

## **The quality of nursing care plans during pandemic in The Kingdom of Saudi Arabia: A Systematic Review**

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### **Abstract**

#### **\* Background**

Nurses are the largest component of the Saudi health care workforce, so it is critical that they are trained and have

the skills and resources to adapt, whether on the front lines of a crisis or in a clinical setting. Nurses play a critical role in meeting the needs of medical treatment because they are the most important component of the health care delivery system. Throughout the pandemic, Saudi nurses proved to be defence fighters, taking on the challenge with their hearts, souls, and great resolve. Nurses in Saudi Arabia are training around the clock, working on the edge, and putting their lives on hold during the early stages of the latest pandemic.

#### **\* Objective**

The purpose of the research is to find out the quality of nursing care plans during the COVID-19 outbreak in Saudi Arabia and identify the challenges they face during pandemic period and determine how these challenges affect their nursing practice.

#### **\* Methodology**

In this study, the systematic review followed the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA) guidelines. Databases such as PubMed, EMBASE, CINAHL, PsycINFO, and Google Scholar, which have electronically published studies during pandemic Covid-2019 period between

December 2019 and December 2023 in Saudi Arabia, were searched for relevant Arabic and English language articles on the rate of the quality of nursing care plans. We searched a database using the following key terms: nursing, nursing care, Covid-2019, medication safety, nursing plan during pandemic , Saudi Arabia.

A total of five electronic databases (PubMed, EBSCOhost, Embase.com, and ProQuest) were methodically searched for articles using components derived from a subject headings and keywords.

**Results:** The review highlights the quality of nursing care plans during the COVID-19 and potential of technology integration. Telehealth enables virtual consultations and overcoming geographical barriers. EHRs enhance care coordination and evidence-based decision-making. mHealth applications empower patients through education and self-management. Educational initiatives foster continuous professional development among nurses.

#### **\* Conclusion**

Incorporating technology into community health nursing practice in Saudi Arabia presents numerous advantages that bring significant

enhancements to patient engagement, streamlined care coordination, and data-driven decision-making. Although there are challenges like digital disparities and data security to contend with, the findings highlight the urgent need for custom strategies and continuous research to fully connect the immense potential of technology.

**Keywords:** nursing, nursing care, Covid-2019, medication safety, nursing plan during pandemic , Saudi Arabia.

#### \* **Introduction**

Coronaviruses spread quickly throughout the country, with periodic variations ranging in severity (Salam et al., 2022). COVID-19 is a new disease that affects the respiratory system. It is also known as severe acute respiratory syndrome coronavirus 2 (Majumder and Minko, 2021). The disease was discovered in the city of Wuhan, Hubei, China, in December 2019. The COVID-19 virus spread rapidly and persistently among individuals.

The Kingdom of Saudi Arabia was one of the nations that acted quickly and was concerned about pandemic consequences. Learning the harsh lessons of the Middle East Respiratory Syndrome (MERS) in 2012, Saudi Arabia has revolutionised

its public health priorities during the pandemic, acting not only in the best interests of its citizens, but also in response to the world. In response to this early stage, a royal decree establishes a specialized panel comprised of 24 governmental agencies and led by His Excellency the Minister of Health to monitor and combat the outbreak.

Nurses are the largest component of the Saudi health care workforce, so it is critical that they are trained and have the skills and resources to adapt, whether on the front lines of a crisis or in a clinical setting. Nurses play a critical role in meeting the needs of medical treatment because they are the most important component of the health care delivery system. Throughout the pandemic, Saudi nurses proved to be defence fighters, taking on the challenge with their hearts, souls, and great resolve. Nurses in Saudi Arabia are training around the clock, working on the edge, and putting their lives on hold during the early stages of the latest pandemic. During the early stages of the latest epidemic, the entire healthcare sector experienced alarming rates of overwork in various health care facilities, including intensive care units

and emergency departments. Nurses here are frequently seen working without adequate rest and rehabilitation, with little regard for their mental health, and without assistance. Nonetheless, they freely and gladly accept these obligations, responsibilities, and obstacles across the Kingdom. Nurses are a significant link between the patient and other health care providers because they are with their patients all the time dealing with the latest Covid-19 crises, and they are able to detect subtle changes in their patients by observation and analytical thinking that may suggest that they are progressing or worsening (Fernandez et al., 2020).

#### \* Literature Review

During the COVID-19 pandemic, Saudi nurses provide health education, screening services, infection prevention, containment, and infection control (Alghamdi, 2020). MOH across the Kingdom has worked tirelessly to combat the Covid-19 pandemic by providing unique training to all medical professionals who are frontline warriors. Saudi Arabia's nurses are constantly updated on new Covid-19 pandemic policies and procedures, and they receive education and training to help them fight the

pandemic. Nurses in all health care facilities across the Kingdom have been trained on basic infection management techniques for dealing with suspected or confirmed Covid-19 cases. During the current outbreak, the MOH has established a nursing leadership and control unit to oversee health facilities and nursing sections, with the goal of assigning nursing personnel to health facilities in emergencies, identifying potential risks, and ensuring a prompt response. It also monitors nursing staff around the clock, as well as rapid response teams in hospitals, healthcare settings, and quarantine facilities.

During the pandemic, nurses in Saudi Arabia provide health education, screening services, and support to the general public and high-risk individuals. They contribute to infection prevention by practicing good hand hygiene and using personal protective equipment. Nurses investigate suspected cases by documenting their case and travel histories. They prevent nosocomial infections by educating and training patients, families, and other healthcare workers to help control the spread of Covid-19. Nurses are planning and implementing appropriate preparations

in covid-19 designated hospitals throughout the Kingdom for patients who require long-term care (American Society of Clinical Oncology, 2020; CDC, 2020). While the majority of covid-19 patients have mild symptoms, isolate themselves at home, and recover in a week or two, there are some who have severe symptoms and must be hospitalised. Nurses in Saudi Arabia provide excellent care for these patients in emergency rooms, general Covid-19 units, and intensive care units. To avoid infection, all health care providers wear appropriate personal protective equipment. Nursing staffs in intensive care provide direct life-sustaining care to help patients recover from COVID-19-induced pneumonia, as well as psychological support to patients in states of panic or distress (Al Thobaity et al., 2020).

As the world and the Kingdom have shown, nurses are often the ones who bear the brunt of the healthcare burden, and they are grateful that their contribution is now more widely recognised than ever. Nurses and health-care practitioners are being treated differently around the world.

At a time of pandemic, nurses are acutely aware of the complexities

of providing high-quality care and have demonstrated how they can increase profitability through consistent high quality. The Covid-19 pandemic has brought nurses to the forefront of people's minds, with daily media coverage and public gratitude to health care professionals.

At a time of pandemic, nurses are acutely aware of the complexities of providing high-quality care and have demonstrated how they can increase profitability through consistent high quality. The Covid-19 pandemic has brought nurses to the forefront of people's minds, and they continue to receive media attention and public gratitude as health care professionals. Because not everyone understands what happens in a health care facility, the Covid-19 pandemic has highlighted the critical role of nurses in health care prevention and promotion. In these difficult times, the reputation of the nursing community and culture, as well as overall nursing morale, are receiving a lot of attention and appreciation.

According to several studies, nurses face challenges when incorporating a nursing care approach into their practice. The challenges include a lack of clarity about the

concept of holistic care and its various dimensions, as well as other factors like workload, burnout, insufficient training and education, communication barriers with patients and families, and competing priorities. Furthermore, the national Academies of Sciences, Engineering, and Medicine emphasised the importance of preparing nurses with the knowledge and skills to provide patient-centered care and value patients as whole individuals rather than just their medical conditions (Flaubert et al., 2021).

Previous research found that nurses face a variety of psychological challenges, including stress, negative emotions, and a high level of concern about transmitting the infection to their families (Cai et al., 2020).

In addition, occupational distress exacerbates nurses' experiences during outbreaks. Nurses' workloads are increasing as the complexity of care required for COVID-19 patients grows. As a result, nurses may encounter challenges in nursing practice related to procedures such as activities of daily living (ADLs), direct patient care, communication, emotional counselling, evidence-based decisions,

setting priorities, mentoring and preceptorship, and teaching patients and their families (Lam et al., 2019).

### **\* Nursing roles during pandemic in Saudi Arabia**

Nursing plays an important role in the prevention of both primary and secondary infectious diseases, and it is widely regarded as the most dedicated profession in disease prevention and pain relief during and after treatment of any illness, including COVID-19 (Chang, 2020)

Nurses worked around the clock to handle the influx of COVID-19 cases as the outbreak spread. During a health crisis, nurses used their specialised knowledge and abilities to provide the best possible care. Patients with Covid-19 should be isolated in a negative pressure room and given basic necessities like food, water, and medications, as well as emotional and psychological support. Nurses are at the forefront of every pandemic response, including the COVID-19 outbreak. One of the most demanding responsibilities is to provide high-quality nursing care to patients. Nurses are the "secure hook" that connects all of the interprofessional teams, and they've been exposed to a variety of

health risks, including mortality.(Jackson, 2020).

Nurses faced significant professional, social, and psychological challenges as a result of COVID-19. Care delivery and management have been hampered by the rapidly changing environment, the rapid development of new infection control standards, and the need to modify care delivery in novel ways. Individuals in nurse management positions are put under a lot of pressure by the constant flow of new information from the government and other national health agencies, which necessitates quick changes in treatment techniques and policies. The quality of nursing care was jeopardised by a lack of medical supplies, confusion in the treatment system, the unpredictable nature of the illness, social isolation, and the virus's widespread spread.(Schoenhofer, 2019)

Nurses were dealing with work stress, a daily influx of patients into hospitals, insufficient hospital capacity, and a high nurse-to-patient ratio, all of which made the COVID-19 epidemic of care difficult. Throughout the outbreak, each nurse supported and advocated for the individual's health.(Qiu, 2020).

### **\* The nursing care plans during pandemic in The Kingdom of Saudi Arabi**

Quality of care is an important indicator of a healthcare provider's performance and can help ensure that patients receive the best possible care (Rahim et al., 2021). Assessing the quality of services provided by healthcare providers has become critical in evaluating patient care because patients provide unique and accurate perspectives on their experiences. The skills of nurses who actively participate in service delivery procedures or facilitate the mechanisms by which customers obtain services are critical to the health care system. Nurses are indispensable in modern healthcare because they lead pandemic responses, provide essential care for chronic diseases and paediatric patients, and offer compassionate end-of-life care (Alwesmi et al., 2022). Their expertise and dedication enable patients to take charge of their health and contribute to better medical outcomes (Shahoei et al., 2022; Potter et al., 2021). Furthermore, nurses actively contribute to research, shaping healthcare policies, and promoting innovative practices (Roxburgh, 2006). Overall, their versatile roles make them

an essential component of the healthcare system, ensuring patients' well-being in a variety of settings. Moreover, nurses provide high-quality, safe patient care despite their complicated working conditions and patients' diverse needs. These responsibilities range from basic patient care, such as taking vital signs, to more involved tasks, such as administering medications and providing wound care.

Nurses who enjoy their jobs are more engaged, motivated, and attentive to patient care, resulting in higher-quality care and better patient safety and experiences (Smith et al., 2020). Their enjoyment leads to a stronger commitment to patient well-being and a willingness to go the extra distance. When nurses enjoy their jobs, they are more likely to approach patient care with enthusiasm and dedication, resulting in increased trust and rapport and higher patient care quality. As a result, nurses' enjoyment and satisfaction with their jobs is critical to the healthcare industry. One of the most important factors in ensuring a nurse's job satisfaction is an effective management team, which has emerged as a critical topic for research scholars and scientists (Robinson et al., 2022).

According to studies, having an effective management team can increase nurses' job satisfaction and foster an environment in which nurses feel supported, recognised, and appreciated for their efforts. This can boost morale, foster camaraderie, and improve job satisfaction (Cheng et al., 2020). Furthermore, in recent years, research scholars have begun focusing on management teams' impact affairs (Furtner et al., 2022). This is due to the growing complexity of medical teams, as well as the recognition that an effective management team can improve patient outcomes by engaging nurses in medical affairs. An effective management team can improve communication among team members, problem-solving abilities, and care coordination, resulting in higher morale and a positive impact on patient care quality. As research into how the management team can improve medical affairs continues, more emphasis is being placed on this critical area. Nurses' participation in medical affairs is critical to the quality of care provided to patients (Alhowaymel et al., 2022). As such, they are responsible for all aspects of patient care, including assessment, diagnosis, plan development,



implementation, and outcome evaluation.

Nurses are also responsible for educating patients, families, and other healthcare providers about preventative care and treatments. They also work with other healthcare professionals to make sure that all aspects of care are covered. Nurses can also influence policy and practice decisions that improve patient care by participating in medical affairs (Rosa et al., 2022). This includes advocating for healthcare access, resources to support quality patient care, and ensuring that the best evidence-based practices are used. Nurses can also provide valuable information on best practices for patient safety.

#### **\* Research Objectives**

##### **\* General objectives**

To discuss the importance of nursing roles in healthcare and assess the healthcare provider's knowledge of medication safety reporting systems in Saudi Arabia during pandemic.

##### **\* Specific objectives**

The study aimed to explore the quality of nursing care plans during the COVID-19 outbreak in Saudi Arabia

and identify the challenges they face during pandemic period and determine how these challenges affect their nursing practice.

#### **\* Methodology**

##### **\* 4.1 Research Methodology**

In this study, the systematic review followed the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA) guidelines. Databases such as PubMed, EMBASE, CINAHL, PsycINFO, and Google Scholar, which have electronically published studies during pandemic Covid-2019 period between December 2019 and December 2023 in Saudi Arabia, were searched for relevant Arabic and English language articles on the rate of the quality of nursing care plans. We searched a database using the following key terms: nursing, nursing care, Covid-2019, medication safety, nursing plan during pandemic, Saudi Arabia.

##### **\* Research Questions**

- 1- What is the impact of medication safety in the healthcare environment during pandemic in Saudi Arabia?
- 2- What is the state of nursing plan during pandemic among Saudi

Arabia's patients?

3- What are the quality of nursing skills that are necessary to implement an effective medication safety program?

**\* Selection of Studies**

First, we conducted a preliminary examination of all titles selected from the search to gather information relevant to our research. Second, we screened for abstracts and skimmed the full text to determine whether the articles should be included.

**\* Studies' inclusion and exclusion criteria**

The inclusion criteria were peer-reviewed observational and interventional studies conducted in Saudi Arabian nursing sector.

**\* Extraction of Data**

We created a standardised data extraction instrument for the study that includes a checklist of items that should be included in the studies, such as the title, year of research, first author's name, study sample size, study location.

**\* Selecting and filtering relevant studies**

This systematic mapping study (SMS) adhered to the Preferred

Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. PRISMA is an evidence-based framework for reporting review results, which includes identifying eligible studies and using inclusion and exclusion rite

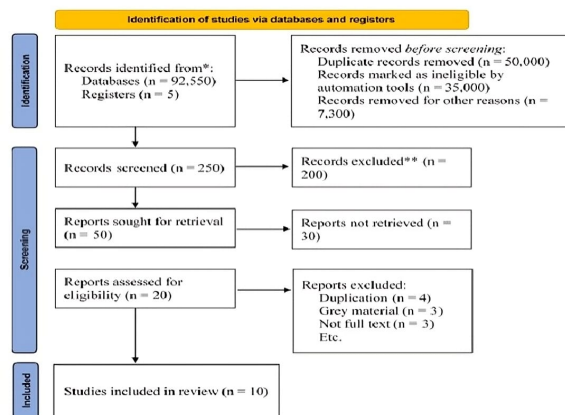


Figure 1: Search flow diagram

Table 1: Selected Studies

| Author  | Research questions   | Methodology   | Results  |
|---|--|---|--|
| Alshammari, A. & Fayed Alanazi (2023)   | Explored the role of technology in enhancing learning among nurses in Saudi Arabia through a systematic review.  | Explored the role of technology in enhancing learning among nurses in Saudi Arabia through a systematic review.   | High review highlighted practice-oriented research and technology-related studies. However, specific findings and insights were not elaborated.  |
| Fahim, H., Hama, S., Elsharbi, J. D., Saad, D. C., Sanyal, P. & Hama, S. W. (2021)                  | Fahim, H., Hama, S., Elsharbi, J. D., Saad, D. C., Sanyal, P. & Hama, S. W. (2021)   | Employed a systematic approach to identify and analyze existing literature on training roles in Saudi Arabia through a comprehensive and updated assessment.  | The review highlighted the importance of technology in training roles and its implications for healthcare education. However, specific findings and insights were not mentioned in the provided details.   |
| Alshammari, A. M. & Elsharbi, R. (2022)   | Conducted an integrative evidenced learning styles in undergraduate nursing programs within the Kingdom of Saudi Arabia.   | Employed an integrative approach to synthesize and analyze existing literature on learning styles in Saudi Arabia through a comprehensive and updated assessment.   | The integrative literature review shed light on learning styles in Saudi Arabia and its implications for healthcare education. However, specific findings and insights were not mentioned in the provided details.                                   |
| Hamdi, R. (2022)  | Conducted a systematic literature review to explore the level of cybersecurity awareness in Saudi Arabia.  | Employed a systematic approach to identify and analyze existing literature on cybersecurity awareness in Saudi Arabia through a comprehensive and updated assessment.   | The systematic review explored the relationship between self-management and self-efficacy among nurses with generalized diabetes mellitus. However, specific findings and insights were not mentioned in the given details.                          |
| Kawachandani, S., Alshammari, W., Alanazi, A., Alsham, H., & Charuchandani, 2022                    | Conducted a systematic review to investigate self-management and self-efficacy among nurses with generalized diabetes mellitus.  | Employed a systematic approach to identify and analyze existing literature on self-management and self-efficacy among nurses with generalized diabetes mellitus.  | The systematic review investigated the level of awareness of pharmaceutical technology among physicians.   |
| Gharaid, A., Adnan, N., Nakh, H., Alsham, S., & Elsham, S. (2022)                                   | Conducted systematic review to examine the acceptance of telemedicine technology among physicians.   | Employed a systematic approach to identify and analyze existing literature on health professionals' perception of telemedicine technology. Utilized established review methods for a comprehensive assessment.  | However, specific findings and insights were not mentioned in the provided details.  |
| Hanifi, U. S., Vignos, D., El Fakouch, Z., Kuba, F., Zayed, A., Romany, B. Y., & Mansour, A. (2021) | Conducted a systematic review to explore the barriers, benefits, facilitators, and attitudes of health professionals toward telemedicine services in type 2 diabetes management. | Employed a systematic approach to identify and analyze existing literature on health professionals' perception of telemedicine technology. Utilized established review methods for a comprehensive assessment.  | The systematic review explored health professionals' perception of telemedicine services in Saudi Arabia. However, specific findings and insights were not mentioned in the provided details.  |
| de Fozzari, M. H., Kawachani, F., Pooni, C. J., Fozzari, H., & Baltes, P. (2021, September)         | Conducted a systematic review to examine a health profession and technology from 2014 to 2018.   | Utilized a systematic approach to identify and analyze existing literature on the effectiveness of telemedicine services in primary healthcare services in rural areas.   | The systematic literature review assessed the level of cybersecurity awareness in Saudi Arabia. However, specific findings and insights were not mentioned in the provided details.  |
| Ghann, Z., Azziz, T., & Kassar, G. M. (2022)  | Conducted a systematic review to explore factors that influence access to primary healthcare services in rural communities.  | Followed established review protocols for comprehensive assessment.   | The systematic literature review assessed the level of cybersecurity awareness in Saudi Arabia. However, specific findings and insights were not mentioned in the provided details.  |
| Durgah, C. M., Al-Jayousi, O. B., & Alshammari, S. M. (2020)  | Conducted a systematic review to explore innovation management literature in the Gulf Cooperation Council (GCC) Region, focusing on insights from Arabian countries.             | Utilized a systematic approach to identify and analyze existing literature on innovation management literature related to the GCC Region. Specifically emphasized perspectives and insights from Arabian countries. Followed established review protocols for comprehensive assessment. | review provided an overview of innovation management literature in the GCC Region. It also explored the contributions and insights from Arabian countries. However, specific findings and insights were not elaborated upon in the provided details. |

Alshammari and Fayed Alanazi (2023) conducted a systematic review of technology's impact on nurse

learning, highlighting positive outcomes but not providing specific details. Fatoum et al. (2021) examined the implications of blockchain integration for healthcare ecosystems but did not reach any specific conclusions. Almarwani and Elshatarat (2022) investigated learning styles in Saudi nursing, yielding insights but no detailed findings. Hamdi (2022) investigated cybersecurity awareness in Saudi Arabia without providing specific findings. Karavasileiadou et al. (2002) investigated self-management and gestational diabetes, focusing on the relationship but lacking specific findings. Garavand et al. (2022) investigated physician acceptance of telemedicine technology, noting a level without specifics. Dankoly et al. (2021) investigated health professionals' perceptions of multidisciplinary care for type 2 diabetes, focusing on barriers and attitudes rather than detailed outcomes. da Fonseca et al. (2021) reviewed e-health practices and technologies from 2014 to 2019, without providing specific findings. Gizaw et al. (2022) investigated factors that improve access to primary healthcare in rural communities without providing specific outcomes.

Durugbo et al. (2020) investigated innovation management in the GCC region, but only provided an overview rather than specific insights. These studies used systematic approaches but did not elaborate on specific findings, resulting in a diverse body of knowledge across reputable journals and publications.

#### **\*Analysis**

The provided data is a compilation of systematic reviews covering a wide range of nursing sector and technology integration topics. The study used a systematic approach to investigate its specific research question. Themes covered include the impact of technology on learning, block chain integration in healthcare ecosystems, learning styles in Saudi nursing programmes during pandemic, cybersecurity awareness in Saudi Arabia, and self-management. In gestational diabetes, telemedicine acceptance among physicians, perceptions of multidisciplinary care in diabetes management, e-health practices, primary healthcare technologies, factors improving access to rural communities, and innovation management in the GCC region. However, the information provided does not go into detail about the

specific findings and insights from these reviews. Despite this limitation, the compilation displays a diverse array of systematic reviews that contribute to the knowledge base in nursing and technology.

### **\* Results and discussion**

The systematic reviews resulted in a tapestry of insights spanning the intersection of healthcare and technology integration. Each study approached its focus area with systematic rigour, uncovering facets of knowledge within specific domains. These domains include enhancing nurse learning through technology, delving into the potential of blockchain in healthcare ecosystems, examining learning styles in Saudi nursing programmes, and investigating cybersecurity awareness in Saudi Arabia. exploring self-management of gestational diabetes, charting telemedicine's acceptance among physicians, deciphering perceptions of multidisciplinary care in diabetes management, navigating the landscape of e-health practices and technologies, identifying factors that amplify access to primary healthcare in rural enclaves, and uncovering innovation management within the GCC Region. However, the intricate patterns and

detailed findings that ran through each study remained hidden, preventing them from being revealed within the scope of the provided information. The resulting mosaic is a testament to the systematic methodologies used, displaying a spectrum of vantage points converging at the nexus of healthcare technological evolution. The integration of technology has gone beyond patient care and into nursing professional development. The review of literature depicts a landscape in which online learning platforms, webinars, and virtual simulations have become essential tools for improving nursing education skills in Saudi Arabia. Technology-enabled education provides flexibility, accessibility, and exposure to the most recent medical advances, promoting a culture of continuous learning among nursing practitioners. The studies highlight the potential of technology to improve nursing competencies and outcomes. The synthesis of these various dimensions of technology integration in community health nursing practice highlights both previous progress and future challenges. While telehealth and EHRs have shown significant potential to improve care delivery, the digital

divide and data security concerns remain significant barriers.

The promising field of mHealth applications necessitates careful consideration of cultural contexts and accessibility concerns. Furthermore, the incorporation of technology into education demonstrates a path for fostering professional growth among nurses, but it requires the creation of tailored, effective learning resources.

A review of the existing literature reveals a significant shift towards telehealth adoption in community health nursing practice in Saudi Arabia. Alanazi et al. (2021) state that telehealth has emerged as a transformative tool, enabling virtual consultations and remote patient monitoring. Ullah et al. (2021) stated that this has effectively broken down geographical barriers, ensuring that people living in rural areas have access to quality healthcare services. Zakowska and Godycki Cwirko (2020), The reviewed studies highlight telehealth's potential to improve patient outcomes by encouraging early intervention, improving treatment plans, and lowering hospital readmissions. However, Zanjari et al. (2021) explain that challenges such as disparities in digital access and the

need for robust digital infrastructure must be addressed in order to fully realise the benefits of telehealth. Jahrami et al. (2021) explained that EHRs have emerged as a key component of technology integration in community health nursing practice. The literature review highlights EHRs' role in improving care coordination, evidence-based decision-making, and patient engagement. The healthcare landscape in Saudi Arabia is being transformed by the digitization of patient information, which streamlines data exchange among nursing planning. The studies reviewed also emphasise EHRs' potential to improve communication among interdisciplinary teams, resulting in more informed and efficient patient care.

### **\* Conclusions**

The synthesis of existing literature sheds light on the transformative impact of technology integration in community health nursing practice in Saudi Arabia. Telehealth, EHRs, mHealth applications, and educational initiatives all point to a promising path towards patient-centered care and improved nursing competencies. While challenges persist, the findings

highlight the importance of integrating technological innovation with Saudi Arabia's unique healthcare landscape and cultural nuances. As the nation strives for comprehensive and patient-centered healthcare, technology integration emerges as a powerful catalyst for achieving these objectives. In addition, more research is needed to determine the long-term impact of technology integration on patient outcomes, healthcare efficiency, and the nursing profession as a whole.

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