

# Patients and Health Professionals' Perceptions of Primary Health Care Services in Saudi Arabia: A Scoping Review

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**Objective:** This scoping review aims to identify and summarize existing evidence concerning the quality and capacity of PHC services in the Kingdom of Saudi Arabia (KSA) with a focus on the patients and healthcare professionals' perceptions of PHC.

**Methods:** This review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The digital library, PubMed, and the search engine Google Scholar were searched to broaden our results for primary research involving patient and/or health professionals' perspectives on Primary Healthcare in KSA.

**Results:** A total of 38 publications were selected for the scoping review. Several studies examined patients' overall satisfaction with PHC services (n=14) while others focused their investigation on specific services provided by PHC (n=3). Several studies assessed the perceptions of certain groups of patients (n=5). Several studies examined health professionals' perceptions of the use of electronic health records (n=3), the safety culture (n=2), communicable disease management (n=1), emergency services (n=1), laboratory services (n=1), cost-effectiveness (n=1), and leadership (n=1). This review also included studies that assessed the health professionals' job satisfaction and burnout (n=6).

**Conclusion:** Patients were satisfied with some aspects of PHC services while recognizing that improvements in some areas were needed. These included waiting time, physician-patient communication, access to the services in rural areas, patient involvement in disease management, and oral health. Health workers were positive about certain quality aspects and services provided by PHC such as EHRs, safety culture, communicable disease management, emergency services, and laboratory services. Health workers demonstrated a low level of job satisfaction due to several reasons, including, working conditions, financial incentives, and burnout.

**Keywords:** primary health care, patients, health professionals, perceptions, satisfaction, Saudi Arabia, PRISMA

## Introduction

Primary healthcare (PHC) is vital to healthcare sustainability as it provides full care ranging from preventive care, treatment, and rehabilitation.<sup>1</sup> The Declaration of Alma-Ata in 1978 established the original concepts of PHC focusing on equity, accessibility, and quality of care.<sup>2</sup> Globally, reforms are being introduced to the basic concepts of PHC to address shifts in the epidemical, demographical, economical, technological, and cultural situations.<sup>3</sup> The health sector in the Kingdom of Saudi Arabia (KSA) is facing similar challenges due to the population growth, the increased cost of healthcare services, unfair access to care, and suboptimal quality of care.<sup>4</sup> The Ministry of Health (MOH) in Saudi Arabia provides the majority of the public health care services (60%), while the private sector and other governmental institutions (military or university hospitals) provide the remaining 40% of the health care services.<sup>5</sup> The healthcare model in KSA has always been hospital-focused, concentrating efforts on treating diseases instead of focusing on avoiding them through preventive approaches. As a result, healthcare in KSA is undergoing a transformation and rapid reforms. In line with the efforts to achieve the transformational goals in healthcare, focus is shifting to reforming and restructuring PHC. Reforms of PHC that would potentially improve the quality of services and the patients' satisfaction include the introduction of innovative clinical pathways, chronic diseases prevention and screening, the incorporation of

the psychological health with the other kinds of services, making enormous development in health technology, building capability, and the provision of improved access to services.<sup>6</sup>

This scoping review seeks to identify and summarize existing evidence concerning the perceptions of the patients and health professionals regarding different aspects of PHC services in the KSA. The results of this study should offer a comprehensive evaluation of the PHC system that should help policymakers arrive at informed decisions regarding the enhancement of the healthcare system.

## Materials and Methods

This is a scoping review<sup>7</sup> that followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) reporting guidelines.<sup>8</sup> We searched the digital library, PubMed, as well as used the search engine Google Scholar to broaden our results for primary research involving patient and/or health professionals' perspectives on Primary Healthcare in KSA. A combination of the following MeSH terms were used: "primary healthcare", "patients", "health professionals", "satisfaction", "access", "quality", "capacity", and "patients' satisfaction". The search covered the last seven years—from 2016 to 2022. Eligible studies were chosen through a multiphase technique, that is, availability of full text, abstract, title reading.

## Criteria for Inclusion and Exclusion

The included articles had to be published between 1 January 2016 and 31 December 2023, published in the English language, based in KSA, primary studies, centered on patient or health professionals' perceptions, included at least one of the previously mentioned keywords. Articles that were meta-analyses, reviews, observational studies, or dissertations were excluded. The first screening was done by removing duplications. Then, the titles and abstracts of articles were reviewed. Subsequently, a full-text screening of all articles was conducted for eligibility. The studies quality was assessed using the Joanna Briggs Institute Critical Appraisal Checklist.

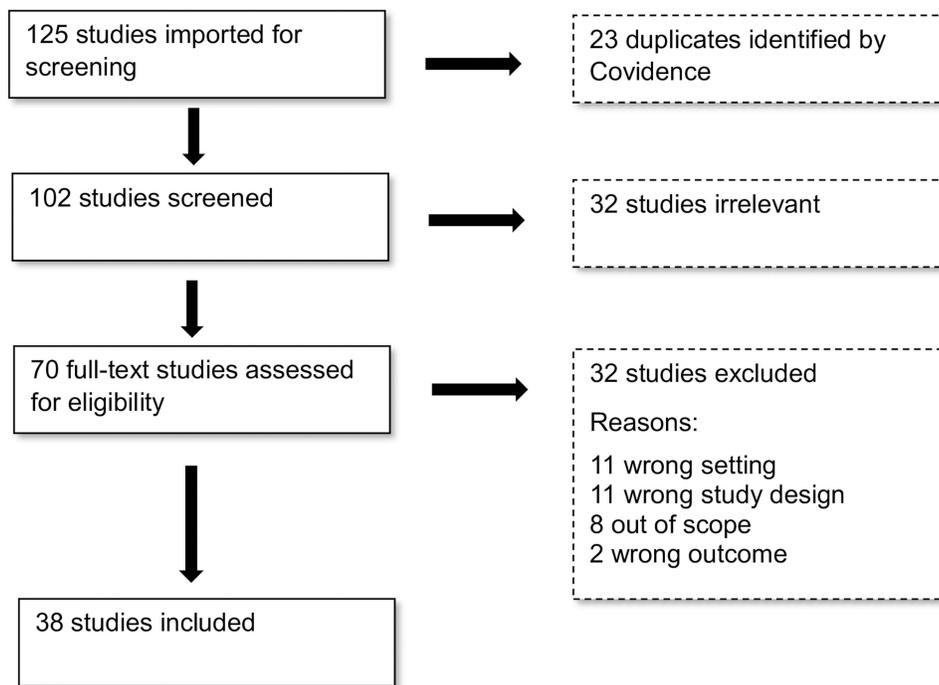
## Results

### Study Search

From the search, a total number of 125 articles was found. The automatic procedures in Covidence identified 23 articles as duplicates, leaving 102 articles for abstract and title screening. After the screening, 32 articles were excluded due to irrelevance. Then, the remaining 70 articles were put for full-text assessment. In the full-text review, another 32 publications were excluded—eight were outside of the scope of the study, eleven did not have the right setting, eleven did not meet the design requirements, and two did not have the right outcome. Finally, 38 articles were chosen for this scoping review (Figure 1).

### Characteristics of the Included Studies

A detailed description of the characteristics and the key evaluation for the included studies is found in (Tables 1 and 2). The included studies investigated patients and health professionals' perceptions of PHC services in KSA. Some were conducted at a national level,<sup>9–13</sup> while others were carried out in specific regions of KSA; namely, Riyadh,<sup>14–27</sup> Jeddah,<sup>28–33</sup> Dammam,<sup>34</sup> Al-Ahsa,<sup>35,36</sup> Hafar Al-batain,<sup>37</sup> Eastern Province,<sup>38</sup> Buraidah,<sup>39</sup> Asser,<sup>40</sup> Qassim,<sup>41,42</sup> Al-Jouf,<sup>43</sup> Jeddah and Eastern region,<sup>44</sup> Abha,<sup>45</sup> and different regions in KSA.<sup>46</sup> Several studies examined patients' overall satisfaction with PHC services<sup>10,12,13,16,20,27,28,34,35,37,41,45,46</sup> while others focused their investigation on specific services provided by PHC, including health education,<sup>33</sup> oral health care,<sup>18</sup> and pharmaceutical care.<sup>11</sup> Several studies assessed the perceptions of certain groups of patients, including those with chronic diseases,<sup>19,24,25</sup> the critically ill,<sup>21</sup> and pregnant women.<sup>17</sup> In terms of the health professionals' perceptions of PHC services, several studies examined their perceptions of the use of electronic health records,<sup>14,15,23</sup> the safety culture,<sup>36,38</sup> communicable disease management,<sup>29</sup> emergency services,<sup>30</sup> laboratory services,<sup>26</sup> and leadership.<sup>43</sup> This review also included studies that assessed the health professionals' job satisfaction and burnout.<sup>9,31,32,39,40,42,44</sup>



**Figure 1** Preferred Reporting Items for Systematic Review Flow Diagram (PRISMA).

## Discussion

### Patients' Perceptions of PHC in KSA

Patient satisfaction has been widely used to measure the quality of healthcare services. The studies identified on this topic indicated that patients were overall satisfied with PHC services in KSA but saw the need for improvements in some areas.<sup>20,22,27,41,46</sup> Waiting time for appointments is a quality attribute that is regularly employed to measure patient satisfaction with PHC services. Two study reported high levels of patients satisfaction overall but accessibility and waiting time needed to be improved.<sup>20,27</sup> Another examined the association between the wait times and patient satisfaction and found that patient dissatisfaction sprang mostly from the time they had to wait for medication to be dispensed, the measuring of their vital signs, consultation with dentists, and radiological investigation.<sup>41</sup> Other studies found a moderate level of satisfaction among patients regarding various aspects of PHC including access to care, the nature of the professional care offered, and the length of consultations.<sup>35,45</sup> It was also observed that pressure on emergency department (ED) by patients with non-urgent issues is presently placing a significant burden on the health system in KSA.<sup>47-49</sup> For example, one study found that the EDs were the preferred places of referral for problems, even though they were not urgent, because of the speediness of the service provided and the fact that same day appointments were unavailable at the PHCs, and a full investigation of the patient's problem was not done either.<sup>10</sup>

Communication between the physician and patient is a significant component of patient satisfaction and two studies examined the impact of the patient-physician communication on the delivery of care at PHC.<sup>13,34</sup> One study found a low level of patients' satisfaction with the physicians' empathy.<sup>34</sup> The other study observed that good patient-physician communication improved the patients' satisfaction at PHCs.<sup>13</sup> This was further confirmed by research that reported that the attentiveness of doctors as well as the friendliness and respectfulness of various categories of healthcare staff increased the levels of satisfaction of patients as PHC in Saudi Arabia.<sup>12</sup> In KSA, there are approximately one PHC center per ten thousands population in KSA.<sup>50</sup> The density of health workers in PHC centers differs across urban and rural areas with the number of physicians being 1766 per ten thousands population in rural areas and 3049 per ten thousands population in urban areas.<sup>50</sup> The inaccessibility of the location of some of the PHCs was stated as a hindrance to receiving services<sup>37</sup> and geography seemed to play a part in this as patients residing in urban areas were generally satisfaction in terms of their accessing and using the PHCs. On the other hand, this was quite the opposite for rural

**Table 1** Full Description of the Included Studies in the Scoping Review (Patients' Perceptions)

Author (Date)	Title	Objectives	Study Design	Methods of Data Collection	Sample size and setting	Main Findings
Albahrani et al (2022) <sup>35</sup>	Patient Satisfaction with Primary Healthcare Services in Al-Ahsa, Saudi Arabia	Assessing the patients' satisfaction with PHC services.	Cross-sectional	The General Practice Assessment Questionnaire	N = 287 Al-Ahsa	Satisfaction with PHC was moderate. satisfaction with some services differed significantly according to gender, age, presence of chronic diseases, and employment.
Alfaqeeh et al (2017) <sup>16</sup>	Access and utilization of primary health care services comparing urban and rural areas of Riyadh Providence, Kingdom of Saudi Arabia	Examination of the influences to the utilization and access to PHC in urban and rural areas of Riyadh province.	Cross-sectional	NHS National Survey Program	N= 935 Urban and rural areas of Riyadh	PHC patients had high satisfaction with the services. a significant variations between rural and urban levels of satisfaction was found according to education level, income, medical investigations, receiving blood tests on time, opening hours, distance, cleanliness and health prevention.
Alhaqbani et al (2022) <sup>17</sup>	Assessment of Pregnant Women's Satisfaction with Model of Care Initiative: Antenatal Care Service at Primary Health Care in Cluster One in Riyadh, Saudi Arabia	To assess the satisfaction of pregnant women with antenatal care services at PHC centers.	Cross-sectional	A questionnaire	N= 646 Riyadh.	Women were satisfied with the Antenatal Care. But higher satisfaction could be achieved by enhancing the consultation and examination practices.
Alharbi et al (2019) <sup>37</sup>	Factors Associated with Access, Utilization, and Level of Satisfaction With Primary Health Care Services in Hafar Al-batain City of Saudi Arabia	To investigate the factors related to utilization, access and satisfaction with phc in hafar al-batain	Cross-sectional	A questionnaire	N = 386 Hafar Al-batain	PHC services were found somewhat satisfying. However, there are areas that need improvement which are related to organization, finance, doctor patient communication, and prevention and health promotion.
Al-Jaber et al (2016) <sup>18</sup>	Primary health care centers, extent of challenges and demand for oral health care in Riyadh, Saudi Arabia	Identifying frequent challenges faced by phc patients getting oral health care and to examine determinants for ohc demand in Riyadh.	Cross-sectional	General Practice Assessment Questionnaire (GAPQ) and New York State Department of Health (NYSDOH)	N = 300 Riyadh	There are challenges faced by patients seeking oral health care and strong evidence of determinants of demand for oral health care.

Almezaal et al (2021) <sup>19</sup>	Chronic disease patients' satisfaction with primary health-care services provided by the second health cluster in Riyadh, Saudi Arabia	Assessing the satisfaction of chronic disease patients with phc services	Cross-sectional	A questionnaire	N = 210 Riyadh	Patients with chronic diseases had high level of satisfaction with PHC. Areas that needed improvement included reception, appointments, and waiting time.
Almulhim et al (2021) <sup>10</sup>	Preference for Visiting Emergency Department Over Primary Health Care Center Among Population in Saudi Arabia	To identify what influence patients to visit the emergency department instead of PHC for non-urgent problems.	Cross-sectional	A questionnaire	N = 915 KSA	Almost half would prefer to visit the ED. Causes for deciding to visit the ED over a PHC, include that the ED provides quick medical service as compared to PHC
Almutairi et al (2017) <sup>20</sup>	Satisfaction of Patients Attending in Primary Healthcare Centers in Riyadh, Saudi Arabia: A Random Cross-Sectional Study	Identifying the satisfaction levels of PHC patients	Cross-sectional	A questionnaire	N = 1741 Riyadh	Most PHC patients were highly satisfied with the services; but, some factors still need to be improved including access to PHC and wait times.
Alomi et al (2016) <sup>11</sup>	Patient satisfaction of pharmaceutical care of primary care centers at Ministry of Health in Saudi Arabia	To explore the satisfaction of patient with pharmaceutical care at PHC as a pilot study	Cross-sectional	A questionnaire	N = 862 KSA	Availability of medication, counseling, and the relationship between the pharmacist and the patient had the highest satisfaction scores. While communication and medication reconciliation had the lowest satisfaction scores. Overall, patients were satisfied with pharmaceutical care at PHC
Alrasheedi et al (2019) <sup>41</sup>	The Association Between Wait Times and Patient Satisfaction: Findings From Primary Health Centers in the Kingdom of Saudi Arabia	To examine the relationship between patient satisfaction and wait times in PHC	Cross-sectional	A questionnaire	N = 620 Al Qassim region	In general, patients were mainly not satisfied with wait times regarding measurement of vital signs, dispensing pf medication, dental consultations, and radiology. positive relationship between the satisfaction and education, marital status, and job.

(Continued)

**Table 1** (Continued).

Author (Date)	Title	Objectives	Study Design	Methods of Data Collection	Sample size and setting	Main Findings
Alsayali et al (2019) <sup>28</sup>	Patients' Satisfaction after Primary Health Care Centers' Integration with Ministry of Health Hospitals, Jeddah	To examine the satisfaction of patients before and after PHC centers integration with the Ministry of Health (MOH) hospitals and to find the factors influencing patient's satisfaction	A cross-sectional study	A questionnaire part of which also included modified Patient Satisfaction Questionnaire (PSQ18) with its subscales and standard cutoffs.	N = 970 Jeddah	66.3% of patients were satisfied with services in the first quarter as compared with 83% in the last quarter. The PHCCs integration with the MOH hospitals was found to be an effective policy, which has significantly improved patient's satisfaction.
Alshammary et al (2020) <sup>21</sup>	Integration of Palliative Care Into Primary Health Care: Model of Care Experience	Evaluating the effect of the integration of the palliative care service at PHC and to examine the patient satisfaction with PHC services	Cross-sectional	A questionnaire	N = 110 Riyadh	Integrating palliative care service integration into PHC was useful for enhancing accessibility to early palliative care, and in improving the control of symptom, adherence with cancer treatment, quality of life, and overall satisfaction.
Alshowair et al (2022) <sup>22</sup>	Assessment of Primary Health Care Specialized Reference Clinics in Riyadh First Health Cluster: Outcome, Cost-Effectiveness and Patient Satisfaction	Evaluating the impact and cost-effectiveness of specialized reference clinics (SRCs) in PHC centers and to identify the patient satisfaction with them.	A retrospective and prospective design	In-depth interview and records review	N = 6 PHC centers in Riyadh	Specialized reference clinics were cost-effective, reasonable, and beneficial in regard to decreasing costs of the delivery of health care, decreasing the pressure on hospitals, and enhancing patient satisfaction
Bawakid et al (2017) <sup>33</sup>	Patient's Satisfaction Regarding Health Education in Primary Health Care Centers working under Ministry of Health Jeddah, Saudi Arabia	To identify the satisfaction level among PHC patients in regard to health education. And to identify the gaps to develop the capacity of health education services	Cross-sectional	A questionnaire	N = 335 Jeddah	Overall, patients were satisfied with the quality of PHC services. However, it needed improvement in the approach of health education. Such as the introduction of professional development programs
Hazazi et al (2022) <sup>24</sup>	Improving Management of Non-communicable Chronic Diseases in Primary Healthcare Centres in The Saudi Health Care System	To establishes how patients with non-communicable diseases evaluate their routine care in PHC and to find areas for improvement.	A cross-sectional study	Questionnaire (PACIC)	N = 315 Riyadh	Patients with non-communicable diseases preferred improvements in organized care that; is comprehensive, helps them identify clear treatment goals, and become more involved in the management of their conditions.

Hazazi et al (2022) <sup>25</sup>	Experiences and Satisfaction of Patients with Non-Communicable Diseases with Current Care in Primary Health Care Centres in Saudi Arabia	To examine the patients' satisfaction and experiences with non-communicable diseases at PHC centers.	Cross-sectional	Patient Assessment of Chronic Illness Care Survey and the Chronic Disease Management Survey	N = 315 Riyadh	Majority of the patients had high satisfaction level with the PHC services and stressed the importance of physicians' communication with the patients. There was a no of evidence of patient involvement in disease management which suggests the need for empowering patients to take a bigger role in disease management.
Howsawi et al (2020) <sup>12</sup>	Application of the Kano model to determine quality attributes of patient's care at the primary healthcare centers of the Ministry of Health in Saudi Arabia, 2019	To determine quality attributes of patient care at PHC by applying Kano model	Cross-sectional	A questionnaire based on the Kano model	N = 243 KSA	The top three one-dimensional attributes were "friendliness and respectfulness of the clinic receptionist", "friendliness and respectfulness of the nurses and laboratory staff", and "care and attention of the doctor".
Senitan et al (2020) <sup>13</sup>	Health-Care Reform in Saudi Arabia: Patient Experience at Primary Health-Care Centers	To identify the association between patients' satisfaction and demographics, physician-patient communication, and coordination	Cross-sectional	Patient experience questionnaire modified from the CG-CAHPS	N = 157 KSA	Improving the overall patient satisfaction and the quality of care at PHCs needs more attention to physician-patient communication.
Tabekhan et al (2018) <sup>45</sup>	Patients satisfaction with consultation at primary health care centers in Abha City, Saudi Arabia	To examine the patients' satisfaction relating to consultations at the PHC centers	Cross-sectional	Consultation satisfaction questionnaire (CSQ)	N = 400 Abha	Suboptimal satisfaction was found among the patients regarding their consultations at PHC centers. satisfaction differed according to age, education, and income.
Alqahtani et al (2023) <sup>27</sup>	Patient Satisfaction with Primary Health Care Services in Riyadh City, Saudi Arabia	To examine patients' satisfaction with primary healthcare services	Cross-sectional	Electronic questionnaire	N = 400 Riyadh	In general, patients were satisfied with the primary healthcare services specifically for appointments booking, triage, and ER. But some areas such as lengthy waiting times and the physical design of the centers needed enhancement
Alhajri et al (2023) <sup>46</sup>	Patients' Satisfaction with the Quality of Services at Primary Healthcare Centers in Saudi Arabia	To examine the patients' satisfaction with the quality of PHC services in different areas in KSA	Cross-sectional	Press Ganey Survey	N = 536,406 different regions in KSA	Patients were generally satisfied, with the highest levels of satisfaction with their care providers, highlighting the crucial role of professionals in the patient experience.

**Table 2** Full Description of the Included Studies in the Scoping Review (Health Professionals' Perceptions)

Author (Date)	Title	Objectives	Study Design	Methods of Data Collection	Sample size and setting	Main Findings
Al Ali et al (2016) <sup>34</sup>	Establishing rapport: Physicians' practice and attendees' satisfaction at a Primary Health Care Center, Dammam, Saudi Arabia, 2013	Estimation of the percentage of physicians who have a good rapport with patients and the percentage of satisfied attendees.	Cross-sectional	structured self-administered questionnaire	N= 401 374 patients and 27 physicians. In Dammam city.	Patients were not satisfied with physicians' empathy and Physicians' rapport with patients was low.
Alanazi et al (2019) <sup>14</sup>	The Role of Electronic Health Records in Improving Communication Between Health Professionals in Primary Healthcare Centres in Riyadh: Perception of Health Professionals	Examination of the influence of occupation and training of health professionals on professionals' perception of the electronic health records (EHRs) role in enhancing communication between healthcare professionals in PHC centers.	Cross-sectional	Survey	N= 1127 Most of the respondents were nurses representing 32.6% of the sample. Riyadh city.	Training and occupation influenced the perceptions of the health providers towards the EHR role in enhancing interprofessional communication. The ones who had training on EHRs gave high rating for the system's role in improving communication
Alanazi et al (2022) <sup>15</sup>	Healthcare Professionals' Perceptions of Adoption of EHRs in Primary Care in Saudi Arabia In book: Informatics and Technology in Clinical Care and Public Health	Evaluation of the healthcare professionals' perceptions towards the adoption of EHRs in PHC	Cross-sectional	Online survey using REDCap	N = 1710 Riyadh.	PHC professionals in Saudi Arabia, in general, positively perceive EHRs.
Alezezi et al (2018) <sup>9</sup>	Work-related stress among nursing staff working in government hospitals and primary health care centres	Comparing the factors and sources of stress among nurses working in PHC	Cross-sectional	Survey	N = 347 KSA	The most common perceived source of work related stress was workload, while insufficient preparation is considered the least. Other important sources of stress were conflicts with physicians and the absence of support.

Aljaffary et al (2022) <sup>38</sup>	Patient Safety Culture in Primary Healthcare Centers in the Eastern Province of Saudi Arabia	Exploring the perceptions of health care professional towards patient safety culture at PHC and to understand the factors that influence them.	Cross-sectional	PSC questionnaire from the Agency for Healthcare Research and Quality (AHRQ).	N = 310 Eastern Province of Saudi.	Several of areas for improvement were identified, specifically relating to issue reporting, non-disciplinary responses, and open communication.
AlJumail et al (2021) <sup>39</sup>	Job Satisfaction among Primary Health Care Workers in Buraidah, Qassim, Saudi Arabia	Assessing the PHC health workers' job satisfaction	Cross-sectional	a questionnaire	N = 230 Buraidah city	Majority of the PHC workers had low satisfaction levels with their job.
Allebdi et al (2020) <sup>31</sup>	Level and determinants of job satisfaction among Saudi physicians working in primary health-care facilities in Western Region, KSA	To examine the job satisfaction levels and influences to dissatisfaction among PHC physicians	Cross-sectional	"Job Satisfaction Survey" adopted by Paul E. Spector (1994).	N = 119 Western Region	A little less than half of the physicians were not satisfied. Factors such as financial incentives had a negative effect on job satisfaction for PHC physicians. However, work nature had the most positive effect on job satisfaction.
AlMaani et al (2021) <sup>36</sup>	Assessment of Attitude of Primary Care Medical Staff Toward Patient Safety Culture in Primary Health-care Centers—Al-Ahsa, Saudi Arabia	To examine the attitude toward patient safety culture and its impact in improving the quality and patient safety in PHC centers	Cross-sectional	a questionnaire	N = 288 Al-Ahsa	Some improvements are required, specifically in the area of communication and stress detection relating to patient safety culture.
Aloufi et al (2016) <sup>30</sup>	Barriers Facing Primary Health Care Physicians When Dealing with Emergency Cases in Jeddah, Saudi Arabia	Estimating the occurrence of emergency cases reported to PHC and to examine the barriers facing PHC physicians when dealing with these emergency cases.	Cross-sectional	A self-administered questionnaire and a structured observation sheet	N = 206 Jeddah	ER at PHC in are performing fairly well but need some adjustment of services and enhancement in their quality.

(Continued)

**Table 2** (Continued).

Author (Date)	Title	Objectives	Study Design	Methods of Data Collection	Sample size and setting	Main Findings
Alqahtani et al (2022) <sup>40</sup>	Primary health care centers Physicians' satisfaction toward COVID-19 management in Asser Region, Saudi Arabia.	To understand the physicians satisfaction levels in PHC centers towards covid-19 management and the different risk factors related to dissatisfaction	Cross-sectional	A questionnaire	N = 424 Asser	The majority of the physicians were not satisfied. The main factors contributing to their dissatisfaction include being male, Saudi National, training resident, and those who received recognition
Alrwili et al (2022) <sup>43</sup>	Impacts of Leadership Style on Staff Job Satisfaction in Primary Health Care Organizations, Primary Health Care Centers in Al-Jouf, Saudi Arabia as Case Study	To understand the effect of effective leadership on service delivery and employee satisfaction and to examine the employee's perception towards various leadership styles in PHC centers and its impact on employee job satisfaction	Quantitative methods and a survey	A questionnaire, a focus group discussion with selected PHCC managers, and an interview session with a subset of the focus group	N = 120 Al-Jouf	Leaders traits had a significant relationship with the employees job satisfaction in PHC centers. Numerous employees stated high satisfaction levels with salary, delivered services, and working hours. The leaders at PHC centers perceive their leadership styles as effective.
Alshehri et al (2021) <sup>29</sup>	Evaluation of Communicable Disease Surveillance System at Primary Health Care Centers in Jeddah, Saudi Arabia	To assess the CDSS performance by evaluating its functions at PHCCs	Cross-sectional	An interview-based questionnaire	N = 42 PHC centers in Jeddah	Satisfactory performance was found in the CDSS at PHC centers, particularly in functions such as reporting, confirmation, and supervision. But, other functions such as registration, detection, data analysis, epidemic readiness, and feedback needed improvement.
Al-Takroni et al (2018) <sup>42</sup>	Job satisfaction among nurses in Al-Qassim hospitals and primary health care centers, Saudi Arabia, 2016	To evaluate job satisfaction levels among nurses working in PHC	Cross-sectional	A questionnaire	N = 5542 Qassim	Most nurses were satisfied with their jobs. More interventions are needed for better nurses' satisfaction and retention.

Bawakid et al (2017) <sup>32</sup>	Burnout of Physicians Working in Primary Health Care Centers under Ministry of Health Jeddah, Saudi Arabia	Assessing the prevalence of physicians' burnout in PHC and to identify the adjustable factors which can reduce the burnout rate	Cross-sectional	Maslach burnout inventory (aMBI) questionnaire	N = 246 Jeddah	Moderate to high burnout rates were identified in 25% of the physicians. The most outstanding feature of overall burnout in the physicians was emotional exhaustion. Main causes include uncoordinated patient flow, less cooperative colleagues, less support, and paperwork
Bawakid et al (2018) <sup>44</sup>	Professional satisfaction of family physicians working in primary healthcare centers: A comparison of two Saudi regions	Assessing professional satisfaction levels and identifying the factors related to professional satisfaction	Cross-sectional	A questionnaire	N = 237 Jeddah and Eastern region	Majority of family physicians were professionally satisfied; but they had perception of being inferior to other specialties. Improving self-image, work environment, and other factors can help family physicians overcome their stress
Hazazi et al (2021) <sup>23</sup>	Leveraging electronic health records to improve management of noncommunicable diseases at primary healthcare centres in Saudi Arabia: a qualitative study	To examine the perceptions of physicians on the existing scope and content of the management of noncommunicable diseases at PHC centers that includes the role of the HER	A qualitative study	Semi-structured interviews	N = 22 Riyadh	The EHR was well regarded by physicians, but the effect on patient care at the chronic disease clinics is not being fully fulfilled. Allowing patient access to their EHR would be help raise self-management
Tashkandi et al (2020) <sup>26</sup>	Clinical laboratory services for primary healthcare centers in urban cities: a pilot ACO model of ten primary healthcare centers	To present a pilot model for the PHC laboratory services in urban cities	FOCUS-PDCA quality improvement method focusing on the pre-analytical phase of the laboratory testing as well as the Saudi Central Board for Accreditation of Healthcare Institutes (CBAHI) gap analysis and readiness	Document reviews	N = 10 PHCCs in Riyadh	The implementation of the national accreditation standards enhanced the laboratory testing process and decreased the cost. Also, the model showed how necessary the pre-analytical phase to improve the quality of laboratory process.

citizens who often cited the length of time it took them to get to these facilities as reasons for their dissatisfaction.<sup>16</sup> Research focused on examining the impact of integrating PHC centers with MOH hospitals discovered that the patients' satisfaction levels increased wherever this was in place due mainly to the ease in being referred to the required tertiary care hospitals.<sup>28</sup>

Several studies assessed the perceptions of certain groups of patients, including those with chronic diseases,<sup>19,24,25</sup> the critically ill,<sup>21</sup> and pregnant women.<sup>17</sup> The increasing rates of chronic diseases is putting a huge burden on health care systems, especially PHC. Therefore, the assessment of patient experiences with the quality of chronic disease management in PHC is important for improving care. Three studies assessed care in PHC among patients with chronic diseases.<sup>19,24,25</sup> One study reported that the chronic disease patients were satisfied with some services provided by the PHCs but were dissatisfied with the process for making appointments, the long time they had to wait, and the service provided by the receptionists.<sup>19</sup> Another study found overall satisfaction with chronic disease care but low satisfaction with patient involvement in setting objectives, follow ups with patients, and the organization of care, all of which were cited for improvement.<sup>24</sup> The third study also found that most patients were pleased with the care they received and stressed the value of the communication skills of the physicians. However, there was no managed care nor patient involvement in disease management which would seem to suggest that action was needed to permit patients to play a bigger role in disease management.<sup>25</sup> Palliative care service in KSA has largely been limited to secondary and tertiary healthcare institutions and one study showed that patients were generally satisfied with this kind of care which was to its integrated into the PHC services. The participants found that integration led to improved access to early care, resulting in better control of symptoms, and a greater degree of adherence to cancer treatment, and enhanced quality of life.<sup>21</sup> Prenatal care is a necessary service that must be given to women during pregnancy either in PHC centers or in hospitals. Expectant mothers' satisfaction with this kind of service was the focus of a study which observed there was, generally, a high level of satisfaction with the quality of the prenatal care services, although they indicated that enhancing the examination and consultation practices would make the experience more satisfactory.<sup>17</sup>

Several studies focused their investigation on specific services provided by PHC. These included health education,<sup>33</sup> oral health care,<sup>18</sup> and pharmaceutical care.<sup>11</sup> Encouraging patients to participate in their health care by providing health education contribute to an improved compliance and health outcomes. A study examined the quality of health education in PHC centers and found it satisfactory but needed improvement in terms of introducing professional development programs.<sup>33</sup> Oral health care is essential to overall health and is a basic component of PHC services. Patients identified the unavailability of dentists in PHC centers as the main challenge in the utilization of this service.<sup>18</sup> A further major indicator of the quality of PHC is patient satisfaction with pharmaceutical care which research showed that patients were mostly satisfied with the availability of medication, the counselling they received, and the relationship between them and the pharmacist. However, patients were least satisfied with pharmacy communication and medication reconciliation.<sup>11</sup>

## Health Professionals' Perceptions of PHC in KSA

The health professionals' perceptions were assessed in terms of the quality of various aspects of the PHC services, burnout, and job satisfaction. In terms of the health professionals' perceptions of some aspects of PHC services, several studies examined their perceptions of the use of electronic health records (EHRs),<sup>14,15,23</sup> safety culture,<sup>36,38</sup> communicable disease management,<sup>29</sup> emergency services,<sup>30</sup> laboratory services,<sup>26</sup> and how cost-effective are the specialized reference clinics.<sup>22</sup> Electronic health records (EHR) are vital for the delivery of high-quality health care.<sup>51-53</sup> Three studies examined the professionals' perception of EHRs use and their role in improving the quality of PHC services.<sup>14,15,23</sup> One study found that healthcare professionals trained in EHRs perceived them as beneficial for improving communication between them<sup>14</sup> while another observed that physicians generally had a positive perception of EHRs.<sup>15</sup> However, a study found that the potential for the use of the EHRs in the management of noncommunicable diseases at PHC was not being fully realized in terms of the patients' accessibility to their EHRs that would help promote self-management.<sup>23</sup>

Safety culture is a key part of healthcare organizations and health care providers working in PHC centers must be knowledgeable of patient safety standards to minimize adverse events. Two studies explored healthcare health providers' perceptions of the culture of patient safety at PHC<sup>36,38</sup> with one highlighting several areas for enhancement, specifically

in regard to how events were reported, non-disciplinary responses to mistakes, and candidness in interactions.<sup>38</sup> The study concluded that creating a culture for safety in healthcare institutions required the removal of the critical factors relating to errors: blame, fear, and silence.<sup>38</sup> The other study also found necessary improvements were needed, especially in the area of stress detection and communication.<sup>36</sup> PHC physicians may encounter a minimum of one emergency incident every year and PHC centers can effectively manage these by ensuring the right equipment and protocols along with the appropriately educated personnel. One study investigated the obstacles challenging physicians working at PHC when faced with emergency situations and based on the findings, informed them that emergency services required refinement and their quality needed to be enhanced.<sup>30</sup>

The recurrence of communicable diseases has shown that we are constantly vulnerable to health hazards. Having a capable communicable disease surveillance system (CDSS) at PHC centers is critical to provide quick warning and sustain health. A study that evaluated the performance of the CDSS found that the PHC centers had an adequate level of performance, especially in roles such as supervision, reporting, and verification.<sup>29</sup> However, other functions such as detection, registration, data analysis, epidemic preparedness, and feedback needed to be bolstered.<sup>29</sup> A fundamental part of PHC services is laboratory. A study found that the implementation of accreditation standards and the provision of laboratory service at a centered laboratory lowered the cost and improved the testing process for most of the routine laboratory tests.<sup>26</sup> The role of primary care physicians in limiting access to secondary care is considered a benefit to the health service. Therefore, it is important to establish specialized clinics in primary health care centers with suitable resources and services to treat and control patients to reduce the pressure on the tertiary hospitals and save cost and time. The establishment of specialized reference clinics (SRCs) in PHC was found by one study to be reasonable, beneficial, and cost-effective in reducing the costs of health care delivery and the burden on hospitals. The existence of these facilities also improved the level of patient satisfaction.<sup>22</sup>

One of the significant factors that enhance the quality of healthcare is the health workers' job satisfaction and six studies explored this topic.<sup>9,31,39,40,42,44</sup> Overall, health professionals working at PHCs in KSA registered low job satisfaction citing many contributory factors. One study assessed job satisfaction among physicians, dentists, nurses, pharmacists and, laboratory, and radiology technicians working at PHC centers and concluded that the working conditions were the main factors for low job satisfaction.<sup>39</sup> Additionally, monetary incentives, namely, contingent rewards were stated as having an adverse effect on job satisfaction for primary care physicians.<sup>31</sup> A study that tried to understand the factors potentially associated with the family physicians' dissatisfaction found that improving self-esteem and the working environment could help family physicians overcome stress, thus, leading to better healthcare delivery.<sup>44</sup> One study assessed the prevalence of burnout in physicians and found that emotional exhaustion was the most prominent contributor to overall burnout. The main reasons given for this were violence and pressure from patients, unorganized patient flow, less cooperative doctor colleagues, fewer support services at the PHCs, and too much paperwork.<sup>32</sup> Two studies assessed job satisfaction among nurses<sup>9,42</sup> and one revealed that they were generally satisfied with their job.<sup>42</sup> The other study reported that the excessive workload was perceived as the most important source of stress at work as well as conflicts between the doctors and nurses.<sup>9</sup> Leadership style is an additional factor affecting workers' job satisfaction. A study assessed the effect of leadership on employee satisfaction and showed that the qualities of the leaders notably associated with the employees' levels of job satisfaction in PHC centers.<sup>43</sup> Leadership characteristics positively impacted employee job satisfaction were shown in statements like these: "leader is understandable", "looks for employee welfare", "treats employees equally", and "makes his or her attitude clear to all employees".<sup>43</sup>

## Conclusion

This scoping review identified and summarized existing evidence concerning the perceptions of the patients and health professionals regarding different aspects of PHC services in the KSA. Overall, patients were satisfied with some aspects of PHC services such as palliative, prenatal care, and availability of medication while recognizing that improvements in some areas were needed. Improvements areas included waiting time, physician-patient communication, access to the services in rural areas, patient involvement in disease management, and oral health. Health workers were positive about certain quality aspects and services provided by PHC such as EHRs, safety culture, communicable disease management, emergency services, cost-effectiveness, and laboratory services. However, areas of improvements include improved

accessibility to EHRs to promote self-management, candidness in error reporting to improve safety culture, stress detection and communication, communicable diseases detection and registration, and emergency services. In addition, health workers, in general, demonstrated a low level of job satisfaction due to several reasons, including, working conditions, financial incentives, self-esteem, burnout, and leadership style. Despite perceived high-quality primary care services, constant enhancement is required to meet the increasing expectations of the healthcare consumers in KSA regarding primary care services.

## Data Sharing Statement

All data are presented in the article.

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## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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## References

1. Chotchongchatchai S, Marshall AI, Witthayapipopsakul W, Panichkriangkrai W, Patcharanarumol W, Tangcharoensathien V. Primary health care and sustainable development goals. *Bull World Health Organ.* 2020;98(11):792–800. doi:10.2471/BLT.19.245613
2. International Conference on Primary Health Care. Declaration of Alma-Ata. *WHO Chron.* 1978;32(11):428–430.
3. World Health Organization (WHO). Report of the Global conference on primary health care: from Alma-Ata towards universal health coverage and the Sustainable Development Goals; 2024. Available from: <https://www.who.int/publications-detail-redirect/report-of-The-global-conference-on-primary-health-care-from-alma-ata-towards-universal-health-coverage-and-The-sustainable-development-goals>. Accessed March 21, 2024.
4. Al Asmri M, Almalki MJ, Fitzgerald G, Clark M. The public health care system and primary care services in Saudi Arabia: a system in transition. *East Mediterr Health J Rev Sante Mediterr Orient Al-Majallah Al-Sihhiyah Li-Sharq Al-Mutawassit.* 2020;26(4):468–476.
5. Ministry of Health Saudi Arabia. Statistical Yearbook of 2022. Ministry of Health Saudi Arabia; 2024. Available from: <https://www.moh.gov.sa/en/Pages/Default.aspx>. Accessed March 21, 2024.
6. Health Sector Transformation Program; 2024. Available from: <http://www.vision2030.gov.sa/en/vision-2030/vrp/health-sector-transformation-program/>. Accessed March 21, 2024.
7. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol.* 2005;8(1):19–32. doi:10.1080/1364557032000119616
8. Moher D, Liberati A, Tetzlaff J, Altman DG; The PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 2009;6(7):e1000097. doi:10.1371/journal.pmed.1000097
9. Alenezi AM, Aboshaiqah A, Baker O. Work-related stress among nursing staff working in government hospitals and primary health care centres. *Int J Nurs Pract.* 2018;24(5):e12676. doi:10.1111/ijn.12676
10. Almulhim N, Almulhim F, Al Gharash A, et al. Preference for visiting emergency department over primary health care center among population in Saudi Arabia. *Cureus.* 2021;13(12):e20073. doi:10.7759/cureus.20073
11. Alomi YA, Kurdy L, Aljarad Z, Basudan H, Almekwar B, Almahmood S. Patient satisfaction of pharmaceutical care of primary care centers at Ministry of Health in Saudi Arabia. *J Pharm Pract Community Med.* 2016;2:3.
12. Howsawi AA, Althageel MF, Mohaideen NK, et al. Application of the Kano model to determine quality attributes of patient's care at the primary healthcare centers of the Ministry of Health in Saudi Arabia, 2019. *J Fam Community Med.* 2020;27(3):178–185. doi:10.4103/jfcm.JFCM\_92\_20
13. Senitan M, Gillespie J. Health-Care reform in Saudi Arabia: patient experience at primary health-care centers. *J Patient Exp.* 2020;7(4):587–592. doi:10.1177/2374373519872420
14. Alanazi B, Butler-Henderson K, Alanazi MR. The role of electronic health records in improving communication between health professionals in primary healthcare centres in Riyadh: perception of health professionals. *Stud Health Technol Inform.* 2019;264:499–503. doi:10.3233/SHTI190272

15. Alanazi BD, Napsok B. Healthcare professionals' perceptions of adoption of EHRs in primary care in Saudi Arabia. *Stud Health Technol Inform.* 2022;289:487–488. doi:10.3233/SHTI210964
16. Alfaqeeh G, Cook EJ, Randhawa G, Ali N. Access and utilisation of primary health care services comparing urban and rural areas of Riyadh Providence, Kingdom of Saudi Arabia. *BMC Health Serv Res.* 2017;17(1):106. doi:10.1186/s12913-017-1983-z
17. Alhaqbani SM, Bawazir AA. Assessment of pregnant women's satisfaction with model of care initiative: antenatal care service at primary health care in cluster one in Riyadh, Saudi Arabia. *Healthc Basel Switz.* 2022;10(1):151.
18. Al-Jaber A, Da'ar OB. Primary health care centers, extent of challenges and demand for oral health care in Riyadh, Saudi Arabia. *BMC Health Serv Res.* 2016;16(1):628. doi:10.1186/s12913-016-1876-6
19. Almezaal EAM, Elsayed EAH, Javed NB, Chandramohan S, Mohammed AM. Chronic disease patients' satisfaction with primary health-care services provided by the second health cluster in Riyadh, Saudi Arabia. *Saudi J Health Sci.* 2021;10(3):185. doi:10.4103/sjhs.sjhs\_213\_20
20. Almutairi KM. Satisfaction of patients attending in primary healthcare centers in Riyadh, Saudi Arabia: a random cross-sectional study. *J Relig Health.* 2017;56(3):876–883. doi:10.1007/s10943-016-0268-x
21. Alshammary SA, Punalvasal Duraisamy B, Salem L, Altamimi A. Integration of palliative care into primary health care: model of care experience. *Cureus.* 2020;12:6.
22. Alshowair A, Altamimi S, Alruhaimi F, et al. Assessment of primary health care specialized reference clinics in Riyadh first health cluster: outcome, cost-effectiveness and patient satisfaction. *Clin Outcomes Res CEOR.* 2022;14:371–381.
23. Hazazi A, Wilson A. Leveraging electronic health records to improve management of noncommunicable diseases at primary healthcare centres in Saudi Arabia: a qualitative study. *BMC Fam Pract.* 2021;22(1):106. doi:10.1186/s12875-021-01456-2
24. Hazazi A, Wilson A. Improving management of non-communicable chronic diseases in primary healthcare centres in the Saudi health care system. *Health Serv Insights.* 2022;15:11786329221088694. doi:10.1177/11786329221088694
25. Hazazi A, Wilson A. Experiences and satisfaction of patients with non-communicable diseases with current care in primary health care centres in Saudi Arabia. *J Patient Exp.* 2022;9:23743735221134734. doi:10.1177/23743735221134734
26. Tashkandi SA, Alenezi A, Bakhsh I, et al. Clinical laboratory services for primary healthcare centers in urban cities: a pilot ACO model of ten primary healthcare centers. *BMC Fam Pract.* 2021;22(1):105. doi:10.1186/s12875-021-01449-1
27. Alqahtani M, Alanazi M, Alsuwaidan S. Patient Satisfaction with Primary Health Care Services in Riyadh City, Saudi Arabia. *Int J Clin Med.* 2023;14(8):366–376. doi:10.4236/ijcm.2023.148032
28. Alsayali MM, Al-Sahafi A, Mandoura N, et al. Patients' satisfaction after primary health care centers' integration with ministry of health hospitals, Jeddah. *J Epidemiol Glob Health.* 2019;9(2):135–142. doi:10.2991/jeqh.k.190522.001
29. Alshehri MH, Alsabaani AA, Alghamdi AH, Alshehri RA. Evaluation of communicable disease surveillance system at primary health care centers in Jeddah, Saudi Arabia. *Cureus.* 2021;13(11):e19798. doi:10.7759/cureus.19798
30. Aloufi MA, Bakarman MA. Barriers facing primary health care physicians when dealing with emergency cases in jeddah, Saudi Arabia. *Glob J Health Sci.* 2016;8(8):54248. doi:10.5539/gjhs.v8n8p192
31. Allebdi AA, Ibrahim HM. Level and determinants of job satisfaction among Saudi physicians working in primary health-care facilities in Western Region, KSA. *J Fam Med Prim Care.* 2020;9(9):4656–4661. doi:10.4103/jfmpc.jfmpc\_428\_20
32. Bawakid K, Abdurashid O, Mandoura N, et al. Burnout of physicians working in primary health care centers under ministry of health Jeddah, Saudi Arabia. *Cureus.* 2017;9(11):e1877. doi:10.7759/cureus.1877
33. Bawakid A, Sharif KA, Rashid OA, Mandoura N, Shah HB, Al-Harbi HO. Patient's satisfaction regarding health education in primary health care centres working under Ministry of Health Jeddah, Saudi Arabia. *Int J Health Res Innov.* 2017;5(2):13–23.
34. Al Ali AA, Elzubair AG. Establishing rapport: physicians' practice and attendees' satisfaction at a Primary Health Care Center, Dammam, Saudi Arabia, 2013. *J Fam Community Med.* 2016;23(1):12–17. doi:10.4103/2230-8229.172224
35. Albahrani S, Albidi H, Alomar N, et al. Patient Satisfaction With Primary Healthcare Services in Al-Ahsa, Saudi Arabia. *Cureus.* 2022;14:11.
36. AlMaani MM, Salama KF. Assessment of attitude of primary care medical staff toward patient safety culture in primary health-care centers--Al-Ahsa, Saudi Arabia. *J Multidiscip Healthc.* 2021;14:2731–2740. doi:10.2147/JMDH.S323832
37. Alharbi ST, Alzghool MM, Isouard G. Factors associated with access, utilization, and level of satisfaction with primary health care services in hafar Al-batain City of Saudi Arabia. *Glob J Health Sci.* 2019;11(13):1–34. doi:10.5539/gjhs.v11n10p1
38. Aljaffary A, Awad Albaalharith M, Alumran A, Alrawiai S, Hariri B. Patient Safety Culture in Primary Healthcare Centers in the Eastern Province of Saudi Arabia. *Risk Manag Healthc Policy.* 2022;15:229–241. doi:10.2147/RMHP.S336117
39. AlJumail E, Rabbani U. Job satisfaction among primary health care workers in Buraidah, Qassim, Saudi Arabia. *Middle East J Fam Med.* 2021;19:12.
40. Alqahtani MM, Al Shaiban HM, Alqahtani SH, Alamri AM, Al MAM. Primary health care centers Physicians' satisfaction toward COVID-19 management in Asser Region, Saudi Arabia. *Cardiometry.* 2022;23:807–815. doi:10.18137/cardiometry.2022.23.807815
41. Alrasheedi KF, Al-Mohaieth M, Edrees HH, Chandramohan S. The association between wait times and patient satisfaction: findings from primary health centers in the Kingdom of Saudi Arabia. *Health Serv Res Manag Epidemiol.* 2019;6:2333392819861246. doi:10.1177/2333392819861246
42. Al-Takroni H, Al-Hindi A, Joshva K, Al-Harbi A. Job satisfaction among nurses in Al-Qassim hospitals and primary health care centers, Saudi Arabia, 2016. *Int J Adv Nurs Stud.* 2018;7(1):34. doi:10.14419/ijans.v7i1.8864
43. Alrwili AM. Impacts of leadership style on staff job satisfaction in primary health care organisations, primary health care centres in al-jouf, Saudi Arabia as case study. 428–407:(1)42;2022. المجلة العربية للإدارة. doi:10.21608/aja.2022.223181
44. Bawakid K, Rashid OA, Mandoura N, Shah HBU, Mugharbel K. Professional satisfaction of family physicians working in primary healthcare centers: a comparison of two Saudi regions. *J Fam Med Prim Care.* 2018;7(5):1019–1025. doi:10.4103/jfmpc.jfmpc\_6\_18
45. Tabekhan AK, Alkhalidi YM, Alghamdi AK. Patients satisfaction with consultation at primary health care centers in Abha City, Saudi Arabia. *J Fam Med Prim Care.* 2018;7(4):658–663. doi:10.4103/jfmpc.jfmpc\_318\_17
46. Alhajri SM, Aljehani NM, El Dalatony MM, Alsuwayt SS, Alhumaidany TM, Aldossary MS. Patients' satisfaction with the quality of services at primary healthcare centers in Saudi Arabia. *Cureus.* 2023;15(9):e45066. doi:10.7759/cureus.45066
47. Almass A, Aldawood MM, Aldawd HM, et al. A systematic review of the causes, consequences, and solutions of emergency department overcrowding in Saudi Arabia. *Cureus.* 2023;15:12.

48. Al-Otmy SS, Abduljabbar AZ, Al-Raddadi RM, Farahat F. Factors associated with non-urgent visits to the emergency department in a tertiary care centre, western Saudi Arabia: cross-sectional study. *BMJ Open*. 2020;10(10):e035951. doi:10.1136/bmjopen-2019-035951
49. Alnasser S, Alharbi M, AAlbrahim A, et al. Analysis of emergency department use by non-urgent patients and their visit characteristics at an academic center. *Int J Gen Med*. 2023;16:221–232. doi:10.2147/IJGM.S391126
50. Al Saffer Q, Al-Ghaith T, Alshehri A, et al. The capacity of primary health care facilities in Saudi Arabia: infrastructure, services, drug availability, and human resources. *BMC Health Serv Res*. 2021;21(1):365. doi:10.1186/s12913-021-06355-x
51. Vos JFJ, Boonstra A, Kooistra A, Seelen M, van Offenbeek M. The influence of electronic health record use on collaboration among medical specialties. *BMC Health Serv Res*. 2020;20(1):676. doi:10.1186/s12913-020-05542-6
52. Upadhyay S, Hu H. A Qualitative Analysis of the Impact of Electronic Health Records (EHR) on Healthcare Quality and Safety: clinicians' Lived Experiences. *Health Serv Insights*. 2022;15:11786329211070722. doi:10.1177/11786329211070722
53. Leveraging electronic health records to improve management of noncommunicable diseases at primary healthcare centres in Saudi Arabia: a qualitative study | BMC Primary Care | full Text. Available from: <https://bmcprimcare.biomedcentral.com/articles/10.1186/s12875-021-01456-2>. Accessed March 21, 2024.

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