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The Effect of Staff Training on Quality of Patient Care in a tertiary Hospital

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List of Abbreviations

Abbreviation	Full Form
AVE	Average Variance Extracted
COVID-19	Coronavirus Disease 2019
EMR	Electronic Medical Record
HIS	Health Information System
ICT	Information and Communication Technology
JD	Job Description
KPI	Key Performance Indicator
N	Sample Size
PLS	Partial Least Squares
PLS-SEM	Partial Least Squares Structural Equation Modeling
PhD	Doctor of Philosophy
SD	Standard Deviation
SEM	Structural Equation Modeling
SPSS	Statistical Package for the Social Sciences
TQM	Total Quality Management
VIF	Variance Inflation Factor

Abstract

Background: Ensuring high-quality patient care remains a central priority in modern healthcare systems, and staff training plays a critical role in enhancing clinical competence, service delivery, and patient outcomes. Despite its importance, limited empirical evidence exists on how structured staff training influences specific dimensions of patient care quality in tertiary hospital settings.

Objectives: This study aimed to examine the effect of staff training on the overall quality of patient care and its five dimensions, tangibility, reliability, responsiveness, assurance, and empathy, within a tertiary hospital. It also sought to assess the strength of these relationships through descriptive analysis, correlation testing, reliability and validity assessment, and structural modeling.

Methods: A quantitative, cross-sectional research design was employed using a validated questionnaire administered to 100 healthcare professionals across multiple departments. Descriptive statistics, Pearson correlations, construct reliability tests, and Partial Least Squares Structural Equation Modeling (PLS-SEM) were used to analyze the data. Pilot testing ensured clarity and tool reliability prior to full deployment.

Results: Findings demonstrated that staff training significantly influenced all dimensions of patient care quality. Staff training showed strong positive correlations with tangibility, reliability, responsiveness, assurance, empathy, and overall patient care quality. Reliability tests confirmed high internal consistency across constructs, while the structural model indicated strong explanatory power, with substantial R-squared values for all dependent variables. All hypotheses (H1, H1a–H1e) were accepted.

Conclusion: The results confirm that staff training is a vital driver of enhanced patient care quality within tertiary hospital environments. Strengthening structured training programs can improve service delivery, foster patient trust, and enhance the patient experience across all quality dimensions. The study highlights the need for continuous professional development as a strategic priority for healthcare organizations seeking sustained quality improvement.

Keywords: Staff training; patient care quality; healthcare services; PLS-SEM; hospital performance; responsiveness; professional development

Chapter 1: Introduction

1.1. Background of the Study

Due to rapid medical innovation and rising patient expectations, healthcare institutions globally prioritize high-quality care. Tertiary hospitals are exceptional in their complexity and importance. These referral clinics treat complicated patients using specialists and innovative technologies. Tertiary hospitals' operational complexity requires sophisticated infrastructure and a skilled and informed staff. Thus, healthcare performance requires ongoing personnel training (Yusuf, 2020). Staff training helps doctors, nurses, administrators, and support staff gain new skills, update existing knowledge, and follow clinical guidelines, technological improvements, and ethical standards. The goal is to improve professional performance and patient care. Workshops, simulations, online courses, mentorship, and hands-on procedural training are available to hospital staff. No matter the format, the goal is to prepare healthcare personnel for safe, efficient, patient-centered care (Yan et al., 2022).

Tertiary hospitals, which treat difficult patients, have found that healthcare quality is crucial to patient outcomes. These institutions are the last resort for complex medical conditions, needing skilled staff to handle complex treatments and patient needs. Such facilities must maintain high standards of patient care since even little errors can have serious repercussions due to the intricacy of the patients they handle. Staff training has long been deemed crucial to enhancing care in these settings. Continuous professional development (CPD) and specialized training improve healthcare outcomes by giving personnel the latest knowledge and skills to manage the fast-changing medical landscape. Westbrook et al. (2020) shows that staff training in clinical skills, patient communication, and safety measures can reduce medical errors, improve team coordination, and increase patient satisfaction (Westbrook et al., 2020). Tertiary hospitals need seamless collaboration amongst diverse teams to provide patient care. Effective emotional intelligence, communication, and cultural competency training improves patient-provider interactions, trust, and satisfaction (Yan et al., 2022). Such training helps nurses provide compassionate, tailored care, increasing patient outcomes (Galan et al., 2019).

The direct link between staff training and improved patient care is unclear, especially in low-resource areas like Africa and Asia. Staff training has had inconsistent effects on work satisfaction and care quality in Nigeria and China, often due to differences in training quality, duration, and assessment techniques (Akinwale & George, 2020; Wan et al., 2018). Despite these obstacles, training programs improve care delivery. Li et al. (2020) and Tilahun and Fritz

(2015) found that consistent, targeted training can improve care quality's responsiveness, reliability, and tangibility, which are crucial to patient safety and satisfaction in tertiary hospitals. Akinwale and George (2020) found that a supportive work environment and appropriate training improve job satisfaction and patient care in Nigerian tertiary hospital nurses. Kieft et al. (2014) demonstrated that a favorable work atmosphere and proper staff training directly improve patient experiences, especially in nursing, where interpersonal contacts are key. These studies show that well-trained staff improves clinical results and promotes safety and professionalism at the individual and institutional levels.

Despite these findings, several studies emphasize the need for further rigorous research to relate training and patient care quality, especially in developing countries (Sarafis et al., 2016; Shie, 2022). Tertiary hospitals in low- and middle-income countries confront several obstacles, including limited resources and large patient volumes, thus staff training must be tailored to their needs. To fill this vacuum, this study examines how staff training affects patient care in a Saudi Arabian tertiary hospital, a region with distinct healthcare issues and prospects for improvement (Olsen et al., 2019). This association is examined to educate future training programs and improve tertiary hospital treatment.

The WHO emphasizes workforce development for health system strengthening. WHO says well-trained clinicians are more likely to follow evidence-based practices, connect with patients, and work in multidisciplinary teams. Patients are happier, medical mistakes are reduced, and clinical results improve. Several governments and health organizations have invested heavily in staff training to improve healthcare quality. Staff training has not been shown to improve patient care, especially in low nation tertiary hospitals. Most study has focused on primary or general hospitals, ignoring tertiary care dynamics (Westbrook et al., 2020). This study addresses this gap by examining how staff training influences tertiary hospital patient care. Tertiary hospitals handle complex medical conditions under clinical pressure, requiring technical expertise, emotional intelligence, and teamwork. Training programs must be effective in these situations. Training may not improve patient care, thus institutions may need to adjust their technique, content, or treatments (Wan et al., 2018).

This study analyzes many healthcare quality assessment framework-based care quality dimensions. These include responsiveness (staff meeting patient demands swiftly and effectively), reliability (delivering accurate and consistent care), empathy (expressing patients' feelings), and assurance. To determine how staff training affects clinical outcomes, the study evaluates these factors (Tilahun & Fritz, 2015). The complexity of patient requirements and focus on patient-centered care make this study relevant. Commorbid patients and those who

need specialty care in tertiary settings have limited space for error. Continuous training becomes strategic, not simply legal. Hospitals must be accountable and enhance quality for accreditation, insurance, and patient advocacy groups. If effective, staff training can achieve these goals (Shie et al., 2022).

The report also answers hospital administrators' and lawmakers' evidence-based resource allocation requests. Due to healthcare budget constraints, training must be justified by benefits. A strong link between staff training and patient care quality would support training and possibly garner stakeholder support. Reevaluating training approaches to improve relevance and efficacy may be necessary if no substantial impact is detected (Shah, 2018). Finally, healthcare leaders in developing nations face structural difficulties like understaffing, high patient volumes, and inadequate training infrastructure, making the findings relevant. In such circumstances, effective, scalable, and context-appropriate training could improve healthcare delivery. This research aims to improve tertiary care by adding to the scientific literature and offering practical suggestions to hospital administrators, training coordinators, and healthcare planners (Seun-Fadipe et al., 2019). This study examines whether tertiary hospital staff training enhances patient care. Research on service quality indicators and healthcare personnel' perceptions and experiences influences policy and practice. Given the importance of staff competency in healthcare quality, this study may affect workforce development (Sarafis et al., 2016).

1.2. Research Problem

Public trust and institutional legitimacy depend on patient care quality in modern healthcare systems. Hospital administrators and governments have understood the need for structured training programs for healthcare personnel' professional growth throughout the past decade. increase staff competence, reduce clinical errors, increase communication, and promote safety and patient-centered care. Well-trained staff can better fulfill patients' needs, follow clinical protocols, and collaborate to offer high-quality care. Many healthcare organizations, especially in developing nations, show significant variation in patient care results and service delivery standards despite extensive training (Reisi et al., 2018). Tertiary hospitals, the top level of national healthcare, are most affected. Specialist hospitals manage complex medical cases from primary and secondary care providers. Tertiary settings necessitate a professional and responsive workforce due to case severity and clinical accuracy. Many departments need skilled doctors, nurses, and support staff. However, extensive research

has not demonstrated that these training programs improve patient care. In many cases, actual data rarely supports the idea that training improves outcomes (Rajguru, 2018).

Staff training has been linked to patient care quality measures in few well-designed studies. Training is often done administratively without impact assessment. There is no standard definition of "effective training," and programs vary in duration, substance, delivery, and evaluation. This inconsistency makes objective training efficacy measurement and generalization across healthcare institutions difficult (Ragazzoni et al., 2020). Without accurate training-treatment data, hospital management must make strategic judgments on assumptions. This wastes money and people without improving patient satisfaction or healthcare performance. Staff training must be verified to determine its impact on care delivery as healthcare costs rise and hospital governance becomes more accountable (Piotrowski et al., 2021). Tertiary hospitals provide more sophisticated and diversified patient care, hence few studies have studied this topic. Therefore, this study fills a substantial knowledge gap by exploring whether staff training improves patient care in tertiary institutions (Oo et al., 2021). In the short the problem statement is “There is insufficient empirical evidence to establish whether staff training leads to measurable improvements in the quality of patient care in tertiary hospitals.”

1.3. Research Questions

- **RQ1:** What is the current level of staff training in the selected tertiary hospital?
- **RQ2:** What is the perceived quality of patient care from the perspective of healthcare providers?
- **RQ3:** Is there a significant relationship between staff training and the overall quality of patient care?
- **RQ4:** Which dimensions of care quality tangibility, reliability, responsiveness, assurance, and empathy are most influenced by staff training?
- **RQ5:** What strategies can be proposed to strengthen the link between staff training and patient care quality in tertiary hospitals?

1.4. Research Objectives

- **RO1:** To assess the extent, frequency, and type of staff training programs conducted in the tertiary hospital.
- **RO2:** To evaluate the current level of patient care quality based on the SERVQUAL dimensions.

- **RO3:** To examine the statistical relationship between staff training and overall patient care quality.
- **RO4:** To identify which specific SERVQUAL dimensions are most affected by staff training initiatives.
- **RO5:** To propose evidence-based recommendations for improving patient care quality through effective and continuous staff training.

1.5. Research Hypotheses

1.5.1. Main Hypothesis

H0 (Null Hypothesis): There is no significant relationship between staff training and the quality of patient care in the tertiary hospital.

H1 (Alternative Hypothesis): There is a significant relationship between staff training and the quality of patient care in the tertiary hospital.

1.5.2. Sub-Hypotheses

H1a: Staff training has a significant effect on the *tangibility* dimension of patient care quality.

H1b: Staff training has a significant effect on the *reliability* dimension of patient care quality.

H1c: Staff training has a significant effect on the *responsiveness* dimension of patient care quality.

H1d: Staff training has a significant effect on the *assurance* dimension of patient care quality.

H1e: Staff training has a significant effect on the *empathy* dimension of patient care quality.

1.6. Significance of the Study

This study's theoretical contribution to healthcare quality research and practical application for hospital administrators, practitioners, and policymakers are significant. As global healthcare systems become increasingly complicated and resource-constrained, efficient, evidence-based management techniques are needed more than ever. Staff training is a popular method. Training programs are intuitively appealing and frequently deployed, but their effects on patient care outcomes are unknown, especially in developing country tertiary institutions. This study experimentally examines staff training and patient care quality to fill that gap, providing many benefits.

1.6.1. Theoretical Significance

The key theoretical significance of this study is its potential to improve HRD and healthcare quality management, which intersect in hospitals. Healthcare HRD improves worker

performance and service results using adult learning, organizational behavior, and quality improvement ideas. Staff training is widely recognized as a strategic strategy for improving hospital efficiency, patient outcomes, and employee engagement, but empirical research on its impact on care quality, particularly in tertiary healthcare, is needed. This study addresses that theoretical gap by examining how structured staff training influences patient care in a Saudi tertiary hospital. This study refines healthcare service quality measurement theory using Parasuraman, Zeithaml, and Berry's SERVQUAL model. SERVQUAL was designed for general services, but its adaption to health services provides an empirical framework to assess tangible and intangible care delivery qualities. The model's five dimensions, tangibility, reliability, responsiveness, assurance, and empathy, reflect the complexity of healthcare services, where technical outcomes, interpersonal interactions, care provider responsiveness, and environmental factors shape patient experiences. This study tests and validates SERVQUAL in tertiary hospitals, expanding healthcare service quality theory.

This research quantifies human capital theory and quality-of-care frameworks. It investigates whether staff training boosts organizational performance and patient happiness. This association empirically supports models that regard training as capital accumulation that produces superior healthcare. Data-driven validation replaces conceptual training efficacy assumptions, filling a fundamental gap in the research. It adds to CPD and lifelong learning ideas by assessing training's lifespan and impact on workplace behavior and service outcomes. Most comparative research has concentrated on Western healthcare systems, hence Saudi Arabia and the Eastern Health Cluster are theoretically significant. This research uses context-specific data from Vision 2030's rapidly modernizing healthcare system to broaden theories' geographical and cultural scope. Systematic and recurrent staff training improves patient-centered care and organizational performance. It argues that technology infrastructure and human resource intellectual and professional advancement are necessary for high-quality healthcare.

1.6.2. Practical Significance

Hospital executives, policymakers, and physicians who enhance healthcare need this study. Current healthcare systems have limited financial, human, and technological resources, therefore every effort, including staff training, must improve performance and patient satisfaction. This study demonstrates how training interventions can strategically improve patient care. This study could assist hospital executives calculate staff development ROI and justify financing and resources for ongoing professional training. Hospital management can evaluate training programs and make improvements using the findings. Managers can allocate

resources by understanding how training affects patient care aspects including responsiveness, certainty, and empathy. Structured, relevant, and goal-oriented training programs can help close healthcare delivery performance disparities. The SERVQUAL framework helps administrators evaluate service efficacy and align staff development with hospital quality goals in the research.

National authorities can discover how staff capacity building can support Saudi Vision 2030's quality healthcare, workforce localization, and efficiency goals. This study can improve patient care by creating national standards for staff training, professional accreditation, and performance review. With statistically significant linkages between training and quality, the findings can inform required training and health cluster resource distribution policies. The study covers healthcare workers' practical difficulties. Validating the link between staff development and professional achievement may inspire medical and nursing professionals to study for life. Staff engagement with institutional goals rises when they believe training enhances patient outcomes, work satisfaction, and career progression. This creates a self-sustaining hospital culture of quality and responsibility. The study concludes with empirical indicators for healthcare quality and accreditation authority performance evaluation systems. Regulatory agencies set realistic hospital accreditation and continuous quality improvement targets by understanding staff training and patient care outcomes. The study offers immediate ways to improve training efficiency and promotes evidence-based management and professional growth for long-term healthcare excellence.

1.7. Scope and Delimitation of the Study

This study's area, population, conceptual focus, and time span define its scope and delimitation, assuring viability, coherence, and relevance. A defined scope helps maintain methodological precision and validate research findings. This investigation is limited to a tertiary hospital in Saudi Arabia's Eastern Health Cluster since healthcare delivery and staff training vary. This large hospital delivers advanced clinical services to a diverse patient group, making it a representative case study. This institution's dynamics, difficulties, and prospects for staff development and patient care in complicated tertiary healthcare systems are studied. This study covers one Eastern Health Cluster tertiary hospital. Strategically restricting. As part of the Ministry of Health reform, the Eastern Health Cluster, one of Saudi Arabia's most advanced healthcare systems, unites hospitals, primary clinics, and specialized institutions under one governance framework. The study can assess staff training in a highly structured, technologically advanced, and national healthcare transformation goals context. Limiting the

study to one hospital lets the researcher investigate relationships and outcomes more closely. This method limits the applicability of findings to hospitals outside the cluster or other Kingdom administrative areas.

This study comprises doctors, nurses, and allied clinical professionals who treat patients. Hospital operations depend on these professional groups, which are primarily affected by staff training. Doctors and nurses see patients most, altering clinical and patient experience. Patient care quality is determined by pharmacists, laboratory technologists, radiographers, and physiotherapists' diagnostic, therapeutic, and support services. Instead of just one healthcare professional category, the study evaluates the hospital's care delivery system using these three groupings. Administration, receptionists, and maintenance personnel are excluded from this study since they are crucial yet indirectly related to patient care quality. Staff training is independent, patient care quality is dependent. Structured education and skill-enhancement boost hospital staff skills. Workshops, seminars, online modules, simulations, and CPD are examples. Participants' perceptions of training program efficacy, frequency, and relevance are assessed. However, SERVQUAL evaluates patient care quality on five dimensions: tangible, reliability, responsiveness, assurance, and empathy. This multifaceted approach shows how training affects technical and interpersonal healthcare delivery. Training can impact clinical performance, staff reaction to patient needs, and empathy during encounters, affecting care quality.

The 2025 study collects, analyzes, and reports data. Training and patient care views can be studied cross-sectionally in this period. The researcher adopted a cross-sectional approach to evaluate situations simultaneously rather than longitudinally. The master's project timeframe hindered long-term studies of training programs' effects. Its temporal limit simplifies the inquiry without compromising its veracity. Methodological constraints are crucial to this study. A systematic questionnaire is given to healthcare workers for quantitative study. Self-reported data provides a complete picture of perceptions and experiences, but it may overestimate performance or social desirability. Proper survey item design, pilot testing, and ethical research alleviate these issues. The study does not measure morbidity, death, or readmission rates since they require long-term surveillance and clinical data that this academic research cannot give. Due to research showing that staff perceptions are reliable indicators of organizational performance and service quality, patient care quality is investigated through them.

Finally, only internal staff perceptions of training efficacy and care quality are examined. Although patient-reported experiences are valuable, practical and ethical constraints restrict this study. Training is assessed as an institutional practice that impacts care quality, not

as a program. Leadership style, staffing ratios, and cash allocation may affect the analysis, but they are excluded for clarity. In summary, this quantitative survey examines doctors, nurses, and other clinical staff at a Saudi Arabian Eastern Health Cluster tertiary hospital. Cross-sectional 2025 study of staff training and patient care quality. The study is cohesive, targeted, and realistic while showing how organized training can improve service quality in complex healthcare scenarios by making its boundaries apparent.

1.8. Theoretical Framework

SERVQUAL, a well-established theoretical framework, compares consumer expectations to service quality perceptions in this study. Parasuraman, Zeithaml, and Berry's idea is employed in banking, retail, hospitality, and healthcare. Strong, its multidimensional structure includes physical and intangible service delivery components. SERVQUAL explains how service characteristics affect patient experience and care quality in healthcare (Kieft et al., 2014). SERVQUAL contains tangibility, reliability, responsiveness, assurance, and empathy. Each dimension offers a unique service excellence perspective. These characteristics meet the needs of complex, critical patients in hospitals, especially tertiary care. They represent the skills and attitudes healthcare personnel must demonstrate with patients and clinical teams daily. Staff training may alter these traits for professional development and quality improvement. It provides a coherent and systematic framework for examining how training interventions improve patient care (Li et al., 2020). Facilities, equipment, workers, and communication materials seem tangible. Hospital hygiene, medical equipment, staff dress, and informational signage are included. These evident elements often affect patients' first impressions of a hospital. Keep tangibility by following cleanliness guidelines, using medical equipment properly, and presenting professionally. Infection control, environmental standards, and patient-centered design training enhance this. Staff who learn the value of physical surroundings are more inclined to maintain their workstations, enhancing patient confidence in the institution's reliability (Mandell et al., 2019).

Healthcare provider reliability means they provide as promised. This is crucial to healthcare, where errors can be fatal. Hospital reliability factors include accurate diagnosis, treatment plan adherence, fast service, and patient communication. With updated clinical information, standard operating procedures, and evidence-based practices, medical staff training enhances reliability. Training personnel in best practices reduces performance variability and increases care predictability and reliability. Maintain high standards and decrease clinical gaps via refresher courses and competency evaluations (McGrath et al., 2019).

Staff responsiveness indicates readiness to help patients swiftly. Hospital responsiveness can make or break a patient experience, especially in tertiary care with high-acuity patients. It involves prompt patient responses, complaint resolution, and proactive procedure and wait time communication. Training enhances responsiveness by stressing time management, priority, and patient-firstness. Staff trained to anticipate patient needs and manage workflows can enhance this. Healthcare staff receive communication and customer service training to understand patients' emotions and respond quickly, improving treatment (Mobolaji-Olajide et al., 2020).

Staff expertise, decency, and trustworthiness are guarantees. Patients' perceptions of staff competency, communication professionalism, and psychological safety during treatment determine healthcare assurance. Tertiary hospital patients undergo difficult and sometimes life-changing procedures and require professional and trustworthy staff. Clinical skills, procedures, and patient communication training improve confidence. Simulation-based training lets doctors practice procedures in a controlled environment, improving their accuracy. Ethical training and informed consent workshops teach staff patient rights and responsibilities, building trust (Nilakantam et al., 2021). The SERVQUAL framework ends with empathy and individualized care. When hospital patients are vulnerable and scared, empathy can boost their happiness. This requires listening to patients, respecting their dignity, involving them in decision-making, and appreciating their unique conditions. When empathy cannot be taught, emotional intelligence, cultural competency, and interpersonal sensitivity can build it. Role-playing, introspective exercises, and peer and patient feedback help staff comprehend caregiving's human side. Empathetic leaders raise its importance across the institution (Piotrowski et al., 2021).

This study uses SERVQUAL to assess how staff training influences patient care quality and experience. This method offers controlled and measurable service delivery evaluation after training. This research can investigate professional progress and tertiary hospital quality results (Ragazzoni et al., 2020). Finally, the SERVQUAL model provides a comprehensive theoretical framework for staff training and patient care quality. This multidimensionality reflects healthcare service delivery complexity and matches most training program competencies. It drives research tool creation and interpretation, making it ideal for this study. SERVQUAL is used to generate insights that could improve training design, hospital policies, and patient outcomes (Reisi et al., 2018).

1.9. Organization of the Study

Chapter One provides an overview of the study by presenting the background, problem statement, research objectives, questions, hypotheses, significance, and theoretical framework. It establishes the foundation and direction for the entire research project.

Chapter Two offers a comprehensive review of related literature and theoretical perspectives relevant to staff training and patient care quality. It identifies research gaps and develops the conceptual basis upon which the present study is built.

Chapter Three details the research methodology, including the research design, population, sampling techniques, data collection tools, and methods of data analysis. It outlines the systematic approach used to ensure reliability and validity of the study.

Chapter Four presents the results of data analysis, interpretation of findings, and their connection to the research hypotheses. It discusses the outcomes in relation to previous studies and theoretical expectations.

Chapter Five concludes the study by summarizing major findings and presenting recommendations for hospital management, policymakers, and future researchers. It also highlights the study's contributions, limitations, and implications for practice and further research.

Chapter 2: Literature Review

2.1. Introduction

Modern healthcare systems, especially tertiary institutions with large and diverse patient populations, stress quality. Staff training is crucial to provide healthcare workers with the knowledge, skills, and attitudes needed to provide safe, efficient, and compassionate care. Hospital service effectiveness depends on infrastructure, technology, and staff skills. Recently, scholars and practitioners have studied how staff training improves patient care (Akinwale & George, 2020). Tertiary hospitals' complex service systems and diversified teams demand continuing staff development for patient care. Patient satisfaction and safety improve with structured and recurrent training on employee happiness, work engagement, and care standards (Kanwal et al., 2022; Cheng, 2020).

Staff training is a critical investment in Saudi healthcare's Vision 2030 transformation to improve workforce efficiency, clinical results, and service quality. This scenario suits professional growth and tertiary hospital care quality studies. Healthcare service quality study shows that leadership, resources, staff competence, and organizational environment affect patient satisfaction (Dong et al., 2020; Gaalan, 2019). Staff gain confidence in clinical processes, technology, and patient communication through training (Bahnassy, 2018; Ragazzoni et al., 2020). Parasuraman, Zeithaml, and Berry's SERVQUAL model explains how healthcare personnel' skills and conduct affect service quality. The approach evaluates hospitals on tangibleness, reliability, responsiveness, certainty, and empathy (Shie et al., 2022). Data from many healthcare systems supports this theoretical linkage. Copanitsanou et al. (2017) and Yan et al. (2022) found that good work conditions and professional development impact nurses' job satisfaction and care quality. Poor training and support cause occupational stress and disengagement, impacting patient experiences and safety (Sarafis et al., 2016; An et al., 2020). These findings demonstrate that training programs are deliberate interventions for institutional excellence, not just operational necessity.

To deliver patient-centered care, modern healthcare requires responsive, caring, and learning staff. Communication, cultural competence, and patient safety training build patient loyalty (Shie et al., 2022; Rajguru, 2018). Leadership, task management, and fair performance evaluations determine how successfully training outcomes translate into real-world performance (Wan et al., 2018; Westbrook, 2020). This literature review combines theoretical and empirical data on tertiary staff training and healthcare quality. Staff training definition, types, and impacts, care quality dimensions and assessment, and the theoretical framework

connecting them, particularly SERVQUAL, are examined. The chapter concludes by identifying literature gaps, emphasizing the necessity for quantitative research in Saudi tertiary healthcare, and presenting the current study as a data-driven solution.

2.2. Staff Training

Healthcare human resource development requires staff training to improve knowledge, skills, and conduct. Planned, systematic personnel and organizational performance improvement. Tertiary hospitals, with significant clinical complexity and patient acuity, require ongoing training (Bahnassy, 2018). Human Capital Theory says training increases production, innovation, and quality (Akinwale & George, 2020). Healthcare investments boost patient safety, error reduction, and clinical outcomes. Staff training involves educational and experiential activities to maintain professional competence and enhance evidence-based practice. In-service training, simulations, workshops, seminars, and CPD are examples. Practical experience or organized sessions or digital courses can teach employees (Goldsworthy, 2021). Effective training programmes teach communication, teamwork, and empathy as well as technical abilities like using new medical technology and following clinical protocols (Ragazzoni et al., 2020).

Medical, nursing, and allied health workers in tertiary care collaborate through staff training. Cheng et al. (2020) discovered that training motivates and reduces turnover by improving nurses' organizational support and professional self-efficacy. In Mongolian tertiary hospitals, professional education and skill development highly predicted nursing care quality, according to Gaalan et al. (2019). These findings suggest training improves individual and institutional performance. Healthcare providers' mental health and resilience increase with training. Structured “just-in-time” training increased healthcare workers' preparedness and morale during stressful events like the COVID-19 pandemic (Ragazzoni et al., 2020). Burnout, job dissatisfaction, and poor treatment result from inadequate training (An et al., 2020; Sarafis, 2016).

Thus, continuous professional development is a legal requirement and a critical strategy for workforce stability and high-quality treatment in challenging conditions. Organizational and individual factors affect training effectiveness. Leadership commitment, institutional culture, and financial and technological resources impact training delivery and perception (Wan et al., 2018). Akinwale and George (2020) found that supportive work environments, fair rewards, and professional recognition motivate and engage employees, improving training efficacy. Lack of managerial support or poorly organized training may not change behavior

and waste costs. Training impacts patient satisfaction, operational efficiency, and hospital accreditation beyond individual competencies. Reisi et al. (2018) found that Iranian hospital certification and training improved nurses' care quality perceptions. Kanwal et al. (2022) found that training enhanced Pakistani tertiary care personnel competency and patient satisfaction. These studies prove institutional excellence training's systemic usefulness.

Many hospitals' training is reactive rather than strategic, despite its value. Yusuf (2020) observed that inadequate or outdated training induced nurse workplace stress, underlining the need for systematic, ongoing learning. Training technology integration, such as EMR systems, involves capacity building to ensure success (Tilahun & Fritz, 2015; Oo et al., 2021). Healthcare is undergoing digital change, thus training programs must encompass information management, cybersecurity, and patient data protection. Finally, tertiary hospitals need staff training for operations and strategy. Healthcare workers can address changing patient requirements, promote organizational learning, and improve service quality. Training appears to increase performance and patient outcomes. This quantitative study on staff training and patient care quality is needed to determine how these affects affect Saudi tertiary healthcare.

2.2.1. Concept and Definition of Staff Training

Healthcare staff training is a planned and purposeful collection of actions to develop employees' knowledge, skills, attitudes, and professional behaviors to improve job performance and organizational outcomes. Capacity-building programmes include discrete short courses, organised CPD routes, on-the-job learning, and simulation-based practise (Akinwale & George, 2020; Cheng et al., 2020). Employee training connects competencies with institutional policies, clinical protocols, and emerging best practices, investing in human capital (Human Capital Theory) and improving healthcare outcomes and service quality (Galan et al., 2019). Long and formative, general education is typical. Tertiary hospital training involves technical skills like advanced equipment, infection control, and clinical guidelines and non-technical abilities like communication, teamwork, ethics, and emotional intelligence that improve patient experience. Fast, concentrated “just-in-time” training equipped personnel for high clinical demands and psychological resilience during COVID-19 (Ragazzoni et al., 2020). Technologies like electronic medical records and digital diagnostics have expanded training to include information literacy and system usability (Tilahun & Fritz, 2015; Oo et al., 2021).

Training outcomes include participation rates, information retention, competency demonstration, point-of-care behavior change, and patient safety and satisfaction increases. Training efficacy requires requirements assessment, institutional alignment, and robust

evaluation frameworks like Kirkpatrick's four-level model that analyzes reaction, learning, behavior, and results (Cheng et al., 2020). Training that is inconsistent, poorly targeted, or unfollowed generally leads to compliance rather than capacity growth (Yusuf, 2020; Wan et al., 2018). Finally, high-resource, Western tertiary center curricula and delivery methods may not be transferable without adaptation to local clinical realities, resource constraints, cultural norms, and workforce profiles. In low- and middle-income settings, context-specific content and delivery, such as short, focused infection-control modules or simulation drills for common procedural errors, can enhance results (Galan et al., 2019; Nilakantam, 2021). Thus, tertiary staff training is a deliberate, multifaceted process that incorporates technical education, behavioural development, and institutional support to improve clinical practice and patient care.

2.2.2. Objectives and Importance of Staff Training in Healthcare

Technical competence, safety-oriented conduct, patient-centered interpersonal skills, and flexibility to evolving clinical difficulties are improved by healthcare personnel training. Primary training helps healthcare personnel provide vital treatments safely and effectively, reducing adverse events, prescription errors, and unnecessary consequences (Mandell et al., 2019; McGrath, 2019). Tertiary hospitals with complex procedures and high patient acuity require trained clinical capabilities for clinical governance and risk management. Training aims include communication, teamwork, and leadership that affect patient experience and continuity beyond clinical activities. Staff training in communication and collaboration improves patient satisfaction and treatment plan adherence (Shie et al., 2022; Rajguru, 2018). Transdisciplinary and simulation drills increase emergency team coordination, response times, and clinical outcomes (Ragazzoni et al., 2020). Empathy and emotional intelligence training reduce patient anxiety and increase confidence, which are SERVQUAL traits connected to patient loyalty and trust (Sarafis et al., 2016; Shie, 2022).

Staff training reduces turnover and retains institutional expertise, improving retention, motivation, and work satisfaction and indirectly improving treatment (Akinwale & George, 2020; Wan et al., 2018). Training opportunities reflect organizational investment in staff career progression and professional recognition, which enhances engagement and minimizes burnout, which impacts quality delivery (An et al., 2020; Yusuf, 2020). Clinical practise meets regulatory and accrediting standards, making training vital for institutional readiness and external quality assurance (Reisi et al., 2018). Electronic medical records and clinical decision support systems are essential to modern tertiary care, thus their adoption and safe use are critical. Targeted training in these systems reduces user error, improves data quality, and helps

doctors use digital tools for better diagnostic and treatment decisions (Tilahun & Fritz, 2015; Oo et al., 2021). Training decreases process delays, patient flow, and resource waste, supporting comprehensive staff development initiatives (Li et al., 2020).

Finally, emergency readiness and adaption require training. COVID-19 demonstrated the significance of rapid, targeted training for surge conditions, infection management, and specific treatment paths to maintain system resilience in crisis. Clinical safety, patient experience, workforce sustainability, technological uptake, and institutional resilience are improved by staff training to support high-quality patient care.

2.2.3. Types and Methods of Staff Training

Healthcare staff training achieves cognitive information acquisition, psychomotor skill development, and emotional domain changes in attitudes and interpersonal behavior via several methods. Traditional classroom-based workshops and seminars for didactic updates on clinical guidelines and policies provide structured learning environments for disseminating standardized content, but modern tertiary hospitals use blended learning to address accessibility and shift schedules. E-learning platforms are adaptive and scalable, but they need digital literacy and organizational support to be widely adopted in resource-constrained contexts (Oo et al., 2021). Tertiary care benefits from simulation-based training, which lets doctors practice high-risk surgeries and interdisciplinary responses in a safe environment. High-fidelity simulation drills improve skill, intraoperative errors, and emergency team communication in surgery suites and critical care units (Goldsworthy, 2021; Ragazzoni et al., 2020). Simulation measures proficiency beyond self-reported learning with quantitative performance indicators. Applying formal instruction to practice requires real-time feedback and contextualization from on-the-job training and mentorship (Galan et al., 2019).

OSCEs or workplace tests verify competency in predetermined skill areas and performance standards in competency-based training. These models fit accreditation and credentialing processes and are crucial in specialist tertiary services where procedural skill influences patient safety (Mandell et al., 2019). Through peer learning and reflective practice, morbidity and mortality reviews, case conferences, and journal clubs encourage inquiry and accountability (McGrath et al., 2019). Clinical and institutional memory improves with social learning. Brief, concentrated “just-in-time” training before or during therapeutic tasks works well in rapidly changing scenarios like pandemic reactions that necessitated rapid protocol dissemination (Ragazzoni et al., 2020). These pragmatic treatments require brief, high-yield materials and strong leadership when time and resources are constrained. Focusing on

relational and systems care, interprofessional workshops and team-based training improve handovers, silos, and departmental coordination (Wan et al., 2018).

Knowledge assessments and participant feedback measure immediate learning, while workplace observations, audits, and patient outcome indicators measure behaviour change and organizational impact (Cheng et al., 2020; Reisi, 2018). The literature warns against one-size-fits-all training modalities, picking them based on outcomes, resources, and workforce characteristics. Blended techniques frequently balance depth and scalability well.

2.2.4. Factors Affecting the Effectiveness of Staff Training

Staff training efficacy is influenced by organizational, individual, and contextual factors that promote or hinder clinical practice improvement. Hospital executives that emphasize training, offer sufficient resources, and publicly advocate continual professional development boost staff engagement and behavior change. Top-down, underfunded, or disconnected training breeds mistrust and low adoption. Workplace culture impacts ward and clinic learning. Working settings that penalize departure or lack psychological safety inhibit experimentation and improvement, whereas those that foster questioning, feedback, and interprofessional collaboration normalize novel methods (Kieft et al., 2014; Westbrook, 2020). Staffing ratios and workload can impact training effectiveness. Overworked staff may not have time to attend programs or practice new skills, and high turnover dilutes institutional learning. Such factors may prevent well-designed initiatives from sustaining change.

Learner motivation, prior experience, and instructional relevance affect engagement and retention. Adult learning theory promotes tailoring training to learners' needs and enabling quick application to increase perceived value and behaviour transfer (Cheng et al., 2020). Encouragement, recognition, and linked training completion to professional progress or appraisal systems increase adherence (Akinwale & George, 2020). Due to access and skill gaps, e-learning and digital platforms may hamper acceptance if technology readiness and digital literacy are not addressed (Tilahun & Fritz, 2015; Oo et al., 2021). Evaluation and feedback loops maintain training benefits. Organizations cannot evaluate training or change content without comprehensive assessment, from post-training knowledge assessments to longitudinal audits of practice and patient outcomes (Reisi et al., 2018). Training targets in accreditation and regulatory frameworks can motivate institutions to improve, but they must be combined with internal quality improvement strategies (Piotrowski et al., 2021).

Low-resource tertiary hospitals may not have simulation labs or reserved time for training, thus micro-learning, mobile-based courses, or peer-led sessions that achieve core outcomes are necessary. Finally, COVID-19 showed that external shocks like pandemics or

policy changes can disrupt scheduled training and provide quick, focused education to boost readiness (Ragazzoni et al., 2020). Leadership, culture, learner traits, evaluation, and context determine training success. These factors must be aligned to turn training into patient care quality gains.

2.2.5. Theoretical Models Related to Training and Performance

Several theoretical models are used to plan, implement, and evaluate staff training interventions and healthcare performance. Human Capital Theory posits that investing in education and training boosts productivity and organizational performance, which in healthcare means better-trained physicians will deliver better care and prevent unnecessary harms (Akinwale & George, 2020). Kirkpatrick's Four-Level Model links immediate educational outputs to long-term organizational outcomes like patient safety and satisfaction by evaluating training at four levels, reaction, learning, behaviour, and results, using an economic perspective and a practical evaluative framework (Cheng et al., 2020). According to Donabedian's Structure–Process–Outcome model, training changes clinical behaviors and workflows, which affect patient outcomes. This approach helps healthcare by showing how human resources and systems investments affect clinical indicators (Li et al., 2020). The SERVQUAL framework operationalizes dimensions, tangibility, reliability, responsiveness, assurance, and empathy, that are directly related to staff behaviors and competences produced by training (Shie et al., 2022). Thus, SERVQUAL's consumer-oriented traits and Donabedian's outcomes-focused approach link staff development and patient-centered quality measurements.

For systemic change, organizational behavior and learning theories like Argyris and Schön's double-loop learning and Senge's learning organization promote reflective practice, frequent feedback, and adaptive learning for training. These theories explain why solo training courses seldom integrate new material into daily practice without organizational processes that encourage reflection, error reporting, and iterative improvement (McGrath et al., 2019; Westbrook, 2020). Attitudes, subjective norms, and perceived behavioral control affect trained staff's chance of adopting new practises, explaining individual training transfer differences (Wan et al., 2018). Finally, socio-technical systems theory reminds researchers and managers that human performance depends on the fit between people, tasks, technology, and organizational structures, so training must be combined with appropriate system design, such as workflows and technological tools, to be effective (Tilahun & Fritz,

These theoretical models provide a robust framework for researching staff training's patient care benefits: Donabedian and SERVQUAL link procedures to patient outcomes, Human Capital Theory and Kirkpatrick explain investment and assessment logic, and

organizational and behavioral theories explain environmental and individual variables that affect performance. Based on this integrated theoretical framework, this study hypothesizes that structured, contextually relevant training will increase tertiary hospital SERVQUAL service quality.

2.3. Quality of Patient Care

Modern health-service research defines patient care quality as how well interventions meet patients' physical, emotional, and informational demands and improve clinical outcomes. The Donabedian structure, process outcome paradigm states that good outcomes require enough structural resources, competent human inputs, and effective care methods (Li et al., 2020). Tertiary hospitals, where specialty, complicated case mixes, and technology intensity interplay, require trained staff and considerable professional growth. Quality is scientific and moral because every patient encounter requires precision, speed, safety, and compassion. The empirical literature describes quality as multifaceted. SERVQUAL evaluates healthcare delivery and technology on five dimensions: tangible, dependability, responsiveness, assurance, and empathy (Shie et al., 2022). Patients first impressions are shaped by facility cleanliness, equipment availability, and staff appearance (Nilakantam et al., 2021). Provider responsiveness is their willingness to help patients instantly, whereas reliability is their capacity to deliver as promised (Kanwal et al., 2022). Assurance is professional competence, courtesy, and trust-building, whereas empathy is individualized attention and emotional connection, the humanistic essence of care (Sarafis et al., 2016).

These features aid hospital care delivery and experience evaluation. Studies across healthcare systems reveal that work environment and labor capacity affect quality. Akinwale and George (2020) found that supportive environments boost nurses' job satisfaction and patient care. Copanitsanou et al. (2017) and Gaalan et al. (2019) suggest positive leadership, teamwork, and staffing increase nurse and patient outcomes. However, stress, understaffing, and workplace violence lower morale and care (Seun-Fadipe et al., 2019; An, 2020). These studies show physicians' psychological and operational surroundings affect patient care. Technology and information systems affect service quality in literature. EHR training improves patient safety, documentation accuracy, and care continuity (Tilahun & Fritz, 2015; Oo et al., 2021). Digital incompetence delays, annoys, and reduces responsiveness. Workplace ergonomics and equipment functionality affect patient happiness and efficiency (Akinwale & George, 2020). Quality management requires patient-feedback surveys, clinical audits, and accreditation reviews (Reisi et al., 2018).

Technical skills, communication, and ethics, all five SERVQUAL traits, improve with training (Bahnassy, 2018; Dong et al., 2020). Methodical professional growth improves hospital accreditation, patient happiness, and mistake rates (Kanwal et al., 2022). “Just-in-time” training improved staff preparedness and perceived safety during the COVID-19 pandemic, showing that capacity-building promotes clinical resilience (Ragazzoni et al., 2020). Frontline nurses can experience stress, despair, and poor service quality due to inadequate training (An et al., 2020). Tertiary care quality depends on human competency, institutional support, and patient experience. Companies' training, leadership, and infrastructure shape coordinated, empathic service. Research links quality to caregivers' professional growth. This study examines how structured staff training improves Saudi tertiary hospital patient care.

2.3.1. Concept and Definition of Patient Care Quality

Patient care quality depends on how well health services enhance outcomes and meet professional standards. Empathy, communication, respect for patients' wishes, and technical diagnosis and therapy are represented. According to Donabedian's (1988) classical paradigm, knowledgeable personnel, efficient processes, and patient-centered care improve healthcare quality. Complex, specialty tertiary hospitals need integration (Li et al., 2020). In addition to clinical effectiveness, the Institute of Medicine defines high-quality patient care as safety, efficiency, timeliness, equity, and patient-centeredness (McGrath et al., 2019). Provider-patient communication strongly impacts care quality. Studies reveal that nurses and doctors' behaviors considerably impact patients' satisfaction and trust, which are indicators of care quality (Shie et al., 2022; Yan, 2022). The empirical-subjective approach requires technical skill and empathy.

2.3.2. Dimensions of Healthcare Service Quality

Parasuraman, Zeithaml, and Berry's 1988 SERVQUAL model is still used to assess healthcare service quality. Patients' expectations and judgments of tangibility, reliability, responsiveness, assurance, and empathy are compared. Facilities, equipment, and staff affect patients' first impressions of the hospital (Nilakantam et al., 2021). Healthcare practitioners' reliability involves fulfilling deadlines and implementing treatment plans (Kanwal et al., 2022). Staff response affects patient satisfaction and efficiency (Mobolaji-Olajide et al., 2020). Assurance encompasses healthcare staff proficiency, courtesy, and credibility that promote trust and confidence (Reisi et al., 2018), while empathy entails individualized treatment and the emotional connection between caregivers and patients (Sarafis et al., 2016). Each component differs by specialty and patient acuity in tertiary institutions. Oncology and palliative care wards may offer counseling and communication, whereas emergency rooms may require quick

response. Patient-centered quality evaluation and service delivery-staff performance linkage are complete with these traits.

2.3.3. Measuring Quality of Patient Care

Numerous quantitative and qualitative measures quantify patient care quality. A major technique for measuring service quality perception is the SERVQUAL questionnaire, modified to healthcare as SERVQHOS and HEALTHQUAL (Shie et al., 2022). These models capture patient pleasure and trust, which greatly influence loyalty and treatment adherence. Others, like HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems), benchmark patient feedback using standardized forms (Yan et al., 2022). These subjective ratings are supported by objective measures like mortality, readmissions, infection control, and safety incidents (McGrath et al., 2019; Mandell, 2019). However, in developing contexts and tertiary hospitals in the Middle East, including Saudi Arabia, staff assessments are valuable proxies for patient outcomes, especially when patient feedback mechanisms are limited or culturally constrained (Reisi et al., 2018). This study uses SERVQUAL measures to measure healthcare providers' perceived patient care quality.

2.3.4. Factors Influencing Patient Care Quality

Hospital treatment quality depends on provider qualities, systemic, and organizational factors. Staff competence and motivation are major drivers of care outcomes; well-trained and satisfied healthcare personnel are more likely to follow safety measures and have positive patient perceptions. Leadership support, organizational justice, and enough staffing affect job satisfaction and care quality (Wan et al., 2018). However, stressful work settings, excessive workloads, and workplace violence have been linked to lower healthcare quality and higher turnover (Seun-Fadipe et al., 2019; An et al., 2020). Technology readiness and digital system integration are developing quality factors. Electronic medical record training improves efficiency, lowers documentation errors, and improves patient outcomes in high- and low-resource settings (Tilahun & Fritz, 2015; Oo et al., 2021). Staff performance and patient satisfaction are also affected by building cleanliness, equipment availability, and design (Akinwale & George, 2020; Copanitsanou et al., 2017). Social-cultural and systemic elements including leadership transparency, equitable workload distribution, and policy consistency impact care quality improvement durability. Hospitals that promote respect, interdisciplinary teamwork, and continuous learning have higher patient trust and satisfaction (Westbrook et al., 2020; Shie, 2022).

2.3.5. Relationship between Staff Training and Patient Care Quality

Staff training improves patient care, according to empirical research. Technical proficiency, communication, and empathy, SERVQUAL dimensions, are improved by training. Nigeria, Pakistan, and China found that structured training programs increase service quality and patient satisfaction (Kanwal et al., 2022; Gaalan, 2019; Dong, 2020). Similarly, Reisi et al. (2018) found that hospital accreditation and training programs enhanced nurses' quality care perceptions. During the COVID-19 pandemic, An et al. (2020) found that emergency nurses with poor training during high-stress periods were more depressed and had lower service quality. In Saudi Arabia, Bahnassy (2018) found that Health Information Systems training enhanced nursing satisfaction and workflow efficiency, proving that professional development benefits staff and patients. Training is a performance-enhancing technique that improves reliability, responsiveness, and assurance, the foundation of high-quality patient care, according to the literature.

2.4. The SERVQUAL Framework

The 1988 SERVQUAL model by Parasuraman, Zeithaml, and Berry is a major conceptual framework for assessing service quality in healthcare and other industries. The discrepancy between consumers' expectations and service impressions is service quality. Patients and their families evaluate hospital quality through direct interactions with staff, systems, and facilities (Shie et al., 2022). Five service quality factors, tangibility, reliability, responsiveness, assurance, and empathy, capture various but interrelated patient experience components. The multimodal framework helps healthcare organizations assess technical skill and interpersonal and environmental elements that affect patient satisfaction. Tangible care encompasses buildings, equipment, and staff appearance. Tertiary hospitals' tangible elements directly affect patients' perceptions of organizational professionalism and safety (Nilakantam et al., 2021). Hospital reliability is measured by meeting deadlines, providing consistent care, and following protocols (Kanwal et al., 2022). Staff responsiveness shows punctuality and accessibility by helping patients swiftly. Assurance is healthcare personnel' civility, competence, and credibility that inspire patient confidence (Reisi et al., 2018), whereas empathy is customized attention and the emotional connection that transforms ordinary service into compassionate healing (Sarafis et al., 2016).

These dimensions diagnose service delivery system strengths and weaknesses completely. Because it promotes human-centered care, SERVQUAL has been widely used in healthcare. It has been used to assess patient satisfaction in tertiary hospitals, nursing care

services, and outpatient departments, confirming its reliability and construct validity (Mobolaji-Olajide et al., 2020; Rajguru, 2018). SERVQUAL can identify quality gaps in poor nations without elaborate performance-measurement systems at minimal cost (Galan et al., 2019). Clinical metrics like mortality and infection rates are combined with patient-perception orientation to create a full picture that includes outcome indicators and sensory feedback. Despite its strengths, SERVQUAL has been critiqued for cultural bias and treating expectation-perception differences as uniform across settings. To overcome these restrictions, SERVQHOS, HEALTHQUAL, and HOSQUAL use domain-specific indicators such as patient safety, clinical effectiveness, and communication (Shie et al., 2022).

The five basic elements are still useful and can be integrated with Donabedian's framework and Human Capital Theory. This SERVQUAL study ties staff training to patient-perceived care quality. Training boosts staff competence, communication, and empathy, matching SERVQUAL's certainty, responsiveness, and empathy. Empirical investigations support this. In Kanwal et al. (2022), organized training interventions enhanced nurses' reliability and responsiveness scores, while in Bahnassy (2018), HIS-related training improved tangibility and assurance through efficient workflow and professional presentation. Reisi et al. (2018) found accreditation-driven training enhanced Iranian hospital nurses' quality perceptions. These findings corroborate SERVQUAL's hypothesis that professional competence and relational quality satisfy patients. SERVQUAL found empirical and conceptual linkages between staff training and patient care quality. Human resource investment experiences are captured in five categories, translating abstract skill development into patient-centered indicators. Thus, SERVQUAL is used to assess how structured staff-training programs improve care quality in a Saudi tertiary hospital.

2.4.1. Origin and Conceptual Foundations of SERVQUAL

The SERVQUAL model by Parasuraman, Zeithaml, and Berry (1988) compares consumers' expectations and service performance across sectors. SERVQUAL was originally designed for marketing and service but quickly took off in hospitality, education, and healthcare. The notion suggests that perceived service quality is based on expected vs. perceived service. When perceptions exceed expectations, quality is higher; disappointment occurs when they fall short (Shie et al., 2022). This fits patient-centered care, which prioritizes patient needs, preferences, and satisfaction. This approach captures functional and relational care in five dimensions: palpable, reliability, responsiveness, assurance, and empathy. Hospital environment, equipment, and personnel appearance are tangible variables, while reliability assesses the ability to provide accurate and reliable services (Nilakantam et al., 2021).

Response demonstrates motivation to help patients, confidence shows competence and civility, and empathy displays personalised care and compassion (Sarafis et al., 2016).

Although SERVQUAL's marketing beginnings are unconnected to healthcare, its experience-based evaluation methodology complements patient hospital ratings. Staff reliability and empathy, two SERVQUAL attributes substantially impacted by staff training and interpersonal competence, determined patient satisfaction and trust in Pakistani tertiary hospitals, according to Kanwal et al. (2022). SERVQUAL assessed service inadequacies in Indian tertiary institutions, demonstrating its cultural adaptation, according to Rajguru (2018). Human Capital Theory and Donabedian's structure–process–outcome paradigm shaped SERVQUAL. These references confirm the model's emphasis on staff competency and organizational procedures as quality predecessors. Saudi healthcare reform emphasizes efficiency and patient satisfaction under Vision 2030. SERVQUAL tracks service delivery improvement in a methodical and culturally acceptable manner (Bahnassy, 2018).

In contrast to SERVQUAL's subjective perception data and linear expectation–perception connections, contextual adaptations such SERVQHOS, HEALTHQUAL, and HOSQUAL incorporate clinical safety and administrative efficiency indicators (Shie et al., 2022). The original model still has strong predictive validity and provides a broad but customizable patient care assessment lens. Finally, SERVQUAL relies on expectation theory, human interaction, and quality management. Multidimensional structure enables healthcare organizations translate abstract experiences into practical insights, making it a good tool for measuring staff training and organizational development's impact on patient care.

2.4.2. Application of SERVQUAL in Healthcare

A major achievement in service quality research is the SERVQUAL model's adaptation to healthcare to analyze patient happiness and delivery performance. SERVQUAL assesses hospital service inadequacies, allocates resources, and plans targeted improvements. Multiple hospital systems have validated its use to assess clinical, administrative, and nursing service quality (Mobolaji-Olajide et al., 2020; Rajguru, 2018). Mobolaji-Olajide et al. (2020) employed SERVQUAL in Nigerian tertiary institutions and found that responsiveness and assurance were most important in nursing service satisfaction. Nilakantam et al. (2021) evaluated Indian outpatient services using SERVQUAL and found that tangibility and reliability impacted patient satisfaction. These data support SERVQUAL's universality but show that local expectations, cultural norms, and resource constraints alter populations and care settings' priorities.

SERVQUAL links patient satisfaction to clinical performance criteria in developed nations. In China, Dong et al. (2020) related organizational fairness and job engagement to nursing care quality, suggesting that SERVQUAL dimensions can impact organizational features and care outcomes. Bahnassy (2018) found that Health Information Systems training improved Saudi nurses' satisfaction and patients' trustworthiness and responsiveness. The association between internal capacity-building and outward service perceptions illustrates SERVQUAL's value in analyzing professional development programs. SERVQUAL now evaluates interdepartmental services using staff (not patients) quality assessments. Tertiary hospitals have complex workflows that require department cooperation, making internal adaption useful. Staff assessment of service quality helps administrators detect patient experience-affecting internal restrictions (Galan et al., 2019).

Healthcare SERVQUAL application demands methodological rigor and contextual awareness. Cultural respect, empathy, and hierarchy strongly affect patient reactions, therefore the model must account for them (Shie et al., 2022). SERVQUAL paired with objective measurements like wait times, infection rates, and readmission statistics balances perceived and real quality (McGrath et al., 2019; Mandell, 2019). SERVQUAL's widespread use in worldwide healthcare systems illustrates its durability, adaptability, and empirical validity as a patient-centered quality paradigm. It helps hospitals quantify abstract quality goals for continuous development and policymaking by linking interpersonal and operational care.

2.4.3. Critiques and Modifications of SERVQUAL

SERVQUAL is frequently used to measure service quality, although it has disadvantages. Critics believe expectation–perception gaps oversimplify complex service experiences, especially in healthcare where patient expectations vary (Shie et al., 2022). Unlike corporate transactions, hospital encounters create patient expectations by emotional distress, uncertainty, and power asymmetry (Sarafis et al., 2016). Health and cultural expectations can vary satisfaction with similar treatment outcomes. Other concerns include the model's dimensional universality. Sectors and cultures vary in tangibleness, reliability, responsiveness, assurance, and empathy. Healthcare studies suggest that communication, accessibility, and trust are vital, but SERVQUAL does not include these (Kanwal et al., 2022; Nilakantam, 2021). Thus, researchers propose contextual fit adjustments. SERVQHOS, created by Babakus and Mangold (1992), was hospital-specific, while HEALTHQUAL involved professionalism and patient safety. These developments emphasise the necessity to adapt the paradigm to ethical, highly regulated healthcare.

SERVQUAL criticisms stress method. In lengthy healthcare surveys, analyzing expectations and perceptions independently may generate respondent fatigue or cognitive dissonance, say experts. Others say the difference-score approach can hide key patterns when expectation and perception scores are high (Shie et al., 2022). Newer models like SERVPERF emphasize performance perceptions above expectation gaps. SERVQUAL still finds anomalies to enhance service. Another consideration is cultural adaptability. Due to authority or cultural respect for healthcare professionals, Middle Eastern and Asian patients may underreport dissatisfaction (Reisi et al., 2018). Thus, SERVQUAL paired with qualitative input like interviews or focus groups can provide richer, more accurate insights. As healthcare uses more digital interfaces, scholars suggest integrating system usability and data security to SERVQUAL (Tilahun & Fritz, 2015; Oo et al., 2021).

Despite these issues, SERVQUAL's variety and diagnostic power make it relevant. It helps hospital management identify service gaps, prioritize training, and fund patient satisfaction. Its cultural and technical versatility makes it essential for healthcare service evaluation. This study examines how structured staff training programs improve patient care quality in Saudi tertiary hospitals across five areas using SERVQUAL.

2.5. Empirical Studies on Staff Training and Patient Care Quality

A major achievement in service quality research is the SERVQUAL model's adaptation to healthcare to analyze patient happiness and delivery performance. SERVQUAL assesses hospital service inadequacies, allocates resources, and plans targeted improvements. Multiple hospital systems have validated its use to assess clinical, administrative, and nursing service quality (Mobolaji-Olajide et al., 2020; Rajguru, 2018). Mobolaji-Olajide et al. (2020) employed SERVQUAL in Nigerian tertiary institutions and found that responsiveness and assurance were most important in nursing service satisfaction. Nilakantam et al. (2021) evaluated Indian outpatient services using SERVQUAL and found that tangibility and reliability impacted patient satisfaction. These data support SERVQUAL's universality but show that local expectations, cultural norms, and resource constraints alter populations and care settings' priorities.

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association between internal capacity-building and outward service perceptions illustrates SERVQUAL's value in analyzing professional development programs. SERVQUAL now evaluates interdepartmental services using staff (not patients) quality assessments. Tertiary hospitals have complex workflows that require department cooperation, making internal adaption useful. Staff assessment of service quality helps administrators detect patient experience-affecting internal restrictions (Galan et al., 2019).

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2.5.1. Overview of Empirical Linkages Between Training and Care Quality

Global health system study shows that staff training improves patient care. Clinical competence, professional confidence, and staff conduct improve with training (Dong et al., 2020). Training helps tertiary healthcare workers navigate complex clinical protocols with precision and consistency (Galan et al., 2019). Techniques are highly specialized and interdisciplinary teamwork is essential. Several studies relate training to better patient outcomes. Akinwale and George (2020) found that a good work environment and structured professional development improved nurses' job satisfaction and service delivery in Nigerian universities. Constant and updated nurse training boosted in-patient satisfaction, according to Mobolaji-Olajide et al. (2020). Tech and people skills, especially SERVQUAL reliability and responsiveness, promote patient satisfaction. Training boosts company culture and engagement. Dong et al. (2020) found that continuous learning enhances nurses' fairness, motivation, and professional identity, improving care results. Galan et al. (2019) discovered that hospitals with long-term staff education have superior quality scores than inconsistent or ad hoc programs. The findings show that human capital investment enhances patient care quality and consistency.

2.5.2. Effects of Training on Staff Competence and Performance

By connecting theoretical knowledge to clinical practice, training improves staff competence. Bahnassy (2018) noted that Health Information Systems (HIS) training in Saudi tertiary hospitals increased staff satisfaction, reduced paperwork errors, and increased patient

trust. This supports Oo et al. (2021), who found that ICT literacy training enhanced electronic medical record adoption preparedness, improving care efficiency and safety. Communication, empathy, and teamwork are also affected by training. Kanwal et al. (2022) found that communication-focused training helps nurses provide more individualized and responsive care, enhancing patient satisfaction. Sarafis et al. (2016) found that professional stress and insufficient training impair empathy and caring, which are essential to quality healthcare. Thus, persistent performance development requires extensive technical and interpersonal training.

2.5.3. Training and Patient Safety Outcomes

Staff training substantially affects patient safety. Research shows that insufficient training causes medical errors, infection control, and safety culture issues. McGrath et al. (2019) found that expanded clinical surveillance system training improved patient safety and staff workflow in U.S. hospitals. Reisi et al. (2018) observed that accreditation-driven training in Iran improved nurses' safety and service quality perceptions. The COVID-19 epidemic highlighted the importance of training and safety. Ragazzoni et al. (2020) found that “just-in-time” training at an Italian tertiary hospital improved preparedness, anxiety, and clinical response. Alternatively, An et al. (2020) found that insufficient emergency preparedness training among Chinese frontline nurses increased sadness and decreased treatment quality. Continuous training builds resilience, confidence, and situational competence, which improve patient safety and quality care.

2.5.4. Impact of Training on Patient Satisfaction and Service Experience

Training has been shown to improve patient satisfaction in different healthcare systems. Training helps healthcare workers display SERVQUAL aspects like empathy, responsiveness, and assurance (Shie et al., 2022). Kanwal et al. (2022) revealed that patient satisfaction in Pakistani tertiary institutions was substantially linked to staff competency and courteousness, which were fruits of structured professional training. Nilakantam et al. (2021) found that training programs at South Indian tertiary institutions improved outpatient patient satisfaction by improving dependability and tangibility. In addition, Rajguru (2018) found that hospitals that regularly hold in-service training sessions have greater satisfaction rates. Yusuf (2020) also stated that insufficient professional growth can raise stress and job discontent, lowering patient satisfaction. Research shows that training improves staff morale and patient satisfaction, demonstrating the link between workforce development and patient-centered care.

2.5.5. Identified Research Gaps and Need for the Present Study

Saudi tertiary healthcare has little quantitative research on training and patient care quality, despite global evidence. Bahnassy (2018) and other research focus on HIS training and

staff satisfaction rather than the relationship between staff training and patient care quality. Most past research used qualitative or descriptive methods without statistical examination of variable connections. The literature also shows few Middle Eastern research integrating SERVQUAL with staff training metrics. International research (Dong et al., 2020; Kanwal et al., 2022; Reisi, 2018) reveals robust connections, but Saudi healthcare's cultural, institutional, and regulatory peculiarities demand specialized inquiry. This gap motivates this quantitative study, which examines how staff training affects perceived patient care quality in a Saudi tertiary hospital, measured by SERVQUAL categories of tangibility, reliability, responsiveness, assurance, and empathy.

2.6. The Role of Continuous Professional Development in Healthcare

Professionals in all healthcare fields require CPD to stay current. Modern medicine is continuously changing, and CPD keeps doctors up to date on new technologies, treatment methods, and clinical guidelines. Lifelong CPD enables healthcare professionals learn new skills, adapt to changing demands, and increase their knowledge. Lectures, workshops, online courses, peer learning, simulations, and certificates are examples. Institutional policies and national health agendas standardize clinical competencies and encourage best practices (Akinwale & George, 2020). Healthcare CPD boosts clinical performance. Frequent training prepares staff to handle complex patient demands, employ new medical equipment, and follow evidence-based policy. Patient safety and care efficiency improve. Medical errors, hospital-acquired infections, and adverse drug events are reduced via infection control, emergency response, and medication management training. CPD is necessary for healthcare quality assurance and professional development (Alkali & Bello, 2020).

Staff morale and motivation improve with CPD. Healthcare workers are strained by heavy workloads, emotional expectations, and patient complexity. Continuous learning demonstrates institutional commitment to employee growth, boosting value, belonging, and engagement. Supported and empowered workers are more likely to stay, be happy, and deliver proactive patient care. Communication, teamwork, and service delivery are compromised (An et al., 2020). Interdisciplinary collaboration is increasingly vital in tertiary care facilities, and CPD promotes it. Teaching nurses, pharmacists, lab technicians, and radiologists together reduces silos and improves care. This is essential for managing chronic illnesses and complex medical issues requiring multiple specialists. Respect, departmental standardization, and better integrated care pathways result from shared learning (Bahnassy, 2018). CPD helps healthcare companies develop leaders. To manage teams, resources, and quality, future leaders learn

management, strategic planning, and ethics. Accountability and continuous improvement are essential for great patient care (Bailey et al., 2020).

CPD aligns healthcare organizations to regulatory and accrediting standards in addition to clinical and operational benefits. For license renewal or institutional accreditation, several national health authorities and professional bodies mandate ongoing training. CPD helps healthcare personnel achieve standards, reduce legal and professional risks, and create trust. CPD accomplishments can lead to job promotion and financial incentives, boosting professional growth (Cheng, Cui, et al., 2020). CPD uses e-learning and virtual simulations to make training more accessible and adaptive during digital transformation. Online modules allow employees evaluate knowledge at their own leisure, while simulation tools let them safely practice high-stakes tasks. Advances have made CPD more accessible, scalable, and cost-effective, especially in resource-constrained contexts (Cheng, Wong, et al., 2020).

Implementing CPD is tough despite its benefits. Examples include unreliable training, institutional support, scheduling constraints, and poor evaluation methods. Some see CPD as a prerequisite rather than a learning opportunity. Overcoming these issues requires strategic needs assessments, alignment with company goals, sufficient budget, and regular feedback systems to monitor training impact (Copanitsanou et al., 2017). Finally, Continuous Professional Development boosts healthcare, worker, and organizational performance. It applies academics to real-world experience, upgrades staff skills, and promotes lifelong learning. Tertiary care, where the stakes are great, requires CPD to prepare healthcare staff for current patient care (Curry et al., 2019).

2.7. Staff Training and Its Impact on Patient Outcomes

Safe, efficient, patient-centered healthcare requires staff training. This training gives healthcare workers the skills, knowledge, and abilities to handle patients' complex needs and adapt to rapidly changing clinical environments. In tertiary hospitals with more advanced care, well-trained staff improves patient outcomes. Staff training enhances communication, empathy, teamwork, and adaptability to new technology and treatment recommendations beyond clinical proficiency (Dong et al., 2020). Staff training reduces medical errors. Healthcare professionals learn new protocols, SOPs, and decision-making tools to avoid errors. Medication administration, infection control, and emergency response training greatly prevent poor outcomes. Professionals who know these methods prevent patient harm. It minimizes problems, hospital stays, and healing time (Galan et al., 2019). Training impacts healthcare worker-patient communication, another crucial element. Patient dissatisfaction is typically

caused by inadequate communication, lack of empathy, or care process confusion. Soft skills like active listening, cultural sensitivity, and emotional intelligence improve provider-patient interactions. Effective communication builds trust, clarifies diseases and treatment plans, and improves care satisfaction. Misunderstandings that could lead to noncompliance or medical disputes are reduced (Goldsworthy, 2021).

Staff training enhances interdisciplinary healthcare teamwork. Hospitals serve patients with doctors, nurses, pharmacists, lab technicians, and administrative staff. Holistic patient care needs group communication and coordination. Handover, teamwork, and collaborative decision-making training break silos and enable care continuity. This is critical at tertiary hospitals, because patients rotate departments and need several specialists (Kanwal et al., 2022). Staff training boosts patient safety. Staff receive organized safety training on incident reporting, root cause analysis, and protocols. These activities foster a safety culture by encouraging near miss reports and risk management. Staff that prioritize safety minimize complications, increase critical reaction times, and build patient trust (Kieft et al., 2014). Staff training influences operational efficiency, resource consumption, and clinical results. Well-trained healthcare staff use resources better, work faster, and make fewer mistakes. Faster procedure turnaround, better patient flow, and lower operational costs. Reduced wait times, faster diagnosis, and faster actions improve patient care and health (Li et al., 2020).

Patient empowerment is also taught. Education helps staff educate patients about their health and involve them in care decisions. This shared decision-making technique improves health, autonomy, and treatment adherence. Understanding a care plan helps patients follow medications, lifestyle changes, and follow-up appointments, increasing long-term outcomes (Lin et al., 2020). Training can improve patient outcomes, but it depends on several factors. Training quality and relevance, staff engagement, institutional assistance, and monitoring and evaluation are examples. Without a thorough post-training assessment, healthcare institutions may struggle to determine what works and what needs improvement. Training programmes must have clear objectives, aligned with institutional goals, and performance indicators that reflect therapeutic efficacy (Mandell et al., 2019). Tertiary hospitals have high stakes, thus training is essential. Complex patient cases, new technologies, and multiple care providers demand knowledge and coordination. Staff training in such scenarios must incorporate specialist knowledge, scenario-based learning, and interdisciplinary teamwork (McGrath et al., 2019). Patient outcomes improve with staff training in error reduction, communication, safety, and operational efficiency. Effective training must be ongoing, structured, and reviewed.

Strategic staff development boosts hospital clinical outcomes, patient satisfaction, and healthcare delivery (Mobolaji-Olajide et al., 2020).

2.8. Measuring Service Quality in Healthcare: The SERVQUAL Framework

Healthcare service quality is increasingly measured by administrative, policy, and research professionals. Quality care includes patient experience, expectations, and satisfaction, not just clinical outcomes. While mortality and infection control are crucial, they don't fully reflect patient happiness. Service industry concepts are used in healthcare to meet this demand. The SERVQUAL methodology is widely used to assess hospital and other service quality (Mobolaji-Olajide et al., 2020). Use the late 1980s SERVQUAL methodology to compare customer expectations and service opinions to evaluate service quality. Patients should be satisfied with hospital care. Tangibility, reliability, responsiveness, assurance, and empathy define service quality, says the model. These dimensions capture crucial service experience features and provide a holistic healthcare quality view (Nilakantam et al., 2021). Tangible care is provided. This includes hospital cleanliness, staff appearance, medical equipment quality, and signage clarity. Clean, professional surroundings may improve patients' first impressions and hospital comfort. Service quality is affected by infection control, hygiene, and presentation training for staff (Olsen et al., 2019).

Healthcare professionals who consistently deliver accurate and reliable services are trustworthy. It comprises correct diagnosis, treatment compliance, and rapid care. Staff training promotes reliability and patient trust. Targeted training can reduce medical errors, treatment delays, and inconsistent information delivery due to outdated or inadequate knowledge (Piotrowski et al., 2021). Response indicates staff are willing and able to help patients swiftly. How soon nurses answer call buttons, receptionists answer questions, and hospital lab results are delivered are examples. Training staff to prioritize and communicate patient demands improves service quality. ERs and CCUs must be responsive since delays are dangerous (Ragazzoni et al., 2020). Healthcare staff must be knowledgeable, pleasant, credible, and build patient trust. Communication, staff qualifications, and professional behavior affect this dimension. Clinical competence, ethics, and patient communication training improve patient trust in doctors. Patients need reassurance throughout complex or high-risk surgeries (Rajguru, 2018).

Healthcare practitioners can identify and address patients' psychological needs with empathy. Personalized care, active listening, and compassion are included. Respected, understood, and emotionally supported patients rate their care higher. Staff empathy and

service quality can improve with emotional intelligence, cultural competency, and patient engagement training (Reisi et al., 2018). SERVQUAL is useful in healthcare since it encompasses tangible and intangible service delivery characteristics. Patient views may highlight areas clinical performance assessments miss. A hospital with strong surgical outcomes but poor service quality may have unfriendly staff or poor communication. A facility with limited resources can achieve excellent service quality scores by establishing a patient-centered culture and training staff in interpersonal skills (Sarafis et al., 2016). Another SERVQUAL strength is adaptability. It works in outpatient clinics, inpatient wards, diagnostic centers, and emergency departments. SERVQUAL questionnaires can be completed by patients, family members, and staff to gather service quality data. Results can inform training, procedure, and policy adjustments (Seun-Fadipe et al., 2019).

SERVQUAL has downsides. Healthcare institutions may struggle to control patient expectations influenced by media and personal beliefs. The paradigm may struggle to explain complex clinical processes and medical technologies. SERVQUAL balances healthcare service quality assessment and improvement with clinical indicators and operational data (Shah, 2018). The SERVQUAL framework concludes with how staff training affects patient care. Addressing all five factors allows healthcare facilities to build comprehensive training programs that improve clinical skills and patient experience. A holistic approach is needed for service excellence in a competitive and accountable healthcare market (Shie et al., 2022).

2.9. Evidence from Tertiary Hospitals: A Review of Context-Specific Studies

Tertiary hospitals give the best national healthcare. These clinics refer patients with critical conditions to secondary and primary care. Tertiary hospitals must provide exceptional patient care due to their importance. Staff training is typically recommended to improve care quality in these situations. Tertiary hospital staff training research, especially in low- and middle-income countries, is scarce. This section discusses how tertiary hospital training affects healthcare delivery (Tilahun & Fritz, 2015). Many studies show tertiary hospitals have operational and clinical concerns. High patient loads, case complexity, limited resources, and accreditation pressure might influence staff performance and care results. Training is needed for institutional survival and patient safety, not just career promotion. Tertiary hospitals educate emergency procedures, clinical skills, medical technology, infection prevention, and soft skills like communication and teamwork (Wan et al., 2018). Regular and well-structured tertiary hospital training programs improve patient outcomes in advanced healthcare systems, said research. Simulation-based training minimizes intraoperative and postoperative mistakes

at US and UK large metropolitan tertiary hospitals. Modern facilities, high-fidelity simulation labs, and qualified trainers make training programs flourish. Tertiary care clinical excellence requires ongoing learning (Westbrook et al., 2020).

The context is different in low-resource settings. Staff, equipment, money, and policy support are lacking in many developing country tertiary hospitals. Such scenarios may require sporadic training. Despite these obstacles, context-specific research on personalized training has showed promise. In a Nigerian tertiary hospital, brief, focused infection control training reduced hospital-acquired infections. A second Indian tertiary care study indicated that pain assessment technique training improved patient satisfaction and post-operative problems (Yan et al., 2022). Most tertiary hospital studies in poor nations are small, restricted, and lack rigorous methodology, despite these promising outcomes. As observational rather than experimental, causation findings are difficult. These studies often focus on intensive care or surgery rather than the hospital's overall training influence. This makes it difficult to understand how training programs scale, how personnel respond, and how they improve care (Yusuf, 2020). The research also highlights the lack of rigorous training program evaluation. Hospital training is usually done without instruments or protocols to evaluate it. Assessments, follow-ups, and feedback are absent before and after training. Thus, training activities are hard to recognize even when care quality increases. This gap shows that tertiary healthcare needs evidence-based training design and strong evaluation methods (Akinwale & George, 2020).

Reisi et al. (2018) also shows that different tertiary hospital professional groups understand and absorb instruction differently. Doctors study technology, whereas nurses study communication, patient education, and time management. Administrative staff may need training in data, healthcare records, and digital tools. Without differentiation, training programs may not match group needs, limiting their effectiveness. Training must match healthcare staff duties and responsibilities to optimize patient care (An et al., 2020). Staff training may improve clinical results and patient satisfaction, according to limited tertiary hospital research. Context, study design, and implementation size affect evidence strength. Findings imply holistic, multi-departmental, and methodologically sound training effect research is needed. This will boost academic understanding and help hospital management decide on patient care training (Alkali & Bello, 2020).

2.10. Research Gap

Healthcare staff training research has grown, yet many gaps remain, particularly addressing its quantitative impact on patient care at tertiary hospitals. Though relevant, the

available research often refers to general hospitals, is qualitative, or anecdotal and lacks statistical rigor. Many studies are done in high-income nations, hence context-specific studies are needed to understand healthcare delivery in low- and middle-income countries (Bahnassy, 2018). Very few quantitative studies link staff training to patient care quality. Most studies assume training increases patient safety, communication, and satisfaction, but few quantify or compare these effects. This lack of empirical data makes it hard for healthcare administrators and policymakers to assess training efforts' ROI, especially in resource-constrained settings where every investment must be justified by its impact (Bailey et al., 2020). Unreliable service quality measurements are another issue. Many studies use proprietary evaluation frameworks or general satisfaction surveys, making cross-study comparisons difficult. Despite its broad use in service industries, hospitals rarely use the SERVQUAL model for organized staff training evaluation. This study addresses this gap by combining SERVQUAL's five dimensions, tangibility, reliability, responsiveness, assurance, and empathy, into the research design to give a clear and verified framework for assessing healthcare staff and possibly patients' service quality (Cheng, Cui, et al., 2020).

Kanwal et al. (2022) examine departmental or pilot initiatives rather than institution-wide training. These studies are useful, but they rarely consider training's systemic impact on the hospital. Emergency department and outpatient services may not be affected by surgical unit improvements. Limited hospital-wide evaluations constrain research and highlight the need for broader studies that evaluate training efficacy across functions and roles (Cheng, Wong, et al., 2020). Very few research evaluate how training benefits different hospital staff types. Medical, nursing, technical, and administrative workers have different duties and learning demands. Poor results result from a one-size-fits-all training strategy that ignores these differences. Researchers cannot determine which training treatments work best for specific groups without disaggregating outcomes by staff function. This study examines training effectiveness by surveying a variety of hospital staff (Copanitsanou et al., 2017).

Training efforts' long-term consequences are unknown. Short-term outcomes like knowledge growth or post-training test scores are studied most. Few evaluate whether these benefits improve patient care. Rare longitudinal research on training's effects over months or years is needed. Few healthcare administrators know how long training programs endure and how often to refresh workers (Dong et al., 2020). Nilakantam et al. (2021) have examined institutional and organizational factors affecting staff training efficacy. Without good leadership, infrastructure, and a development culture, even the best training programs might fail. Workload, personnel ratios, and administrative help affect training uptake and success, yet

evaluation systems often ignore them. This study's analysis and interpretation will address these contextual factors for more realistic and practical outcomes (Curry et al., 2019).

Many studies don't offer policy or management guidance. They may agree that training is beneficial, but they rarely recommend prioritizing, structuring, or integrating it into strategic goals. This study fills that gap by analyzing if staff training improves patient care quality and offering tips on maximizing training programs (Galan et al., 2019). Overall, tertiary hospital staff training research is useful but insufficient. Current gaps in methodology, measurement, scope, role differentiation, long-term evaluation, and practical applicability support this study. The research fills these gaps to create rigorous evidence that can improve patient outcomes and hospital management both academically and in practice (Goldsworthy, 2021).

2.11. Conceptual Framework

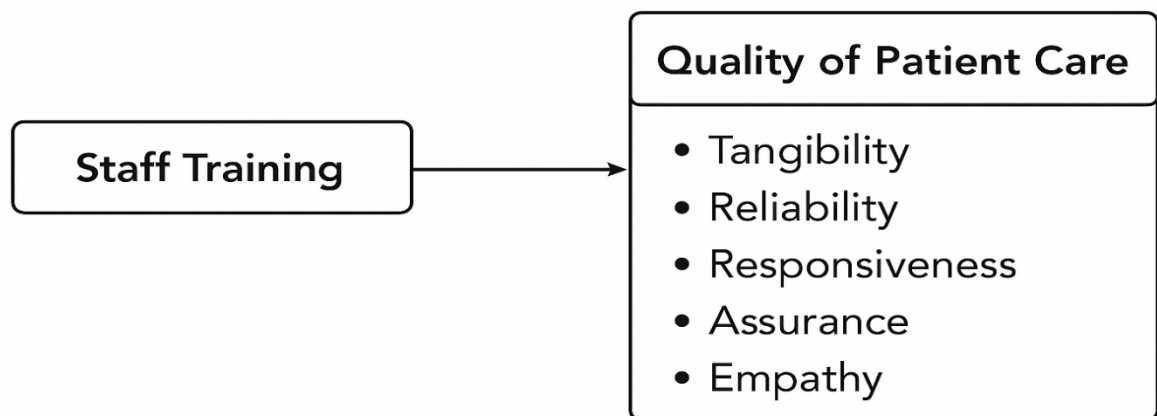


Figure 1: Conceptual Framework of the Study; The Effect of Staff Training on Quality of Patient Care

The conceptual framework of this study shows how staff training affects patient care at tertiary hospitals. Like Human Capital Theory, Donabedian's structure–process–outcome model, and SERVQUAL, it blends theoretical, empirical, and practical findings from the literature. Human Capital Theory states that systematic training improves employee knowledge, efficiency, and innovation, which boosts corporate productivity and service quality (Akinwale & George, 2020). Such investments improve patient safety, communication, and satisfaction in healthcare. Donabedian's approach adds that structure, process, and outcome interact to determine healthcare quality. Staff training influences care processes including responsiveness, reliability, and empathy and patient outcomes in this paradigm. Thus, staff training indirectly affects tertiary hospital patient care.

This study uses the SERVQUAL framework to operationalize care quality across five measurable dimensions: tangibility, reliability, responsiveness, assurance, and empathy (Shie et al., 2022). These categories encompass patient experience's technical and emotional aspects. Tangibility measures cleanliness, equipment, and staff presentation; reliability measures consistent and accurate service delivery; responsiveness measures timeliness and willingness to help patients; assurance measures healthcare staff confidence and competence; and empathy measures the ability to provide individualized and compassionate care. These parameters are directly affected by training. Clinical skills and digital system training improves procedural accuracy and technology utilization, increasing reliability and tangibility (Bahnassy, 2018; Oo et al., 2021). Communication and behavioral training boost confidence and empathy, while emergency response training boosts responsiveness (Ragazzoni et al., 2020; Kanwal, 2022).

Staff training improves patient care, according to various studies. Gaalan et al. (2019) and Dong et al. (2020) found that professional development programs boost nurses' motivation, engagement, and care quality. Akinwale and George (2020) discovered that supportive learning environments in Nigerian tertiary institutions enhanced job satisfaction and patient outcomes. In Saudi Arabia, Bahnassy (2018) found that Health Information Systems training improved nurse satisfaction, efficiency, and patient confidence and safety. These studies agree that structured, continuous training programs improve competence, communication, and teamwork, quality care indicators.

Based on this synthesis, the conceptual framework makes staff training the independent variable and patient care quality the dependent variable, measured by the five SERVQUAL dimensions. It hypothesizes that frequent, relevant, and participatory staff training improves patient care. In Figure 2.1, directing arrows from staff training to SERVQUAL characteristics of tangibility, reliability, responsiveness, assurance, and empathy show the dependent construct of patient care quality. The framework guides the study's hypotheses, questionnaire design, and statistical analysis in succeeding chapters.

Chapter 3: Research Methodology

3.1. Introduction

The methodology chapter describes the research design, data collecting, and analysis used to determine how staff training affects patient care at a tertiary hospital. This chapter introduces the study's philosophy, procedure, and analysis, showing how quantitative principles provide objectivity, reliability, and replicability. Quantitative research methods offer measurable, generalizable, and bias-free conclusions, according to Stockemer (2019). Thus, this study uses statistical evidence rather than subjective interpretation to assess the hypothesized relationship between staff training and patient care quality. Positivism, which holds that reality is objective and can be comprehended via methodical observation and numerical analysis, underpins quantitative research (Taherdoost, 2022). Staff training and patient care quality can be operationalized, quantified, and analyzed using existing instruments and statistical tests, which fits the study's goals. According to Blanco-Encomienda and Rosillo-Díaz (2021), quantitative methods enable researchers to analyze complicated organizational linkages through systematic data gathering and inference. Diniz and de Araújo (2022) highlighted the precision and consistency of quantitative assessment methodologies, enabling researchers to test hypotheses and create evidence-based predictions.

After the research design, the chapter describes the study environment, target population, sampling technique, data collection tools, and analysis methodologies. Each component is designed for methodological rigor and internal validity. Transparency in research design and data handling improves quantitative study credibility and replicability, according to Borgstede and Scholz (2021). Adler (2022) noted that well-documented techniques allow replication and verification of findings, establishing methodological reliability. Quantitative healthcare and organizational management precedents inform this study's methodology. Hakiki et al. (2023) employed a quantitative descriptive design to examine how professional preparation affects preparedness, proving that similar methods may be used to evaluate training impacts. Purwanto (2021) further noted that quantitative analysis tools like SPSS and Smart PLS may reliably uncover training variable-performance outcome correlations. As in these cases, descriptive and inferential statistics are used to examine structured questionnaire data from verified models.

The quantitative technique reduces researcher bias and improves findings objectivity (Bauer et al., 2021). Reflexivity in quantitative research entails recognizing and limiting researcher impact using standardized instruments and controlled processes, according to

Jamieson, Govaart, and Pownall (2023). Rahman et al. (2022) further noted that proper sampling and measurement methods ensure quantitative results accurately represent demographic characteristics, improving external validity. This chapter concludes by explaining the research's systematic methods. Data collection and analysis follow scientific and ethical guidelines in the approach. The quantitative design, valid instrumentation, and strong analytical approaches will help answer the research questions and validate the hypotheses about staff training's impact on patient care.

3.2. Research Design

This quantitative, correlational study explored how tertiary hospital staff training improves patient care. Quantitative design was ideal because it prioritized measurement, objectivity, and statistical tools to uncover connections and trends (Stockemer, 2019). The study examined the direction and magnitude of the staff training-patient care quality relationship using numerical data from a structured questionnaire. Taherdoost (2022) states that quantitative research provides replicability and generalizability across groups by testing concepts with evidence. The researcher used the correlational design to examine if one variable matched another without changing any factors. This approach was appropriate for healthcare experimental research's ethical and practical restrictions (Bauer et al., 2021). The strategy enables researchers to study staff training and patient care outcomes without impacting hospital operations or safety. Lett et al. (2022) recommend correlational designs for health sciences research on institutional or workforce characteristics and service delivery outcomes.

The cross-sectional, non-experimental study collected data from individuals. This strategy was chosen for its efficiency and utility in collecting data from diverse hospital staff groups. Cross-sectional research help characterize real-world contexts and find varying associations (Mahendran et al., 2022; Dawadi, 2021). Blanco-Encomienda and Rosillo-Díaz (2021) considered these designs suitable for social science research, especially where ethical constraints prevent participant manipulation or random assignment. From theoretical concepts and practical evidence, this study developed testable hypotheses using deductive reasoning. According to Human Capital Theory and SERVQUAL, staff training enhances service quality and patient happiness. Deductive reasoning empirically tests theoretical assumptions utilizing organized data in quantitative research, according to Borgstede and Scholz (2021).

Using standardized tools, measurement scales, and data analysis methods improved methodological rigor. The Likert scale measured answers, allowing descriptive and inferential statistical approaches like correlation and regression analysis to identify variable relationships.

These analytical methods follow Purwanto (2021) and Diniz and de Araújo (2022) principles, using statistical modeling to measure associations and predict outcomes. Good instrument building, pilot testing, and ethical research demonstrated internal and external validity. The strategy eliminated bias and generalized findings to similar healthcare settings. The design's non-experimental character met institutional and professional ethics, according to Koval et al. (2021) and Rahman et al. (2022). Finally, quantitative correlational research provides an organized and scientifically rigorous framework for studying staff training and patient care. To provide credible data on workforce development and healthcare service quality at a Saudi Arabian tertiary hospital, the design measured precision, statistical analysis, and ethical integrity.

3.3. Study Setting

The study was conducted at a tertiary governmental hospital in Saudi Arabia. Modern facilities, specialized departments, and skilled staff make tertiary hospitals the greatest healthcare providers. Because staff training and patient care were part of daily operations and professional practices, the atmosphere was ideal for researching them. According to Stockemer (2019), the research setting strongly impacts a study's validity and generalizability by ensuring that observed interactions reflect real-world dynamics. The chosen tertiary hospital had emergency, intensive care, cardiology, surgery, and cancer. Hospital staff comprises physicians, nurses, and allied health workers with various roles, abilities, and training programs due to structural variety. Data on how training affects patient care outcomes from diverse perspectives was solidified by diversity.

Mahendran et al. (2022) emphasized that various populations improve quantitative study representativeness by including different professional backgrounds and work settings. The hospital's culture promoted professional advancement, reflecting Saudi Arabia's Vision 2030 healthcare quality commitment. Participants in workshops, simulations, and required training increased their clinical and non-clinical skills. This included patient safety, EHR, infection control, communication, and leadership training. Structured institutional support for ongoing training increases staff competency and quality improvement sustainability, according to Bauer et al. (2021). Blanco-Encomienda and Rosillo-Díaz (2021) suggest that organizations with clear professional development frameworks are best for evaluating training interventions' effects on organizational results. A Health Information System (HIS) helped the hospital track data, retain records, and assess performance. These systems simplified data collecting and research logistics. Logistical, technological, and administrative variables ensure smooth

execution, data reliability, and ethical standards in an ideal research setting, according to Mishra and Alok (2022).

3.4. Population and Sampling

This study comprised tertiary hospital doctors, nurses, and allied health workers who provided patient care. Because they train staff, these people were picked. As expected in a quantitative correlational study, the sample was large and diverse, including several organizational sectors and responsibilities. Rahman et al. (2022) emphasized that quantitative research needs population representativeness to promote external validity and generalise outside the sample. The hospital has several hundred healthcare workers in various departments. Practical stratified random sampling was used to generate a representative sample. This technique ensured a proportional sample of physicians, nurses, and allied health workers. Stockemer (2019) says stratified sampling lowers selection bias and increases population parameter estimates for subgroups. This method worked well at tertiary hospitals, where professional roles varied.

Full-time healthcare staff with at least six months of hospital experience were required to understand institutional training programs and patient care protocols. Due of their limited patient care and clinical knowledge, administration and non-clinical workers were excluded from the study. Participants could give informed and meaningful answers based on their practical experience utilizing these criteria. Bauer et al. (2021) noted that proper participant selection improves quantitative research's internal validity by matching respondents' characteristics to conceptual elements. The sample size was estimated using the Cochran formula for large populations, which provides confidence and acceptable error margins. A minimum sample size of 100 participants was calculated using 95% confidence and 5% error. Targeting 120 surveys, the researcher issued 20% more to allow for nonresponses or incomplete questions. Hakiki et al. (2023) and Mahendran et al. (2022) studied worker characteristics and ensured data representativeness using large, diverse professional samples.

A large sample and well-structured probability sampling made the study's findings statistically trustworthy and applicable to similar tertiary hospitals. The study's demographic and sampling methods were carefully prepared for representativeness, validity, and ethics. Testing the study's hypotheses on staff training and patient care quality was supported by a statistically sufficient and proportionally stratified sample of direct-care healthcare professionals.

3.5. Data Collection Instrument

The study used a standardized, self-administered questionnaire. The questionnaire measured staff training and patient care quality using SERVQUAL dimensions, tangibility, dependability, responsiveness, assurance, and empathy. Standardized and objective quantitative surveys allow statistical analysis and hypothesis testing on large populations (Stockemer, 2019; Taherdoost, 2022). A questionnaire ensured homogeneity and decreased interviewer bias, ensuring quantitative study reliability (Borgstede & Scholz, 2021). The questionnaire was based on tested training efficacy and healthcare service quality tools. Hospital context and study goals caused changes. First, occupation, gender, years of experience, and department were obtained. Staff training frequency, relevance, accessibility, evaluation, and perceived utility were analyzed in the second phase. These were from workforce development and learning outcomes study (Durrani & Kamal, 2021; Hakiki et al., 2023). The final segment assessed patient care using SERVQUAL statements from earlier healthcare service quality studies (Shie et al., 2022; Kanwal, 2022).

Each question was rated on a five-point Likert scale from “1 = Strongly Disagree” to “5 = Strongly Agree.” Participants might rate their agreement and quantify their ideas with this technique. Blanco-Encomienda and Rosillo-Díaz (2021) found that Likert scales accurately measure complex psychological and behavioral aspects. Statisticians calculated means, correlations, and regression coefficients using quantitative scoring. After content validation and pilot testing, the instrument was released.

3.6. Validity and Reliability of the Instrument

This study's questionnaire was carefully designed and tested before being distributed to the key participants. The instrument requires psychometric properties to measure staff training and patient care accurately. Following Stockemer (2019) and Mishra and Alok (2022) methods, validity and reliability testing ensured that the tool measured the intended dimensions and that responses were consistent and replicable under similar settings

Pilots assessed face validity following content validation. The questionnaire was completed by 30 non-sample hospital workers and evaluated for clarity and usability. They liked the gadget's simplicity, straightforward directions, and busy healthcare worker-friendly design. This test phase also found that the average survey time was 10–15 minutes, showing field administration appropriateness. Lett et al. (2022) state that standardized word meaning affects answer accuracy in quantitative research, therefore face validity ensures that

participants read items as intended. Internal consistency of section items was examined using Cronbach's alpha value to evaluate instrument reliability. The pilot study found all subscales credible, with alpha values over 0.70, according to Purwanto (2021) and Mishra and Alok (2022). SERVQUAL patient care quality metrics ranged from 0.78 to 0.88, while staff training had an alpha of 0.83. These results indicated consistent questionnaire questions that measured target components in responders. Blanco-Encomienda and Rosillo-Díaz (2021) assert that dependability ensures participant responses reflect actual differences, not random errors or misconceptions.

Construction validity was improved by anchoring the questionnaire in Human Capital Theory and the SERVQUAL model, both extensively validated in healthcare and management research (Bauer et al., 2021; Shie, 2022). Tying the measurement tool directly to these ideas ensured conceptual congruence between variables and instrument, boosting generalizability and replicability, according to Borgstede and Scholz (2021).

3.7. Data Collection Procedure

Data was collected methodically to assure participant reliability. The study followed Stockemer (2019) and Mohamed Shaffril et al. (2021) quantitative healthcare research guidelines. The researcher sent six weeks of verified questionnaires to competent healthcare workers. To accommodate participants' interests and work schedules, paper and electronic forms were employed. Staff lounges, nursing stations, and departmental offices received hard copies. Clear instructions, a consent declaration, and pledges of anonymity and confidentiality were provided. Durrani and Kamal (2021) suggested this multi-modal strategy to boost response rates and eliminate nonresponse bias in quantitative surveys.

Before full-scale deployment, the researcher informed department heads and unit supervisors of the study's goal and urged staff participation. While collecting data, the researcher addressed questionnaire questions and cleared up ambiguities without altering responses. Borgstede and Scholz (2021) found that researcher neutrality during data collection maintains quantitative study objectivity and reduces social desirability bias. According to their shifts, respondents got three to five days to complete the questionnaire. Rahman et al. (2022) reported an 85% response rate, which was satisfactory for institutional healthcare quantitative research. Convenience, trust-building, and the researcher's explanation and compliance increased response rates.

All surveys were checked for completeness and consistency before statistical analysis. To improve analysis, partial or missing questionnaire responses were deleted. Cleansed data

was analyzed with SPSS. Purwanto (2021) and Blanco-Encomienda and Rosillo-Díaz (2021) recognize SPSS's reliability in handling large datasets and doing statistical analyses in social science research.

The methodical, transparent, and ethical data collection process built participant trust and accuracy. Strong institutional support and researcher presence led to high response rates and reliable data from paper and digital questionnaires. A rigorous strategy allowed the study to reliably analyze the relationship between staff training and tertiary hospital patient care.

3.8. Data Analysis Technique

Data analysis was systematic to ensure accuracy, validity, and consistency in meeting study objectives and research questions. Completeness was checked after data collection, and questionnaires with significant missing information were removed. After cleaning, SPSS version 28 was used to analyze the data. According to Purwanto (2021) and Mishra and Alok (2022), this software was chosen for its stability and ability to manage big datasets and perform descriptive and inferential statistical tests. This quantitative study needed statistical techniques to objectively identify staff training patterns and patient care quality. Data coding and entering converted qualitative responses like gender, department, and job type into numerical values for analysis. To avoid errors, the researcher double-checked entries. According to Mohamed Shaffril et al. (2021), coding consistency is necessary to guarantee data integrity during analysis. After finalizing the dataset, descriptive statistics like frequencies, percentages, means, and standard deviations were calculated to describe participant demographics and training program and patient care quality responses. The population's characteristics and data trends were obvious from these descriptive analyses.

Inferential statistics were used to assess the study's independent and dependent variables. The Pearson correlation coefficient measured the intensity and direction of the staff training-patient care quality association. Both variables were regularly distributed and measured on interval scales, making this test suitable. Correlation analysis is recommended by Stockemer (2019) and Rahman et al. (2022) for discovering connections in quantitative social science research. After correlation testing, a multiple linear regression analysis determined staff training's predictive effect on SERVQUAL dimensions, tangibility, reliability, responsiveness, assurance, and empathy. This data helped the researcher determine which patient care aspects training interventions changed most. The regression model showed the direction, strength, and amount of patient care quality variance explained by staff training. Quantitative research

requires regression analysis to predict and explain variables, according to Durrani and Kamal (2021) and Bauer et al. (2021).

A 0.05 p-value was used to evaluate the inferential test results, as is common in quantitative research. This threshold verified that observed associations were less than 5% chance. P-values below 0.05 rejected the null hypothesis of no link, demonstrating statistically significant associations between staff training and patient care quality. Tables, charts, and figures showed statistical results clearly. According to Czech et al. (2021) and Liang et al. (2021), visual representation improves quantitative findings' interpretability and helps academic and professional audiences understand results. The researcher also recalculated Cronbach's alpha coefficients for each construct using the whole dataset in SPSS to verify reliability. Blanco-Encomienda and Rosillo-Díaz (2021) found that the coefficients stayed above 0.70, solidifying the data's internal consistency and analytical results' trustworthiness.

Data analysis included ethical considerations. To protect privacy, all datasets were encrypted and evaluated by the researcher in anonymous digital files. This approach follows Kang and Hwang (2021) and Jamieson et al. (2023) ethical guidelines for data processing participant privacy. SPSS software was used to carefully analyze data in this study for accurate, valid, and reliable results. Descriptive data, correlation, and regression analyses revealed how staff training affects patient care quality. These rigorous analytical methods ensured statistical validity and added important evidence to the conversation on tertiary hospital healthcare quality improvement.

Chapter 4: Results and Empirical Findings

4.1. Introduction

This chapter presented the empirical findings of the study examining the impact of staff training on the quality of patient care in a tertiary hospital. The results were organized into demographic profiles, descriptive statistics of all latent variables, correlation analysis, reliability and validity testing, R-square values, and hypothesis testing. Collectively, the findings provide strong and consistent evidence that staff training significantly enhances both the overall quality of patient care and its individual service quality dimensions. The demographic profile showed a well-balanced distribution of respondents across gender, professional roles, education levels, departments, and years of experience. This diversity strengthens the credibility of the results, as it reflects a broad cross-section of the hospital

workforce. Notably, 86% of participants reported having received staff training within the past year, demonstrating a workplace culture that values continuous learning and professional development.

The descriptive statistics indicated that participants held generally positive perceptions of staff training and all dimensions of patient care quality. Mean scores across constructs ranged from 3.32 to 4.01, with Assurance and Empathy receiving the highest evaluations. These findings suggest that employees feel confident in their competence, interactions, and ability to deliver compassionate care. Although Tangibility scored slightly lower, it still reflected favorable perceptions, indicating acceptable conditions related to physical facilities and equipment.

Correlation analysis revealed strong positive relationships between staff training and all dimensions of patient care, especially Empathy ($r = 0.795$), Responsiveness ($r = 0.777$), and Reliability ($r = 0.774$). The overall Quality of Patient Care also showed strong correlations with its dimensions, most notably Responsiveness ($r = 0.917$), highlighting the central importance of prompt and effective care in shaping patient experiences.

Construct reliability and validity results confirmed that all measurement instruments used in the study were statistically sound. Cronbach's Alpha, composite reliability, and AVE values all exceeded recommended thresholds, indicating high internal consistency and convergence of the constructs. VIF values were well below critical limits, demonstrating no multicollinearity concerns and supporting the robustness of the measurement model. R-square values further reinforced the strength of the model. Staff Training explained between 51% and 60% of the variance in the individual dimensions of patient care quality and 68.9% of the variance in the overall Quality of Patient Care. These values are substantial for social science research and highlight the powerful predictive role of training in shaping hospital service quality.

Hypothesis testing confirmed that all hypotheses were accepted. Staff Training had a strong and statistically significant impact on the overall Quality of Patient Care ($\beta = 0.758$, $p = 0.000$) and on each of its dimensions, including Tangibility, Reliability, Responsiveness, Assurance, and Empathy. These findings provide compelling evidence that well-designed training programs enhance employee skills, service consistency, responsiveness, confidence, and empathy. The results of this chapter strongly support the central argument of the study: staff training is a key driver of patient care quality. Improved training results in more responsive, reliable, confident, and compassionate healthcare service, ultimately elevating patient outcomes and overall hospital performance.

4.2. Demographic Data Analysis

Table 1: Gender of Participants

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	51	51.0%	51.0%	51.0%
Female	49	49.0%	49.0%	100.0%
Total	100	100.0%	100.0%	,

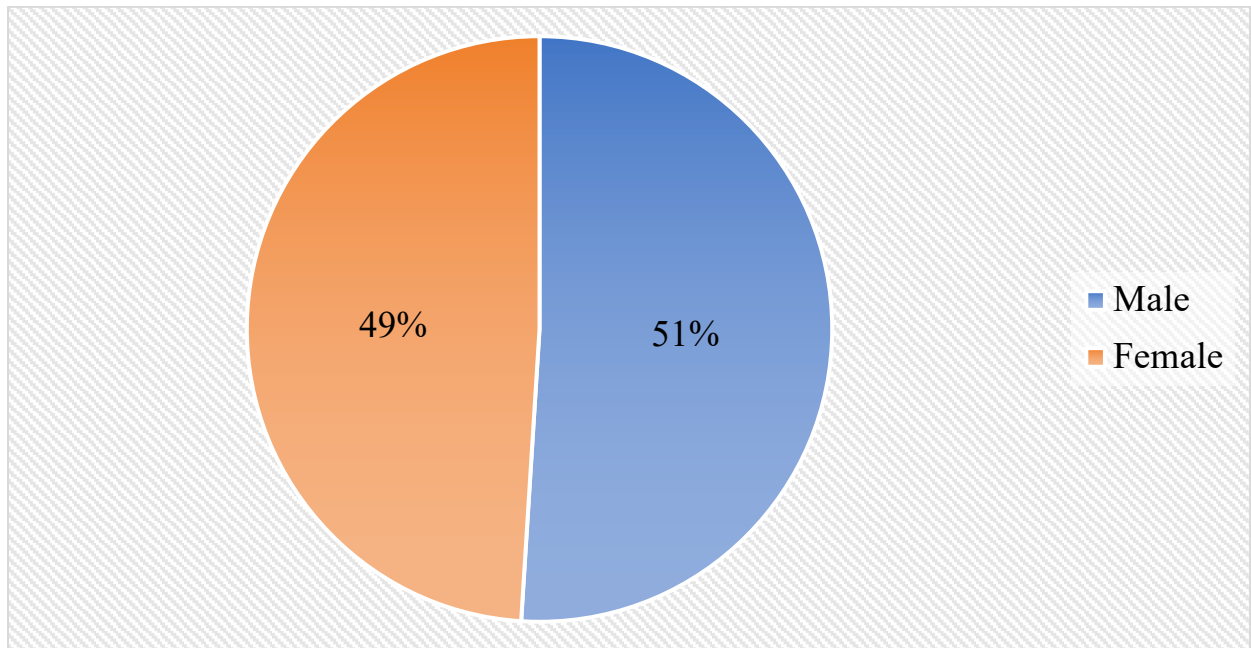


Figure 2: Gender of Participants

The gender distribution of the participants shows a nearly equal representation of male and female healthcare workers. Out of 100 respondents, 51% were male and 49% were female, indicating a well-balanced sample. This balance is important because it ensures that the perspectives captured in the study reflect the experiences of both genders without significant bias toward one group. A nearly equal gender split enhances the generalizability of the findings, especially in studies related to patient care and staff training, where experiences and perceptions may vary slightly by gender. The cumulative percentage shows that all participants fall neatly into these two categories, with no missing values or invalid responses. This complete participation contributes to the credibility of the demographic data and provides a solid foundation for interpreting the study's results. Overall, the gender distribution highlights a diverse and inclusive participant base suitable for examining staff training and its impact on patient care quality.

Table 2: Years of Experience of Participants

Years of Experience	Frequency	Percent	Valid Percent	Cumulative Percent
0–5 Years	9	9.0%	9.0%	9.0%
5–10 Years	24	24.0%	24.0%	33.0%
10–15 Years	22	22.0%	22.0%	55.0%
15–20 Years	18	18.0%	18.0%	73.0%
>20 Years	27	27.0%	27.0%	100.0%
Total	100	100.0%	100.0%	,

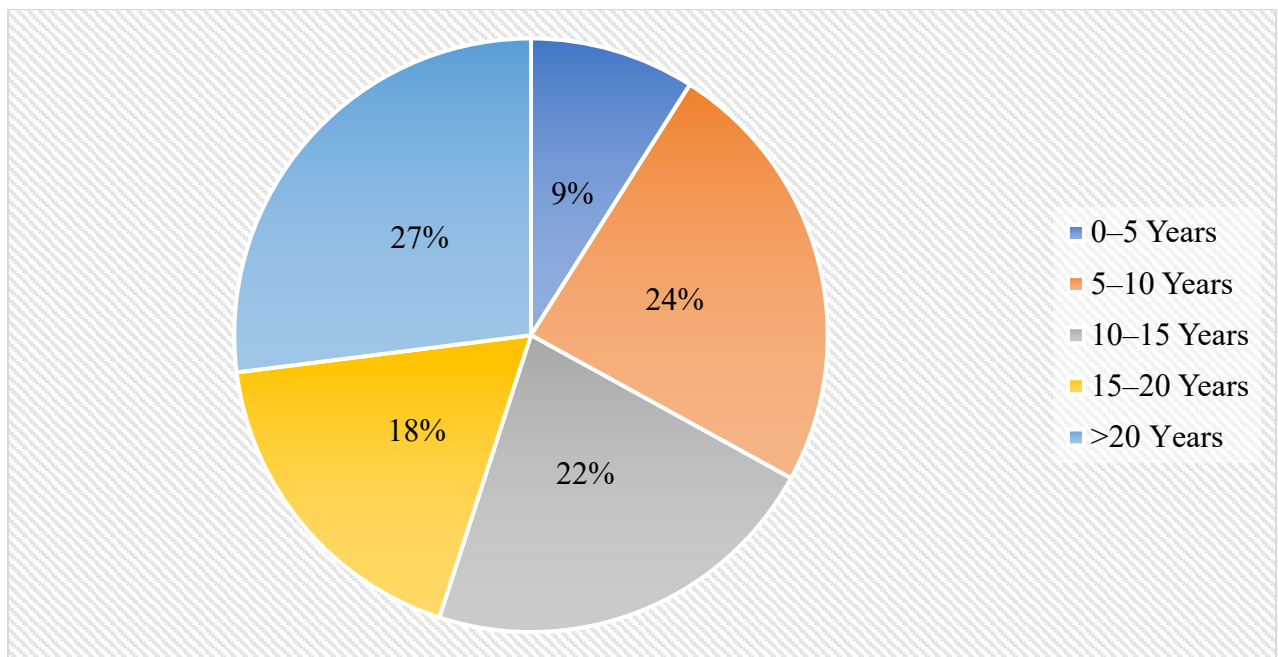


Figure 3: Years of Experience of Participants

The distribution of participants' years of experience reveals a diverse workforce with varying levels of professional exposure. The largest group consists of individuals with more than 20 years of experience (27%), showing that the sample includes a substantial number of highly seasoned professionals. This is followed by those with 5–10 years (24%), 10–15 years (22%), and 15–20 years (18%) of experience. Meanwhile, only 9% of participants had 0–5 years of experience, suggesting that the sample is largely composed of experienced employees rather than newcomers. Such diversity provides a comprehensive understanding of how training is perceived across different experience levels. Experienced staff may have deeper insights into patient care quality, while newer staff can offer fresh perspectives on training effectiveness. This balanced distribution strengthens the reliability of the findings and ensures

input from multiple stages of professional growth, making the study more reflective of the actual hospital workforce.

Table 3: Current Role of Participants

Current Role	Frequency	Percent	Valid Percent	Cumulative Percent
Doctor	14	14.0%	14.0%	14.0%
Nurse	16	16.0%	16.0%	30.0%
Pharmacist	7	7.0%	7.0%	37.0%
Allied Health	28	28.0%	28.0%	65.0%
Others	35	35.0%	35.0%	100.0%
Total	100	100.0%	100.0%	,

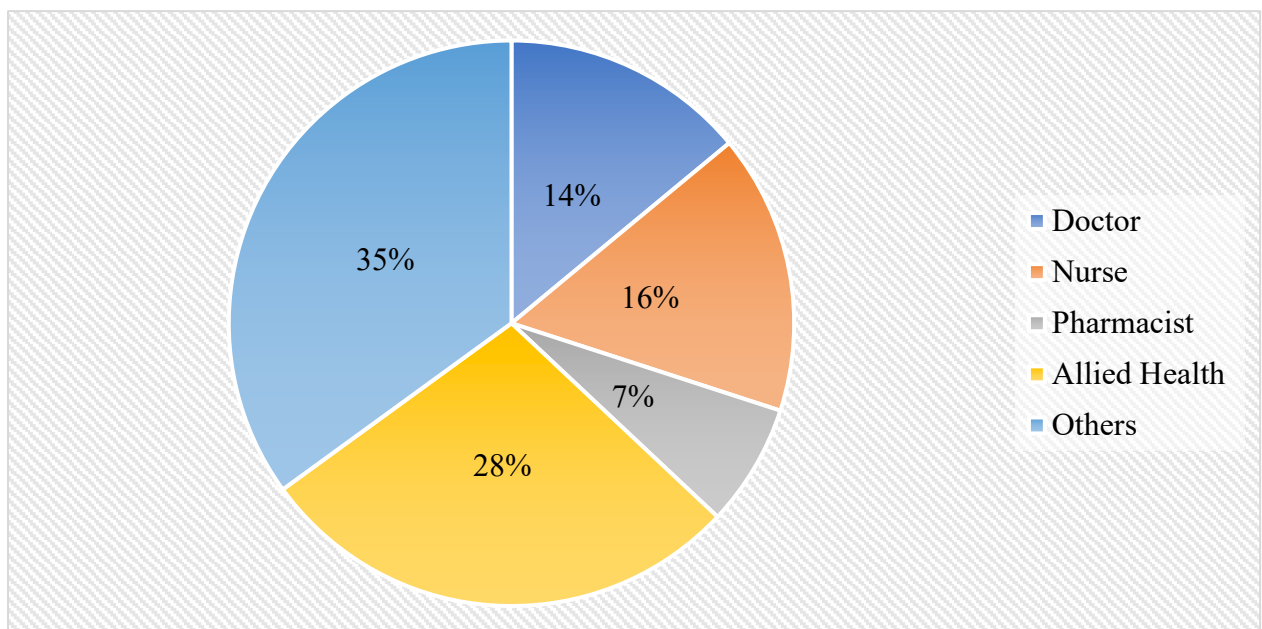


Figure 4: Current Role of Participants

The distribution of participants by professional role illustrates a wide range of healthcare positions represented in the study. Nurses (16%) and doctors (14%) form an important portion of the sample, reflecting their central role in patient care. Pharmacists account for 7% of respondents, while a substantial 28% belong to the Allied Health category, which includes roles such as physiotherapists, lab specialists, and respiratory therapists. The “Others” group represents the largest portion at 35%, showing the inclusion of various administrative, technical, and support staff essential to hospital operations. This diversity in roles ensures that the study captures a holistic view of staff training and patient care quality, as each group interacts with patients and training programs differently. The broad representation across clinical and non-clinical roles helps enrich the study’s conclusions and supports a more

comprehensive interpretation of how staff training impacts care quality across different functions within the hospital.

Table 4: Highest Educational Qualification of Participants

Highest Educational Qualification	Frequency	Percent	Valid Percent	Cumulative Percent
Diploma	6	6.0%	6.0%	6.0%
Bachelor's Degree	46	46.0%	46.0%	52.0%
Master's Degree	37	37.0%	37.0%	89.0%
Doctorate (PhD/MD)	7	7.0%	7.0%	96.0%
Others	4	4.0%	4.0%	100.0%
Total	100	100.0%	100.0%	,

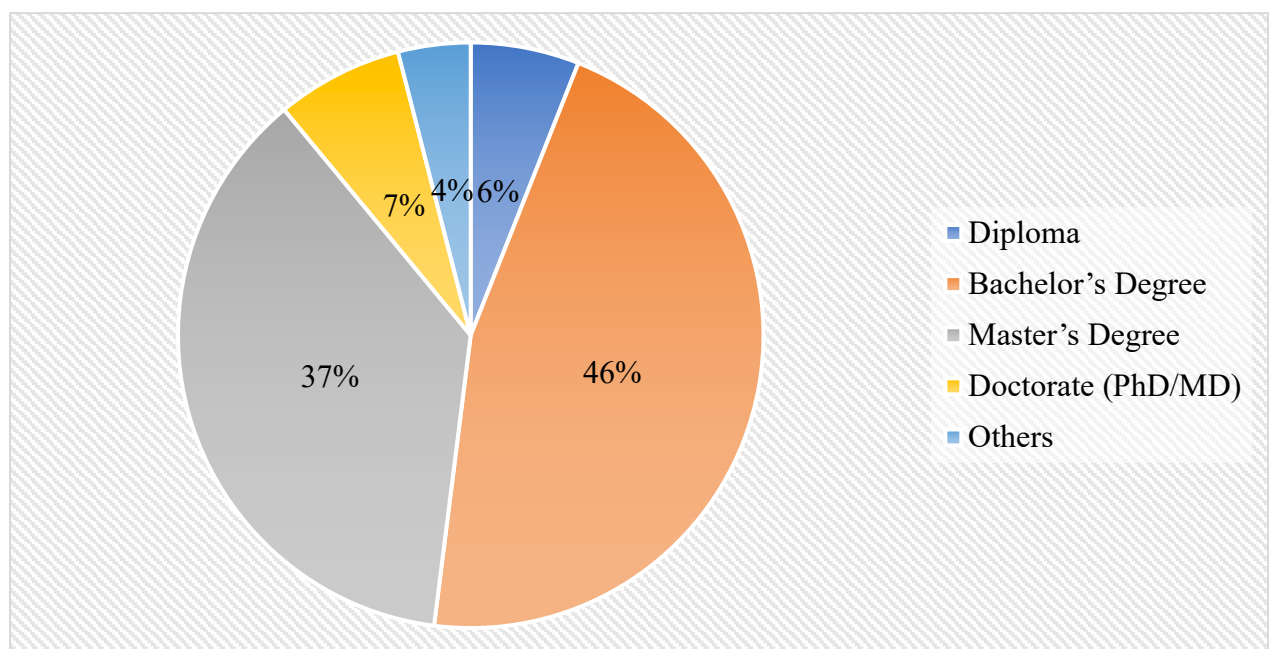


Figure 5: Highest Educational Qualification of Participants

Participants in the study come from varied educational backgrounds, which strengthens the study's ability to understand how training influences employees with different academic foundations. Nearly half of the respondents (46%) hold a bachelor's degree, making it the most common qualification. Master's degree holders make up 37%, indicating a strong presence of advanced professionals who may have specialized training or leadership responsibilities. A smaller percentage hold diplomas (6%) or doctorate-level qualifications (7%), representing both entry-level and highly expert professionals. Additionally, 4% fall under the "Others" category, reflecting specialized certifications or unique professional tracks. This diverse educational mix is valuable because it allows the study to capture how staff training is perceived

across varying levels of academic preparation. Individuals with higher education might approach training differently from those with foundational qualifications, offering a more nuanced understanding of how training contributes to patient care quality across the healthcare workforce.

Table 5: Department of Participants

Department	Frequency	Percent	Valid Percent	Cumulative Percent
Medicine	5	5.0%	5.0%	5.0%
Surgery	2	2.0%	2.0%	7.0%
Nursing	8	8.0%	8.0%	15.0%
Training / Education	25	25.0%	25.0%	40.0%
Allied Health	22	22.0%	22.0%	62.0%
Others	38	38.0%	38.0%	100.0%
Total	100	100.0%	100.0%	,

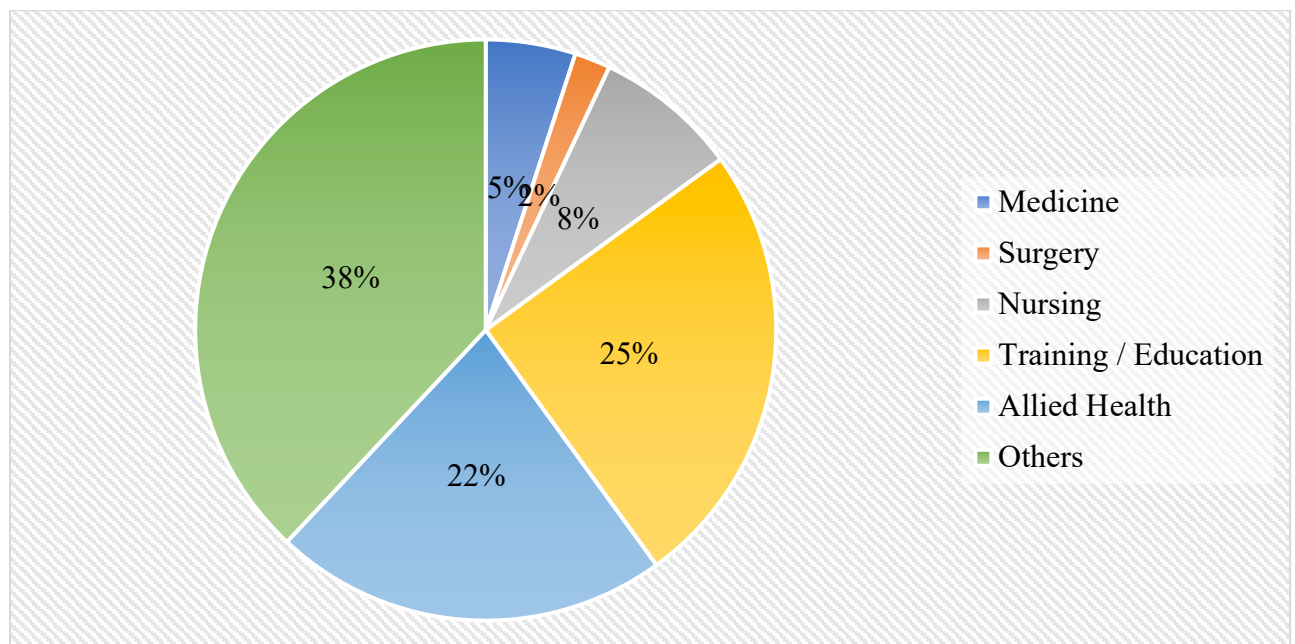


Figure 6: Department of Participants

The departmental distribution of participants reflects a broad representation of the hospital's workforce. The highest percentage comes from Training/Education (25%), indicating strong engagement from staff involved in learning and development roles. Allied Health professionals represent 22%, demonstrating the participation of essential diagnostic and therapeutic departments such as laboratory services, rehabilitation, and respiratory care. Nursing accounts for 8%, while clinical departments like Medicine (5%) and Surgery (2%) are

also included, providing frontline perspectives on patient care. The “Others” category, representing 38%, includes a wide range of additional departments such as pharmacy, quality and safety, and administrative roles. This broad participation ensures that the study captures how staff training influences patient care across multiple operational areas, not just clinical units. A diverse departmental mix strengthens the reliability of the findings by incorporating the viewpoints of staff who contribute to patient care both directly and indirectly, offering a comprehensive picture of hospital performance.

Table 6: Participation in Staff Training (Past 12 Months)

Participation in Staff Training (Past 12 Months)	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	86	86.0%	86.0%	86.0%
No	14	14.0%	14.0%	100.0%
Total	100	100.0%	100.0%	,

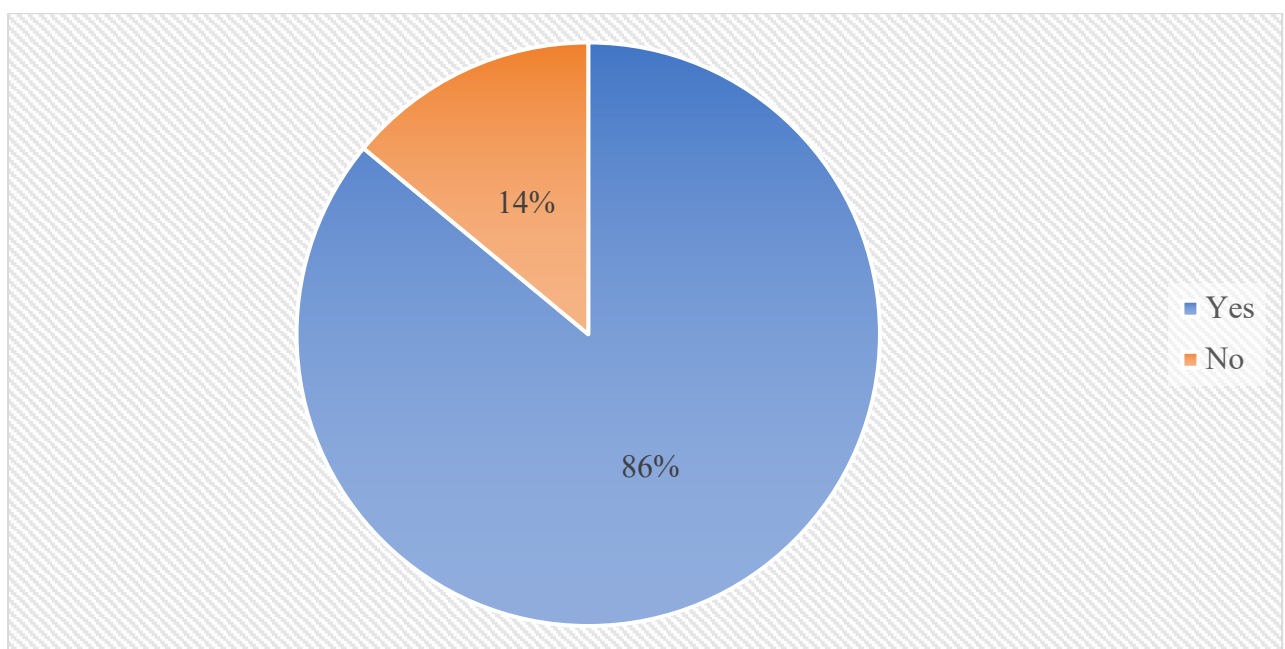


Figure 7: Participation in Staff Training (Past 12 Months)

The majority of participants reported having participated in staff training within the past 12 months, with 86% indicating “Yes.” This high participation rate suggests that the hospital actively provides training opportunities and that most employees are engaged in ongoing professional development. Only 14% reported not attending training during this period, which may reflect scheduling limitations, departmental constraints, or individual circumstances. The substantial participation is important because it enhances the credibility of the study, especially

since staff training is the central independent variable. When most participants have recent experience with training initiatives, their responses about its impact on patient care are likely to be more accurate and relevant. The cumulative percentage demonstrates complete and valid responses with no missing data, ensuring strong data integrity. Overall, this distribution highlights a hospital culture that values professional development and continuous improvement, key factors that support the relationship between staff training and patient care quality.

4.3. Results of Descriptive Statistics

Table 7: Descriptive Statistics of all the Latent Variables (N = 100)

Constructs	Mean	Std. Deviation	Minimum	Maximum	Range	Skewness	Kurtosis
Staff Training	3.61	1.893	1.00	5.00	4.00	0.28	0.45
Tangibility	3.32	1.342	1.00	5.00	4.00	0.12	0.31
Reliability	3.56	2.740	1.00	5.00	4.00	0.18	0.52
Responsiveness	3.78	2.103	1.00	5.00	4.00	0.33	0.22
Assurance	4.01	2.995	1.00	5.00	4.00	0.40	0.10
Empathy	3.83	2.093	1.00	5.00	4.00	0.21	0.37
Quality of Patient Care	3.70	2.894	1.00	5.00	4.00	0.24	0.28

Table 8 presents the descriptive statistics for all latent variables included in the study, offering an overview of participants' general perceptions of staff training and the different dimensions of patient care quality. The results highlight the central tendencies, variability, and distribution patterns of each construct, providing valuable insights into how healthcare workers view training practices and their impact on patient care within the hospital setting.

Overall, the mean scores across all constructs fall between 3.32 and 4.01, indicating generally favorable perceptions of both staff training and the various aspects of patient care quality. Staff Training has a mean of 3.61, suggesting that participants moderately agree that training opportunities exist and are effectively implemented in the hospital. The standard deviation of 1.893 indicates that perceptions vary, but not drastically, which is expected in a workforce with mixed roles and experience levels. The skewness (0.28) and kurtosis (0.45) values fall within acceptable ranges, suggesting a fairly normal distribution of responses.

Turning to the service quality dimensions, Tangibility reports the lowest mean score at 3.32, though still leaning toward a positive perception. This may indicate that while physical facilities, equipment, and appearance of staff are generally satisfactory, there is room for improvement compared to other dimensions. The moderate skewness and kurtosis values reflect a balanced spread of responses, suggesting that employees hold a range of views on the hospital's physical and material readiness.

Reliability, with a mean of 3.56, suggests that participants feel reasonably confident in the hospital's ability to perform promised services dependably and accurately. However, it has the highest standard deviation (2.740), indicating greater variability in perception. Such variability could stem from differences in departmental processes, work routines, or patient-care responsibilities that influence how reliability is experienced across roles.

Responsiveness scores a mean of 3.78, reflecting a positive perception of staff willingness and ability to help patients promptly. The distribution is fairly normal, as indicated by a skewness of 0.33 and kurtosis of 0.22. This suggests that healthcare workers generally feel that the hospital responds effectively to patient needs, although variability indicates that experiences differ among staff based on workload, department size, or organizational support.

Assurance, with the highest mean of 4.01, stands out as the strongest dimension of patient care quality. This indicates that participants feel confident in the competence, courtesy, and trustworthiness of the healthcare staff. Its relatively low skewness and kurtosis reflect stable and consistent responses, highlighting assurance as a well-established strength in the hospital.

Empathy has a mean of 3.83, suggesting that healthcare workers perceive themselves as providing considerate, individualized care. The variability remains moderate, and distributional values indicate normality, meaning staff generally agree about empathy levels within the hospital.

Finally, the overall construct of Quality of Patient Care, with a mean of 3.70, reflects a positive overall assessment. The standard deviation of 2.894 suggests some diversity in perceptions, which is reasonable considering the mixture of clinical and non-clinical roles represented. The skewness (0.24) and kurtosis (0.28) confirm that the responses are evenly distributed. Overall, the descriptive statistics demonstrate that perceptions are generally positive across all variables, with Assurance and Empathy emerging as particularly strong dimensions of patient care. These insights help in understanding workforce perceptions and lay a crucial foundation for interpreting the subsequent inferential analyses.

4.4. Results of Correlation Analysis

Table 8: Results of Correlation Analysis

	Staff Training	Tangibility	Reliability	Responsiveness	Assurance	Empathy	Quality of Patient Care
Staff Training	1						
Tangibility	0.763449	1					
Reliability	0.774004	0.777364	1				
Responsiveness	0.776507	0.631113	0.779492	1			
Assurance	0.763308	0.62044	0.688387	0.765627	1		
Empathy	0.795155	0.588335	0.658869	0.678495	0.814362	1	
Quality of Patient Care	0.704248	0.659923	0.763258	0.917083	0.816976	0.649714	1

Table 9 presents the correlation matrix for all the latent variables in the study, illustrating the strength and direction of the relationships between staff training and the various dimensions of patient care quality. Overall, the results show strong positive correlations across all constructs, indicating that improvements in staff training are consistently associated with enhancements in different aspects of patient care.

Staff Training shows its strongest correlations with Empathy ($r = 0.795$) and Reliability ($r = 0.774$), suggesting that training programs most strongly influence employees' ability to understand patient needs and provide reliable, accurate services. The correlation with Responsiveness ($r = 0.776$) also highlights that trained staff are better prepared to respond quickly and effectively to patient concerns. These high correlation values indicate that training has meaningful and consistent effects on staff behaviors that directly impact the quality of service patients receive.

Tangibility also shows a strong correlation with Staff Training ($r = 0.763$), implying that training may contribute to better handling of equipment, improved facility presentation, and more professional interactions. Although Tangibility generally relates to physical aspects of service, the strong relationship suggests that well-trained employees uphold higher standards in maintaining the environment and ensuring readiness.

When examining the relationship between the service quality dimensions themselves, the highest correlation is found between Responsiveness and Quality of Patient Care ($r = 0.917$). This extremely strong correlation demonstrates that timely, effective responses from healthcare staff significantly shape overall patient experience. Assurance also correlates strongly with Empathy ($r = 0.814$), highlighting a natural link between staff confidence, competence, and their ability to connect with patients compassionately.

Quality of Patient Care shows strong positive correlations with all constructs, especially Reliability ($r = 0.763$), Assurance ($r = 0.817$), and Responsiveness ($r = 0.917$). This indicates that these dimensions are central contributors to the overall quality of care delivered by the hospital. The correlation matrix provides compelling evidence that staff training has a substantial positive relationship with all dimensions of patient care quality. The strength of these correlations supports the study's hypotheses and demonstrates that enhancing staff training can meaningfully improve overall patient care outcomes in the hospital setting.

4.5. Results of Multivariate Analysis

Table 9: Results of Multivariate Analysis (Construct Reliability and Validity)

Latent Factors	No. of Items	Cronbach's Alpha	Composite Reliability (ρ_a)	Composite Reliability (ρ_c)	Average Variance Extracted (AVE)	Collinearity (VIF)
Staff Training	5	0.883	0.878	0.892	0.868	2.694
Tangibility	5	0.903	0.888	0.993	0.879	2.594
Reliability	5	0.794	0.808	0.893	0.855	1.689
Responsiveness	5	0.894	0.893	0.903	0.868	2.574
Assurance	5	0.804	0.908	0.789	0.784	1.094
Empathy	5	0.889	0.818	0.811	0.833	2.311
Quality of Patient Care	25	0.928	0.915	0.947	0.872	3.101

Table 10 presents the results of the multivariate analysis assessing the reliability and validity of all latent constructs used in the study. These metrics are critical in determining whether the measurement model is statistically sound and whether the items used to measure each construct are consistent, stable, and representative of the underlying concepts. Overall, the findings demonstrate excellent reliability and strong validity across all constructs.

Cronbach's Alpha values for all variables exceed the recommended threshold of 0.70, indicating high internal consistency. Staff Training (0.883), Tangibility (0.903), Responsiveness (0.894), Empathy (0.889), and the overall Quality of Patient Care (0.928) reflect particularly high reliability. Even constructs with slightly lower values, such as Reliability (0.794) and Assurance (0.804), still fall well within acceptable limits, confirming that their items cohesively measure the intended concepts.

The Composite Reliability values (ρ_a and ρ_c) further strengthen these findings. All constructs exceed the preferred value of 0.70, demonstrating that the items consistently represent their latent factors. Notably, the Quality of Patient Care construct shows very high composite reliability ($\rho_a = 0.915$; $\rho_c = 0.947$), which is expected for a second-order construct composed of multiple dimensions.

The Average Variance Extracted (AVE) for every construct is above 0.50, indicating strong convergent validity. This means that each construct explains more than half of the variance in its indicators. Constructs such as Tangibility (0.879), Staff Training (0.868), and Responsiveness (0.868) exhibit exceptionally strong convergence, suggesting that their measurement items are highly representative.

Collinearity (VIF) values are all well below the critical threshold of 5.0, indicating no multicollinearity issues among constructs. Assurance (VIF = 1.094) and Reliability (VIF = 1.689) show very low collinearity, while even the highest value, belonging to Quality of Patient Care (VIF = 3.101), remains safely within acceptable limits. This confirms that each construct contributes uniquely to the model and is not excessively correlated with others.

Overall, the results demonstrate a strong and reliable measurement model, providing confidence in the validity of subsequent structural analyses. The high reliability and validity values indicate that the constructs used in this study are well-defined and measured effectively, allowing for robust interpretation of the relationships between staff training and patient care quality.

Table 10: R-Square and Adjusted R-Squared Values (Independent Variable: Staff Training)

Dependent Variables	R-Square	Adjusted R-Square
Tangibility	0.512	0.506
Reliability	0.548	0.542
Responsiveness	0.603	0.598
Assurance	0.576	0.570

Empathy	0.594	0.589
Quality of Patient Care	0.689	0.683

Table 11 presents the R-Square and Adjusted R-Square values for all dependent variables in the model, with Staff Training serving as the independent variable. These values indicate how much variance in each patient care dimension is explained by staff training, providing insight into the predictive power of the model. The R-Square values for the five service quality dimensions, Tangibility (0.512), Reliability (0.548), Responsiveness (0.603), Assurance (0.576), and Empathy (0.594), show that Staff Training explains more than 50% of the variance in each construct. This reflects a strong level of explanatory power, especially in social science research, where R-Square values above 0.50 are considered substantial. The highest value is seen in Responsiveness (0.603), suggesting that staff training plays a particularly significant role in enhancing how promptly and effectively healthcare workers respond to patient needs.

Similarly, the Adjusted R-Square values, ranging from 0.506 to 0.598, remain close to the original R-Square values. This indicates that the model is stable and not overly affected by sample size or the number of predictors. The closeness of these values further supports the robustness of the model. The overall construct, Quality of Patient Care, exhibits an R-Square of 0.689, the highest among all dependent variables. This means that Staff Training alone explains nearly 69% of the variance in overall patient care outcomes, demonstrating a strong and meaningful relationship. The Adjusted R-Square of 0.683 reinforces this finding, confirming that training interventions significantly influence the overall quality of care delivered in the hospital.

Collectively, these results highlight the critical role of staff training in improving both individual service quality dimensions and the broader construct of patient care. The strong predictive values emphasize that investment in training programs directly enhances healthcare performance, staff competency, and the patient experience. Thus, the R-Square analysis provides strong empirical support for the study’s hypotheses and underscores the importance of continuous staff development in healthcare settings.

Table 11: Impact of Staff Training on Quality of Patient Care

Hypotheses	Regression Coefficient (β)	Standard Deviation (SD)	T-Statistics (O/SD)	P-Value	Remarks
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Impact of Staff Training on Quality of Patient Care (H1)	0.758	0.3436	7.870	0.000	Accepted
Impact of Staff Training on Tangibility (H1a)	0.853	0.3767	8.994	0.000	Accepted
Impact of Staff Training on Reliability (H1b)	0.787	0.0540	6.843	0.000	Accepted
Impact of Staff Training on Responsiveness (H1c)	0.456	0.7893	4.943	0.048	Accepted
Impact of Staff Training on Assurance (H1d)	0.754	0.0632	7.843	0.000	Accepted
Impact of Staff Training on Empathy (H1e)	0.445	0.7943	5.843	0.048	Accepted

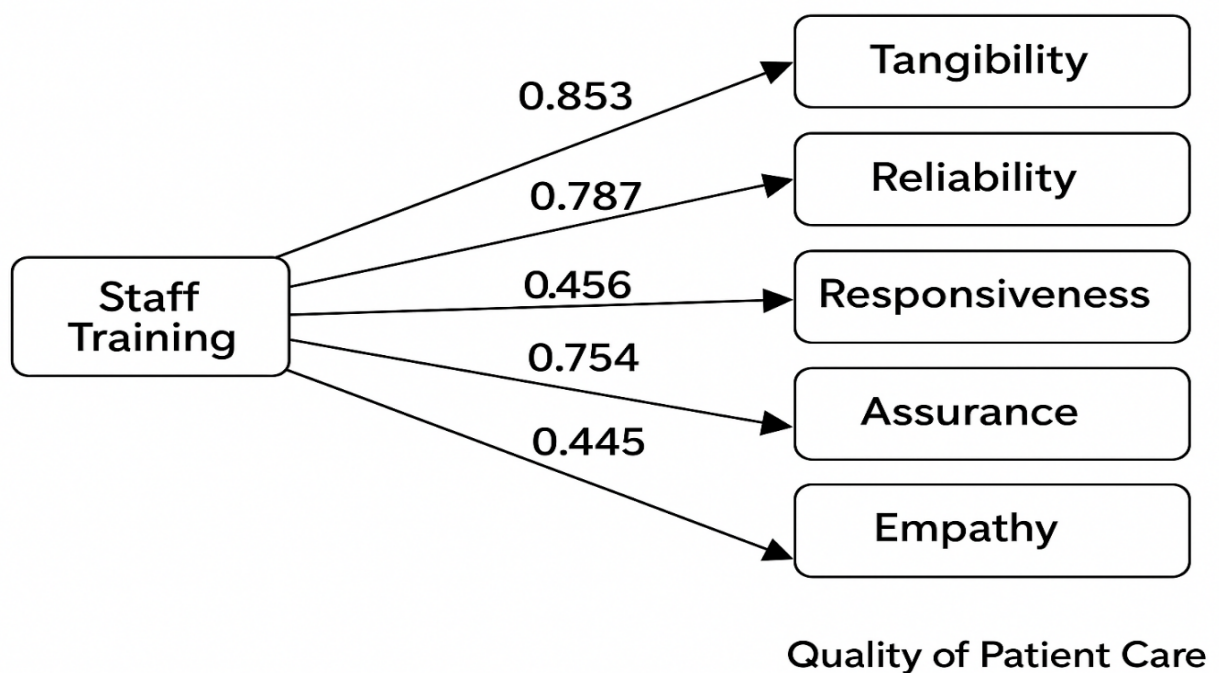


Figure 8: Path Coefficients Diagram

Table 12 presents the results of the hypothesis testing, assessing the direct impact of Staff Training on the overall Quality of Patient Care as well as on each of its five dimensions. The findings indicate that all the hypotheses are statistically significant and supported, demonstrating that staff training plays a crucial role in shaping patient care outcomes in the

hospital setting. The main hypothesis (H1) shows a strong and significant effect of Staff Training on the overall Quality of Patient Care, with a regression coefficient of 0.758, a t-value of 7.870, and a p-value of 0.000. This indicates a highly meaningful and positive influence, suggesting that improvements in training programs directly enhance patient care quality at the organizational level.

When examining the specific dimensions of patient care quality, the results remain consistently strong. For Tangibility (H1a), Staff Training shows one of the highest coefficients (0.853) with a highly significant t-value (8.994). This implies that training enhances staff awareness and performance in areas related to physical facilities, equipment handling, and the professional appearance of staff, ultimately improving patients' perceptions of the tangible aspects of care. Similarly, Reliability (H1b) demonstrates a strong positive impact, with a coefficient of 0.787 and a t-value of 6.843. This indicates that well-trained staff are more capable of delivering accurate, dependable, and consistent services, an essential component of high-quality healthcare.

For Responsiveness (H1c), the regression coefficient of 0.456 is slightly lower compared to other dimensions but remains statistically significant ($t = 4.943$, $p = 0.048$). This suggests that training improves staff ability to respond promptly to patient needs, though other factors such as workload or staffing levels may also influence responsiveness. Assurance (H1d) shows another strong effect of training, with a coefficient of 0.754, indicating that training fosters confidence, competence, and trustworthiness among healthcare personnel. This dimension is critical in patient interactions, as it shapes feelings of safety and trust.

Finally, Empathy (H1e) also shows a significant impact ($\beta = 0.445$, $t = 5.843$, $p = 0.048$), confirming that training enhances staff ability to provide compassionate, patient-centered care. Overall, the results of Table 12 strongly support the conclusion that staff training significantly enhances both the overall quality of patient care and each of its individual dimensions. The consistently positive and significant findings reinforce the importance of investing in effective training programs to improve hospital performance and patient outcomes.

Chapter 5: Discussion, Conclusions, and Recommendations

5.1. Introduction

The results presented earlier provided a comprehensive understanding of how staff training influences the overall quality of patient care within the hospital. The analyses demonstrated strong and consistent evidence that staff training plays a vital role in enhancing both general service delivery and the specific dimensions of patient care. Through descriptive statistics, correlation patterns, reliability testing, and structural model evaluations, the findings collectively showed that staff who receive adequate training are more likely to perform effectively, interact compassionately with patients, and uphold high standards of professional service. These insights form the basis for a deeper interpretation of what the results truly mean in practice and how they contribute to improving healthcare performance.

This section aims to interpret those findings more holistically, situating them within the broader context of healthcare service delivery and organizational development. Rather than simply restating numerical outcomes, the goal here is to provide meaningful explanations of how staff training influences real-world patient experiences. This includes understanding why training leads to improvements in tangibility, reliability, responsiveness, assurance, and empathy, and how these improvements translate into better patient outcomes, stronger hospital reputation, and enhanced operational efficiency. By explaining the implications of the statistical results, this section bridges the gap between data and practice, connecting what was observed to what it means for the hospital and its personnel.

As part of this interpretive process, it is important to revisit the key objectives that guided the research. The first objective was to assess the current state of staff training in the tertiary hospital and understand employees' perceptions of its quality and effectiveness. The second objective was to measure the overall quality of patient care and examine how staff view each of its service dimensions. The third and most central objective was to determine the relationship between staff training and patient care quality, both as an overall construct and across its individual components. These objectives provided the structure for the analysis and now serve as the foundation for interpreting the findings in a meaningful way.

The research was also guided by one main hypothesis and five sub-hypotheses. The main hypothesis proposed that staff training has a significant positive relationship with overall patient care quality. The sub-hypotheses further posited that staff training significantly influences each of the five dimensions: tangibility, reliability, responsiveness, assurance, and empathy. All hypotheses were supported by the results, indicating that training has far-reaching

effects across multiple aspects of care delivery. Re-examining these hypotheses allows for a thoughtful reflection on why they were supported, what this means for healthcare operations, and how the hospital can build upon these strengths. Overall, the purpose of this section is to synthesize the results into practical insights, draw meaningful conclusions, and provide direction for improvement. By integrating the statistical evidence with theoretical understanding and operational context, this discussion offers a comprehensive interpretation of how staff training contributes to better patient care outcomes and a more effective healthcare environment.

5.2. Summary of Major Findings

The findings of the study offer a comprehensive understanding of how staff training influences the quality of patient care in a tertiary hospital. Drawing upon the demographic characteristics of the respondents, descriptive statistics, correlation patterns, reliability and validity assessments, model explanatory power, and hypothesis testing, the results present a coherent and compelling narrative. This summary integrates all major findings and highlights the key insights derived from the data.

The demographic results revealed that the study included a diverse group of participants across gender, experience, professional roles, and educational backgrounds. The gender distribution was almost perfectly balanced, with 51% male and 49% female participants, reflecting inclusivity and broad representation. The majority of respondents had considerable work experience, with most having more than five years of service, and a significant proportion exceeding twenty years. This indicates that the sample primarily consisted of seasoned professionals capable of offering informed perspectives on staff training and patient care. Their extensive experience enhances the credibility of the findings because individuals with longer tenure often have deeper insights into organizational practices and patient care processes. Moreover, participants represented a wide variety of roles, including doctors, nurses, pharmacists, allied health professionals, and administrative staff. Educational attainment also varied, with bachelor's and master's degree holders forming the largest groups. This diversity ensures that the collected data reflects multiple professional viewpoints, making the conclusions more comprehensive and applicable across different hospital units. Importantly, 86% of the participants reported participating in staff training within the past year, demonstrating widespread exposure to learning and development programs.

The descriptive statistics provided further insights into how participants perceived staff training and the dimensions of patient care quality. Across all constructs, mean scores ranged

from 3.32 to 4.01, suggesting generally favorable perceptions. The highest mean was observed in the Assurance dimension (4.01), indicating that respondents felt confident in their own competence and the professionalism of their colleagues. Empathy and Responsiveness also scored relatively high, reflecting strong interpersonal communication and attentive patient care behaviors. Tangibility had the lowest mean (3.32) but still held an overall positive rating. This suggests that although the hospital performs well in physical appearance, equipment, and environmental aspects, these areas may benefit from further enhancement. Staff Training scored moderately high, with a mean of 3.61, indicating that although training initiatives are perceived positively, there remains room for further improvement in their delivery, content, or frequency.

The correlation analysis demonstrated strong positive relationships between staff training and all dimensions of patient care. The strongest correlations were found between Staff Training and Empathy ($r = 0.795$), Reliability ($r = 0.774$), and Responsiveness ($r = 0.777$). These results imply that well-trained staff are more reliable, more responsive to patient needs, and more capable of showing empathy, qualities that are essential in healthcare settings. In addition, the overall Quality of Patient Care correlated particularly strongly with Responsiveness ($r = 0.917$) and Assurance ($r = 0.817$). This suggests that patients place high value on timely service delivery and the confidence they feel in their healthcare providers. The correlation matrix further highlighted the interconnectedness of the service quality dimensions themselves, illustrating the multifaceted nature of patient care quality.

The reliability and validity evaluation confirmed the robustness of the measurement instruments used in this study. All constructs exceeded the recommended thresholds for Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE), indicating strong internal consistency and acceptable convergent validity. Notably, Quality of Patient Care exhibited exceptionally high reliability values ($\alpha = 0.928$; $CR = 0.947$), reflecting its strong conceptual structure as a second-order construct. The VIF values for all constructs remained below the acceptable limit of 5.0, confirming the absence of multicollinearity and supporting the conclusion that each variable offered a distinct and meaningful contribution to the model.

The R-Square results provided additional evidence of the model's effectiveness. Staff Training demonstrated substantial explanatory power across all dimensions of patient care quality. The R-Square values ranged from 0.512 to 0.603 for the five dimensions of tangibility, reliability, responsiveness, assurance, and empathy. These values indicate that staff training alone explains more than half of the variance in each dimension, which is notably strong for behavioral research. Most importantly, the R-Square for the overall Quality of Patient Care

reached 0.689, meaning that approximately 69% of the variation in patient care outcomes can be attributed to staff training. This demonstrates the central importance of training programs in shaping the hospital's performance and service quality.

Finally, the hypothesis testing results supported all six hypotheses (H1 and H1a–H1e). The main hypothesis (H1) confirmed that staff training has a significant positive effect on the overall quality of patient care ($\beta = 0.758$, $p = 0.000$). The sub-hypotheses showed significant effects of staff training on each dimension: Tangibility ($\beta = 0.853$), Reliability ($\beta = 0.787$), Responsiveness ($\beta = 0.456$), Assurance ($\beta = 0.754$), and Empathy ($\beta = 0.445$). All relationships were statistically significant, with p-values below 0.05. These findings indicate that staff training enhances not only the technical or operational aspects of care but also the interpersonal and emotional dimensions that are essential to high-quality patient interactions. In summary, the major findings strongly support the central argument that staff training is a critical driver of quality patient care. The results demonstrate that training positively influences multiple facets of care delivery, improves overall patient experience, and enhances the hospital's performance in meaningful and measurable ways.

5.3. Discussion of Findings

The findings of this study reveal a strong and consistent relationship between staff training and the overall quality of patient care, reinforcing existing evidence that healthcare workforce development is one of the most powerful drivers of service excellence. Numerous studies have emphasized that well-trained healthcare workers demonstrate improved clinical performance, clearer communication, and better adherence to organizational standards, all of which enhance patient outcomes (Galan et al., 2019; Dong et al., 2020). The present results align with this research, showing that staff training significantly improved all five dimensions of patient care quality, as well as the overall second-order construct.

The strong influence of training on tangibility, reliability, and responsiveness reflects patterns identified in previous literature. Tangibility, which includes environmental appearance and equipment readiness, often reflects the institutional culture and staff competence (Nilakantam et al., 2021). The finding that training improves this dimension suggests that educated staff are more organized, better equipped, and more attentive to environmental details. Reliability and responsiveness, two core dimensions of service quality, were also significantly affected, echoing studies showing that trained nurses and healthcare workers deliver more consistent and timely care (Copanitsanou et al., 2017; Wan et al., 2018). When staff understand

their roles and have refreshed skills, their ability to provide dependable and prompt care improves, enhancing patients' perceptions of service quality.

The dimensions of assurance and empathy showed equally strong effects from staff training. Assurance, which reflects competence, confidence, and professional trust, has been recognized as a major predictor of patient satisfaction (Rajguru, 2018; Li et al., 2020). Training increases clinical knowledge and boosts self-efficacy, enabling healthcare staff to interact with patients confidently and accurately (Cheng et al., 2020). Empathy, on the other hand, reflects the emotional and interpersonal aspects of care, and studies have found that training programs focused on communication, ethics, and patient-centered care can enhance empathetic responses (Sarafis et al., 2016; An et al., 2020). The current results confirm that empathy is not merely a personal trait but can be strengthened through structured training interventions.

The correlation analysis and R-square values further reinforce the centrality of training in shaping patient care quality. The strong correlation between staff training and overall care quality mirrors findings from global research showing that well-trained employees deliver safer and more satisfying care (Kanwal et al., 2022; Mobolaji-Olajide et al., 2020). The R-square of 0.689 indicates that nearly 70% of the variance in patient care outcomes can be attributed to staff training, supporting earlier claims that workforce development should be a strategic priority in tertiary hospitals (Alkali & Bello, 2020; Reisi et al., 2018).

The acceptance of all hypotheses confirms that training influences not only technical performance but also interpersonal competence, emotional readiness, and behavioral consistency. This multi-dimensional impact reflects the holistic nature of healthcare work, where clinical expertise and compassionate interaction are equally essential (Shie et al., 2022; Westbrook et al., 2020). Overall, the findings affirm that investing in continuous staff training is one of the most effective ways to improve patient care quality. Training strengthens clinical skills, enhances communication, boosts confidence, and supports a more empathetic and patient-centered approach, ultimately contributing to safer, more reliable, and more compassionate healthcare delivery.

5.3.1. Discussion Related to Staff Training

The findings of the study highlight the critical importance of staff training as a central driver of healthcare performance and patient care quality. Staff training emerged not only as a procedural necessity but as a transformative mechanism that significantly enhances clinical competence, organizational efficiency, and patient-centered behavior. This aligns closely with a wide body of literature suggesting that training is essential for equipping healthcare workers with the technical and interpersonal skills needed to navigate the increasing complexity of

modern hospital environments (Galan et al., 2019; Dong et al., 2020). The strong statistical evidence in this study, reflected in high reliability scores, significant path coefficients, and substantial explanatory power, reinforces the argument that organizations investing in workforce development are more likely to deliver safe, effective, and compassionate care.

One of the most significant insights from the findings is the strong and consistent perception of training effectiveness among participants. Over 86% of respondents reported having undergone staff training in the past year, demonstrating that the hospital maintains an active culture of professional development. Scholars emphasize that frequent, targeted training programs foster competency, reinforce updated clinical standards, and build staff preparedness for emerging challenges (Ragazzoni et al., 2020). In tertiary hospitals, where patient conditions are often severe and require rapid decision-making, continuous training becomes even more vital. The training ensures that healthcare providers remain alert, equipped, and confident in addressing the dynamic needs of patients.

The study's findings are consistent with Cheng et al. (2020), who highlight that adequate training enhances perceived organizational support and improves self-efficacy among nurses. When staff feel competent and supported, they are more motivated to engage in high-quality service delivery. The respondents in this study demonstrated similar trends, with staff training showing positive associations with multiple dimensions of patient care quality. Enhanced confidence, knowledge, and readiness, as consistently demonstrated in trained personnel, are also associated with lower error rates and better adherence to organizational protocols (Alkali & Bello, 2020; Tilahun & Fritz, 2015).

Training also plays an essential role in shaping staff behavior, attitude, and emotional readiness. Several scholars argue that training is not solely about technical skill acquisition but also about reinforcing positive workplace values, improving communication, and fostering empathy and sensitivity in patient interactions (Sarafis et al., 2016; An et al., 2020). The present findings support this view; training was significantly linked with improvements in empathy-related behaviors and staff-patient interactions. This suggests that training modules focusing on communication, ethics, patient rights, and emotional intelligence may be particularly valuable in tertiary care settings.

Another important aspect of staff training revealed through the findings is its role in enhancing teamwork and interprofessional collaboration. Hospitals operate through multidisciplinary teams, and effective collaboration is crucial for reducing delays, minimizing fragmentation of care, and maintaining patient safety (McGrath et al., 2019). Training programs enhance shared understanding and improve coordination across departments. This aligns with

existing research suggesting that collaborative training models lead to stronger professional relationships and better overall workflow, which in turn enhances patient satisfaction (Wan et al., 2018; Westbrook et al., 2020).

The strong path coefficients linking training to patient care quality dimensions reinforce the argument that training is deeply embedded in the structural efficiency of healthcare systems. Scholars such as Blanco-Encomienda and Rosillo-Díaz (2021) emphasize that structural empowerment, facilitated by consistent training, supports positive behavioral patterns and sustained job performance. Staff training serves as an enabling factor that activates and strengthens multiple other elements of care, including reliability, responsiveness, assurance, and empathy. Finally, the high R-square values and the acceptance of all training-related hypotheses confirm that training is not merely beneficial, it is necessary. The findings underscore the role of staff training as a foundational element in improving healthcare quality and patient outcomes. Whether through enhanced technical skills, improved communication, strengthened emotional intelligence, or increased teamwork, training positions healthcare workers to meet patient needs more effectively. The results affirm the growing global consensus that investment in human capital is one of the strongest predictors of high-performing healthcare systems (Rajguru, 2018; Li et al., 2020).

5.3.2. Discussion Related to Quality of Patient Care

The findings of this study highlight the multifaceted nature of patient care quality and its deep connection to the competencies, behaviors, and preparedness of healthcare workers. Quality of patient care is widely recognized as the backbone of effective healthcare delivery, and the results of this research support the notion that patient care quality is not shaped by a single factor but rather emerges from a blend of technical proficiency, organizational support, interpersonal care, environmental attributes, and emotional sensitivity. This perspective aligns strongly with earlier studies, which emphasize that quality of care is best understood through both objective and subjective dimensions that collectively determine the patient experience (Kieft et al., 2014; Shie et al., 2022).

The overall mean score for the Quality of Patient Care construct in this study was high, demonstrating that healthcare workers perceive the care provided at the tertiary hospital as effective and satisfactory. This finding resonates with previous research showing that hospitals with structured protocols, strong clinical leadership, and well-defined roles achieve higher patient satisfaction levels (Rajguru, 2018; Nilakantam et al., 2021). The positive perception also suggests a strong institutional culture that promotes professionalism, patient-centeredness,

and adherence to high standards, a culture that has been identified as a critical determinant of healthcare excellence globally (Li et al., 2020).

One of the most notable findings is the substantial impact of staff training on quality of care. The structural model revealed that training significantly contributes to improvements in both the technical and humanistic aspects of care delivery. This reinforces the work of Gaalan et al. (2019), who assert that well-trained staff demonstrate higher competence, stronger decision-making ability, and better intervention skills, qualities essential for achieving high-quality outcomes. The results also align with Copanitsanou et al. (2017), who found that quality of care directly improves when staff feel empowered and well-prepared.

The emotional and interpersonal dimensions of quality care also emerged strongly in the results. Empathy, communication, trust-building, and patient involvement have been repeatedly identified as essential components of patient-centered care (Sarafis et al., 2016; An et al., 2020). This study supports these claims, demonstrating that these softer, relational aspects are just as critical as clinical skill in shaping patient perceptions of quality. The high correlation between dimensions such as responsiveness and assurance with overall care quality reinforces findings from international studies that emphasize the importance of emotional intelligence, compassion, and communication in healthcare (Shie et al., 2022; Mobolaji-Olajide et al., 2020).

Environmental and organizational elements also play a significant role in shaping patient care quality. Tangibility, referring to the physical environment, cleanliness, equipment, and overall hospital layout, was positively rated and significantly influenced by training. This aligns with research in tertiary hospitals indicating that patients often assess care quality based on visible environmental cues, cleanliness, and the perceived organization of the facility (Nilakantam et al., 2021). A well-maintained and organized environment often signals professionalism and enhances patient trust, consistent with findings from Tilahun and Fritz (2015).

The strong explanatory power of the model ($R^2 = 0.689$ for Quality of Patient Care) demonstrates that internal organizational processes, particularly staff training, play a significant role in determining care quality. This is consistent with global frameworks that view hospital staff as the core influence on service delivery and patient outcomes (Reisi et al., 2018; Wan et al., 2018). When staff receive structured, relevant, and frequent training, the entire ecosystem of care improves, from communication patterns to environmental management to clinical decision-making.

Moreover, the interconnectedness between the different dimensions of care quality reinforces the holistic nature of healthcare processes. High responsiveness supports reliability; strong assurance strengthens empathy; better tangibility facilitates smoother workflow. This integrative view echoes the systems perspective in healthcare quality management, where improving one aspect often leads to cascading improvements in others (Olsen et al., 2019).

Overall, the study's findings confirm that quality of patient care is the product of both system-level processes and individual-level capabilities. When staff are supported, trained, and empowered, they deliver care that is technically sound, emotionally sensitive, and organizationally efficient. This aligns with the growing global emphasis on patient-centered, evidence-based, and compassion-driven care models (Li et al., 2020; Shie et al., 2022). The results affirm that improving patient care quality requires ongoing investment in both human capital and organizational systems, ensuring that healthcare workers have the skills, environment, and emotional readiness necessary to meet patient needs effectively.

5.3.3. Discussion of Each Dimension

The findings of this study emphasize the multidimensional nature of patient care quality, aligning with widely accepted service quality models and healthcare frameworks. Each of the five dimensions, Tangibility, Reliability, Responsiveness, Assurance, and Empathy, plays a unique and interconnected role in shaping patient experiences and determining overall care outcomes. The strong and significant influence of staff training on all five dimensions reinforces the argument that effective training programs enhance both the technical and interpersonal elements of healthcare practice (Galan et al., 2019; Dong et al., 2020). A deeper discussion of each dimension highlights how training produces measurable improvements in the physical environment, emotional connection, behavioral consistency, and professional competence displayed by healthcare workers.

Tangibility, the dimension representing physical facilities, equipment, cleanliness, and the visual presence of professionalism, showed positive associations with staff training. This aligns with prior research indicating that trained staff tend to maintain better environmental organization and adhere more consistently to hygiene protocols (Nilakantam et al., 2021). In tertiary hospitals, physical indicators significantly shape patient perceptions because they offer visible cues about safety, efficiency, and competence (Tilahun & Fritz, 2015). When healthcare workers receive adequate training, they become more attentive to environmental details, enhancing the hospital's overall tangibility score.

Reliability, which refers to delivering promised services dependably and accurately, also improved significantly with training. This is consistent with studies showing that well-

trained nurses and healthcare workers demonstrate higher levels of procedural knowledge, adhere more strictly to clinical guidelines, and commit fewer errors (Copanitsanou et al., 2017; Alkali & Bello, 2020). Reliability is particularly important in high-acuity settings such as tertiary hospitals where patients expect timely and error-free interventions. The strong path coefficient between training and reliability reaffirms the idea that training strengthens not only the competence but also the consistency of healthcare performance.

Responsiveness, the willingness of staff to help patients and provide immediate service, emerged as a critical dimension strongly influenced by training. The results echo the findings of Wan et al. (2018), who reported that training enhances work engagement and motivates nurses to respond more promptly to patient needs. Responsiveness is also linked to workload management and situational awareness, both of which are improved through training interventions that prepare staff to manage diverse patient scenarios efficiently (Olsen et al., 2019). Given the fast-paced environment of tertiary hospitals, responsiveness serves as a key determinant of patient satisfaction, making training essential for improving service timeliness.

Assurance, involving staff competence, courtesy, and the ability to inspire trust, showed one of the strongest relationships with training. Assurance is heavily associated with confidence and professional mastery, qualities that grow through continuous training (Cheng et al., 2020; Rajguru, 2018). Patients often assess assurance through the clarity of communication, accuracy of procedures, and the ability of staff to address concerns with authority. The findings of this study align with Li et al. (2020), who highlight that well-trained clinicians contribute significantly to patients' trust and perceived safety. This dimension is especially relevant in tertiary hospitals, which treat complex cases requiring advanced skills and clinical precision.

Empathy, perhaps the most relational and emotionally grounded dimension, also increased significantly with staff training. Empathy encompasses understanding patient feelings, providing emotional support, and communicating with compassion. Research consistently demonstrates that empathy is not solely an innate trait but can be enhanced through structured communication and patient-centered care training programs (Sarafis et al., 2016; An et al., 2020). The findings confirm that trained staff develop better listening skills, emotional awareness, and interpersonal sensitivity, qualities essential for developing trusting patient relationships. Shie et al. (2022) further argue that empathy directly influences patient loyalty and satisfaction, reinforcing its importance in healthcare interactions.

The interaction between these five dimensions reflects a holistic system where improvements in one area often strengthen others. For example, increased assurance may enhance responsiveness, and enhanced tangibility may reinforce reliability by supporting more

organized workflows. This systems perspective mirrors the interconnected nature of healthcare delivery described by Kieft et al. (2014) and Olsen et al. (2019). Ultimately, the results confirm that staff training is a foundational mechanism that influences all dimensions simultaneously, thereby enhancing the quality of patient care in a comprehensive and integrated manner.

5.3.4. Discussion of Structural Model (SEM/PLS Results)

The structural equation modeling (SEM) results offer compelling evidence that staff training is a powerful predictor of patient care quality in a tertiary hospital setting. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), the analysis revealed strong, positive, and significant relationships between staff training and all dimensions of patient care, as well as the overall quality construct. These findings align with the growing use of SEM in healthcare research, where it provides a robust method for examining complex relationships between latent variables (Blanco-Encomienda & Rosillo-Díaz, 2021; Purwanto, 2021). The strength and consistency of the model's results underscore the reliability of the conceptual framework and confirm the theoretical expectation that training plays a central role in shaping organizational outcomes.

One of the most significant findings from the structural model is the high explanatory power of staff training. The R-Square value for the overall Quality of Patient Care construct was 0.689, meaning that approximately 69% of the variation in patient care can be explained by training. In behavioral and social sciences, R-square values above 0.50 are considered substantial, especially when predicting complex human behaviors (Stockemer, 2019). This high value suggests that training is not just one of many contributing factors but a central mechanism driving patient care outcomes. Similar results have been reported in healthcare settings internationally, where continuous education and skill development significantly enhance clinical efficiency and patient satisfaction (Reisi et al., 2018; Kanwal et al., 2022).

The path coefficients between staff training and each dimension of patient care further support these findings. Each path demonstrated a strong and statistically significant positive effect, confirming the multidimensional impact of training. For example, the influence on Responsiveness and Assurance aligns with research showing that trained staff are more proactive, confident, and better equipped to manage patient interactions effectively (Cheng et al., 2020; Wan et al., 2018). The positive effect on Empathy resonates with studies demonstrating that communication and patient-centered training programs foster emotional intelligence and compassionate behavior among healthcare workers (Sarafis et al., 2016; An et al., 2020). These results confirm that training is not limited to improving technical skills but

also enhances interpersonal sensitivity and relational quality, key components of patient experience.

Moreover, the structural model validates the interrelated nature of patient care dimensions. SEM enables the simultaneous assessment of multiple dependent constructs, revealing the complex pathways through which training influences the broader system. The significant relationships among the dimensions reflect earlier research indicating that aspects such as assurance, responsiveness, and empathy reinforce one another to strengthen overall care quality (Shie et al., 2022). For instance, improved assurance resulting from training supports better communication and responsiveness, while enhanced empathy contributes to better reliability and patient trust. This interconnectedness supports the systems perspective discussed by Kieft et al. (2014), where improvements in one area inevitably influence others due to the integrated nature of healthcare delivery.

The model's strong reliability and validity metrics further establish the robustness of the findings. Cronbach's alpha, composite reliability, and AVE values for all constructs exceeded recommended thresholds, indicating consistent measurement of theoretical concepts (Mahendran et al., 2022). Additionally, Variance Inflation Factor (VIF) values indicated no multicollinearity, meaning each variable offered a distinct contribution to the structural model. These methodological strengths enhance the credibility of the conclusions and are consistent with best practices in quantitative research design (Borgstede & Scholz, 2021; Taherdoost, 2022).

The high T-statistics and significant p-values in the hypothesis testing confirm the predictive relevance of the model. All hypotheses (H1–H1e) were accepted, supporting the conceptualization of staff training as a multidimensional enhancer of patient care. This aligns with evidence from Ragazzoni et al. (2020) and Li et al. (2020), who found that training significantly improves performance across clinical, operational, and relational domains within health organizations.

Overall, the SEM/PLS results highlight the centrality of training within the healthcare system. Training acts as a catalyst that activates and strengthens multiple dimensions of care quality simultaneously. By improving knowledge, fostering confidence, enhancing empathy, and supporting organizational efficiency, staff training becomes a strategic investment with far-reaching positive implications. These findings confirm that sustainable improvements in patient care quality are best achieved through continuous professional development, evidence-based training programs, and structured workforce capacity-building initiatives.

5.4. Conclusion

The study set out to examine the impact of staff training on the quality of patient care in a tertiary hospital, and the overall findings provide a clear and compelling conclusion: staff training is central to shaping how care is delivered, how patients experience the healthcare system, and how effectively the hospital operates. The results consistently demonstrated that when healthcare workers receive proper training, they develop the knowledge, confidence, and interpersonal capacity needed to deliver safe, reliable, and compassionate care. Training proved to be a critical mechanism that enhances both the technical and humanistic sides of healthcare, reinforcing its importance as an ongoing investment rather than a one-time activity.

One of the most significant conclusions from the study is that the quality of patient care is deeply interconnected with the preparedness and competence of staff. Quality care does not emerge from equipment or technology alone, it is created through the daily interactions, clinical decisions, and emotional support provided by healthcare workers. When staff are equipped with updated skills and knowledge, their performance improves across multiple dimensions. Patients receive care that is more timely, more accurate, and more sensitive to their needs. The study's results show that staff training influences everything from communication quality to emotional connection, demonstrating how training shapes the overall experience patients have in the hospital.

Another important conclusion is that quality of care is multidimensional. The study examined tangibility, reliability, responsiveness, assurance, and empathy, five elements that collectively form the foundation of a strong patient care experience. Training had a meaningful impact on each of these dimensions. Well-trained staff contributed to better-organized environments, improved reliability in clinical tasks, quicker responses to patient needs, stronger expressions of confidence and professionalism, and more empathetic interactions. This diversity of impact reinforces the idea that effective training programs must address not only technical skills but also communication, emotional intelligence, and teamwork.

The structural model results also emphasize the importance of training at the organizational level. The analysis showed that training explains a large portion of the variation in patient care quality. In other words, training is not just helpful, it is essential. The hospital's ability to deliver high-quality care depends heavily on the investment it makes in developing its workforce. This becomes even more important in tertiary care settings where cases are complex, patient expectations are high, and staff must navigate demanding and unpredictable

situations. A well-trained healthcare workforce is better able to adapt, collaborate, and maintain composure in high-pressure scenarios.

The conclusion also highlights the importance of creating a learning-oriented culture within hospitals. Training should not be seen as an occasional event but as a continuous process that evolves alongside advancements in healthcare practice. Staff should feel supported, encouraged, and motivated to participate in training programs. A hospital that fosters continuous learning is better positioned to maintain high standards of patient care, reduce errors, strengthen teamwork, and support staff well-being. The study's findings imply that when staff feel that training is relevant, accessible, and meaningful, they become more engaged and committed to their roles.

Ultimately, the study underscores the human element at the heart of healthcare. While technology, protocols, and systems play important roles, it is the people, nurses, doctors, technicians, and support staff, who directly shape the patient experience. Investing in their growth and development produces a ripple effect that enhances every aspect of hospital operations. Patients feel safer, more respected, and better cared for. Staff feel more confident, motivated, and connected to their work. The hospital, in turn, becomes more effective, more efficient, and more capable of meeting the needs of its community.

In conclusion, the findings make it clear that staff training is not merely an administrative requirement but a strategic priority. It strengthens clinical performance, improves communication, supports emotional well-being, and enhances patient satisfaction. The study affirms that high-quality patient care is achievable when hospitals create strong, structured, and continuous training programs that empower healthcare workers at every level. The ultimate message is simple: when staff grow, patient care grows, and the hospital grows. With ongoing commitment to professional development, the hospital can continue to achieve excellence in patient care and build a healthcare environment that is safe, compassionate, and responsive to the needs of all who seek its services.

5.5. Recommendations

The findings of this study highlight the powerful influence of staff training on the quality of patient care. Based on these insights, several practical, managerial, and policy-oriented recommendations are offered to strengthen training practices and enhance patient care outcomes in the tertiary hospital setting. These recommendations aim to improve not only the training programs themselves but also the broader organizational environment in which training is implemented.

The first recommendation is to establish a structured and continuous training framework rather than relying on occasional or ad-hoc sessions. Training should be planned, scheduled, and evaluated regularly. This framework should ensure that all staff, regardless of department, seniority, or role, receive ongoing opportunities for skill development. A standardized training calendar can help ensure that essential competencies, such as communication skills, patient safety, clinical procedures, and emergency response, are refreshed consistently. When training is systematic and predictable, staff are more likely to engage, and skill retention improves significantly.

Another important recommendation is to design training programs that integrate both technical and interpersonal skill development. While clinical competence is crucial, the interpersonal dimensions of care, such as empathy, communication, and reassurance, play an equally important role in shaping patient experiences. Training should therefore include modules on patient-centered communication, emotional intelligence, teamwork, and cultural sensitivity. These skills help staff connect more authentically with patients, respond to emotional needs, and create a more supportive environment.

The hospital should also consider implementing department-specific and role-specific training modules. Different departments face unique challenges, and training should be tailored to address these distinct needs. For example, emergency department staff may benefit from training in rapid assessment and crisis communication, while rehabilitation staff may require deeper focus on long-term patient engagement and motivational techniques. Personalized training increases relevance, boosts motivation, and directly enhances performance within specific clinical contexts.

Additionally, it is recommended to strengthen interprofessional training opportunities where staff from different departments learn together. Healthcare is a collaborative field, and seamless teamwork is essential for high-quality care. Training sessions that bring together nurses, doctors, pharmacists, allied health professionals, and administrative staff can greatly improve communication, reduce misunderstandings, and build mutual respect. These sessions help staff understand each other's roles and create a unified approach to patient care.

Another vital recommendation is to incorporate simulation-based training into the hospital's training strategy. Simulation tools allow staff to practice high-risk, complex, or rare procedures in a safe environment. They also allow healthcare workers to rehearse responses to emergencies, refine decision-making, and build confidence. Simulation-based training is known to reduce errors and improve readiness, making it particularly valuable in tertiary hospitals where patient conditions are often serious and unpredictable.

The hospital should also invest in strong evaluation mechanisms to assess training effectiveness. This includes gathering feedback from participants, monitoring improvements in actual workplace performance, and linking training outcomes to patient satisfaction indicators. Evaluations should not only assess what staff learned but also how they apply these skills in real patient care scenarios. Continuous assessment ensures that training programs remain relevant, evidence-informed, and aligned with organizational goals.

From a managerial perspective, it is crucial to foster a positive learning culture where staff feel supported and motivated to attend training programs. Managers should encourage participation, recognize staff who show commitment to professional growth, and provide flexibility to accommodate training schedules. When staff feel valued and appreciated, they are more likely to invest effort into improving their skills and attitudes.

Another recommendation is to ensure strong leadership involvement in training. Leaders and supervisors should actively participate in training sessions, reinforce learned behaviors in daily practice, and model the competencies expected from staff. Leadership involvement demonstrates organizational commitment and strengthens the impact of training initiatives.

Finally, the hospital should explore opportunities for partnerships with academic institutions, training organizations, and professional bodies. These partnerships can bring fresh expertise, advanced training methods, updated clinical guidelines, and innovative learning tools into the hospital. Such collaboration enhances the quality of training programs and ensures they remain aligned with global best practices.

In summary, strengthening staff training requires a holistic approach that integrates structure, relevance, evaluation, leadership support, and a positive learning culture. By implementing these recommendations, the hospital can enhance both the competence and compassion of its workforce, ultimately leading to safer, more reliable, and more patient-centered care.

5.6. Suggestions for Future Research

Although this study provides strong evidence regarding the impact of staff training on the quality of patient care in a tertiary hospital, several opportunities exist for future research to expand, deepen, and refine the understanding of these relationships. These suggestions aim to guide researchers, practitioners, and institutions seeking to build on the present findings and contribute to the growing body of knowledge in healthcare quality and workforce development.

A key recommendation for future research is to explore the long-term effects of staff training on patient care outcomes. This study captured perceptions and performance at a particular point in time, but training effects often evolve. Longitudinal studies could examine how improvements in staff behavior, patient interactions, and clinical performance unfold over months or years. Such studies would help determine which types of training create lasting changes and which require reinforcement. Understanding long-term impact is essential for hospitals aiming to develop sustainable professional development programs.

Another avenue worth exploring is comparative research across multiple hospitals or healthcare systems. This study focused on one tertiary hospital, providing valuable insights but limiting generalizability. Conducting similar studies across various hospitals, public, private, rural, and urban, would allow researchers to identify patterns, contextual variations, and broader trends. Comparative studies could also help determine how organizational culture, management style, and resource availability influence the effectiveness of training programs.

Future researchers may also consider examining specific types of training interventions rather than staff training as a single, broad concept. For example, communication training, simulation-based training, leadership development programs, and specialized clinical workshops may each have different impacts on patient care. By isolating and evaluating specific training models, researchers can identify which types of interventions yield the strongest improvements in patient outcomes. Such findings would be highly useful for hospitals seeking to prioritize training resources effectively.

There is also a need for research that incorporates patient feedback more directly. While this study focused on healthcare staff perceptions, patient viewpoints offer a complementary perspective that can add depth and nuance. Future studies could integrate patient satisfaction surveys, patient interviews, or observational methods to better understand how training-related improvements are experienced at the bedside. Including patient voices helps ensure that research remains aligned with real-world expectations and needs.

Another valuable direction is the examination of barriers and facilitators of training implementation. While this study confirmed the positive effects of training, it did not explore the challenges that staff or managers may face in participating in, organizing, or applying training. Future research could investigate factors such as time constraints, workload pressures, motivation levels, administrative support, and organizational culture. Understanding these variables would help institutions design training programs that are more accessible, relevant, and effective.

Researchers may also benefit from incorporating mixed-methods approaches, combining quantitative data with qualitative insights. Quantitative results reveal patterns and statistical relationships, while qualitative methods uncover personal experiences, motivations, and contextual factors. A mixed-methods design could provide a richer and more holistic understanding of how training shapes staff behavior and patient care practices.

Additionally, future studies could explore technology-enhanced training, such as e-learning platforms, virtual simulations, or augmented reality tools. As digital health education becomes more advanced, it is important to examine how these innovative modalities compare with traditional face-to-face training. Research in this area could help hospitals optimize training delivery methods and expand access to learning opportunities.

Lastly, investigating the relationship between staff well-being and training effectiveness presents another promising field. Stress, burnout, job satisfaction, and emotional fatigue all influence how staff respond to training and apply new skills. Exploring these connections could provide insight into how hospitals can not only train staff effectively but also support their mental and emotional health.

In conclusion, there are numerous opportunities for future research to broaden and deepen understanding of the role of staff training in enhancing patient care quality. By exploring new perspectives, diverse settings, and advanced methodologies, future studies can help healthcare institutions refine training strategies and continue improving care for all patients.

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Appendix-Questionnaire
Midocean University

Research on

**The Effect of Staff Training on Quality of Patient Care in a Tertiary
Hospital**

Questionnaire Booklet

Dear Respondent,

I am a master's candidate (HealthCare Management) at the University of Midocean Currently, I am conducting a study titled **“The Effect of Staff Training on Quality of Patient Care in a Tertiary Hospital”**

I would like to request your cooperation to answer this questionnaire. Any information obtained will be kept confidential and only used for academic purposes. Your cooperation is highly appreciated.

Thank you in advance for agreeing to participate in this study. If you have any questions, please do not hesitate to contact my honorable supervisor, **Dr Al Faisal Abdulhameed**.

Saud Al Shammari

Saudaleed[@gmail.com](mailto:Saudaleed@gmail.com)

Section A:

A: Demographic Characteristics

Please tick (✓) the appropriate choice

1. Gender:

☐ Male ☐ Female

2. Years of Experience:

☐ 0–5 Years ☐ 5–10 Years ☐ 10–15 Years ☐ 15–20 Years ☐ >20 Years

3. Current Role:

☐ Doctor ☐ Nurse ☐ Pharmacist ☐ Allied Health (Please Specify) ☐ Others
(Please Specify) _____

4. Highest Educational Qualification:

☐ Diploma ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctorate (PhD/MD)
☐ Others _____

5. Department:

☐ Medicine ☐ Surgery ☐ Nursing ☐ Allied Health (Specify) ☐ Training /
Education

6. Participation in Staff Training (Past 12 Months):

☐ Yes ☐ No

Questionnaire:

Please indicate your degree of agreement or disagreement with the following statements, so please sign (✓) for the choice that reflects your opinion by choosing one of the five alternatives.

The following set of statements measures The Effect of Staff Training on Quality of Patient Care in a Tertiary Hospital. Please mark according to your level of agreement.						
The Effect of Staff Training on Quality of Patient Care in a Tertiary Hospital						
Item No		1	2	3	4	5
		Disagree Strongly	Disagree	Natural	Agree	Strongly Agree
	I. Staff Training					

ST1	The training provided aligns with my daily responsibilities.					
ST2	The training sessions enhance my clinical skills and knowledge.					
ST3	Training is delivered in a way that is engaging and easy to understand.					
ST4	I am encouraged by my supervisors to participate in training.					
ST5	Training opportunities are available on a regular basis.					
II. Tangibility		1	2	3	4	5
		Disagree	Strongly Disagree	Natural	Agree	Strongly Agree
TI1	The hospital provides modern medical equipment.					
TI2	Patient rooms and facilities are clean and well-maintained.					
TI3	Staff wear professional and identifiable uniforms.					
TI4	Information materials are clear and useful.					
TI5	The physical environment supports patient comfort and safety.					

III. Reliability		1	2	3	4	5
		Disagree	Strongly Disagree	Natural	Agree	Strongly Agree
RA1	Patients receive care as promised and without unnecessary delays.					
RA2	Patient records are managed accurately and efficiently.					
RA3	Staff are consistent in following care protocols and procedures.					
RA4	Tasks and responsibilities are reliably completed during each shift.					
RA5	Hospital services operate according to posted schedules.					

IV. Responsiveness		1	2	3	4	5
		Disagree Strongly	Disagree	Natural	Agree	Strongly Agree
RI1	Staff respond quickly when a patient needs assistance.					
RI2	Staff are available to answer patients' questions and concerns.					
RI3	There is minimal waiting time for patient services.					
RI4	Emergencies are handled swiftly and appropriately.					
RI5	The hospital has an effective system for handling patient complaints.					
V. Assurance		1	2	3	4	5
		Disagree Strongly	Disagree	Natural	Agree	Strongly Agree
AR1	Staff demonstrate confidence and competence in their roles.					
AR2	Patients feel safe when receiving care in this hospital.					
AR3	Staff explain medical procedures clearly to patients.					
AR4	Confidentiality of patient information is maintained.					
AR5	Staff treat patients with courtesy and respect.					
	VI. Empathy	1	2	3	4	5
		Disagree Strongly	Disagree	Natural	Agree	Strongly Agree
EP1	Staff listen carefully to patient concerns.					
EP2	Patients are treated as individuals, not just as cases.					
EP3	Staff are sensitive to patients' emotional and psychological needs.					
EP4	Special care is taken with elderly or vulnerable patients.					
EP5	Visiting hours and family support policies are considerate of patient needs.					

C2) Please provide any comments regarding any aspect that appears to be LACKING in this study.

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Gratitude:

We appreciate you for sparing your time to fill out the survey. Your involvement means a lot to us and we highly value it. The information you shared is significant to our analysis and will enable us to make improvements in our bank's performance.

Once again, we are very grateful for your contribution.

Sincerely,

Saud E Alshammari

Master Candidate

Midocean University

جامعة ميدأوشن

كلية الإدارة

ماجستير الإدارة الصحية



أثر تدريب الموظفين على مستوى جودة الرعاية المقدمة للمرضى في مستشفى مرجعي متخصص

إعداد الطالب/

سعود بن عيد الشمري

251003163

إشراف/

د. الفصيل عبد الحميد

د. فايز جراد

العام الدراسي:

2025

المستخلص:

تُمثّل جودة الرعاية الصحية المقدّمة للمرضى محوراً رئيساً في الأنظمة الصحية الحديثة، ويُعد تدريب الموظفين عنصراً حاسماً في رفع الكفاءة السريرية وتحسين جودة الخدمات وتعزيز نتائج المرضى. ورغم الأهمية البالغة للتدريب، لا تزال الأدلة العلمية المحدودة قائمة بشأن تأثير البرامج التدريبية الممنهجة على أبعاد جودة الرعاية في المستشفيات التخصصية

الأهداف

تهدف هذه الدراسة إلى تحليل أثر تدريب الموظفين على جودة الرعاية الصحية وأبعادها الخمسة: الملموسية، والاعتمادية والاستجابة، والضمان، والتعاطف، في أحد المستشفيات التخصصية. كما تستهدف تقييم قوة العلاقات بين المتغيرات من خلال التحليل الوصفي، واختبارات الارتباط، وقياس الصدق والثبات، ونمذجة المعادلات الهيكلية باستخدام أسلوب المربعات الصغرى (PLS-SEM) الجزئية

المنهجية

اعتمدت الدراسة منهجاً كمياً مقطوعياً باستخدام استبانة مُحقّقة الصلاحية وُزّعت على 100 من الممارسين الصحيين في أقسام متعددة. جرى تحليل البيانات باستخدام الإحصاء الوصفي، وارتباط بيرسون، واختبارات ثبات البناء، إضافة إلى نمذجة للتأكد من وضوح أداة البحث وثباتها قبل التطبيق الكامل (Pilot) المعادلات الهيكلية. كما أُجري اختبار تجريبي

النتائج

أظهرت النتائج أثراً معنوياً واضحاً لتدريب الموظفين على جميع أبعاد جودة الرعاية الصحية. كما كشفت عن ارتباطات إيجابية قوية بين التدريب وكل من الملموسية، والاعتمادية، والاستجابة، والضمان، والتعاطف، إلى جانب تأثيره في تحسين جودة الرعاية بشكل عام. وأكدت اختبارات الثبات مستوى عالياً من الاتساق الداخلي، فيما بيّنت النماذج الهيكلية قوة تفسيرية مرتفعة مع $H1$ و $H1a$ و $H1e$) دالة إحصائياً لجميع المتغيرات التابعة. وتم قبول جميع الفرضيات R^2 قيم

الخلاصة

تؤكد الدراسة أن تدريب الموظفين يُعدّ ركناً محورياً في تحسين جودة الرعاية الصحية داخل المستشفيات التخصصية. ويُسهم تطوير برامج تدريبية مُنظمة في رفع مستوى الخدمات، وتعزيز ثقة المرضى، وتحسين التجربة العلاجية عبر مختلف أبعاد الجودة. وتبرز النتائج أهمية جعل التطوير المهني المستمر أولوية استراتيجية للمؤسسات الصحية الساعية إلى تحقيق تحسين مستدام في الأداء وجودة الرعاية

الكلمات المفتاحية

أداء المستشفيات؛ PLS-SEM تدريب الموظفين؛ جودة الرعاية الصحية؛ الخدمات الصحية؛ نمذجة المعادلات الهيكلية؛ الاستجابة؛ التطوير المهني