), and the total score ($p=0.013$). To find the direction of these differences, the researcher performed post hoc LSD test as presented in table (5).

Table (5): Multiple comparisons Post hoc LSD test for level of education

Domain	Level of education		Mean difference	p value
Tangibility	Prep school and less	Secondary school	-0.293	0.010*
		University	-0.228	0.049*
Responsiveness	Prep school and less	Secondary school	-0.344	0.001*
		University	-0.283	0.009*
Assurance	Prep school and less	Secondary school	-0.212	0.018*
		University	-0.290	0.002*
Empathy	Prep school and less	Secondary school	-0.259	0.064
		University	-0.357	0.012*
Total	Prep school and less	Secondary school	-0.216	0.011*
		University	-0.223	0.009*

***Significant at 0.05**

Table (5) indicated that patients who have low education (prep school and less) expressed significant lower satisfaction with tangibility compared to patients who have secondary school education ($p=0.010$) and patients who have university education ($p=0.049$). Also, patients who have an education of prep school and less expressed significant lower satisfaction with responsiveness compared to patients who have secondary school education ($p=0.001$) and patients who have university education ($p=0.009$). Moreover, patients who have an education of prep school and less expressed significant lower satisfaction with assurance compared to patients who have secondary school education ($p=0.018$) and patients who have university education ($p=0.002$). In addition, patients who have an education of prep school and less expressed significant lower satisfaction with empathy compared to patients who have university education ($p=0.012$). In general, patients who have an education of prep school and less expressed significant lower satisfaction with the overall quality of provided health services compared to patients who have secondary school education ($p=0.011$) and patients who have university education ($p=0.009$).

Table (6): Association between quality of health services and length of stay in the hospital

Domain	Admission days	n	Mean	SD	t	P value
Tangibility	3-5 days	111	4.164	0.543	0.860	0.349
	6-8 days	39	4.064	0.653		
Reliability	3-5 days	111	4.043	0.465	-0.115	0.909
	6-8 days	39	4.056	0.661		
Responsiveness	3-5 days	111	4.148	0.473	1.077	0.287
	6-8 days	39	4.019	0.696		
Assurance	3-5 days	111	4.216	0.431	1.965	0.073
	6-8 days	39	4.051	0.503		
Empathy	3-5 days	111	4.046	0.651	0.240	0.811
	6-8 days	39	4.015	0.840		
Total	3-5 days	111	4.116	0.377	0.958	0.340
	6-8 days	39	4.040	0.541		

Table (6) examined patients' satisfaction with quality of health services related to their length of stay in the hospital. The results showed that there were statistically no significant differences in tangibility ($p=0.349$), reliability (0.909), responsiveness ($p=0.287$), assurance ($p=0.073$), empathy ($p=0.811$), and the total score ($p=0.340$).

Table (7): Association between quality of health services and number of years having the disease

Number of years having the disease	n	Mean	SD	F	P value
Tangibility	2 years and less	60	3.937	6.712	0.002*
	3-5 years	65	4.288		
	More than 5 years	25	4.230		
	Total	150	4.138		
Reliability	2 years and less	60	3.770	18.736	0.000*
	3-5 years	65	4.181		
	More than 5 years	25	4.360		
	Total	150	4.046		
Responsiveness	2 years and less	60	4.054	0.631	0.534
	3-5 years	65	4.153		
	More than 5 years	25	4.160		
	Total	150	4.115		
Assurance	2 years and less	60	4.020	6.107	0.003*
	3-5 years	65	4.288		
	More than 5 years	25	4.240		

Number of years having the disease		n	Mean	SD	F	P value
Empathy	Total	150	4.173	0.455	4.050	0.019*
	2 years and less	60	3.893	0.890		
	3-5 years	65	4.221	0.438		
	More than 5 years	25	3.912	0.666		
	Total	150	4.038	0.702		
Total	2 years and less	60	3.925	0.528	9.100	0.000*
	3-5 years	65	4.224	0.280		
	More than 5 years	25	4.1764	0.323		
	Total	150	4.097	0.425		

*Significant at 0.05 One way ANOVA

Table (7) examined patients' satisfaction with quality of health services related to years of having the disease. The results indicated statistically significant differences in tangibility ($p=0.002$), reliability ($p=0.000$), assurance ($p=0.003$), empathy ($p=0.019$), and the total score ($p=0.000$). To find the direction of these differences, the researcher performed post hoc LSD test as presented in table (4.15).

Table (8): Multiple comparisons Post hoc LSD test for number of years having the disease

Domain	Number of years having the disease		Mean	p value
Tangibility	2 years and less	3-5 years	-0.350	0.001*
		More than 5 years	-0.292	0.028*
Reliability	2 years and less	3-5 years	-0.411	0.000*
		More than 5 years	-0.590	0.000*
Assurance	2 years and less	3-5 years	-0.267	0.001
		More than 5 years	-0.219	0.038*
Empathy	2 years and less	3-5 years	-0.328	0.009*
		More than 5 years	-0.018	0.910
Total	2 years and less	3-5 years	-0.298	0.000*
		More than 5 years	-0.250	0.010*

*Significant at 0.05

Table (8) indicated that patients who have the disease for 2 years and less expressed statistically significant lower score in tangibility compared to patients who have the disease for 3 – 5 years ($p=0.001$) and patients who have the disease for more than 5 years ($p=0.028$). Also, patients who have the disease for 2 years and less expressed statistically significant lower score in reliability compared to patients who have the disease for 3 – 5 years ($p=0.000$) and patients who have the disease for more than 5 years ($p=0.000$).

Patients who have the disease for 2 years and less expressed statistically significant lower score in assurance compared to patients who have the disease for 3 – 5 years ($p=0.001$) and patients who have the disease for more than 5 years ($p=0.038$).

Moreover, patients who have the disease for 2 years and less expressed statistically significant lower score in empathy compared to patients who have the disease for 3 – 5 years ($p=0.009$).

Overall, patients who have the disease for 2 years and less expressed statistically significant lower score in the total score of the questionnaire compared to patients who have the disease for 3 – 5 years ($p=0.000$) and patients who have the disease for more than 5 years ($p=0.010$).

Table (9): Association between quality of health services and type of cancer

Type of cancer	n	Mean	SD	F	P value
Tangibility	Breast	40	4.256	2.461	0.048*
	Colorectal	38	4.243		
	Uterus	23	4.076		

Type of cancer	n	Mean	SD	F	P value
	Prostate	14	3.767	0.828	
	Others	35	4.078	0.506	
	Total	150	4.138	0.573	
Reliability	Breast	40	4.120	0.325	8.611
	Colorectal	38	4.289	0.331	
	Uterus	23	4.173	0.291	
	Prostate	14	3.614	0.649	
	Others	35	3.788	0.711	
	Total	150	4.046	0.521	
Responsiveness	Breast	40	4.100	0.348	1.340
	Colorectal	38	4.151	0.310	
	Uterus	23	4.228	0.260	
	Prostate	14	4.267	0.317	
	Others	35	3.957	0.953	
	Total	150	4.115	0.540	
Assurance	Breast	40	4.381	0.423	10.967
	Colorectal	38	4.381	0.401	
	Uterus	23	3.923	0.276	
	Prostate	14	4.035	0.133	
	Others	35	3.928	0.509	
	Total	150	4.173	0.455	
Empathy	Breast	40	4.030	0.572	1.540
	Colorectal	38	4.200	0.267	
	Uterus	23	3.808	0.691	
	Prostate	14	4.228	0.312	
	Others	35	3.948	1.129	
	Total	150	4.038	0.702	
Total	Breast	40	4.168	0.346	3.433
	Colorectal	38	4.252	0.121	
	Uterus	23	4.037	0.240	
	Prostate	14	3.977	0.377	
	Others	35	3.933	0.692	
	Total	150	4.097	0.425	

*Significant at 0.05 One way ANOVA

Table (9) presents the association between quality of health services and different types of cancer. There was statistically significant differences in tangibility ($p=0.048$), reliability ($p=0.000$), assurance ($p=0.000$), and total score ($p=0.010$). to find the direction of these differences, the researcher performed post hoc LSD test as presented in table (4.10).

Table (10): Multiple comparisons Post hoc LSD test for type of cancer disease

Domain	Number of cancer disease	Mean difference	p value
Tangibility	Prostate	Breast	-0.488
		Colorectal	-0.475
		Uterus	-0.308
		Others	-0.310

Domain	Number of cancer disease		Mean difference	p value
Reliability	Prostate	Breast	-0.505	0.001*
		Colorectal	0.675	0.000*
		Uterus	-0.559	0.001*
		Others	-0.174	0.248
Assurance	Prostate	Breast	-0.345	0.007*
		Colorectal	-0.345	0.007
		Uterus	0.111	0.416
		Others	0.107	0.403
Total	Prostate	Breast	-0.190	0.138
		Colorectal	-0.275	0.035*
		Uterus	-0.060	0.667
		Others	0.043	0.739

*Significant at 0.05

The table shows the results from a post-hoc Least Significant Difference (LSD) test, comparing mean differences between Prostate cancer patients and patients with other cancer types across various domains (Tangibility, Reliability, Assurance, and Total):

Patients with prostatic cancer expressed significant lower score in tangibility compared to patients with breast cancer (mean difference= -0.488, $p=0.006$), and patients with **colorectal** cancer (mean difference= -0.475, $p=0.008$), but the differences were not significant in patients with uterus cancer ($p=0.108$) and other types of cancer ($p=0.083$).

Patients with prostatic cancer expressed significant lower score in reliability compared to patients with breast cancer (mean difference= -0.505, $p=0.001$), and patients with **colorectal** cancer (mean difference= -0.675, $p=0.000$), uterus cancer (mean difference= -0.559, $p=0.001$), but the differences were not significant in patients with other types of cancer ($p=0.248$).

Patients with prostatic cancer expressed significant lower score in assurance compared to patients with breast cancer (mean difference= -0.345, $p=0.007$), and patients with **colorectal** cancer (mean difference= -0.345, $p=0.007$), uterus cancer (mean difference= -0.559, $p=0.001$), but the differences were not significant in patients with uterus cancer ($p=0.416$) and other types of cancer ($p=0.403$).

Patients with prostatic cancer expressed significant lower score in other types of cancer compared to patients with colorectal cancer (mean difference= -0.275, $p=0.035$), but the differences were not significant in patients with breast cancer (mean difference= -0.190, $p=0.138$), uterus cancer (mean difference= -0.060, $p=0.667$) and other types of cancer (mean difference= 0.043, $p=0.739$).

Discussion

Quality of health services

Tangibility

The highest score was in visually appealing facilities ($m=4.31$, 86.2%): This indicates that participants highly value the physical environment of the healthcare facilities. The score suggests a strong association between a visually pleasant environment and patients' satisfaction. Availability of modern equipment was ranked the second ($m=4.21$, 84.2%): The availability of advanced medical equipment and technology is another critical factor contributing to positive perceptions. This reflects the importance of technology in building patient trust in the quality of care provided. Professional appearance of employees was ranked the third ($m=4.09$, 81.8%): Professional presentation of staff also plays a significant role in patient satisfaction, underscoring the importance of visual and interpersonal elements in healthcare. The overall score was high, reflecting high satisfaction of tangibility in the studied patients. Regarding personal appearance, several patients stated that the hospital staff, especially nurses pay high attention to their personal appearance, they put on unified clean uniform, they are neat, and good looking.

This result was consistent with a recent study carried out by Parasuraman et al. (1988), who found that tangibility factors, particularly visually appealing facilities and modern equipment, often score highly in healthcare settings. In addition, a clean, well-

maintained, and comfortable healthcare facility positively influences patients' perceptions of the service quality. Therefore, tangibility is viewed as a critical factor because it affects first impressions and shape the overall perceptions of the service quality (Sivakumar & Rajendran, 2013), and **Choi et al. (2016)** emphasized the importance of well-maintained physical infrastructure and professional appearance of staff in improving patient satisfaction. Also, the results of Asnawi et al. (2019) reported that hospital image had a big impact on patients' satisfaction. In contrary, the study of Prakash (2019) showed that patients valued staff behavior and responsiveness over physical and visual aspects. In addition the results of Shodiya et al. (2024) implied that patients attending healthcare centers are dissatisfied with the facilities tangibility.

The researcher believes that high scores in tangibility dimensions underscore the importance of investing in visible infrastructure and professional presentation. To further enhance patient satisfaction, healthcare providers could focus on improving aspects like service-related materials and integrate these with digital solutions or interactive formats. These findings highlight the multifaceted nature of health-care service quality and suggest that while patients value competent and empathetic care, the physical environment significantly influences overall quality perceptions.

Reliability

Highest score was noticed in providing services at the promised time. This result suggests that punctuality and adherence to schedules are highly valued by patients, reflecting the importance of time management in healthcare settings. Patients often equate timeliness with efficiency and professionalism. Another high score was noticed in providing services as promised. The high score indicates that meeting expectations and commitments is critical to patients' perceptions of reliability. When healthcare providers deliver on their promises, it strengthens patient confidence. Additionally, adequate number of staff was high as perceived by the patients, which highlights the importance of staffing levels in ensuring timely and consistent service delivery. Adequate staffing helps prevent delays and ensures that patients feel attended to. The overall score was high reflecting a positive perception of reliability in the healthcare services, with punctuality and fulfilling promises standing out as the strongest indicators. From the interview, the patients said that the hospital staff, mainly physicians and nurses are providing the required healthcare service promptly, without mistakes, waiting time is acceptable, and the number of nurses is adequate, especially in the day shifts.

This result was in align with the results of Amina & Khanb (2022) which confirm a positive relationship between reliability and service quality, and reliability plays a significant role in determining the outcome of maternity service quality. Also, **Oliveira et al. (2014)** reported that reliability was a key driver of patients' overall satisfaction with healthcare services, and **Rao et al. (2014)** stated that the consistency of health care, including follow-ups and appointment scheduling, significantly impacts patient satisfaction.

This result highlighted that while reliability in terms of punctuality and meeting commitments is perceived positively, aspects such as problem resolution and first-time accuracy remain areas where improvements could further enhance patient satisfaction. Comparatively, these results align with global studies emphasizing the critical role of reliability in healthcare service quality, but they also reveal opportunities for fine-tuning patient-centered care processes.

Responsiveness

High score observed in keeping patients informed about when services will be performed. This high score reflects the importance of clear communication in healthcare settings. Informing patients about the timing of services helps to set expectations, reduce uncertainty, and improve patient satisfaction. Also, high score obtained in willingness to help patients. The willingness of hospital staff to assist patients is another significant factor that influences the perception of responsiveness. It suggests that patients value not only the technical aspects of care but also the attitudes and behaviors of healthcare providers. Moreover, high score was observed in readiness to respond to patients' enquiries. Patients value timely and accurate responses to their questions, indicating that open and effective communication is a core expectation. The overall score indicating a strong perception of responsiveness, with communication-related factors scoring the highest and promptness identified as a potential area for improvement. As mentioned by most of the patients, the hospital uses information technology and a computerized system with updated information about all the patients, which make it easier to give fast and accurate information about the patients compared to the paper files. Using computerized system will enhance storage and extract of high amount of information in a short period of time. Also, the patients reported that the majority of the hospital

staff are willing to offer help, and meet the patients' needs as soon as possible. They inform me about the time on advance when there are special procedures such as CT, blood test, and treatments.

This result was supported by Rosen et al. (2014) who argued that patients who feel that their healthcare providers listen to them and address their concerns quickly are more likely to be satisfied with their care. **In addition, Berry et al. (2004)**, patients who perceive healthcare providers as responsive to their needs tend to rate their satisfaction higher.

This result demonstrates a strong overall perception of responsiveness, particularly in communication and willingness to assist patients. These findings emphasize the importance of interpersonal aspects of care. However, the lower score in providing prompt service highlights a challenge in healthcare settings, indicating opportunities for improvements to enhance service delivery.

Assurance

High score obtained in employees who instill confidence in patients. This result reflects the importance of patients' trust and confidence in their healthcare providers, and fostering a sense of security. Also, high scores obtained in making patients feel safe. Safety is a cornerstone of patient satisfaction, especially in the delivery of healthcare. High ratings suggest that the healthcare facility provides a secure and reassuring environment. In addition, high scores was observed in employees who have the knowledge to answer patients' questions. One patient said that the hospital staff are encouraging. The nurses and physicians are trusted. I'm confident in their skills and abilities. I feel secured and safe between the hands of the nurses. They are skillful and know what they supposed to do.

This finding emphasizes the value of knowledgeable staff in addressing patient queries and concerns, reflecting the technical competence of healthcare providers. The total score signifies strong performance in the assurance domain, suggesting that the hospital effectively builds trust and confidence among patients. However, the relatively lower rating for courtesy indicates room for improvement.

In my opinion, the findings of this study are consistent with other studies that emphasize the critical role of assurance in healthcare quality. The high ratings for confidence-building, safety, and staff knowledge reflect strong institutional practices. However, the lower score for courtesy suggests a need for targeted improvements in staff behavior to ensure a consistently positive patient experience. Addressing this gap can further enhance overall service quality and patient satisfaction.

Empathy

High score noticed convenient working hours. Convenient working hours is critical in ensuring that patients can seek care without disruption to their routines, which improve patients' accessibility to health services. High score also observed in having the patient's best interest at heart. This result indicates patients' perception that staff genuinely prioritize their well-being, which is an essential aspect of building trust in healthcare. In this regard, one patient said that nurses are interested and concern for all the patients, and deal with each patient individually as a unique person. Nurses are empathetic and take in consideration the circumstances of each patient. The overall score demonstrates good performance in the empathy domain. However, the lower ratings for caring interactions suggest that some patients perceive gaps in the emotional connection with staff. The study of Farhani, (2023) showed that the responsiveness, reliability, assurance and tangible variables had a positive and significant effect on consumer satisfaction, while the empathy variable had a negative and insignificant effect on consumer satisfaction.

From the researcher's point of view, these findings highlight strong performance in empathy, particularly in providing individual attention and maintaining convenient working hours. However, the lower score for caring interactions underscores the need for targeted strategies to enhance emotional engagement with patients. Comparisons with other studies indicate that these findings are consistent with other studies, though the specific gaps in showing care reflect challenges that are context-specific and could be addressed through focused interventions.

Overall quality of health service

Ranking of the dimensions of quality of health service showed that assurance was rated by the patients as the highest dimension, which reflects patients' confidence in the competence, knowledge, and trustworthiness of healthcare providers. This aligns with the critical role that assurance plays in building trust, and ensuring a positive perception of care quality. The second-highest dimension was tangibility, which highlights the value patients place on the physical environment and resources, such as modern equipment, visually appealing facilities, and the professional appearance of staff. A positive tangible environment enhances the patient

experience and perception of quality. The lowest score was in empathy. Despite being the lowest-rated dimension, empathy still received a positive score, indicating that patients generally feel understood and valued. However, the relatively lower score suggests opportunities to enhance personalized care and emotional connection with patients. The total mean score ($m = 4.09$, 81.8%) reflects strong overall performance across the five SERVQUAL dimensions, with no major weaknesses. The relatively balanced scores across dimensions indicate a well-rounded healthcare service. As extracted from the interview the patients mostly exhibited satisfaction with the quality of health service they received during their stay in the hospital. Some patients complained from the transportation, especially those who are living in the southern parts of Gaza Strip; they said that the hospital is far away from their residence area and asked if the hospital can afford transportation to them or to their family members.

Comparison with other studies reflected variability in results. The study of Fatima et al. (2019) reported that the SERVQUAL was the most commonly used model to measure healthcare service quality, and tangibility found to be the most common dimension rated by respondents. This result was consistent with the results of Derisi et al. (2020) which reported that the highest dimension of patient satisfaction with the quality of services was assurance, followed by reliability, while the least effective was empathy. In addition, Agostinho et al. (2023) who found that patients' satisfaction with quality of health services was high, and the highest average score was in quality of service ($m = 4.50$, 90%) and quality of care ($m = 4.47$, 89.4%). In contrary, lower results obtained by Abbasi-Moghaddam et al. (2022) which indicated that the total mean score of service quality was 3.73 (74.6%), and the results of Sharour et al. (2021) indicated moderate quality of oncology nursing care.

The overall score of 4.09 (81.8%) is comparable to findings in developed healthcare systems, where service quality is generally high. In resource-constrained settings, however, overall scores tend to be lower, reflecting challenges such as staff shortages, outdated facilities, and high patient loads.

I think that the finding that **assurance** is ranked as the highest dimension of quality in healthcare reflects a crucial aspect of patients' satisfaction and healthcare delivery. Patients place a high value on the competence and knowledge of healthcare providers, as these directly impact their confidence in receiving effective and safe care. This is especially critical in healthcare, where trust in the provider's ability is foundational. Assurance encompasses the provider's ability to communicate confidence and integrity. Trust is not just a desired quality but a necessity, as patients often make significant decisions based on the advice and recommendations of healthcare professionals.

Moreover, the perception of assurance goes beyond clinical outcomes. Feeling secure and reassured contributes to a patient's overall experience and reduces anxiety, especially in vulnerable situations such as chronic illness and cancer. Healthcare providers should prioritize clear, transparent communication to reinforce confidence in their competence and decisions.

Association between quality of health service and sociodemographic factors

Gender

Several studies investigated the role of gender in satisfaction with quality of provided health services. The study of Lu et al. (2020) reported that gender was a significant factor affecting the level of service quality, and the results of Chang et al. (2019) found significant association between gender and quality of provided healthcare services. In addition, the results of Abbasi-Moghaddam et al. (2022) found significant relationship between positive perception of service quality and gender, and the study of Wasihun et al. (2024) found that female expectations were statistically significantly higher compared with the male expectations in the dimensions of tangibility and reliability. Furthermore, the results of Chico et al. (2024) indicated significant association between gender and overall satisfaction with quality of healthcare services. Whereas, the results of Sharour et al. (2021) showed higher score among male patients than female patients. In contrast, the results of Derisi et al. (2020) found no significant association between gender and quality of service, and the study of A'aqoulah et al., (2022) reported that gender did not have an influence on the health service quality.

The finding of significant gender-based differences in satisfaction with reliability and assurance, with higher satisfaction among female patients, is an important insight. It suggests that men and women perceive and experience healthcare differently, even though their overall satisfaction levels and satisfaction in other dimensions (tangibility, responsiveness, empathy) do not differ significantly. Female patients might have a stronger preference for clear communication and may perceive providers as more trustworthy

and dependable when efforts are made to explain treatments, diagnoses, and care plans thoroughly. This could explain their higher satisfaction in assurance.

Age

The results of this study showed that in general, there were statistically no significant differences in patients' satisfaction with quality of health services related to age, while patients aged more than 60 years old expressed significant higher satisfaction with reliability. This result was consistent with the results of A'aqoulah et al., (2022) who reported that age did not affect perception of quality of health services, and Al-Damen (2017) found no significant association between age and healthcare quality.

Different results noticed by Dopeykar et al. (2018) who reported that age was a significant factor that have an influence on quality of care, and the findings of Chang et al. (2019) and Lu et al. (2020) reflected significant association between age and health service quality. Also, the results of Chico et al. (2024) indicated significant association between age and overall satisfaction with quality of healthcare services, and the results of Wasihun et al. (2024) revealed that patients whose age greater than 65 years old had statistically significant highest expectations and a more negative gap in the dimensions of assurance compared with other age groups. The findings that patients over 60 years old expressed significantly higher satisfaction with reliability, while there were no statistically significant differences in overall satisfaction, provide meaningful insights into how different aspects of healthcare quality are perceived by older patients.

Older patients typically have more frequent and prolonged interactions with healthcare providers compared to younger patients. Over time, they may develop familiarity and trust in the staff ability to deliver consistent and dependable care, increasing their satisfaction with reliability. In addition, many older adults manage their illness, where reliability (regular follow-ups, consistent medication access, and predictable care processes) is crucial. Positive experiences in these areas could explain their higher satisfaction levels.

Education level

The results of this study showed statistically significant association between quality of health services and education level, as patients with low education (prep school and less) exhibited statistically significant low satisfaction with tangibility, responsiveness, assurance, empathy and the overall quality of health services. This result agreed with the result of Abbasi-Moghaddam et al. (2022) who found significant relationship between positive perception of service quality and level of education, and the results obtained by Chico et al. (2024) indicated significant association between education level and overall satisfaction with quality of healthcare services. In contrast, this result was inconsistent with the results of Wasihun et al. (2024) which showed that patients who had a college degree and above had statistically significant higher expectations in the dimensions of tangibility.

The finding that patients with lower education levels report significantly lower satisfaction with various dimensions of healthcare quality (tangibility, responsiveness, assurance, empathy, and overall quality) is a critical insight. This association highlights disparities that may arise from differences in expectations, understanding, and communication between healthcare providers and patients. Patients with lower education levels may have limited health literacy, making it difficult for them to fully understand medical procedures, treatment plans, or health-related instructions. This gap can lead to perceptions of poor communication (responsiveness, assurance) and empathy from healthcare providers.

Length of stay in the hospital

The length of stay (LOS) in hospital has been a focus of research in quality of clinical care and efficiencies, mostly in older adults living with chronic conditions (Inabnit et al., 2018). LOS has been suggested as a meaningful outcome measure that is a potential target for quality improvement activities (Guru et al., 2005). The results showed that there were statistically no significant differences in tangibility, reliability, responsiveness, assurance, empathy, and the total score related to length of stay in the hospital. This result was consistent with the result of Borghans et al. (2012) who found no correlation between LOS and patient satisfaction with healthcare services.

This result suggests that the perceived quality of service dimensions (tangibility, reliability, responsiveness, assurance, empathy, and the overall score) are not influenced by the LOS in the hospital. This is an interesting finding as it challenges the assumption

that longer hospital stays might negatively or positively affect a patient's perception of service quality. The lack of statistical significance could also mean that patients' perceptions of these dimensions are shaped more by their interactions and less by the duration of their stay. It's worth exploring if there are other, unmeasured aspects influencing patient satisfaction.

Number of years having the disease

The results indicated significant association between length of time having the cancer disease and satisfaction with tangibility, reliability, assurance, empathy, and the overall quality of health services, as patients who have the disease for two years and less expressed statistically significant lower satisfaction compared to patients who have the disease for longer years. The findings suggest an intriguing dynamic between the length of time living with cancer and patient satisfaction with various dimensions of healthcare quality. Patients who have recently been diagnosed with cancer may be in the early stages of coping with their diagnosis, which can involve emotional distress, uncertainty, and low awareness regarding treatment options and healthcare processes. This might negatively affect their perception of healthcare quality. Newly diagnosed patients may have higher or unrealistic expectations of the healthcare system. If these expectations are not met (e.g., quick results, seamless processes), their satisfaction levels may be lower.

The initial phase of treatment often involves a significant amount of information regarding prognosis, treatments, and procedures. Patients may feel overwhelmed and perceive the service as less empathetic or reliable. Patients who have the disease longer time might develop a better understanding of healthcare processes, forming realistic expectations and coping mechanisms. Also, over time, patients often build rapport with their healthcare providers, which could enhance perceptions of empathy and assurance.

Type of cancer

The results showed significant association between type of cancer and tangibility, reliability, assurance, and the overall quality of health services, and patients with prostatic cancer showed significant lower satisfaction with quality of health services. This result was consistent with the results of Wasihun et al. (2024) which indicated significant association between type of cancer and satisfaction with quality of health services, and patients with cervical cancer had statistically significant lowest perception and highest expectations compared with other patients with cancer in the dimension of reliability. Also, Abate et al. (2020) found that the mean overall satisfaction of patients with the services provided at the adult oncology center was significantly low (44.8%), and type of cancer was a factor associated with patient satisfaction.

On the other hand, the results of Derisi et al. (2020) reflected no significant correlation between the type of cancer and patients' perceptions, expectations, and quality gap.

Prostate cancer often involves complex decision-making, including choosing between active surveillance, surgery, radiation therapy, or hormone therapy. Patients may perceive the process as confusing or lacking clarity, affecting their satisfaction with reliability and assurance. Also, prostate cancer often requires long-term follow-up and management. Patients might feel that the healthcare system lacks reliability in addressing their ongoing concerns or ensuring continuity of care. In addition, treatments for prostate cancer can lead to significant side effects, such as urinary incontinence, sexual dysfunction, and hormonal changes, which may impact the patient's quality of life and perceptions of healthcare quality.

Conclusion:

The study indicated high satisfaction with the quality of health services at Turkish Friendship Hospital.

Recommendations:

In the light of the results, the researcher recommends the need to adopt the SERVQUAL as an instrument to evaluate the quality of provided healthcare services in the hospital. The need to consider patients' opinion and perception with the service they received when assessing the quality of health services. Also, the need to focus on psychological support and empathy with patients and their families.

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