

## Quality And Factors influencing Healthcare in KSA (Systemic literature review)

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### Abstract

The aim of this review is to identify the factors that impact the quality of healthcare service in KSA based on locally published studies, There are a several factors that contribute to the quality of healthcare in KSA from the perspective of patients and healthcare providers (HCPs) and nurses. Factors such as infrastructure and device availability, emotional, social, and physical support, clinic duration time and appointment availability, HCPs experience and competencies, and specialists and drugs availability were identified as important for quality healthcare. HCPs and nurses in KSA prioritize delivering care that meets international standards, embracing evidence-based practices, and valuing continuous professional development. They also emphasize the significance of patient-centeredness, interdisciplinary teamwork, and respecting patients' cultural beliefs. A robust regulatory framework, healthcare policies, and accreditation standards play a vital role in ensuring consistent quality healthcare services. Additionally, healthcare management and information, hospital supervision, and training and development programs for HCPs were identified as important factors for improving the quality of healthcare in KSA.

In conclusion, several factors have shown to be impacting quality of healthcare service in KSA, Policymakers and healthcare providers in KSA shall strive to improve the quality of healthcare services by acknowledging and tackling these factors.

**Keywords:** Healthcare system, Services, KSA, Saudi Arabia, Patients, HCPs

## 1. Introduction:

Healthcare quality is a critical aspect of any healthcare system, as it directly affects the well-being and outcomes of patients. Kingdom of Saudi Arabia (KSA) has made significant strides in improving its healthcare system in recent years. This essay explores healthcare quality in KSA and identifies the key factors that influence it according to Allen-Duck et al. (2017).

KSA has invested heavily in its healthcare infrastructure, aiming to provide accessible and high-quality healthcare services to its population. The country has developed an extensive network of hospitals, clinics, and healthcare centers across its regions. The Ministry of Health (MOH) in KSA oversees the planning, development, and management of healthcare facilities, ensuring adequate infrastructure is in place according to Vision 2030 (2022).

Regulatory bodies play a crucial role in ensuring healthcare quality by setting standards and monitoring compliance. In KSA, the Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI) accredits healthcare facilities and ensures their adherence to established quality standards according to CBAHI (2022). Accreditation by CBAHI has become a benchmark for healthcare quality in the country, driving facilities to improve their performance..

The quality of healthcare providers is a crucial factor in ensuring the delivery of effective and efficient healthcare services. In KSA, the focus on enhancing healthcare quality has gained significant attention recently. This essay explores the quality of healthcare providers in KSA and identifies the key factors influencing their performance according to Saunders et al. (2019).

The quality and competence of the healthcare workforce play a pivotal role in delivering high-quality care. Several studies have highlighted the importance of continuous education and professional development for healthcare providers in KSA according to Alageel et al. (2023). Continuous education programs, including workshops, conferences, and training sessions, contribute to improving clinical skills, knowledge, and adherence to evidence-based practices. Moreover, the Saudi Commission for Health Specialties (SCFHS) regulates the licensing and certification of healthcare professionals (HCPs), ensuring their competence and adherence to professional standards according to Homepage | Saudi Commission for Health Specialties (2023). Adopting health information technology (HIT) has emerged as a critical factor influencing healthcare provider quality in KSA. Implementing electronic health records (EHRs) and other HIT solutions can improve clinical decision-making, care coordination, and patient outcomes according to Alzghaibi and Hutchings (2022). HIT integration facilitates the timely exchange of patient

information among healthcare providers, reduces errors, and enhances communication, improving healthcare quality according to Alotaibi and Federico (2019). .

Patient-centered care is an essential aspect of healthcare quality. KSA has recognized the significance of patient satisfaction and experiences in evaluating healthcare provider performance. Studies have highlighted the importance of effective communication, empathy, and cultural sensitivity in promoting patient-centered care according to Turner and Archer (2020). Additionally, efforts have been made to enhance patient satisfaction by reducing waiting times, improving access to care, and implementing patient feedback mechanisms according to Shen and Lee (2018).

The financial aspects of healthcare provision can impact the quality of healthcare providers. In KSA, healthcare services are predominantly financed through public sources, with the government heavily subsidizing healthcare costs according to Al-Hanawi et al. (2017). Adequate healthcare financing ensures the availability of necessary resources, including medical equipment, medications, and well-maintained facilities. Additionally, healthcare financing models impact healthcare provider remuneration, influencing motivation, job satisfaction, and retention according to Mosadeghrad (2018).

An Exploratory Study published in the International Journal of Health Policy and Management in 2014 aimed to explore the factors influencing healthcare service quality in Iran. The study used a mixed methods approach and collected data from 32 healthcare experts through semi-structured interviews and a focus group discussion. The study found several factors influencing healthcare service quality, including Leadership and management, human resources, HCPs training and development, healthcare infrastructure, patient-centeredness, and financial resources. The study also highlighted that the cultural and social context of the Iranian healthcare system also plays a significant role in shaping healthcare service quality according to Mosadeghrad (2018).

A systemic review was done across the MENA region to address the patient-centered care (PCC) concept from the HCP's perspective; The study used a comprehensive search strategy to identify relevant studies published between 2000 and 2019 according to Alkhaibari et al. (2023). The study found that while there is a growing awareness of the importance of PCC in the MENA region, the implementation of PCC still needs to be improved.

The study identified several barriers to implementing PCC in the region, including cultural norms and values, the lack of patient empowerment, and the dominant biomedical model of care.

From another aspect, a study aimed to review and compare countries' health systems in the Middle East and North Africa (MENA) region according to Mate et al. (2017). The study found that the MENA region faces several challenges in providing equitable and accessible healthcare, including inadequate healthcare financing, limited healthcare resources, and a shortage of healthcare workers. The study also identified disparities in healthcare access and outcomes across the region, with vulnerable and marginalized populations often receiving lower-quality care. The study found that many MENA countries have implemented health system reforms to improve healthcare access and quality, such as expanding healthcare coverage and investing in healthcare infrastructure. However, the implementation of these reforms has been limited by political instability, conflicts, and economic challenges in the region.

### **1.1. Objectives:**

This review aims to explore the currently available evidence that assesses the quality of healthcare providers in KSA and identify the key factors influencing the performance of healthcare providers in KSA.

### **1.2. Methodology:**

#### **1.2.1. Study method:**

In our research, we developed a comprehensive search strategy to identify relevant literature, utilizing academic databases (such as PubMed, Google Scholar, and Embase). The keywords and search terms related to the research question we used, such as "healthcare providers," "quality," "KSA," "factors," "performance," and any specific factors of interest (e.g., workforce, regulation, technology, financing). According to our study objectives, we structured the research question for this literature review: What is the current understanding of the quality of healthcare providers in KSA (SA) and the factors that impact their performance?

We Defined clear inclusion and exclusion criteria to select relevant studies, including studies published between 2010 and 2022 in KSA, written in English and focusing on the quality of healthcare providers and factors influencing their performance. Exclude studies that do not meet these criteria or are not directly relevant to the research question. Once then, we create a data extraction form or table to extract relevant information from the selected studies systematically. Extract details such as authors, publication year, study design, sample size, methodology, key findings, and factors identified to healthcare provider quality.

We then analyze the extracted data to identify common themes and patterns related to healthcare provider quality and the factors influencing their performance.

A critical appraisal was then conducted to evaluate the quality and credibility of the included studies. We considered factors such as study design, sample size, methodology, potential biases, and the strength of the evidence presented.

### **1.2.2. Search strategy:**

In our review, we have identified the quality and factors influencing the healthcare system in KSA from both the patient's and the healthcare provider's perspectives; we have utilized open-access medical search engines, including "PubMed, Embase, ScienceDirect, and Google Scholar." The main search terms used in our research include "KSA" and/or "Healthcare" and/or "Patients" and/or "quality" and/or "factors."

### **1.2.3. Literature extraction:**

A total of 43 studies were identified from PubMed, Embase, and Google Scholar search engines. A total of 35 were included for the title and abstract screening after removing 8 duplicates and irrelevant studies. Following the screening, 14 studies were excluded, and 21 studies underwent further review for the quality and factors influencing the healthcare system in KSA. A total of 6 studies were excluded following the review, and 15 were included for data extraction (Figure 1).

### **1.2.4. Inclusion and exclusion criteria**

This study was limited to empirical research from January 2007 to December 2022. Only studies that were published in peer-reviewed journals were included. Also, only studies that were carried out in KSA were included. In addition, the selected literature included studies highlighting the factors attributing to quality of care in the healthcare system from patients, HCPs, nurses, and management.

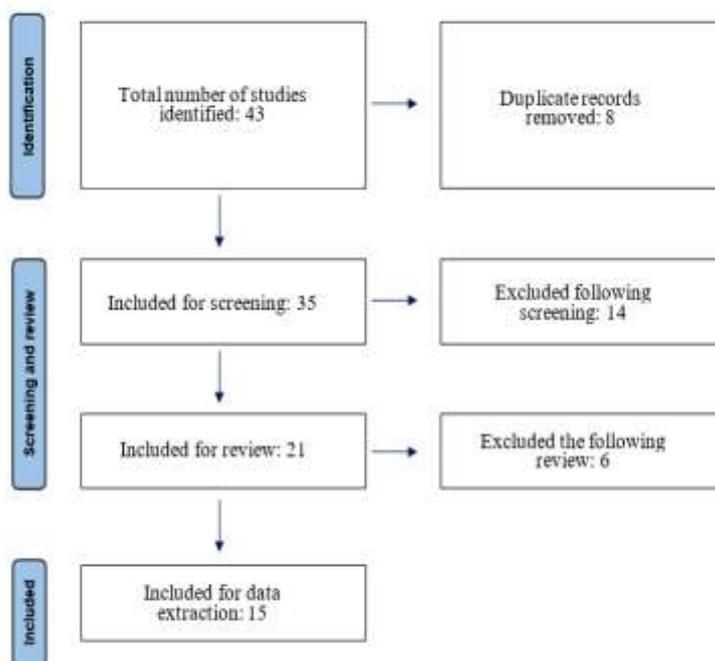


Figure 1 PRISMA for the selected literature

## 2. Results

### 2.1. Quality assessment:

Quality assessment for studies in a literature review involves evaluating the included studies' reliability, validity, and relevance. It aims to determine the trustworthiness of the research and the extent to which it contributes to the overall findings and conclusions of the literature review. The criteria used for quality assessment may vary depending on the research field and the review's objectives. The articles included in this study underwent quality assessment using the Joanna Briggs checklist, and the findings are summarized in **Error! Reference source not found..**

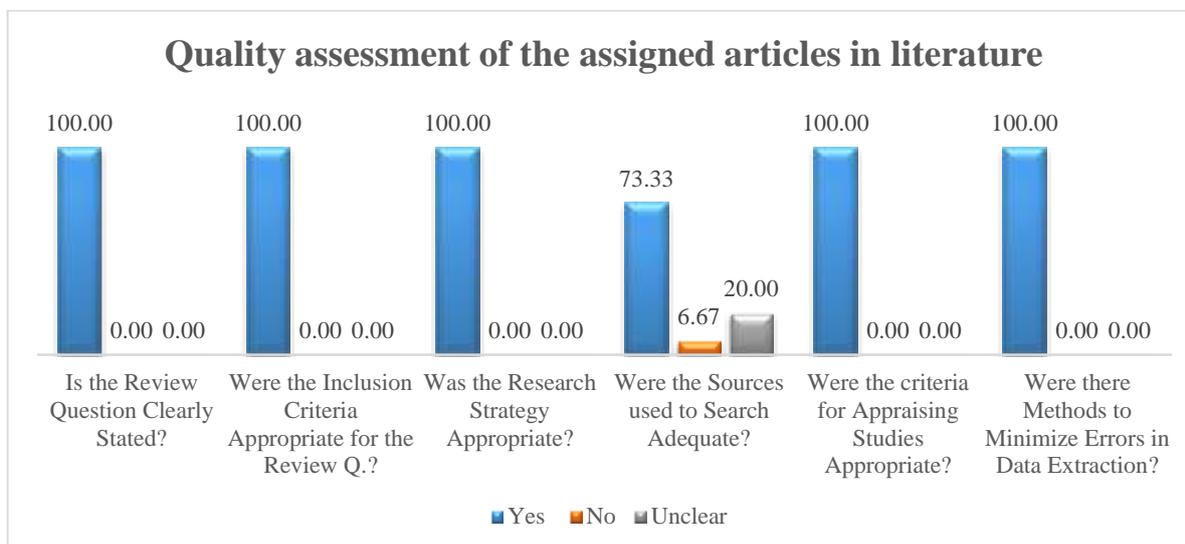


Figure 2 Quality assessment of the assigned articles in literature

## 2.2. Quality and factors influencing the healthcare system globally:

An Exploratory Study published in the International Journal of Health Policy and Management in 2014 aimed to explore the factors influencing healthcare service quality in Iran. The study used a mixed methods approach and collected data from 32 healthcare experts through semi-structured interviews and a focus group discussion. The study found several factors influencing healthcare service quality, including Leadership and management, human resources, HCPs training and development, healthcare infrastructure, patient-centeredness, and financial resources. The study also highlighted that the cultural and social context of the Iranian healthcare system also plays a significant role in shaping healthcare service quality according to Mosadeghrad (2018).

A protocol-driven article published in 2020 in the Systematic reviews journal involving a comprehensive search of multiple databases for relevant systematic reviews published between 2000 and 2019, with a focus on studies conducted in high-income countries to identify the factors that affect patients' access to healthcare, including structural and organizational factors, financial barriers, sociodemographic factors, and cultural factors according to Dawkins et al. (2020).. The article highlighted the importance of understanding the factors that affect access to healthcare, given the significant impact that lack of access can have on health outcomes, health equity, and healthcare costs. The article suggested that the review's findings could inform the development of policies to improve patient access.

Another study aimed to assess the main factors impacting the healthcare system from patients' perspectives in Italy. The survey included questions about patients' demographics, their satisfaction with healthcare services, and their perceptions of the quality of healthcare. The study found that patients' perceptions of healthcare quality were primarily influenced by communication, empathy, and trust in healthcare providers according to Bellio and Buccoliero (2021).

Patients also identified the importance of the accessibility and availability of healthcare services and the cleanliness and comfort of healthcare facilities. The study also found that patients' perceptions of healthcare quality were positively associated with their overall satisfaction with healthcare services and their likelihood to recommend the healthcare provider to others. The study suggests that healthcare providers must prioritize effective communication, empathy, and trust-building with patients to improve patients' perceptions of healthcare quality according to Bellio and Buccoliero (2021).

### 2.3. Quality and factors influencing healthcare system in the Middle East region:

A study aimed to identify the factors influencing healthcare providers' care quality in Jordanian hospitals from the perspectives of nurses, pharmacists, and physicians. The study used a cross-sectional design and collected data from 384 healthcare providers through self-administered questionnaires. The study utilized a multi-stage sampling technique to select participants from different public and private hospitals in Jordan. The study found that healthcare providers' care quality was influenced by several factors, including organizational factors, such as management support, work environment, and resource availability, and individual factors, such as healthcare providers' knowledge, skills, and attitudes. The study also found that communication and teamwork were critical factors that impacted the quality of care provided by healthcare providers according to Algunmeeyn et al. (2021).

A systemic review was done across the MENA region to address the patient-centered care (PCC) concept from the HCP's perspective; the study used a comprehensive search strategy to identify relevant studies published between 2000 and 2019 according to Alkhaibari et al. (2023). The study found that while there is a growing awareness of the importance of PCC in the MENA region, the implementation of PCC still needs to be improved. The study identified several barriers to implementing PCC in the region, including cultural norms and values, the lack of patient empowerment, and the dominant biomedical model of care.

The study also found that healthcare providers in the MENA region have limited knowledge and skills in delivering PCC and that patient participation in decision-making still needs to be improved. However, the study also identified some positive factors that promote PCC, such as the use of technology to enhance patient engagement and the role of family members in supporting patients' needs according to Alkhaibari et al. (2023).

From another aspect, a study aimed to review and compare countries' health systems in the Middle East and North Africa (MENA) region. The study found that the MENA region faces several challenges in providing equitable and accessible healthcare, including inadequate healthcare financing, limited healthcare resources, and a shortage of healthcare workers. The study also identified disparities in healthcare access and outcomes across the region, with vulnerable and marginalized populations often receiving lower-quality care. The study found that many MENA countries have implemented health system reforms to improve healthcare access and quality, such as expanding healthcare coverage and investing in healthcare infrastructure.

However, the implementation of these reforms has been limited by political instability, conflicts, and economic challenges in the region according to Mate et al. (2017).

#### 2.4. Patients' preference towards quality and factors attributing to healthcare in KSA

In our study, ten studies

Table 2 have highlighted several factors that attribute to impacting the quality of the healthcare system in KSA from patients' perspective; these factors were summarized into Infrastructure and devices available, Emotional, social, and physical support, Duration of clinical intervention, Experience of HCPs, Drug and appointment availability.



Figure 3 Factors shared by patients in KSA that impact the quality of the healthcare system

##### **Infrastructure and devices availability**

According to a study by Alqossayir et al. (2021) aimed to assess the factors associated with patients bypassing primary healthcare centers in Qassim Region, KSA, through a cross-sectional study among 266 patients in 2021, the main outcomes of this study emphasized that 31.7% believed that PHCs were insufficient for diagnostic tests, This study strongly recommends that facilities at PHCs should be improved by considering the factors identified by patients, including the hiring of experienced medical staff and improving diagnostic measurements.

##### **Emotional, social, and physical support**

The impact of emotional, social, and physical support as factors influencing the healthcare system is significant; it can Improve patient well-being, enhance patient engagement, and increase patient

satisfaction; this will positively impact HCPs and potentially lead to cost savings according to Al Shammrie et al. (2022). In our review, three studies have highlighted the impact of emotional, social, and physical factors as important factors that influence the quality of the healthcare system, according to a study by Alosaimi et al. (2022) aimed to analyze factors that Influencing Patient Selection of a Surgeon for Elective Surgery in KSA through a Questionnaire-Based Survey, in a cross-sectional study manner, 609 participants have participated in providing their inputs, 84.7% mentioned that paying attention to patient's needs and opinions is important; sparing enough time for patients is important as reported by 83.9% of the participants, and communication skills were considered to be important as stated by 82.6% of the participants.

In another study aimed to address patient's perspectives on factors affecting health-seeking behavior in Al-Ahsa, KSA, among 481 participants, socioeconomic factors contributed a lot to the frequency of visiting the healthcare system, 68.5% of participants with intermediate economic status visit healthcare centers for any symptoms compared to 50% of others with high financial status ( $P=.049$ ) according to Almaqhawi et al. (2022). Lastly, according to a study by Al Shammrie et al. (2022) aimed at factors affecting patient satisfaction in dermatology clinics in KSA. in a cross-sectional study across 1002 patients, the main outcome was that emotional support and physical comfort appeared to be the most crucial factors in determining patient happiness.

### **Clinic duration time and appointment availability:**

In a study aimed to assess how satisfied the Saudi people are with their public sector healthcare services by Al-Hanawi et al. (2017) among 36 participants in 2018 through a cross-sectional interview study, 50% of the participants reported dissatisfaction with the healthcare service provided by the PHCs, out of the dissatisfied patients, 94% reported that Waiting times in accessing public hospitals or unavailability of appointments were on top of the reasons of dissatisfaction, in addition also, 61% reported there dissatisfaction from the waiting time before seeing HCP. According to a study by Alqossayir et al. (2021), among 266 patients visiting the ER clinics, the outcomes show that more than half of the selected patients indicated that the opening times of the PHCs were inconvenient, as they used to visit emergency departments at public hospitals in the evening or during the night.

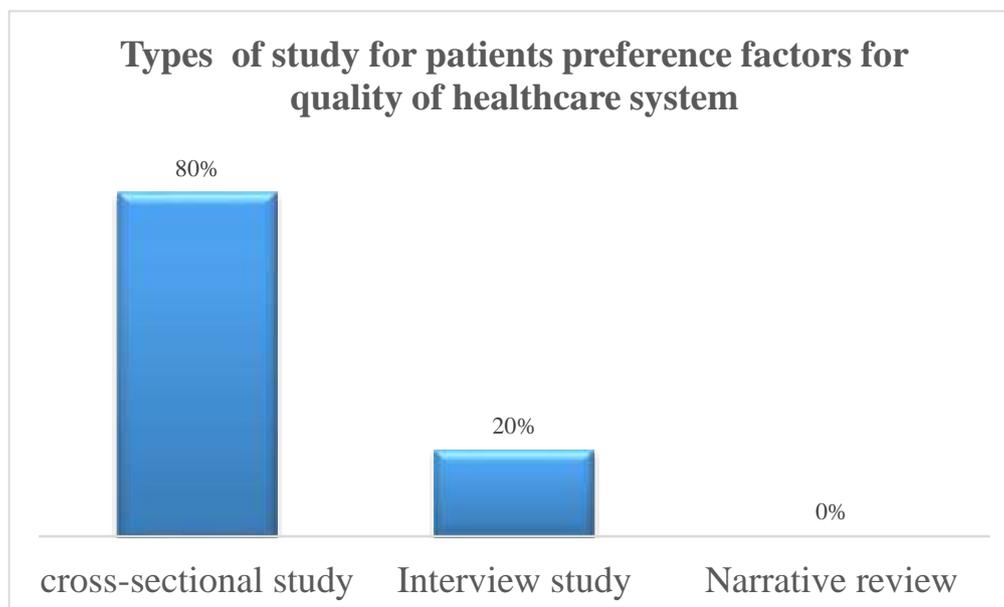
### **HCPs' Experience and Competencies**

The skills, knowledge, and capabilities of the healthcare providers are highly influencing the quality of healthcare service; this can be related to how improvement in the provided quality and

emotional support to patients, providing personalized care for each patient, and providing better counseling for patients, from this aspect, many studies in our report have highlighted this pillar of HCPs knowledge as one of the main factors that impact the quality of healthcare system. A study by Alqossayir et al. (2021) has shown that among 266 participants, 38.1% mentioned a lack of experienced staff, as well approximately 42.2% of the unmarried participants suggested that more experienced staff at PHCs were urgently needed. From another aspect, Alosaimi et al. (2022) studied the attitude and factors impacting healthcare quality across 609 patients in KSA; 88.3% of patients thought it was crucial to research the doctor before contacting them for the current admission.

### **Specialists and drugs availability:**

In a study by Al-Hanawi et al. (2017) across 36 participants aiming to address the factors influencing the quality of care across patients in KSA, as shared earlier, half of the patients reported dissatisfaction with the quality of the provided healthcare system, 22% have reported that lack of drug availability and 17% have reported absence of the specialists in the hospital as one of the driving dissatisfactions for the healthcare system. Lastly, in a study Alqossayir et al. (2021) in a cross-sectional study among 266 patients, 13.8% of the patients reported the unavailability of prescribed medicines.



*Figure 4 Types of study for patients' preference factors for quality of healthcare system*

## 2.5. HCPs and nurses' preference towards quality and factors attributing to healthcare in KSA

In KSA, HCPs and nurses strongly prefer quality healthcare services and recognize the factors that contribute to it. They prioritize delivering care that meets international standards and embraces evidence-based practices. HCPs in KSA emphasize the importance of continuous professional development to enhance their skills and knowledge. They value using advanced technologies and state-of-the-art medical equipment to provide accurate diagnoses and effective treatments. HCPs in KSA also emphasize the significance of patient-centeredness, respecting patients' cultural beliefs, values, and preferences and involving them in decision-making. In our review, five trials have highlighted the preference of HCPs and nurses towards the impact of healthcare management and information towards the quality of the healthcare system in KSA

Table 3; these factors were summarized into healthcare management and information, hospital supervision & training, and development program to HCPs.

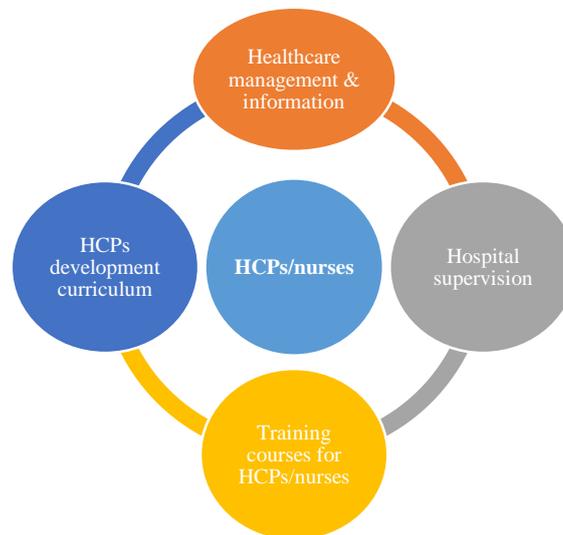


Figure 5 Factors shared by patients in KSA that impact the quality of the healthcare system

### **Healthcare management & information**

In a cross-sectional study by Alatawi et al. (2022) among 20 physicians aiming to examine the factors that influence the efficiencies of health service provision in public hospitals in KSA and their potential remedies, ineffective management and lack of strategic planning were among the key factors associated with the poor healthcare system, another study by Almujaidei et al. (2022) among 17 physicians through a cross-sectional designing aimed to explore social determinants of health in an primary health care setting in KSA, the need for a multidisciplinary approach,

The disconnect between the primary care clinic and the outside community hinders referral of patients to local support agencies was among the main factors impacting the quality of healthcare system.

In another study by Aljadhey et al. (2014), which was conducted in 2016 among 65 physicians via interviewing them so as to understand the Challenges to and the future of medication safety in KSA, the main outcomes of this study have shown that communication gaps between healthcare institutions, limited use of important technologies such as computerized provider order entry were on top of the healthcare management issues that impact the quality of healthcare system in KSA.

### **Hospital supervision**

A study by Almujaidei et al. (2022) aimed to explore the different variants that impair the quality of the healthcare system in KSA among 17 physicians; in this study, healthcare providers emphasized that the bias provided by the supervisors in treatment between colleagues was one of the main challenges in impairing quality of healthcare management, another study by Al Malki et al. (2017) among 144 physicians through a cross-sectional study aiming to explore the Health professional perspectives of patient safety issues in intensive care units in KSA, the main outcomes driven from the study has shown that Leadership, blame culture, workload/staffing issues and communication were the factors most frequently reported as hindering a positive safety culture.

In a study aimed at Identifying the Factors Influencing the Leadership Performance of Saudi's Healthcare Sector by Algarni (2018) among 29 physicians in a cross-sectional design, fairness and equality scored the highest factor among healthcare providers as an impacting factor in the healthcare system, The study suggested that the relations between leaders and their followers need to be under the official supervision of the highest tiers of management. Lastly, in a study of 585 nurses aimed to understand the quality of work life among primary health care nurses in the Jazan region, KSA Almalki et al. (2012), the main outcomes of the study emphasized that the management and supervision issues were of concern among nurses, majority of the nurses have disagreed on receiving proper supervision and fair management from the authorities, it ranges between 51.2% till 68.3%.

### **Training and development program to HCPs**

A study by Almalki et al. (2012) across 585 nurses aimed to understand the quality of work life among primary health care nurses in the Jazan region, KSA. 72.4% and 71.1% disagreed with the support to attend continuing education/training programs and Career advancement opportunities

from the hospital management, respectively. According to a review article by Al Asmri et al. (2019) highlighted that lack of training among healthcare providers was one aspect that impairs the healthcare system's quality.

From another aspect, a study aimed to understand Leadership Skills and their associated factors among Pharmacy Students at Umm Al-Qura University, Makkah, KSA. Among 400 physicians, the main outcomes of this study have shown that training in both leadership skills and emotional intelligence leads to the development of highly qualified healthcare personnel according to Alaaddin et al. (2021).

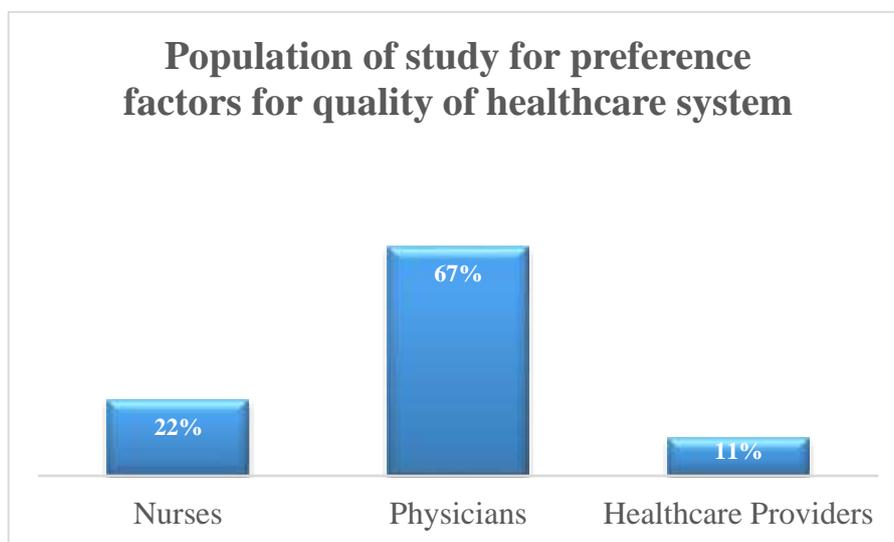


Figure 6 Population of study for preference factors for quality of healthcare system

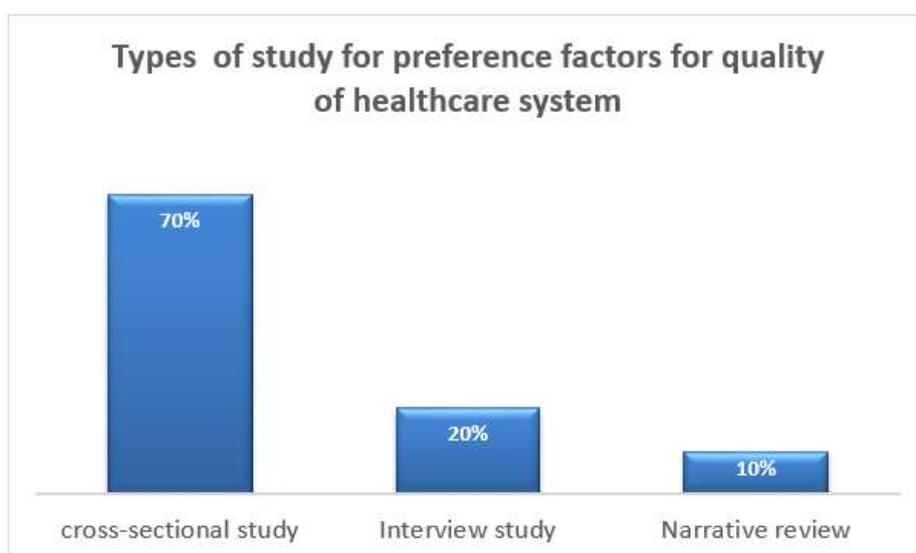


Figure 7 Types of study for preference factors for quality of healthcare system

### 3. Discussion

The quality of the healthcare system in KSA is influenced by various factors, as highlighted in the studies included in our systematic review. Infrastructure and device availability emerged as significant factor, with patients expressing concerns about the insufficiency of diagnostic tests at primary healthcare centers (PHCs). Recommendations include improving facilities at PHCs, hiring experienced medical staff, and enhancing diagnostic measurements. Additionally, emotional, social, and physical support was found to play a crucial role in influencing healthcare quality. Socioeconomic factors also impact the frequency of patients visiting healthcare centers. To improve patient satisfaction, providing emotional support and physical comfort is essential according to Ibrahim and Allebdi (2020).

In our study, Clinic duration time and appointment availability were identified as key factors influencing healthcare quality. Patients reported dissatisfaction with waiting times in accessing public hospitals and the unavailability of appointments, leading them to visit emergency departments or bypass primary healthcare centers. This outcome was in line with other studies; according to a study by Sampson et al. (2008) conducted in the United Kingdom examining the relationship between waiting times for primary care appointments and patient satisfaction. The study found that patients waiting longer for appointments reported lower satisfaction levels. Specifically, patients who waited more than two weeks for an appointment were significantly less satisfied than those who could get an appointment within a week. A study conducted in Canada by Ansell et al. (2017) assessed the impact of waiting times for specialist consultations on patient outcomes. The study found that longer wait times for specialist appointments were associated with delayed diagnosis and treatment, leading to poorer patient outcomes. Specifically, longer waits were associated with increased morbidity and mortality rates for certain conditions.

Factors such as paying attention to patients' needs and opinions, sparing enough time for patients, and effective communication skills were identified as important aspects of our study; this was also in line with in a systematic review, researchers analyzed studies on the impact of HCP communication skills on patient outcomes. The review found that effective communication between HCPs, and patients significantly improved patient satisfaction, adherence to treatment plans, and overall healthcare outcomes. Good communication skills, including active listening, empathy, and clear information delivery, were associated with better patient experiences and outcomes according to Kwame and Petrucka (2021).

In our study, Ensuring a competent and knowledgeable experience and competencies of HCPs were identified as significant contributors to healthcare quality. Similar outcomes were also identified in a study by Kaihlaniemi et al. (2023) that examined the relationship between nurse staffing and patient outcomes. The study found that hospitals with a higher proportion of nurses with a Bachelor of Science in Nursing (BSN) degree had lower mortality rates and better patient outcomes. The study also revealed that hospitals with better nurse work environments, including adequate staffing levels and supportive policies, had higher levels of patient satisfaction. Also, a study conducted in Australia by Rawlings et al. (2019) explored the impact of HCPs' clinical experience on the quality of care in acute care settings. The study found that HCPs with more experience had lower rates of adverse events and medication errors. Experienced HCPs were better able to recognize and respond to complex clinical situations, improving patient safety and outcomes.

Specialists and drug availability were also important factors influencing KSA's healthcare quality. For specialist availability, our outcomes aligned with a systematic review by Pilonieta et al. (2023) who analyzed studies on the impact of specialist availability on healthcare quality and patient outcomes. The review found consistent evidence that increased availability of specialists was associated with improved healthcare quality, reduced hospitalizations, and better patient outcomes. Access to specialized care plays a crucial role in diagnosing and managing complex medical conditions effectively.

On the other hand, Drug availability and its impact on healthcare quality were also mentioned in a study conducted in the United States by Phuong et al. (2019) who investigated the impact of drug availability on healthcare outcomes. The study found that patients with barriers to accessing essential medications experienced poorer health outcomes and higher healthcare costs. Limited availability of certain drugs, such as those used for chronic conditions or rare diseases, significantly impacted patients' ability to manage their health.

#### **4. Recommendations:**

Improving the quality of the healthcare system in KSA presents various opportunities for enhancing patient care and outcomes. Here are some key opportunities that can contribute to the improvement of healthcare quality in KSA:

1. Investment in Healthcare Infrastructure: Increasing investments in healthcare infrastructure can significantly enhance the quality of healthcare services in KSA. This includes expanding

and improving facilities, upgrading medical equipment and technologies, and ensuring adequate resources for healthcare providers. By investing in modern Infrastructure, healthcare organizations can offer more efficient and effective treatments, diagnostic capabilities, and patient-centered care.

2. **Strengthening Healthcare Workforce:** Focusing on developing and training HCPs is crucial for improving healthcare quality. This involves continuous professional development programs, ensuring a competent and skilled workforce, and promoting a culture of lifelong learning. Encouraging healthcare providers to acquire advanced certifications, keeping up with the latest research and best practices, and fostering a culture of innovation can lead to improved patient outcomes and overall quality of care.
3. **Enhancing Patient Engagement:** Engaging patients in their healthcare journey can positively impact healthcare quality. By promoting shared decision-making, patient education, and communication, healthcare providers can empower patients to participate in their treatment plans and make informed choices actively. Emphasizing patient-centered care and considering patients' cultural beliefs, values, and preferences can foster a stronger patient-provider relationship, improving satisfaction and better health outcomes.
4. **Strengthening Healthcare Regulation and Governance:** Establishing a robust regulatory framework and governance structure is essential for ensuring consistent quality standards across healthcare facilities in KSA. Strengthening regulatory bodies, implementing accreditation programs, and enforcing adherence to quality standards can help identify areas for improvement and ensure that healthcare providers meet the required quality benchmarks. Regular audits, quality assessments, and monitoring systems can provide valuable feedback for continuous improvement.
5. **Embracing Digital Health Technologies:** Utilizing digital health technologies, such as electronic health records, telemedicine, and health information exchange systems, can enhance the efficiency, accessibility, and coordination of healthcare services. These technologies can streamline workflows, improve communication among healthcare providers, and enable remote consultations and monitoring. Embracing digital health solutions can improve care coordination and patient outcomes.

6. Collaboration and Research: Encouraging collaboration among healthcare providers, researchers, and policymakers is vital for driving quality improvement initiatives. Supporting and funding research studies on healthcare quality and outcomes can generate valuable insights and evidence-based practices. Collaborative efforts facilitate the exchange of knowledge, best practices, and innovative ideas.

## 5. Conclusion

In conclusion, several factors have been linked to impacting the quality of healthcare services in KSA. By considering these factors and addressing the challenges they present, policymakers and healthcare providers in KSA can work towards enhancing the quality of healthcare services. Improving infrastructure and device availability, ensuring emotional and physical support, addressing clinic duration and appointment availability issues, enhancing the experience and competencies of HCPS, and improving specialists and drug availability are essential steps. Furthermore, effective healthcare management and information systems, proper hospital supervision, and robust training and development programs for HCPs should be implemented to enhance healthcare quality in KSA.

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## Appendices

**Table 1** Quality assessment of the assigned articles in literature

Authors	Is the Review Question Clearly Stated?	Were the Inclusion Criteria Appropriate for the Review Q.?	Was the Research Strategy Appropriate?	Were the Sources used to Search Adequate?	Were the criteria for Appraising Studies Appropriate?	Were there Methods to Minimize Errors in Data Extraction?
<i>Al Shammrie et al. (2022)</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Almaqhawawi et al. (2022)</i>	Yes	Yes	Yes	Unclear	Yes	Yes
<i>Al-Hanawi et al. (2017)</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Alosaimi et al. (2022)</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Alqossayir et al. (2021)</i>	Yes	Yes	Yes	Unclear	Yes	Yes
<i>Almalki et al. (2012)</i>	Yes	Yes	Yes	No	Yes	Yes
<i>Ibrahim and Allebdi (2020)</i>	Yes	Yes	Yes	Yes	Yes	Yes

Authors	Is the Review Question Clearly Stated?	Were the Inclusion Criteria Appropriate for the Review Q.?	Was the Research Strategy Appropriate?	Were the Sources used to Search Adequate?	Were the criteria for Appraising Studies Appropriate?	Were there Methods to Minimize Errors in Data Extraction?
<i>Algarni (2018)</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Alatawi et al. (2022)</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Al Malki et al. (2017)</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Aljadhey et al. (2014)</i>	Yes	Yes	Yes	Unclear	Yes	Yes
<i>S. Alayed et al. (2014)</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Alaaddin et al. (2021)</i>	Yes	Yes	Yes	Unclear	Yes	Yes
<i>Al Asmri et al. (2019)</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Almujadidi et al. (2022)</i>	Yes	Yes	Yes	Yes	Yes	Yes

**Table 2** Summary of articles for patient's preference factors for quality of healthcare system

Author	Study title	No. of patients	Method	Outcomes
<i>Al Shammrie et al. (2022)</i>	Factors Affecting Patient Satisfaction in Dermatology Clinics in KSA	1002 patients	Cross-sectional study	<ul style="list-style-type: none"> <li>Emotional support, and physical comfort appear to be the most crucial factors in determining patient happiness.</li> </ul>
<i>Almaqawi et al. (2022)</i>	Patient's Perspective on Factors Affecting Health-Seeking Behavior in Al-Ahsa, KSA	481 patients	Cross-sectional study	<ul style="list-style-type: none"> <li>68.5% of participants with intermediate economic status visit healthcare centers for any symptoms compared to 50% of others with high financial status.</li> </ul>

<p><i>Al-Hanawi et al. (2017)</i></p>	<p>Healthcare Finance in the Kingdom of KSA: A Qualitative Study of Householders' Attitudes</p>	<p>36 patients</p>	<p>interview study</p>	<ul style="list-style-type: none"> <li>• 50% of the participants have reported dissatisfaction from the healthcare service provided by the PHCs.</li> <li>• 94% reported that waiting times in accessing public hospitals or unavailability of appointments were on top of the reasons of dissatisfaction.</li> <li>• 61% reported their dissatisfaction from the waiting time before seeing HCP.</li> <li>• 22% have reported that lack of drug availability</li> <li>• 17% have reported absence of the specialists in the hospital as one of the driving dissatisfactions for healthcare system.</li> </ul>
<p><i>Alosaimi et al. (2022)</i></p>	<p>Analyzing Factors Influencing Patient Selection of a Surgeon for Elective Surgery in KSA: A Questionnaire-Based Survey</p>	<p>609 patients</p>	<p>Cross-sectional study</p>	<ul style="list-style-type: none"> <li>• 84.7% mentioned that paying attention to patient's needs and opinions is important</li> <li>• 83.9% of the participants reported sparing enough time for patients is important</li> <li>• 82.6% of the participants reported that</li> </ul>

				<p>communication skills were considered to be important.</p> <ul style="list-style-type: none"> <li>• 88.3% of patients thought it was crucial to research the doctor before contacting her or him for the current admission</li> </ul>
<i>Alqossayir et al. (2021)</i>	Factors associated with patients bypassing primary healthcare centres in Qassim Region, KSA	266 patients	Cross-sectional study	<ul style="list-style-type: none"> <li>• 31.7% believed that PHCs were insufficient for diagnostic tests.</li> <li>• more than half of the selected patients indicated that the opening times of the PHCs were inconvenient.</li> <li>• 38.1% mentioned a lack of experienced staff</li> <li>• 42.2% of the unmarried participants suggested that more experienced staff at PHCs were urgently needed</li> <li>• 13.8% of the patients reported the unavailability of prescribed medicines</li> </ul>

**Table 3** Summary of articles for HCPs-nurses preference factors for quality of healthcare system

Author	Study title	No. of patients	Method	Outcomes
<i>Almalki et al. (2012)</i>	Quality of work life among primary health care nurses in the Jazan region,	585 nurse	cross-sectional study	<ul style="list-style-type: none"> <li>• 51.2% till 68.3%. of the nurses has disagreed on receiving proper supervision and fair management from the authorities.</li> </ul>

	KSA: a cross-sectional			<ul style="list-style-type: none"> <li>• 72.4% have disagreed on the support to attend continuing education programs</li> <li>• 71.1% have disagree on the career advancement opportunities from the hospital management</li> </ul>
<i>Ibrahim and Allebdi (2020)</i>	Level and determinants of job satisfaction among Saudi physicians working in primary health-care facilities in Western Region, KSA	119 physician	cross-sectional study	<ul style="list-style-type: none"> <li>• Financial incentives impose a negative impact on job satisfaction for primary care physicians. On the other side, the nature of work has had the most positive impact on job satisfaction. Specialists have less satisfaction</li> </ul>
<i>Algarni (2018)</i>	Identifying Factors Influencing the Leadership Performance of Saudi's Healthcare Sector	29 physician	cross-sectional study	<ul style="list-style-type: none"> <li>• 'fairness and equality, islamic value, The study suggested that the relations between leaders and their followers need to be under the official supervision of the highest tiers of management.</li> </ul>
<i>Alatawi et al. (2022)</i>	Factors Influencing the Efficiency of Public Hospitals in KSA: A Qualitative Study Exploring	20 physician	cross-sectional study	<ul style="list-style-type: none"> <li>• Ineffective hospital management, lack of strategic planning and goals, weak administrative leadership, and absence of monitoring hospital performance was noted to have a profound impact on hospital efficiency.</li> </ul>

	Stakeholders' Perspectives and Suggestions for Improvement			
<i>Al Malki et al. (2017)</i>	Health professional perspectives of patient safety issues in ICU in KSA	144 physician	cross-sectional study	<ul style="list-style-type: none"> <li>• Leadership, blame culture, workload issues and communication were the factors frequently reported as hindering a positive culture</li> </ul>
<i>Aljadhey et al. (2014)</i>	Challenges to and the future of medication safety in KSA: A qualitative study	65 healthcare provider	Interview study	<ul style="list-style-type: none"> <li>• communication gaps between healthcare institutions, limited use of important technologies such as computerized provider order entry</li> </ul>
<i>S. Alayed et al. (2014)</i>	KSA An ICU safety culture and nurses' attitudes	216 nurse	cross-sectional study	<ul style="list-style-type: none"> <li>• nurses were uncomfortable speaking openly about their concerns if they perceived a problem with patient care. Nurses' management perceptions received the lowest mean score and the overall lowest positive attitudes</li> </ul>
<i>Alaaddin et al. (2021)</i>	Leadership Skills and their Associated Factors among Pharmacy Students at Umm Al-Qura University, Makkah, KSA.	400 physicaian	cross-sectional study	<ul style="list-style-type: none"> <li>• Training in both leadership skills and emotional intelligence leads to the development of highly qualified healthcare personnel.</li> </ul>

<i>Al Asmri et al. (2019)</i>	The public health care system and primary care services in KSA: a system in transition		Narrative review	<ul style="list-style-type: none"> <li>• Shortage of health care professionals , training , lack of referral system. Besides the huge growth in NCDs</li> </ul>
<i>Almujadidi et al. (2022)</i>	Exploring social determinants of health in a KSA primary health care setting: the need for a multidisciplinary approach	17 physician	cross-sectional study	<ul style="list-style-type: none"> <li>• Lack of physician knowledge or training, -Time constraints and difficulties to follow up, - Disconnect between the primary care clinic and the outside community hinders referral of patients to local support agencies, and bias</li> </ul>

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Doi: <https://doi.org/10.52132/Ajrsp.e.2023.56.3>