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Review Article

Job Satisfaction among Primary Healthcare Workers in Saudi Arabia and Associated Factors: A Systematic Review

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Abstract

Background: There are increasing concerns about job satisfaction in healthcare settings because it has potential roles in staff turnover and the quality of the healthcare services provided. During the COVID-19 pandemic, several healthcare systems worldwide have suffered shortages in healthcare workers attributed to turnover from job dissatisfaction, which raised the need to comprehensively assess job satisfaction among healthcare workers. Saudi Arabia is among the countries that suffered shortages of healthcare workers, especially in primary healthcare settings, during the COVID-19 pandemic. However, job satisfaction in Saudi Arabia has not been widely discussed regarding its prevalence and associations. **Aim:** This study aimed to systematically review studies that assessed job satisfaction among healthcare workers in primary healthcare settings in Saudi Arabia. Methods: In this systematic review, I searched multiple databases (PubMed/Medline, PsycINFO, CINAHL, The Cochrane Library, Portal of Ministry of Health in Saudi Arabia (in English), and Google Scholar) to identify studies assessing job satisfaction among healthcare workers in primary healthcare settings in Saudi Arabia. Healthcare workers included physicians, nurses, allied health professionals, pharmacists, pharmacy technicians, physical therapists, occupational therapists, psychologists, community health practitioners, and social workers. From each included study, the following information was extracted: the last name of the first author, the year of publication, occupational and sociodemographic characteristics of the included healthcare workers, study design, study setting, methods used to assess job satisfaction, and results. Only studies published in English were considered and no limits were set for the publication year. **Results:** A total of 8 studies were included. All studies had a cross-sectional design. The studies were published between 2001 and 2020, yet most of these studies were published during the past 3 years. Most of the studies were conducted in one center or one hospital. The sample size of included studies ranged from 143 to 508 healthcare workers. Overall, the systematic review included 741 nurses, 526 physicians, 498 dental assistants, 380 physicians, 325 pharmacists, and 161 orthodontists. Prevalence of job satisfaction varied widely across studies by job role: 92% among nurses, 80.7% among orthodontists, 76.5% among dental assistants, 73.7% among pharmacists, and only 7.3% among physicians. Most investigated sociodemographic characteristics were not associated with job satisfaction, yet some workplace characteristics related to salary, the flexibility of working hours, and having the chance to select the specialty were associated with job satisfaction. **Conclusion:** Job satisfaction among healthcare workers in primary healthcare centers in Saudi Arabia was scarcely investigated. The included studies showed heterogeneous results that make concluding a single job satisfaction rate highly inconclusive. The variations in these studies could be attributed to the facts that most studies were conducted in one or two regions, the studies were conducted on healthcare workers with different roles and job descriptions (physicians, nurses, etc.), the studies used different data collecting methods to assess job satisfaction, and the studies were published throughout a long period (2001 and 2020). However, many of the included studies detected worrying job satisfaction prevalence rates that should highlight the need to intervene to improve job conditions in the health settings. Still, future wide-scale research with validated tools is needed to precisely indicate the burden of job dissatisfaction in primary healthcare settings in Saudi Arabia.

Keywords: Healthcare workers; Primary healthcare centers; Systematic review; Job satisfaction; Saudi Arabia

Background

In recent years, job satisfaction has been considered by several health organizations as a determinant of the quality of healthcare services [1]. Globally, healthcare services suffer from labor shortages [2-4] which negatively influence patient care and increase the associated costs [5]. One of the significant factors that may increase healthcare retention and enhance the quality of healthcare is job satisfaction [1,6,7].

The COVID-19 pandemic created an unprecedented level of stress on the healthcare systems worldwide. It remarkably pushed healthcare workers to remain vigilant and increased their work hours and efforts to meet societal expectations and demands which put them under stress [8]. Primary healthcare is the first defense line in the healthcare system; therefore, it became under pressure and stress, during the COVID-19 pandemic, in terms of clinical problems and organizational issues [9-11].

Job Satisfaction: A Global Healthcare Challenge

Job dissatisfaction and attributed turnover intention has become one of the key issues that several healthcare organizations face [12]. Turnover intention is defined as the extent of the employees' planning to leave an organization [13].

Healthcare systems around the world are already suffering shortages of healthcare workers. In Europe, the rate of turnover intention among nurses, for example, varied between 5 and 17% [14] and reached 62.5% in some Middle Eastern countries [15]. Job satisfaction and related quality of life have been linked to nurses' turnover intention [14,16,17]. In Saudi Arabia, the primary healthcare system suffers from a nursing shortage attributed to high nurse turnover [18].

The increasing turnover can result in significant reductions in patients' care and well-being [19]. It was also linked to longer hospitalization and increased medical errors [15]. Additionally, turnover intention contributes to higher costs on any health organization due to the need to recruit temporary staff to help maintain high service quality.

With the COVID19 pandemic, the world has witnessed a new phase in healthcare delivery with new challenges and needs of staff interacting with aspects of life including, but not limited to, fears, anxiety, exposure to the virus, quarantine regulations, bans on travel, schooling from home with all its consequences for children's needs and safety at home in absence of a working mother/father, and even transferring the infection to family members. This has added more stress and created a new era of heightened healthcare demands and could probably further compromise job satisfaction under such stressful work and personal conditions, especially in countries with expanding healthcare system that is developing fast to meet certain national goals like Saudi Arabia [20].

In this chapter, I will provide definitions of job satisfaction and background about the concept of job satisfaction, the healthcare system in Saudi Arabia, and primary healthcare centers in Saudi Arabia. This chapter will serve as a foundation for discussing job satisfaction among primary healthcare workers in Saudi Arabia. It will give the reader an overview of the country's current healthcare service, mainly primary healthcare.

Job Satisfaction in Healthcare

Job Satisfaction's Definitions

Several studies have linked the recruitment and retention of healthcare workers to job satisfaction [3,7,21]. Job satisfaction is a latent, multifaceted, and complex concept. Despite its importance as a concept, there is no standard definition or general agreement among researchers about the definition of job satisfaction [22]. Yet, it can be simply defined as the person's behavior towards his/her organization in terms of the like or dislike to his organization [23]. Another definition considered job satisfaction as a sum of different elements, including job nature, conditions, relationships, policies, security, communications, promotion opportunities, appreciation, and supervision [24]. Lu, et al. have defined job satisfaction as not only individuals' feelings towards their job, but also their expectations towards what their job should provide [25]. As a result, healthcare organizations have to look after their employees' satisfaction levels because a low level of satisfaction could lead to a reduction in the quality of healthcare services and increased burnout [26].

Factors Linked to Job Satisfaction

There are several significant factors associated with job satisfaction under various common conditions such as role conflict, role ambiguity, the institution's environment working conditions, professional commitment role perception, and content [7,24,25,27,28]. Salary package is also a prime factor that significantly influences job satisfaction [29]. Professional improvement opportunities are important to increase job satisfaction [30,31]. Additionally, work stress has a serious impact on employees' productivity and job satisfaction, which may lead to individuals' turnover intention [30].

High quality of life could improve work performance and job satisfaction as reported in an Iranian study showing that the majority of nurses with no turnover intentions tended to have an average of high quality of life in a clinical healthcare setting. An Australian study illustrated a remarkable association between staff turnover and a lack of quality of life [32]. Ibrahim, et al. indicated that poor quality of life may negatively impact job

satisfaction and increase the rate of job turnover [33]. Besides, it seems that poor quality of life among nursing staff in healthcare systems may negatively impact patient's safety [34]. During the COVID-19 pandemic, an overwhelming number of intensive care unit admission, virtual education, and training amidst a restricted travel or family union for expatriates should also be considered.

Conceptually, job satisfaction is not a static situation. It is always exposed to a dynamic process of interaction with many internal and external factors such as life events in terms of getting married or having a first child [35]. Given the above mentioned, it is not feasible to research job satisfaction across all healthcare workers under all settings in all countries similarly.

The population in Saudi Arabia has increased rapidly necessitating a quick plan to fix the healthcare system to satisfy the ever-growing demands of people on healthcare services, which are likely to increase in near future [36]. The situation in Saudi Arabia is still less known in comparison to other high-income [37]. Moreover, less is known about the situation in primary healthcare in terms of healthcare workers' satisfaction.

The Healthcare System in Saudi Arabia

Saudi Arabia is considered the largest country in the Eastern Mediterranean Region, with a 2.15 million km^2 area. The country's population has witnessed rapid growth in the past few decades, from approximately 7.3 million people in 1975 to approximately 34.2 million in 2019 [38]. Two major factors influence the healthcare system in the country: a large number of foreigners (29.1% of the total population) and a large population under the age of 15 (27.8% of the total population) [38].

Saudi Arabia is a welfare state that provides healthcare freely to Saudi and non-Saudi people working in the public sector, primarily through the Ministry of Health. The private sector is required to provide health coverage for its employees. Healthcare in Saudi Arabia is funded publicly by approximately 75%, and the rest are out-of-pocket expenditure [37]. The Ministry of Health provides 60% of health services, the private sector provides 23%, and other government health sectors provide 17%. In 2016, the national transformation program [39] was approved. In Saudi Vision 2030, the strategic plan aims to develop the healthcare sector through privatization [40]. As part of this privatization effort, the government established a holding company and five regional companies. These companies manage15 hospitals and 100 primary healthcare centers, and the government has also planned to privatize 290 hospitals and 2300 Primary healthcare centers by 2030 [41].

Another distinct feature is serving over 10 million pilgrims to Mecca and Madinah's holy mosques every year. During Hajj season, the country welcomes over 2.5 million pilgrims [42]. For instance, the performer numbers who came to Umrah in 2017 were 6,756,614 [38]. The government provides free healthcare to pilgrims through the Ministry of Health facilities. The Ministry of Health has assigned over 22 hospitals and 125 primary healthcare centers to serve pilgrims through Hajj season [43].

Trauma, stampede, infection, sunstroke, heatstroke, gastroenteritis, and death are major problems during a pilgrimage with all their consequences on the burden of healthcare workers [44]. Although international interpreters of several languages are provided, in many instances healthcare workers especially nurses would find significant language and cultural barriers during their work that may be counterbalanced by the general high spirit to work in the holy city and serve pilgrims [45]. This event has the potential to speared lots of viruses among pilgrims, which becomes a challenge for the healthcare system in Saudi Arabia [46]. This means that healthcare workers may face overload to save this huge amount of people in a short period, which may influence job satisfaction among healthcare workers. For example, there is a study that showed that Hajj access was limited by the Saudi Arabia government in 2020 to reduce overcrowding which leads to the rapid spread of COVID-19; this was helpful to minimize the healthcare system's risk. This has shown that temporary mass gathering events in Saudi Arabia require special efforts and needs from healthcare workers to Muslims. However, all nurses who deliver health care services in Hajj are Muslims as it is not acceptable for non-Muslims to work in Makkah, which is considered a Holy City [47]. It seems also that it is appropriate for Muslim nurses to deliver health care to other Muslims in this city because they can understand the religious situation, but it is also a challenge because this requires relying on just Muslim staff for that event. This means that it may increase overload at this time, which may influence job satisfaction. For example, there is a study that showed that there was workplace violence towards nurses during Al-Hajj seasons in 2015, which make burnout stress among them [48]. It was remarkable that this violence led to job dissatisfaction among nurses.

Additionally, because of overcrowding in Hajj time, pilgrims usually walk from one place to another at a temperature that reaches 45°C, which causes several mental and physical health problems which include skin infection, spreading of coronavirus, and exhaustion [49]. Therefore, it is required to provide good training for medical staff which seems limited as it has been explained previously which may put stress on healthcare workers to treat varieties of diseases at the same time. The increased stress among healthcare workers can undermine job satisfaction and negatively impact healthcare quality and increase turnover intention.

Delivery of Healthcare in Saudi Arabia

The administrative division of Saudi Arabia divides the country

into 13 regions or directorates, which represent government across Saudi Arabia [50]. There is relative autonomy in managing health affairs in each directorate [51]. This relative autonomy stems from flexible policy guidelines set by the Ministry of Health [51]. Each directorate has allocated budgets to distribute to the primary healthcare centers they run [52]. According to the Ministry of Health strategic plan (2010-2020), there are four healthcare levels in the Saudi healthcare system [53]. The first level is primary healthcare that provides the essential curative, preventive, and promotive services. The second level consists of general and peripheral (community) hospitals that provide several diagnostic and curative services. The third level consists of central hospitals that are equipped to provide advanced diagnostic, curative, and rehabilitative services. The fourth level comprises medical cities. In the medical cities, patients receive specialized diagnostics like intervention radiology, and stenting, curative like stem cell transplantation and chemoimmunotherapy, advanced surgical techniques like cochlear implants and organ transplantation, and rehabilitative services. Also, these cities act as research and teaching centers [53].

Primary Healthcare Centers

In this review, I will focus on primary healthcare workers in Saudi Arabia. According to the Alma-Ata declaration, Saudi Arabia is committed to developing primary healthcare [54]. The Saudi Ministry of Health focuses intensely on prevention and primary care. This focus manifests in establishing 2261 primary healthcare centers and many preventive medicine departments across the country [55]. Even with this level of focus, many challenges face primary healthcare services in the country. These challenges extend but are not limited to the workforce, patterns of diseases, financial support, accessibility, and information systems [53,56-59]. Therefore, the Saudi government implemented the Saudi Healthcare National Transformation Program- 2020 that is based on providing high-quality healthcare services [60].

One more feature of the healthcare system in Saudi Arabia is that the nursing workforce depends mainly on expatriate nurses who constitute up to 72% of the total workforce [61]. Saudi nurses face many challenges. Altakroni, et al. investigated that the productivity of Saudi female nurses and detected two main findings [62]. First, Saudi females experience a lack of work-life balance. Second, stigma and other cultural issues are major concerns among them. These two factors were associated with their low productivity. Another recent study showed that even expatriate nurses had work stress and felt insecure about renewing their contracts that may affect their quality of care [63]. Furthermore, expatriates have been reported to experience difficulty adjusting to Saudi culture, this being one of the reasons why they tend to leave the country after a short length of employment [12]. Another issue is the lack of communication with the community because the majority of them do not speak Arabic, which is the official language in Saudi Arabia. For example, some barriers face non-Saudi nurses across Saudi Arabia in terms of different language, religion, a culture which become a serious challenge to deliver high-quality healthcare [64]. This means that they may have special needs to be satisfied in Saudi Arabia because they may not adapt to the community effectively. Another issue that may appear in this context is that culture distance linked to the previous point because there is a study which shows that one of the challenges that face nurses from Malaysia who come to Saudi Arabia looking for international experiences is culture shock which is also called culture distance [65]. Nevertheless, Malaysia is considered a Muslim country which seems to be appropriate for nurses' Malaysia who is in the majority of them Muslim and aware of the Islam rules in Saudi Arabia which seems to be an appropriate option for them to obtain international experiences. However, they face a real challenge to be successful in their career because of cultural distance [65]. Thus, it appears that cultural distance may play a role in the level of job satisfaction. However, there is another study that indicates how culture plays a key role among female Saudi nurses in Saudi Arabia although they are in their home country. The study indicated that traditional aspects were considered as barriers to involving Saudi females in the nursing field because the society was against women working with males in the same place [66]. Thus, one of those barriers was leading to prevent these women from marriage because the majority of men at this time refused to marry women who work in the medical field. After all, it is mixed with males which were unacceptable which has changed later on [66]. Thus, it becomes challenging to maintain a secure healthcare workflow and continuity of care for patients that draws on well-developed levels of vital care expertise [67]. As a result, to retain healthcare workers including nurses, the Saudi healthcare systems should examine the factors that contribute to nurses' turnover especially job satisfaction.

In this context, organizational policies for overcoming the challenges facing nursing recruitment and retention in Saudi Arabia were emphasized as significant objectives in Vision 2030 [68]. One of these policies is to revitalize career-focused educational institutions to increase the number of Saudi healthcare professionals and encourage them to join the nursing profession [68,69].

The Workforce of Primary Healthcare

As of 2014, the primary healthcare workforce in Saudi Arabia included 9304 physicians and dentists (3/10,000 inhabitants), 18,136 nurses (5.9/10,000 inhabitants), and 9690 allied health workers [53]. Many healthcare workers from Saudi origins, particularly nurses, move to management or other non-nursing departments within their institutes [6]. This phenomenon extends to physicians who prefer moving to more managerial positions

[70]. In a ministerial committee review, the Ministry of Health estimated a 60% deficiency in physician manpower in primary healthcare centers which would negatively impact job satisfaction, increase stress levels, and lower the quality of care [70].

Research about primary healthcare job satisfaction can be crucial to identify the main areas of improvement needed in workplaces. Also, it can aid in highlighting the factors influencing the levels of job satisfaction positively or negatively. A recent review pointed out that most studies published in Saudi Arabia are about hospital-based service, and more studies are needed in primary healthcare settings [53].

The Impact of Age of Healthcare Workers on Job Satisfaction

The majority of the Saudi population are young people with 36.7% aged 15-34 of Saudi's population, which may impose stress on healthcare workers in the field in terms of adolescents, pregnancy, and childhood care [71]. For instance, there is a study, which shows that the adolescents' population has become a target for primary health care, which creates special needs for them to not just prevent or treat them from diseases, but it also assists them to promote their healthful behavior towards their life [72]. It remarkable that this kind of commitment towards increasing the rate of young people in Saudi Arabia leads to increase stress on healthcare workers which may lead influence job satisfaction.

Factors Relevant to the Primary Healthcare System

There are numerous factors relevant to the primary healthcare system in Saudi Arabia. Firstly, there is a study that shows that emotional exhaustion has become a serious issue that faces medical staff in primary healthcare centers, which include physicians, and nurses because the potential reasons for that they face violence from patients and their family attendants and lack of collaboration between collages doctors [73]. The study show also that the managers' attitude and poor opportunities for achievements are considered as reasons for emotional exhaustion among healthcare workers, which may lead to job dissatisfaction [73]. Another factor related to primary healthcare is that the level of education among nurses leads to high stress, which may influence the level of job satisfaction. To demonstrate that point, nurses who have education which bachelor or more likely to have more stress than those who have less than bachelor degree [74]. This means that there is a potential to use this factor to develop a healthcare system to increase the quality of work. However, another study shows that there is a relationship between the high quality of work and turnover intention among nurses in primary healthcare, which may link, to the level of job satisfaction in Saudi Arabia [6].

Nevertheless, there is a study indicates that Saudi female nurses prefer to work in primary healthcare rather than hospitals because it seems more appropriate with their family expectations in terms of no 24 hours responsibility [75]. Another issue that has been raised recently which relevant to primary healthcare in Saudi Arabia is the distribution of centers [76]. To explain that point, the previous study's results found that Saudi Arabia has large numbers of facilities for primary healthcare centers, however, distribution has become the issue because health workers face a problem which some region has an extreme shortage of employees, which may lead to overload or long shift work hours [76].

However, the administrative region has high primary healthcare centers per population more than rural areas in terms of the number of rooms and services [76]. Nevertheless, the approximately of primary healthcare centers in rural areas are 56% which seems high even though 17% of the population lives in rural areas which may be explained as a small size of the population [76]. As a result, the issue of distribution could be a problem for healthcare workers especially in rural areas, which has a large number of primary healthcare centers in Saudi Arabia. This means that healthcare workers may face issues in terms of transportation cost, international school for their children, lack of entertainment, shortage of opportunities. As a consequence, these factors that seem to be relevant to the primary healthcare system may affect the level of job satisfaction among healthcare workers which have to be addressed in this methodology. On another hand, the previous study has also mentioned that Saudi Arabia aims to reform primary healthcare centers to become better and efficient because primary healthcare centers are considered as a major line between patients and hospitals [76]. It is important to contribute to examine and predict throughout this research unknown factors that may be related to that rapid change in the primary healthcare system in Saudi Arabia. It may also contribute to assist policymakers and stakeholders to make the right and appropriate decisions.

Aim and Research Questions

This systematic review aimed to synthesize the evidence from studies conducted in Saudi Arabia regarding job satisfaction among healthcare workers in primary healthcare centers.

My research questions were as follow:

1. What is known about the prevalence of job satisfaction among healthcare workers in the primary healthcare centers in Saudi Arabia?
2. What is known about associated factors with job satisfaction among healthcare workers in the primary healthcare centers in Saudi Arabia?

Methodology

The systematic literature review is defined as a method that assists to combine large bodies of information to make sense

of them as well as discovering areas of uncertainty [77,78]. It is also described as a review of a formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyze data from the studies that are included in the review [79]. Polit and Beck defined systematic review as evidence-practice that depends on the integration of research elements that lead to a topic [80].

Polit and Beck indicated that the claimant that systematic review seemed to be just a literature review was not true because the systematic review is considered a unique type of research [80]. It should have features that include being comprehensive, transparent, methodical, and replicable. A systematic review process aims to locate all relevant unpublished or published researches to answer a research question or more questions that address a specific area [79].

Additionally, the systematic review method was proved to be effective to develop a new theory or evaluate existing theory to become more efficient as well as minimize bias and subjectivity [79]. It seems that the systematic review method has multiple features that assist to evaluate a large number of studies that help to answers a specific question, it seems also able to combine lots of information to get new knowledge about a question or more questions. According to Petticrew and Roberts, a systematic review can highlight the data that has been missed from the study, and come up with the fact that is understanding based on the limit of empirical underpinnings [77].

Furthermore, systematics review can recognize the existing gap and contribute to future efforts [77]. Since policy makers hardly depend on single studies, they should collaborate with researchers to use the systematic reviews efficiently [81]. It seems that the healthcare field requires systematic review as a tool that will assist to predict issues in the future effectively because it can combine lots of studies from verities sources that relevant to each other, and it could exact new fact from it after study it and analyze it as well.

Strength and Limitation of using Systematics Review

First, the systematic review is considered a tool to answer some types of questions which means that not all types of questions can be answered by systematic review. According to Murdoch, the main purpose of systematics review is to answer a question because it helps to translate a gap knowledge to answerable and soundly which is an important skill that is required to formulate a good question [82]. After all, a good question helps a researcher to identify inclusion and exclusion easily and effectively. Moreover, a good question for systematics review is an effective way to create a search strategy as well as collect the data and present outcomes [82]. Also, the sound question could assist a researcher to find information that relevant to that question easily and quickly, it provides a researcher a checklist of concepts that important to be included in a researcher's search strategy [82]. The question that systematics review has to be clear, unambiguous, and structured [82].

Another point of the question is that it could become a broad or narrative question [82]. The final aspect of the question for systematics review is that a researcher should be aware of how to formulate a question to avoid either missing studies that could be potentially relevant to a researcher's question or collecting information or data that have biases [82]. Another type of question that the systematic review may not appropriate to answer is that if a question or same area already has been answered from several good systematics review studies [77]. Additionally, if the review question is either too broad or too narrative, this may not appropriate to be answered by a systematic review tool because the results will be unlikely to be useful for researchers and policy-makers [77]. Another important reason why some questions may not be appropriate for the systematic review tools is that some organizations do not have sufficient recourses that could support the systematics review [77]. This means that lack of organization's ability could be a barrier to do a systematic review because some systematic review requires several resources to be done effectively.

Methods

This chapter will provide a detailed description of the systematic review strategy for the literature. This systematic review follows the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) [83] and the Cochrane Handbook for Systematic Reviews of Interventions Version 6.2 [84].

Search terms

The World Health Organization (WHO) defines healthcare workers as all people engaged in actions whose primary intent is to enhance health [85]. This definition extends to healthcare providers such as doctors, nurses, management, and support workers such as administrative professionals, support staff, and other categories. This systematic review will focus on primary healthcare workers. Primary healthcare is defined as a whole-of-society approach to health and wellbeing centered on the needs and preferences of individuals, families, and communities. It addresses the broader determinants of health and focuses on the comprehensive and interrelated aspects of physical, mental, and social health and wellbeing [86]. In line with these definitions, categorize healthcare providers in primary healthcare as follows:

1. Physicians who are working in primary healthcare, including residents and interns.
2. Advanced practice providers: physician assistants, nurses (practitioners, clinical specialists, and anesthetists), and certified midwives.

3. Allied health professionals who are working in Primary healthcare centers: dietitians, occupational therapists, and paramedics.
4. Other health professionals work in Primary healthcare centers: pharmacist, pharmacy technician, physical therapist, occupational therapist, psychologist, a public health or community health practitioner, and social workers.

Inclusion criteria of primary healthcare

1. Polyclinics and primary care centers or small hospital,
2. Vaccination centers,
3. Small peripheral hospitals,
4. Maternity clinics providing basic assessment, curative and supportive treatment,
5. Small centers or hospitals for primary maternal care like normal vaginal delivery and assessment for possible transfer for cesarean section or complicated delivery,
6. Primary family practice clinics,
7. Primary care clinics in multiple subspecialties,
8. Primary dental clinics and centers serving routine none-advanced care like dental exams, removals, caries treatment,
9. Booths and temporary acute care centers set up during pilgrimage for taking care of pilgrims (> 2 million in less than 2-3 weeks) during hajj,
10. Clinics or centers for follow□up for patients with chronic diseases.

The relevant database for this research was identified and reviewed through different combinations of keywords. The literature was used to aid the identification of keywords. Only research published in English was considered (see inclusion and exclusion criteria) as the standard language for publication in Saudi Arabia for research in the medical field is English. The following list of databases was searched using subject headings and keywords:

1. PubMed/Medline,
2. The Cochrane Library,
3. Google Scholar.

All the studies and texts were analyzed for their contents and the relevant information was synthesized and reported (Table 1).

Job	Satisfaction	Primary Healthcare	Saudi Arabia
Job, career, work, doctor, nurse, physician, practitioner, GP, resident, allied, assistant, specialist, dietitian, pharmacist, technician	Satisfaction	Family medicine, rural health, Primary health care, PHC, clinics, outpatient, emergency, Ministry of Health	Saudi Arabia, KSA

Table 1: Search terms used in the systematic review.

Inclusion and Exclusion Criteria of Studies

The methodology applied in this dissertation was based on guidelines developed by the Cochrane Collaboration and published in the Cochrane Handbook for Systematic Reviews of Interventions [84].

Types of studies

Quantitative studies that had job satisfaction as an outcome were considered. Papers were excluded if they were from outside Saudi Arabia, reporting job satisfaction for non-healthcare workers, or published in a language other than English.

Types of participants

Only healthcare workers were considered for inclusion in this review. Studies that reported job satisfaction for physicians, nurses, assistant nurses, and allied health practitioners were included.

Interventions

All studies were observational studies and did not perform interventions.

Types of outcome measures

The study was included in the review if at least one of the following outcomes was met:

- Job satisfaction in a primary healthcare setting was the main outcome.
- Job satisfaction measured quantitively and with association factors that may influence the level of satisfaction were measured statistically.

Study selection

Studies with potential inclusion in the final dataset were exported reference managing software (EndNote X8TM). These studies were screened by titles and abstracts per the inclusion and exclusion criteria mentioned in the previous section. Potentially relevant papers were obtained in full text and screened a second time to determine the final sample of included studies. The reasons for including and excluding studies were described graphically per the in PRISMA flowchart [83].

Data Extraction and Synthesis

Once the studies of interest were identified, data were extracted in a table of characteristics. The table included the following:

1. Citation (First Author et al., year of publication)
2. City or area in Saudi Arabia
3. Study design
4. Sample size
5. Primary outcomes related to job satisfaction and associated factors.

Quality assessment

The quality of studies was determined using the modified Newcastle–Ottawa Scale based on studies' selection (representativeness, sample size, non-respondents, and ascertainment of exposure), comparability (control of confounders), and outcome (assessment of the outcome and statistical test). The maximum number of stars for selection was five, for comparability was two, and for outcome was three, making the maximum overall score standing at 10.

Analysis

No meta-analysis was employed in this research due to the diverse samples, measured outcomes, and methods. The Cochrane Handbook warns against combining "apples with oranges" to cause fundamental differences to be obscured [87]. Instead, the synthesis of the evidence was narratively described with a table of counts for the factors associated with job satisfaction.

Results

Participant and study characteristics

Eventually, we included 8 studies. These studies were published in the English language during the period between 1/1/2000 and 31/3/2021. All studies were related to job satisfaction among healthcare workers in the primary healthcare system in Saudi Arabia and involved diverse subspecialties. Of the 8 publications, 5 (62.5%) were published between 2018 and 2020 [9,73,88-90]. There was an exponential increase in the number of publications over the last few years with more than two-thirds (71%) published over the last 3 years. This came in line with the overall trend of increased publications in the region [91]. It may also reflect the recent trend of training of nurses and young physicians abroad with an exchange of experience in the field of workplace management [53,92] (Figure 1, Table 2).

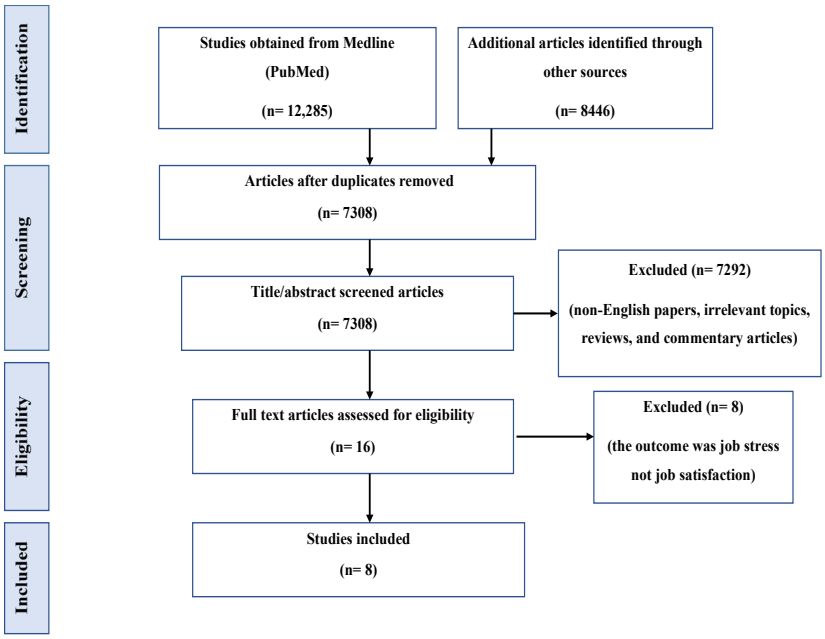

Figure 1: PRISMA flowchart.

Author/year/ region in Saudi Arabia	Study design/ methods	Population and setting	Aim	Main results, comments, and recommendations
El-Gilany and Al-Wehady 2001	Cross-sectional	Profession: Nurses Year of the survey 2000 Region: Al-Hassa 60.1%, North 30.9% Place of work: PHC Center 40.8%. Number 233; all were females Nationalities: Saudi Age: <30 =89.3%, >30 = 10.7% Married 62.2% Residence: urban: 88.4% Hospital-based work: 59.2%, Work experience < 5 years: 62.2% Qualifications: Nurse diploma 97%,	To assess the job satisfaction level of female nurses & to study factors that might increase their job satisfaction	More than 87% satisfied with their workplace. 92% were satisfied with their workplace and the role assigned. The majority preferred one-shift duty because of social and family obligations. Those assigned to female and pediatric wards or clinics were more satisfied (95.7%) vs male +/- female wards /clinics (84.3%) The majority (98.7%) of nurses interviewed would not accept working with male patients. To increase their satisfaction there is a need to improve the social attitude towards the nursing profession and to provide more comfortable working conditions.

Author/year/ region in Saudi Arabia	Study design/ methods	Population and setting	Aim	Main results, comments, and recommendations
Almalki et al., 2012	Cross□sectional	Profession: Nurses Health care system: primary healthcare center nurses Region: Jazan Total number surveyed: 584 Respondents: 508 (RR = 87%) Saudis: (72.2%), 67.3% females, 44.1% aged 20-29 & 73.8% were married and 61% had children and 54.9% had dependent adults. 47.4% had a Diploma, 33.7% an Institute Certificate, 12.8% an Associate Degree, and only 5.3% had a Bachelor Degree or higher. 46% had a salary of 5,000-10,000 SR/Mo (1US$ = SR 3.75) 62% covered ≥2 departments or more during their duties. The mean work experience as an RN was 11.3 years, with about 6.6 years in the current primary healthcare organization and 6.1 years in the current position	to examine the relationship between quality of work-life and turnover intention of PHC nurses in Saudi Arabia.	Respondents were dissatisfied with their work-life, with almost 40% indicating a turnover intention from their current primary healthcare centers. Dissatisfaction was more with males, shorter positional tenure (<4 years) or organizational tenure (<4 years) or lower salary tier. The turnover intention was significantly related to the quality of work-life. Using standard multiple regression, 26% of the variance in turnover intention was explained by the quality of work-life, $p < 0.001$, with $R2 = .263$. The quality of work-life explained an additional 19% of the variance in turnover intention, after controlling for demographic variables. Comments: a large study, many primary healthcare centers (nearly all centers).

Author/year/ region in Saudi Arabia	Study design/ methods	Population and setting	Aim	Main results, comments, and recommendations
Allebdi and Ibrahim 2020	Cross□sectional	Participants: Saudi physicians System: PHC, 45 primary healthcare centers Region: Jeddah Nationality of participants: Saudi Period: 1/3/2016 to 31/9/2016 Response rate 83% (143) Mean Age: 32.8 ± 5.6 years, (range 23-49y) Gender: 59.7% females Level of specialization: 28.8% were specialists. Salary: 53.8% had a salary <20,000 Saudi Ryall. Mean work experience duration 2.0 ± 0.8 years	To assess the level of job satisfaction To assess factors contributing to the dissatisfaction of Saudi physicians in PHC centers	- 63% were satisfied with the nature of work in the primary healthcare centers - 25.2% were satisfied with the payment. - 83.2%, were dissatisfied with the contingent rewards and - 76.5% were dissatisfied with the fringe benefits. - None of the specialists were satisfied with the work compared to 10.6% of the general practitioners. Only 6.7% were satisfied with the contingent rewards, and 9.2% were satisfied with the fringe benefits. The overall level of satisfaction about work in the primary healthcare centers, only 7.6% were satisfied, 49.6% were ambivalent, and 42.9% were dissatisfied. Other factors that were associated with dissatisfaction but to a nonsignificant level (P >0.05) were longer the duration of work at the same primary healthcare entre, higher income, or none-specialists. Comments: For Saudi primary healthcare physicians, low financial incentives (contingent rewards and fringe benefits) impose a negative impact on job satisfaction. On the other side, the nature of work has had the most positive impact on job satisfaction. Further studies and interventions are needed to further improve job satisfaction amongst national Saudi physicians.

Author/year/ region in Saudi Arabia	Study design/ methods	Population and setting	Aim	Main results, comments, and recommendations
Bawakid et al., 2018	Cross-sectional	Profession: Saudi family physicians Period: 1/1/17- 1/10/17 Total: 116 family physicians in Jeddah region and 180 Eastern regions) System: PHC centers, Ministry of Health Regions: Jeddah and Eastern Region. Respondents: 237 Response rate: 74.4%, n = 134 Eastern Region vs 89% (n = 103) of Jeddah region. Gender: 159 (67.1%) Female Mean age: w 37.8 ± 5.7 years. Married (n = 206, 86.9%). Experience <10 y: 195(82.1%). Mean working hours 5.79 ± 3.19 h/d Mean patients/outpatient clinic: 24 ± 8 patients.	to assess the level of professional satisfaction and to compare and identify the factors potentially associated with professional satisfaction/ dissatisfaction among family physicians.	Overall satisfaction rate: 147 (62%) of respondents. Male doctors were less in number yet more satisfied (71%). FPs of the Eastern Region were slightly more satisfied (63.4%) when compared with 59.2% of Jeddah but not significantly (P >0.05) Most study participants think of themselves as inferior to other specialties. Similarly, the majority perceived that the community and doctors of other specialties all consider them as inferior specialties. Factors significantly associated with professional dissatisfaction included family physicians having the opinion that they were not respected by community members [OR 2.7, CI: 1.24-5.97, *P* = 0.012] and family physicians' perception of being inferior to other specialties (OR 13.59, CI: 4.98-37.07, P < 0.001). Most satisfied family physicians were content with their clinical job and did not desire any additional administrative work (n = 155, P < 0.001). Teaching/training postgraduate residents was the only additional duty in which around 61% (n = 144) FPs showed interest. **Comment:** A better self-job-esteem and participation in academic and research work are important positive factors that should be investigated and utilized to improve the job satisfaction level of Saudi family physicians.

Author/year/ region in Saudi Arabia	Study design/ methods	Population and setting	Aim	Main results
Al-Muallem et al., 2019	Cross-sectional	Region: Riyadh, Participants: Pharmacists Total surveyed: 515 Respondents: 325 (63%) 63.4% were government employees Gender: 57.8% F Age 25-30: 35.7% Nationality: 78.2% were Saudis Settings: public & private hospitals/ primary healthcare centers, community pharmacies, primary healthcare pharmacies, industrial pharmacies, and academic pharmacies. Marital status: 61.8% married. Work status: 88.1% worked 36-44 hrs/week 96.6% were full-time.	To assess JS, work commitment & ITL among pharmacists in different healthcare settings in SA Factors affecting JS Marital status, nationality, salary, level of education, working hours, place of work …	- Most (73.7%) of the pharmacists were satisfied (39.1% satisfied and 24.6%, slightly satisfied) with their current job, and 61.2% were likely to leave their job despite the degree of satisfaction reported and 14.3% reported unsafety to patient. - 29% were dissatisfied with variable degrees. - 61.9% had the intention to leave. Predictors of pharmacists' intentions to leave in multiple logistic regression analysis were job satisfaction and work commitment (OR=0.923; 95% CI: 0.899 to 0.947; p<0.001 and OR=1.044; 95% CI: 1.014 to 1.08; p=0.004, respectively), whereas demographic characteristics did not affect. Sufficient freedom to use own judgment in pharmacists' job was an important factor in job satisfaction but salary stood as the most significant factor related to JS (p 0.047) Although the pharmacists surveyed were satisfied and committed to their current job, they had the intention to leave suggesting a very complex interplay between job satisfaction and intention to leave. Comment: Further research is recommended to clarify why pharmacists in Saudi Arabia have the intention to leave their pharmacy practice job and how to satisfy their unmet needs of better job satisfaction and retention of such an important specialty in the primary healthcare domain.

Author/year/ region in Saudi Arabia	Study design/ methods	Population and setting	Aim	Main results
Mirza et al., 2020	Cross-sectional	Profession: surgical healthcare professionals Facilities: King Abdullah Medical City, King Faisal Hospital, and Al-Noor Specialist Hospital, Makkah, Saudi Arabia serving as primary healthcare facilities and delivering primary healthcare for pilgrims during pilgrimage time Number: 146 participants: Qualifications: 28 (19.18%) consultants, 61(41.78%) specialists and 57 (39.04%) residents. Gender: 118(80.8%) were males. Nationality: 79(54.5%) non-Saudis The mean age was 37.47±9.94 years.	to assess the job satisfaction of working during Hajj, and to determine the potential predictors of overall job satisfaction in Hajj and non-Hajj periods.	This is a peculiar study where the hospital assigned work as primary healthcare and specialized hospitals for pilgrims had any medical or surgical issues. Overall job satisfaction scores in the Hajj period were slightly better than none in -Hajj period but the difference was not significant (5.53 ±1.19 vs 5.40±1.3; $p>0.05$). During the Hajj period, the surgeons were significantly more satisfied in terms of „amount of variety in work“ ($p<0.05$), while they were significantly dissatisfied about „physical working condition“, „hours of work“ and „attention paid to suggestions“ ($p<0.05$). Comments: Working as a healthcare provider during Hajj may be an exciting experience and an excellent learning opportunity, as it represents the largest mass gathering in the world, with people coming from almost all countries. associated with an increased amount of responsibility and workload which may constitute the major factor that counterweighs the variety of work on the satisfaction scale. Religious and spiritual factors are potential factors that need to be further examined to help improve the job satisfaction of health care providers working under different conditions.

Author/year/ region in Saudi Arabia	Study design/ methods	Population and setting	Aim	Main results
Alqahtani et al., 2018.	Cross-sectional	Orthodontists Study population: All orthodontists registered with the Saudi Orthodontist Society having work experience in the Kingdom. Region: national level. respondents: 161 (13.4%) Nationality: 57.8% Saudi, 42.2% were non-Saudi. Gender: 33.5% females Age <30: 13.7% 31-40: 46%, 41-50: 24.8 Training experience: 44.1 in SA and 23.6%Arab Qualification: Board 55.3%, MSc 24,2% Work experience: 16-25y 16.8%, 3-8y 39.1, 9-15 y 18.6%, <3 y = 25.5%	To assess level of job satisfaction among orthodontists in relation to some significant intrinsic and extrinsic factors that generally affect their performance.	The majority (80.7%) were satisfied with orthodontics as their profession irrespective of their gender and depicted a higher level of passion and commitment although they do not have adequate time for their personal life. The vast majority (88.2%) reported that orthodontic specialty was my first choice. Only 4.4% showed dissatisfaction, whereas the remaining 14.9% were moderately satisfied with orthodontics as a profession. Factors affecting or associated with satisfaction/dissatisfaction: The majority (56.2%) showed reservations over having ample time for their family life. A marginal majority (52.8%) strongly agreed that they are assigned significant paperwork. Likewise, 66.5% showed moderate dissatisfaction over time adherence by the patients. Comments: - Free well in a career choice is an important asset in satisfaction. - The working efficiency of orthodontists may be significantly enhanced by reducing paperwork and improving patients' compliance with appointments.

Author/year/ region in Saudi Arabia	Study design/ methods	Population and setting	Aim	Main results
Al Jazairy et al., 2014	Cross-sectional .	All dental assistants working in public and private institutions who were able to understand the DASS questionnaire (in English) were included, whereas others not fluent in the English language were excluded. Region: Riyadh 8 public and 6 private Public participants: 349 (70.1) Period: 5 months (2/2013 onwards) Respondents: 498 (72.1%) Nationality: 111 (22.3) Saudis Gender: 417 (83.7%) females Age: 41.9%<30, 32.6% 30-40y Mean age: 34.19 ± 8.70 (20 to 58). Credentials: Dental degree 306 (61.4), Diploma in Dental Assisting 67 (13.5) Years of experience: ≤10 339 (69.5) >10 = 30.5%	to assess the influence of professional and personal characteristics on job satisfaction among dental assistants.	The mean score for overall job satisfaction was 3.86 (satisfied) out of 5. Among the work environment factors, the highest mean score, 4.26 (satisfied), was obtained for quality of service, and the lowest mean score, 2.78 (neutral), was obtained for the perception of income. Income and general prospects of the profession were significantly associated with overall job satisfaction. Five important factors were related to job satisfaction: 1)Professional and personal life, 2)quality of service, 3) perception of income, 4) prestige, and 5) self-respect Dental assistants were considerably satisfied with their jobs despite differences in professional formation standards. Regarding the perception of income 77 (15.5%) were satisfied, 265 (53.4%) were neutral, and 154 (31.0%) were dissatisfied. Regarding the quality of service: 454 (91.2%) were satisfied.

Table 2: Characteristics of the included studies

Sample size and characteristics

The sample size of included studies ranged from 143 to 508, with a total of 2251; 741 were nurses [6,93], 498 dental assistants [94], 380 physicians [73,95], 325 pharmacists [89], 161 orthodontists [88]. Job satisfaction of 146 surgeons working during Hajj as primary healthcare workers at specialist or tertiary care facilities was also included and compared to their work during none-Hajj time as an interesting experience because the primary care of during more than 3 million pilgrims gathered in a few days is distributed on all field hospitals as well as all other hospitals in the Holy City of Makkah and Jeddah including large hospitals.

The gender of most of the nurses included in all the studies was female while, surgeons and orthodontists were mostly males. The age of most nurses, assistant dentists, pharmacists was relatively young (<30 years) for the majority indicating a relatively young workforce which will probably have an impact on their job satisfaction over time as age is an important factor reported.

There was a significant similarity between studies in the methodology (all were cross-sectional) with a good rate of response to the survey or questionnaire (63-89%; only orthodontists study [88] was 13%.

Regions of Saudi Arabia

Studies covered a wide geographical area of Saudi Arabia. Of the 8 studies identified for the review, one was a national study [88] but the rate of response was low (13%) and was limited to orthodontists. Three studies were conducted in Jeddah, 2 studies in Riyadh, 2 studies in the Eastern Region, 2 studies covering 2 different regions (Hassa and North; Jeddah and Eastern Region, 1 study in Jizan, and 1 study from the North Region.

The publications reported many aspects of job satisfaction including workplace satisfaction, and performance. Seven (87.5%) publications reporting directly on job satisfaction indicated that the majority (62-92%) of the responders were satisfied with their jobs; only the study by Almalki, et al. reported that the majority were dissatisfied with their quality of working life which is one of the major factors that can affect job satisfaction. However, the aim of the study was not to assess job satisfaction in its entirety [6].

Job Satisfaction amongst Physicians Working in the Primary Healthcare Centers (n= 3)

In the study by Allebdi and Ibrahim, the study sample included 143 Saudi physicians working at 45 primary healthcare centers in the Western Region of Jeddah during the period 1/3/2016 -31/9/2016. The median age was 32.8 ± 5.6 years (range 23-49 years). This publication highlighted the pivotal impact of financial incentives (contingent rewards and fringe benefits) on job satisfaction among primary healthcare physicians.

The authors reported that 63% of the physicians were satisfied with the nature of work in primary healthcare centers, 25.2% were satisfied with the payment. Yet, 83.2% were dissatisfied with the contingent rewards and 76.5% were dissatisfied with the fringe benefits. The longer duration of work in the same primary healthcare facility was weakly correlated with a higher dissatisfaction, P=0.054.

Bawakid, et al. reported an overall satisfaction of 62% among Saudi family physicians working at the primary healthcare centers of the Ministry of Health in Jeddah (n=116) and the Eastern Region (n=180) [73]. The participants were surveyed between 1/1/2017 and 1/10/2017 with an overall 80% response rate. Females represented two-thirds of the workforce surveyed (67.1%). The mean age was relatively young (37.8 ± 5.7 years) and 82.1% had a relatively short experience (<10 years). Additionally, the vast majority were married (86.9%) implicating the potential impact of marital and family commitments on work. The average working hours was 5.79 ± 3.19 hours per working day. The patients' burden per outpatient clinic was relatively large (24 ± 8 patients).

However statistically insignificant (P>0.05), family physicians in the Eastern Region were slightly more satisfied (63.4%) when compared with those working in Jeddah (59.2%). Unfortunately, most participating family physicians considered their jobs inferior to other specialties, and the majority perceived that the community and physicians of other specialties were considering family physicians as inferior specialties.

Job dissatisfaction was associated with having the opinion that they were not respected by community members [odds ratio (OR) 2.7, 95% confidence interval (CI): 1.24-5.97] and family physicians own perception of being inferior to other specialties (OR 13.59, 95% CI: 4.98-37.07). Teaching postgraduate residents was the only additional duty that family physicians (61%) described as interesting.

Mirza, et al. presented very interesting data about the job satisfaction of surgeons representing different levels of specialization (residents, specialists, and consultants) working at specialized large centers during the days of Hajj [96]. This multicentre cross-sectional included King Abdullah Medical City, King Faisal Hospital, and Al-Noor Specialist Hospital, Makkah, Saudi Arabia. Of the 146 participants, 28 (19.18%) were consultants, 41.8% were specialists, and 39% were residents. The mean age of the participants was 37.47±9.94 years. The vast majority (80.8%) of participants were males. Surgeons with Saudi nationality contributed 45.5% of the participants. Overall job satisfaction scores in the Hajj period were slightly better than none -Hajj period but the difference is not significant (5.53 ±1.19 vs 5.40±1.3; p>0.05). The participants were significantly more satisfied in terms of the amount of variety in work (p<0.05)

during the Hajj period although they were significantly dissatisfied concerning the physical working conditions, working hours, and attention paid to their suggestions ($p<0.05$). Working as a healthcare worker during Hajj was described as an exciting experience and excellent learning opportunity, as it represents the largest mass gathering in the world, with people coming from almost all countries. Although the religion of participants was not detailed, it is known that the three hospitals are located in a region where most, if not all their participants are Muslims offering primary healthcare to Muslim pilgrims during the holy month of Thee-Alhijjah in the holy city of Mekkah.

Job Satisfaction among Nurses Working in the Primary Healthcare System (n= 2)

In the female-only population of nurses, El Gilany and Al Wehady reported that 87% and 92% of nurses, respectively, were satisfied with their workplace and the role assigned [93]. Female nurses assigned to female and pediatric wards or clinics were more satisfied (95.7%) than those assigned to other wards / clinics (84.3%). Of the participating nurses, 208 (89.3%) were <30 years and 62% were married. Additionally, the majority (98.7%) of nurses said that they would not accept working with male patients. The impact of family needs and the central role of females in social and family life was evident in their preference of one-shift duty to be able to comply with their family and societal commitments.

Almalki et al. studied 508 nurses in the primary healthcare system of the southern state of Jazan; 72.2% were Saudis and 67.3% were females [6]. The study aimed to investigate the impact of quality of work-life on the turnover rate in primary healthcare centers. The authors detected that nurses were dissatisfied with their work-life, with almost 40% indicating a turnover intention from their current primary healthcare centers.

The following risk factors were significantly associated with a higher dissatisfaction and/or turnover intention: gender (being males), positional tenure <4 years, or organizational tenure <4 years, and lower salary. Overall, 26% of the variance in turnover intention was explained by the quality of working life ($P < 0.001$) and ($R2= 0.263$) [90].

Job Satisfaction amongst Dental Assistants Working in the Primary Healthcare System (n= 1)

The study by Al Jazairy, et al. included dental assistants (n=498) who were working in public (n=8) and private institutions (n=6). Of them, 70.1% were working at public facilities. Females represented the vast majority (83.7%) of participants. The mean age was 34.19 ± 8.70 years (20-58 years) [94]. The main qualifications of participants were Dental degree 306 (61.4%) and Diploma in Dental Assisting 67 (13.5%). Only 111 (22.3%) were Saudi. The majority of participants (69.5%) had <10 years of experience.

The mean score for overall job satisfaction was 3.86 out of 5 and the highest mean score was obtained for quality of service 4.26 while the lowest mean score was obtained for the perception of income 2.78. The study could not appreciate a significant difference in the level of satisfaction based on nationality. Income and general prospects of the profession were significantly associated with overall job satisfaction.

Job Satisfaction amongst Pharmacists Working in the Primary Healthcare Centers (n= 1)

In Al-Muallem and Al-Surimi study, 515 pharmacists licensed by the Saudi Commission for Health Specialties were surveyed, and 325 (63%) responded [89]. Saudi nationalities represented 78.2% and females represented a modest majority (57.8%) and more than a third (35.7%) were young (25-30 years). Participants were working in both public and private hospitals, community chain pharmacies, community independent pharmacies, primary care center pharmacies, industrial pharmacies, and academic pharmacies. Of the participants, 61.8% were married, 63.4% were government employees working in public hospitals or primary healthcare centers, and 96.6% were full-time employees. Most of the pharmacists were satisfied (39.1% satisfied and 24.6% slightly satisfied) with their current job and 61.2% were likely to leave their job despite the degree of satisfaction reported and 14.3% reported unsafety to patients. Also, 29% were dissatisfied with variable degrees and 61.9% had the intention to leave. The most important predictors of pharmacists' intentions to leave were related to job satisfaction and work commitment (OR=0.92; 95% CI: 0.90- 0.95 and OR=1.04; 95% CI: 1.01-1.08, respectively), whereas demographic characteristics had no significant impact. Salary stood as the most significant factor related to job satisfaction ($p=0.047$). Although the surveyed pharmacists were satisfied and committed to their current job, they had the intention to leave.

Job Satisfaction amongst Orthodontists Working in the Primary Healthcare Centers (n= 1)

In Alqahtani et al. study, the majority of orthodontists (80.7%) were satisfied with orthodontics as their profession irrespective of their gender, and 88.2% indicated that orthodontic specialty was their first choice depicting a higher level of passion and commitment even though they did not have adequate time for their personal life [88]. Only 4.4% showed dissatisfaction, whereas the remaining 14.9% were moderately satisfied with orthodontics as a profession. The study population was a mix of a slight majority (57.8%) of Saudis and 42.2% of non-Saudi. Although the survey was sent nationally to all orthodontists registered with the Saudi Orthodontist Society having work experience in the Kingdom, only 161 (13.4%) responded representing the lowest response rate among all studies. Besides, 61% were relatively young (<40 years), only a very small minority (13%) were <30 years, and

nearly two-thirds had short experience (≤8 years).

Regarding factors associated with job satisfaction, 56.2% of respondents reported having ample time for their family life, 52.8% were dissatisfied with the paperwork, and 66.5% showed moderate dissatisfaction with time adherence by the patients. Most studies had low to average quality as most studies did not describe their selection process, failed to select a representative sample, did not control for important confounders, and did not assess job satisfaction using validated tools (Table 3).

Study ID	Selection	Comparability	Outcome
El-Gilany and Al-Wehady, 2001	**	--	*
Almalki et al., 2012	***	*	**
Allebdi and Ibrahim, 2020	***	*	*
Bawakid et al., 2018	**	*	*
Al-Muallem et al., 2019	**	*	*
Mirza et al., 2020	**	*	*
Alqahtani et al., 2018	**	*	*
Al Jazairy et al., 2014	***	*	*

Table 3: Quality assessment of the included studies.

Discussion

Job satisfaction in the healthcare setting is an important indicator of the quality of healthcare services offered by healthcare workers to their patients. Therefore, assessing job satisfaction in the field of health management is essential because job satisfaction can affect the quality of healthcare services [97]. Besides, job satisfaction is a fundamental indicator used to evaluate the quality of a healthcare setting, as the role of healthcare workers in this healthcare setting is vital for achieving its goals. The presence of healthcare workers who are satisfied with their job can enhance productivity and the quality of healthcare service provided by the healthcare setting [97].

In this study, I systematically retrieved studies that assessed job satisfaction among healthcare workers at different primary healthcare centers in Saudi Arabia. As shown in the results section, these studies showed heterogeneous findings related to the prevalence and associations with job satisfaction among healthcare workers in the country. For example, in the study by El-Gilany and Al-Wehady [93], the great majority (92%) of nurses working in primary health centers were satisfied with their workplace and the role assigned while most of the nurses participating in the study by Almalki et al. [6] were dissatisfied with their job and workplace. Other studies showed different prevalence rates of job satisfaction: 80.7% in the study that was conducted by Alqahtani, et al. [88] on orthodontists, 76.5% in the study that was conducted by Aljazairy, et al. [94] on dental assistants, 73.7% in the study that was conducted by Al-Muallem, et al. [89] on pharmacists, and only 7.3% in the study that was conducted by Allebdi, et al. on physicians [95].

The heterogeneous results across studies have several explanations. First, most of these studies were conducted in a single healthcare setting or assessed healthcare workers from one region. For example, most of the nurses participating in El-Gilany and Al-Wehady study [93] were from Al-Hassa, all nurses in Almalki et al [6] study were from Jazan, all physicians in Allebdi et al [95] study were from Jeddah, all pharmacists in Al-Muallem and Al-Surimi [89] study were from Riyadh, and all surgical healthcare professionals in the Mirza, et al. [96] study were from Makkah. Therefore, none of these studies can claim representativeness. It could also be speculated that workload in some Saudi regions is heavier than in other regions and healthcare settings in big cities and urban areas have better facilities than their counterparts in rural areas. This could partially explain the higher job satisfaction rates in the studies conducted in Riyadh. Moreover, since job satisfaction is considered an indicator of the quality of life [97], we cannot separate the healthcare setting from the surrounding city where the investigated healthcare setting is located. In cities that provide a higher quality of life, healthcare workers residing in these cities may be keener to express their job satisfaction compared to other cities providing a lower quality of life. This finding also refers to the need to conduct a wide-scale national study to assess job satisfaction among healthcare workers across Saudi Arabia.

Second, the previous national studies used different assessment tools to measure job satisfaction and most of these tools were created by the authors themselves [6,73,88,89,93-95]. Moreover, different studies used different definitions for job satisfaction. For example, El-Gilany and Al-Wehady [93] assessed satisfaction with the workplace and the role assigned, Almalki et al. [6] assessed satisfaction with work-life, and Bawakid et al. [73] assessed satisfaction with the job as a whole. On the other hand, Allebdi et al. [95] were more specific and assessed satisfaction with the nature of work, payment, contingent rewards, and fringe benefits. Al Jazairy et al. used a score from one to five to assess five items: professional and personal life, general prospects, quality of service, perception of income, and prestige and self-respect [94]. Approaches of formulating questions and arranging questionnaires can affect the responses and consequently affect the final results [98]. Also, apart from the study by Al Jazairy et al. [94], the reliability of these tools was not examined by the authors.

Even though Al Jazairy, et al. [94] tested the reliability of the five elements included in their tool to assess job satisfaction, three elements of this tool had low reliability with Cronbach's alphas of 0.66, 0.58, and 0.31. Thus, it seems important for future national studies to use reliable assessment tools to examine job satisfaction among healthcare workers in Saudi Arabia.

Third, the included studies were conducted on healthcare workers with different roles (physicians, nurses, orthodontists, surgeons, and assistants). Since the investigated healthcare workers have different job descriptions and requirements, it should be expected that they would have different satisfaction rates. This explanation is supported by a recent study conducted on healthcare workers in primary healthcare settings and managing people with COVID-19 in Saudi Arabia [99]. The study aimed to examine the occupational risk factors for workplace stress among healthcare workers and showed that role conflict, role ambiguity, and lack of social support were risk factors for job stress and even turnover intention. However, role conflict, role ambiguity, and lack of social support were more obvious among nurses than physicians, and physicians than paramedics, and paramedics than administrative workers [99]. Based on the findings of this study, it can be concluded that healthcare workers with different roles face different workplace challenges and as a consequence can show different job satisfaction rates. Therefore, future national studies have to consider such differences and recruit large study populations to allow stratifying results by the job. Also, healthcare organizations in Saudi Arabia should consider these variations in future interventions.

Fourth, the retrieved studies were conducted throughout a long period (between 2001 and 2020). Throughout this period, long-term health reform was adopted by the Saudi governments, and healthcare services have developed enormously. This improvement was represented in raising the share of the Saudi Ministry of Health in providing healthcare services to more than 60%, more than tripling the budget of the Saudi Ministry of Health, establishing infrastructure to help in expanding the curative and preventive services, providing hospitals and primary healthcare centers with updated equipment and lab facilities, investing in medical education by building tens of faculties of Medicine, Dental Medicine, Pharmacy, Allied Health, and Medical Sciences, providing free programs to train healthcare workers, and implementing a comprehensive primary healthcare program that enjoys accessibility and affordability [52,100]. Therefore, it could be expected that job satisfaction will not stay the same with the improvement in the national healthcare system.

Fifth, there were miscellaneous reasons that could justify the results in each study. For instance, El-Gilany and Al-Wehady explained the high job satisfaction rate among nurses in their study by the fact that Saudi women nurses were given the advantage to select the hospitals and primary healthcare centers where they were working; therefore, they tended to select the most suitable and comfortable workplaces [93]. The authors even noticed that the satisfaction rates were higher in remote and rural areas because nurses were working in their villages, which minimized their stress. This finding was supported by the fact that more than 95% of the surveyed nurses said that they would refuse to move to a different primary healthcare center or hospital. It should be noted that remote and rural areas in Saudi Arabia have strict conservative traditions which explain the finding that the great majority of female nurses said that they would never examine a male patient, and male patients, according to the same traditions, did not ask female nurses to examine them. So, it could be concluded that those nurses found their comfort zones in their working places. In Alqahtani et al. [88] study on orthodontists, the high satisfaction rate was explained by the fact that most respondents reported that they had chosen their specialty as a first choice. So, what the authors named "professional growth" would be the reason for the increased job satisfaction. In the study by Al Jazairy, et al. [94] on dental assistants, the relatively high satisfaction rates could be attributed to a significant proportion of the participants coming from developing countries with poor workplace conditions in their home healthcare settings, and the workplace conditions including the salaries in Saudi Arabia were much better when compared to those in their homelands. This explanation could be confirmed by the fact that non-Saudi dental assistants in this study were more satisfied with their personal and professional life, salary, and self-respect and prestige than Saudi dental assistants [94].

It should be noted that job dissatisfaction among healthcare workers is not a problem that solely affects the healthcare system in Saudi Arabia but most healthcare systems in the developed and developing countries as well. Lu and colleagues conducted a systematic review of the literature to assess job satisfaction among hospital nurses and retrieved 59 studies published between 2012 and 2019 [101]. The authors, in line with my findings, could find heterogenous job satisfaction prevalence rates that were mostly attributed to the varying healthcare systems, different sociodemographic and occupational characteristics of the investigated nurses, and incoherent study designs and sampling approaches.

Herein, I highlight some previous international studies that assessed job satisfaction among healthcare workers worldwide. In a study conducted on 462 healthcare workers who were recruited by a multistage random sampling approach in India, only 24.7% were satisfied with their working conditions, 66% with their fringe benefits, 74.6% with their promotion facet [102]. The study also showed higher levels of uncertainty and low self-esteem among the dissatisfied healthcare workers [102]. In China, job satisfaction was assessed among 5845 healthcare. On a scale from one to six, the mean score of job satisfaction was 3.99 [103]. The

study suggested several associations with job satisfaction such as the low work stress, the decreased work-family conflict, and the better doctor-patient relationship [103]. In Ethiopia, a multi-center study assessed job satisfaction among 98 anesthetists [104]. The study detected that 46.9% of participants were satisfied with their job. The distribution of their satisfaction rates with different work elements was as follows: control of responsibility (59.2%), social interaction (55%), salary and benefits (51%), recognition (49%), professional opportunity (46.9%), work schedule (43.9%), and coworker relationship (37.8%) [104]. In Greece, one study assessed job satisfaction among 457 randomly selected healthcare workers [105]. Job satisfaction included relations with patients, family roles, emotions, and sexual life. On a scale from one to five, the mean score for general satisfaction was 4.5 suggesting a high job satisfaction prevalence and this score was even higher among healthcare workers in the mental health sector 4.9 [105]. In Spain, one study assessed job satisfaction among 546 healthcare workers in one hospital [106]. The study showed that 77.2% of the surveyed healthcare workers were satisfied with their job and higher job satisfaction prevalence rates were detected among female and old healthcare workers than male and young ones [106]. In the UK, a recent quantitative and qualitative study has shown that out of 1742 surveyed nurses, 67% were dissatisfied with their job and felt demoralized [107]. Missed care, lack of support, staffing issues, and failures in leadership were suggested, in the qualitative section, to be associated with job dissatisfaction [107]. In Egypt, job satisfaction was assessed among nurses on the frontlines managing COVID-19 patients in two hospitals (a fever hospital and a general hospital) [108]. The study showed satisfaction rates of 51% among nurses in the fever hospital and 41.9% among nurses in the general hospital. Workload, stress, stigma, biosecurity measures, and infection risk were determinants for job dissatisfaction [108]. In Australia, a cross-sectional online study investigating job satisfaction among 786 nurses showed that most nurses were satisfied with general practice (77%) and did not intend to leave their jobs (86%), however, those who showed lower job satisfaction rates were more likely to express their turnover intention [109]. These international studies confirm that job dissatisfaction among healthcare workers is a worldwide phenomenon.

Unfortunately, most of the included national studies did not assess the associations with job satisfaction. Herein, I will cite some examples of studies that examined potential associations with job satisfaction. In El-Gilany and Al-Wehady study, age, sex, residence, marital status, region, work duration did not differ between those who reported or did not report place and role satisfaction [93]. However, those who were assigned to female or pediatric wards were more satisfied with their place and role than those who were assigned to other wards. This could be partially explained by the conservative traditions in Saudi Arabia that do not allow female nurses to examine male patients, thus, the investigated nurses might have considered these wards, where examining male patients were not possible, safe places where they could do their work and respect their traditions [93]. Still, it should be noted that the previous findings were based on univariate analyses, and multivariable regression analyses were not conducted. So, the possibility of confounding variables cannot be excluded. In the study by Al Jazairy et al., age, sex, educational qualifications, working hours, nationality, and years of experience were not associated with the overall job satisfaction, however, it could be seen that some variables were associated with specific elements of job satisfaction [94]. For example, non-Saudi nationalities were more satisfied with their professional and personal life compared with their Saudi counterparts that could be explained by the larger social cycle of non-Saudi dental assistants than Saudi ones [94]. Another explanation could be the high possibility of stigma associating with some medical assistant jobs in Saudi Arabia. Also, working in private places was associated with more satisfaction with a personal and professional life that could be explained by the flexible working hours in the private sector and more satisfaction with salaries that could be understood given the higher salaries of the private sector compared with public sectors in the country [94]. These higher salaries might have contributed to the satisfaction with personal and professional life. Female dental assistants were more satisfied with their salaries than male dental assistants. This could be explained by the social structure of the Saudi society that obliges men to carry all financial burdens in the household. Moreover, those who reported more hours of work were less satisfied with their salaries than those who reported fewer working hours. This finding may indicate that the benefits and bonus system in the contracts of dental assistants should be revised [94]. On the other hand, the work environment had a significant impact on overall job satisfaction. In the multinominal regression analyses, the following statements were determinants for job satisfaction: deciding to study dentistry regardless of obstacles, not thinking about leaving dentistry, believing that dentistry was the job where the participant could do best, encouraging children to pursue the dental career if they were interested in dentistry, satisfying with the income, and satisfying with the benefits [94].

Of note, my systematic review had some strengths. First, this is the first systematic review, to the best of my knowledge, to systematically assess studies that investigated job satisfaction among healthcare workers in primary healthcare centers in Saudi Arabia. Second, in addition to searching multiple databases, I reviewed the reference sections of the included studies and relevant review articles to look for other studies. Third, the pros and cons of the included studies were highlighted. Fourth, justifications of results were given whenever possible in the light of the occupational characteristics of healthcare workers in primary healthcare centers and social characteristics of the Saudi society.

Fifth, to understand the results of the national studies, comparisons with other international studies from developing and developed countries were made.

Still, several limitations should be addressed as well. First, all the included national studies had cross-sectional designs; therefore, causality cannot be implied. Thus, national studies with prospective cohort designs are needed. Second, all the included studies used self-administrated questionnaires to assess job satisfaction and other covariates; therefore, recall bias, information bias, and social desirability bias cannot be excluded. Third, most of the included studies did not comprehensively assess the sociodemographic and occupational characteristics of job satisfaction, and even studies that did so either ignored important variables that could be confounders or did not conduct multivariable regression analyses to detect the independent associations. Fourth, most of the included studies were conducted on healthcare workers from one region; therefore, these studies could not claim representativeness and their results could not be generalized; given the wide variability in the workplace conditions and sociodemographic factors across different regions in Saudi Arabia. Fifth, most of the included studies did not use validated questionnaires for data collection and did not assess for reliability, and the only study that examined the reliability of job satisfaction items detected that three out of the five items had low reliability. Sixths, in the Almalki et al. study, job satisfaction was the exposure while the turnover intention was the outcome; therefore, job satisfaction was not the core of the study [6]. Seventh, because of the heterogeneity of study assessment methods, result plans, and definitions of job satisfaction, merging the results in a meta-analysis was impossible. Eighth, although I searched multiple databases, I made no efforts to retrieve unpublished data such as master's and Ph.D. theses. Ninth, only studies published in English were considered. Tenth, the studies were published across a relatively long period (2001 to 2020) during which significant improvements in the primary healthcare centers and the healthcare system throughout Saudi Arabia were achieved making older studies less representative.

Conclusion

This systematic review indicated that the prevalence of job satisfaction among healthcare workers in primary healthcare centers varied widely by job role: 92% among nurses, 80.7% among orthodontists, 76.5% among dental assistants, 73.7% among pharmacists, and only 7.3% among physicians [6,73,88,89,93-95]. Although most studies abstained from investigating the sociodemographic associations with job satisfaction, the studies that made formal analyses failed to find significant associations [6,93]. One exception was that one study detected lower job satisfaction among males and one study detected that Saudi citizens might have lower job satisfaction than none-Saudi ones. It could also be speculated that culture could play an important role in determining job satisfaction among female nurses in Saudi Arabia, yet this claim needs to be investigated in future studies. Some occupational characteristics and workplace environment elements were found to be associated with job satisfaction such as high salaries, incentives, selecting the specialty as a first choice, and working close to home. Therefore, I strongly recommend the health authorities in Saudi Arabia consider these sociodemographic and occupational characteristics to improve job satisfaction among healthcare workers in primary healthcare centers in the country. For example, assigning nurses to primary healthcare centers should consider their address and the culture they come from. The pay system for healthcare workers should consider giving bonuses and incentives for extra working hours especially in the field of dental assistance. Moreover, the question of why non-Saudi dental assistants were more satisfied with their jobs than Saudi ones needs to be investigated. Saudi health authorities should consider the possibility of stigma associating with this job. This problem could be partially solved by awareness programs that enlighten people about the importance of these jobs. Also, the fact that many healthcare workers preferred the private sector to the public one and were more satisfied with their private job than their public one needs to be studied. The incentives provided by the private sector and the flexibility in selecting working hours could be the cause of this preference. Therefore, the healthcare system reform in Saudi Arabia should solve this problem by giving incentives to healthcare workers and allow them to choose their working hours whenever possible.

In addition, the included national studies had their own conclusions. For example, Almalki, et al. study concluded that nurse turnover was a significant challenge for many primary healthcare centers and job dissatisfaction was a chief risk factor for this turnover and suggested a few approaches to increase nurse retention and improve their performance and productivity [6]. In El-Giany and Al-Wehedy study, the authors highlighted the fact the nursing was seen as traditionally unacceptable [93]. The authors believed that religious and social leaders could play a larger role in mitigating stigma associating with nursing in Saudi society. Also, this study indicated that reducing the working hours segregating sexes and scheduling one-shift duties could improve job satisfaction in rural and remote primary healthcare centers. In Allebdi and Ibrahim study, the authors concluded that contingent rewards and fringe benefits were associated with reduced job satisfaction among Saudi physicians while the nature of work positively impacted their job satisfaction [95]. The study by Bawakid et al. concluded that emotional exhaustion was the most important feature of burnout among physicians working in primary healthcare centers in Saudi Arabia and this emotional exhaustion was attributed to violence against healthcare workers, lack of support services, and slow administrative transactions [110]. In the study by Al-Muallem and Al-Surimi, the authors concluded

that pharmacists' job satisfaction was strictly associated with their work commitment and their turnover intention [89]. In the study by Alqahtani, et al., the authors concluded that most orthodontics in primary healthcare centers had a passion for their professional growth and development despite suffering from heavy paperwork and lack of time to spend with family [88]. In the study by Mirza et al., the authors concluded that job satisfaction did not change during Hajj and non-Hajj periods [96].

However, the limitations of the included national studies would lead us to two main conclusions. First, extrapolating the results of the previous studies to all healthcare workers in primary healthcare centers in Saudi Arabia should be done very cautiously [111-113]. Second, there is an utmost need to conduct a national study to assess job satisfaction among healthcare workers in primary healthcare centers in Saudi Arabia that consider the limitations of the previous studies. The characteristics of the suggested study should be as follows: First, this study should adopt a multi-stage random sampling approach to seek representativeness. Second, a large study population is needed, and the sample size calculation process should consider stratifying the results by their job role (physicians, nurses, paramedics, etc.). Third, stratifying the results by region of primary healthcare centers should be considered. Fourth, sociodemographic and workplace characteristics should be studied as potential risk factors for job dissatisfaction. Of the sociodemographic risk factors, age, sex, social status, nationality, income, social support, self-esteem, personal and sexual life, and living conditions should be considered. Of the workplace risk factors, role ambiguity, role conflict, working hours, tenure, availability of updated equipment, working schedule, availability of selecting the specialty, job stress, and violence against healthcare workers should be studied [114,115]. Fifth, potential consequences of job satisfaction such as the quality of life, the quality of healthcare, patient satisfaction, and turnover intention should also be studied. Mediating and moderating variables should also be investigated whenever possible. Sixth, the proposed study should adopt a validated data collecting tool to assess job satisfaction. Seventh, qualitative assessments via interviews could add several merits in explaining the results of the quantitative section. Eights, a prospective cohort design would be needed to imply causality.

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