

2024

## Patient Satisfaction Among Saudi Academic Hospitals: A Systematic Review

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### Original Publication Citation

Alasiri, A. A., Alotaibi, S. A., & Schussler, E. (2024). Patient satisfaction among Saudi academic hospitals: A systematic review. *BMJ Open*, 14(5), 1-7, Article e081185. <https://doi.org/10.1136/bmjopen-2023-081185>

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# BMJ Open Patient satisfaction among Saudi academic hospitals: a systematic review

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**To cite:** Alasiri AA, Alotaibi SA, Schussler E. Patient satisfaction among Saudi academic hospitals: a systematic review. *BMJ Open* 2024;**14**:e081185. doi:10.1136/bmjopen-2023-081185

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<https://doi.org/10.1136/bmjopen-2023-081185>).

Received 20 October 2023

Accepted 27 March 2024



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## ABSTRACT

**Purpose** To systematically review the patient's satisfaction (PS) levels within academic hospitals in Saudi Arabia from January 2012 to the end of October 2022.

**Data sources** Articles were gathered from PubMed, ProQuest, Google Scholar and Web of Science.

**Study selection/data extraction** This review identified studies that assessed PS in Saudi Arabian university hospitals. Articles published before January 2012, as well as commentary letters, conference papers, theses and dissertations, were excluded. The study employed the five domains of PS as outlined by Boquiren *et al*. Two independent reviewers independently identified qualifying studies, used the Joanna Briggs Institute tools to evaluate the quality of each study and extracted essential data from each article.

**Results** Out of the 327 studies identified during the search phase, 11 met the project's objectives and criteria. Six studies reported overall PS rates ranging from 78% to 95.2%, with only one study indicating lower PS levels in emergency departments. Most studies demonstrated that technical skill is the primary domain influencing PS in academic hospitals.

**Conclusion** There is a need for further investigation to explore the factors influencing PS using standardised survey instruments suitable for Saudi culture. Contradictory results regarding PS are clearly evident in the literature; therefore, it is advisable to standardise the assessment process to reduce discrepancies within the academic hospital setting in Saudi Arabia.

## INTRODUCTION

Patients' satisfaction (PS) has been defined by the number of scholars; however, there is no consensus on how they defined it. One of the widely used definition is 'a healthcare recipient's reaction to salient aspects of the context, process, and result of their service experience'.<sup>1(p.189)</sup> While (PS) has been a centre of attention as a popular and legitimate indicator of healthcare quality.<sup>2,3</sup> Through qualitative and quantitative measurements, researchers can assess a wide range of PS categories (eg, interpersonal behaviour, communication or financial aspects) to determine whether patients' expectations are aligned with the actual practices in their care. Similar to developed countries,<sup>4,5</sup> Saudi Arabia, through its Vision 2023 engineered by the Crown Prince

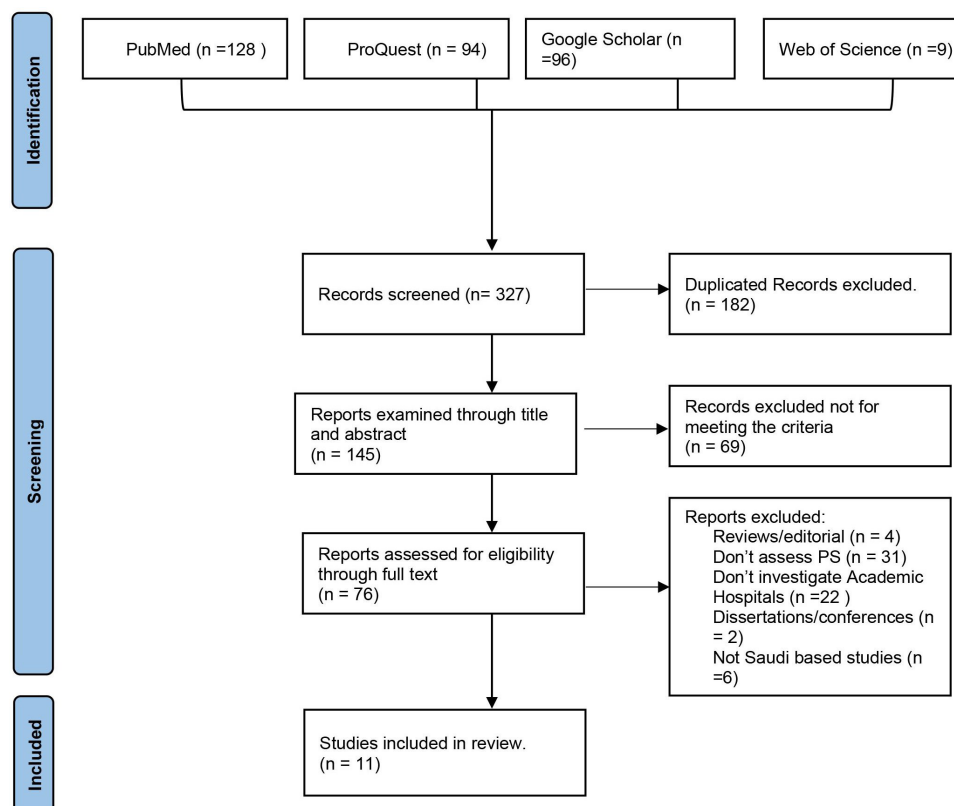
## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ It is the first systematic review project conducted on patients' satisfaction levels with health services provided by academic health centres in the Kingdom of Saudi Arabia (KSA).
- ⇒ The project's objective is to address the significant gap in terms of patient satisfaction within academic health centres, aligning with the Ministry of Health's Vision 2030.
- ⇒ This research employs the Preferred Reporting Items for Systematic Reviews and Meta-Analyses, a globally acknowledged protocol for conducting and reporting systematic reviews, enhancing the credibility of the findings.
- ⇒ The number of studies included is limited, which may not fully represent patient satisfaction among academic health centres in the KSA.

Mohammed Bin Salman, endeavours to achieve the highest healthcare services standards, especially in improving PS.<sup>6</sup> However, current PS research has struggled to arrive at the best policy recommendation because of the scarcity of data.<sup>7</sup>

A 2018 systematic review identified 10 articles published in 17 years that studied PS in primary health centres of the Saudi Ministry of Health.<sup>8</sup> This report found that PS was associated with income and educational level. They concluded that healthcare consumers were unlikely to be completely satisfied with the primary care centres because they typically visit the emergency room instead. Moreover, another systematic review investigated the quality of care in Saudi university hospitals from 2004 to 2014. Only four articles discussed PS from the four indicators examined. They concluded that poor medical treatment communication, language barriers and low medical personnel perceptions about PS lowered patients' satisfaction.<sup>9</sup> However, they did not explicitly investigate PS as a whole but rather as a subsequent characteristic of quality of care.

Because Saudi Arabia aims to build 23 university hospitals by the end of 2025,<sup>8</sup> a need arises to systematically review the



**Figure 1** Systematic review process following PRISMA guidelines. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

current literature to bridge the scientific gap regarding PS from academic health centres in Saudi Arabia. The main objectives of this systematic review are to aggregate recent satisfaction levels in academic health centres in Kingdom of Saudi Arabia (KSA), explore the factors associated with PS and examine the existing tools to assess PS.

## METHODS

This qualitative systematic review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines for conducting a systematic review,<sup>10</sup> as shown in [figure 1](#).

### Search strategy

We searched for scientific studies using the established databases PubMed, ProQuest, Google Scholar and Web of Science. Articles were considered if published between January 2012 and the end of October 2022. This time restriction was applied to obtain the most relevant information regarding PS from academic health centres in the KSA. The research keywords were adopted from prior studies,<sup>7,8</sup> and additional terms were developed to retrieve relevant articles. Online supplemental table 1 provides a comprehensive list of the keywords used in each database. Two researchers (AAA and SAA) independently conducted searches to ensure consistency of findings before proceeding to review each article independently. In the event of a disagreement, a coauthor (ES) served

as the mediator. He facilitated constructive discussions to ensure adherence to established review guidelines and collaboratively reached a consensus with the first two authors.

### Eligibility criteria

The inclusion criteria for this systematic review were studies that (a) assessed PS as an outcome variable, (b) were conducted at an academic healthcare centre in Saudi Arabia and articles and (c) were written in English language. Articles were excluded if they were (a) published before 2012, (b) were commentary letters, conference papers, theses or dissertations or (c) were systematic reviews. These criteria were established to ensure that the included studies are relevant to the topic of investigation.

### Quality appraisal

The Joanna Briggs Institute (JBI) tools for cross-sectional and observational studies were employed to assess the quality of various sections of each article, including methodology, design, analysis and biases within each study. The JBI cross-sectional checklist consists of 8 questions while the observational checklist contains 11 questions. There are only four possible responses (yes, no, unclear and not applicable).<sup>11</sup> Two independent reviewers (AAA and SAA) assessed each article using the checklists provided in [table 1](#).

**Table 1** The JBI evaluation results for each article included

First author, (year)	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Cross-sectional studies								
Abass (2021) <sup>20</sup>	Y	Y	U	U	N	NA	Y	Y
Al Humud (2020) <sup>19</sup>	Y	Y	Y	NA	Y	NA	Y	Y
Al Malky (2021) <sup>22</sup>	U	U	Y	Y	N/A	N	N	Y
Shahrani (2015) <sup>23</sup>	N	Y	Y	N	N	N	N	Y
Alshareef (2021) <sup>21</sup>	Y	U	U	U	N	N	N	Y
Al Shehri (2015) <sup>12</sup>	Y	Y	U	U	N	N	U	Y
Balhaddad (2018) <sup>13</sup>	U	U	N	Y	N	N	N/A	Y
Bin Traiki (2020) <sup>18</sup>	Y	Y	Y	Y	N	N	Y	Y
Bokhary (2022) <sup>14</sup>	Y	Y	Y	Y	N	NA	Y	Y
Mahrous (2012) <sup>17</sup>	U	Y	Y	Y	N	N	Y	Y
Observational studies								
Al Harethy (2017) <sup>22</sup>	U	Y	N	U	Y	Y	N	Y

The checklist questions and the responses were recorded as yes, no, unclear or not applicable. The questions are listed below: Checklist for cross-sectional studies: Q1: Were the criteria for inclusion in the sample defined? Q2: Were the study subjects and the setting described in detail? Q3: Was the exposure measured validly and reliably? Q4: Were objective, standard criteria used for measurement of the condition? Q5: Were confounding factors identified? Q6: Were strategies to deal with confounding factors stated? Q7: Were the outcomes measured validly and reliably? Q8: Was appropriate statistical analysis used?. Checklist for observational studies: Q1: Were the two groups similar and recruited from the same population? Q2: Were the exposures measured similarly to assign people to exposed and unexposed groups? Q3: Was the exposure measured validly and reliably? Q4: Were confounding factors identified? Q5: Were strategies to deal with confounding factors stated? Q6: Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)? Q7: Were the outcomes measured validly and reliably? Q8: Was the follow-up time reported sufficient to be long enough for outcomes to occur? Q9: Was the follow-up complete, and if not, were the reasons for the loss to follow-up described and explored? Q10: Were strategies to address incomplete follow-up used? Q11: Was appropriate statistical analysis used?.

JBI, Joanna Briggs Institute; N, no; NA, not applicable; U, unclear; Y, yes.

Articles with poor quality scores were not excluded because the purpose of this study was to update the current literature and to compile a large quantity of data to inform policy-makers and interested researchers in this area of research. Additionally, because there are not many publications on Saudi PS, excluding low-quality articles would result in insufficient information and unsatisfactory results.

### Data extraction

After finalising the selection of articles and completing the appraisal process, both investigators (AAA and SAA) independently extracted data from each article using Excel spreadsheets. The extracted data included study design, study location, sample size, level of PS, type of questionnaire and the findings of the studies, as presented in table 2.

Because articles investigate a diverse number of factors that assess PS and due to the lack of consensus among researchers on categorising the factors, Boquiren *et al* provided a sufficient layout for classifying factors into domains. These domains are (1) communication attributes, (2) relational conduct, (3) technical skill/knowledge, (4) personal qualities and (5) availability/accessibility.

### Patient and public involvement

None.

## RESULTS

### Characteristics of data

Out of 327 publications, 11 studies met the study requirements to be included in this systematic review. 10 articles used a cross-sectional design, whereas only 1 followed the guidelines of a prospective observational design.<sup>10</sup> The study's sample size ranged from 41 to 353 participants. Most studies (7 out of 11) were conducted in Riyadh, the capital of Saudi Arabia. In contrast, the remaining studies were distributed throughout four major cities: Abha, Jeddah, Madinah and Dammam. Six studies used standardised and validated questionnaires, whereas four developed instruments or used instruments from previous studies. One study did not explicitly state any instruments were used to measure PS.<sup>12</sup> Table 3 presents the PS domains in each article.

### PS indicators

Two primary methods were identified for representing PS. The first method involves using percentages while other articles describe it through mean values. Collectively, most articles indicated that PS levels range from 78% to 95.2%. Notably, the study of Abass *et al* stood out, revealing that PS for domains ranges from 37% to 43%. However, according to the authors, this improvement was unsatisfactory because it was still below 50%. Additionally, dental health services showed a subcategory of mean levels ranging from 4.27 to 4.38.<sup>13</sup> Another study

**Table 2** A general description of each article's characteristics

First author, (year)	Study design	Location of study	Survey	Sample size	Satisfaction level	Main findings
Abass (2021) <sup>20</sup>	Cross-sectional	King Fahad Medical City, Riyadh	Emergency Department Consumer Assessments (ED-CAHPS)	200	29%–61%	Patients indicated satisfaction with information regarding follow-up care and symptoms to observe on discharge. However, patients were dissatisfied because of the lack of details about the side effects of the new medication and the scarcity of time spent with medical staff.
AlHarethy (2017) <sup>15</sup>	Prospective observational	King Abdelaziz University Hospital in Riyadh	Rhinoplasty outcomes evolution (ROC)	103	21.5%–31.3% increase	Patients' satisfaction with function and shape increased by 21.5% and 31.3% after the surgical operation, respectively.
Almalky (2021) <sup>22</sup>	Cross-sectional	King Khalid University Hospital in Riyadh	Telepsychiatry Care Satisfaction Questionnaire	141	94.3%	Patients were satisfied with the telepsychiatry services, especially during COVID-19. Participants indicated that the personal qualities of providers and the availability and accessibility of a service were of particular satisfaction.
Shahrani (2015) <sup>23</sup>	Cross-sectional	King Khaled University Hospital in Abha	Self-developed	72	87.1%	Patients indicated their satisfaction with the technical skills dentists possess.
Alshareef (2021) <sup>21</sup>	Cross-sectional	King Abdelaziz University Hospital in Riyadh	Prior study	41	83.3%	Patients were satisfied with the telemedicine service overall.
Alshehri (2015) <sup>12</sup>	Cross-sectional	King Khalid University Hospital in Riyadh	N/A	353	95.2%	Patient satisfaction was high after anaesthetic care.
Alhumud (2020) <sup>19</sup>	Cross-sectional	King Abdelaziz University Hospital in Riyadh	Patient Satisfaction Questioners PSQ18	163	80.4%	Patients were satisfied with the Tele-retinal programme; however, there is a low satisfaction level regarding access to medical staff.
Bin Traiki (2020) <sup>18</sup>	Cross-sectional	King Khalid University Hospital in Riyadh	Hospital Consumer Assessment of Healthcare	223	85.35%	Patients appreciated being informed and respected by medical staff.
Bokhary (2022) <sup>14</sup>	Cross-sectional	Educational tertiary healthcare, Jeddah	Quality of care in hospitalities scale (EQS-H)	235	The mean score of EQS-H was 65.4	Patients were satisfied with the medical information and the interpersonal communication with medical staff.
Balhaddad (2018) <sup>13</sup>	Cross-sectional	Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia	Prior studies	262	The mean score ranges from 4.27 to 4.38	The patients are satisfied with the dental services provided.
Mahrous (2012) <sup>17</sup>	Cross-sectional	College of Dentistry at Taibah University in Madinah	Prior study	162	79.5%	The majority of patients have a high level of satisfaction with the professional quality of interaction, treatment and availability.

indicated that patients' overall mean satisfaction rate was 65.4.<sup>14</sup> Moreover, an observational study reported that the satisfaction rate increased after postoperative surgery for function and shape by 21.5% and 31.3%, respectively.<sup>15</sup> Detailed findings for each article are presented in [table 2](#).

## Domains of PS

### Communication attributes

The domain of communication refers to the interaction between a healthcare provider and patients. It includes listening skills, eliciting patient information, providing explanations, patient understanding, providing information and addressing patients' concerns.<sup>16</sup> This review has identified five articles that investigated the communication effects on PS. These studies revealed that

communication attributes played a critical role in justifying PS. More precisely, 5 of 11 studies revealed that the better communication interaction with patients, the higher the percentage of satisfaction is vice versa.<sup>14 17–20</sup> For instance, Abass *et al* reported that patients expressed satisfaction with the information about symptoms to observe after discharge and with medical follow-up care. However, the lack of information regarding a new medication's negative effects left patients unhappy. Another instance was that patients described their extreme satisfaction with the medical personnel's ability to listen to their concerns and clearly explain their current health issues.<sup>18</sup> Correspondingly, Bokhary *et al* emphasised a great deal of communication with patients seeking medical attention.



**Table 3** Articles that investigate each domain

First author (year)	Communication	Relational conduct	Tech skills	Personal qualities	Availability and access
Abass (2021) <sup>20</sup>	☑				☑
AlHarethy (2017) <sup>15</sup>			☑		
Almalky (2021) <sup>22</sup>			☑	☑	☑
Shahrani (2015) <sup>23</sup>			☑		
Alshareef (2021) <sup>21</sup>		☑	☑		☑
Alshehri (2015) <sup>12</sup>			☑		
Alhumud (2020) <sup>19</sup>	☑		☑		☑
Bin Traiki (2020) <sup>18</sup>	☑	☑			
Bokhary (2022) <sup>14</sup>	☑	☑			
Balhaddad (2018) <sup>13</sup>		☑			
Mahrous (2012) <sup>17</sup>	☑		☑		☑
Total	5	4	7	1	5

☑ Investigated.

They found that patients rated the communication ability of medical staff as very good, whereas ‘excellent’ could have been achieved. Mahrous and Hifnawy reported that 77% of patients were satisfied with dentists’ interaction with them.

#### Relation conduct

How medical personnel treat their patients is a key element of relation conduct. It includes respecting patients, allowing them to make decisions, gaining patients’ trust, making patients feel heard and treating their issues seriously.<sup>16</sup> The relation conduct domain was found in four studies.<sup>13 14 18 21</sup> For example, Al Shareef *et al* revealed that patients trusted the mode of communication via telemedicine and expressed their desire to use it again. Moreover, Balhaddad noted that patients expressed extraordinary satisfaction with dentists’ treatment plans as patients participated in their treatment plans, and their questions were answered. Bin Traiki *et al* denoted that patients were thrilled with the treatment of respect and courtesy they enjoyed during their medical interventions. Bokhary *et al* manifested patients’ satisfaction with medical personnel’s quality of care as ‘excellent’ because medical attention, trust and care were provided throughout their residence at the academic medical centre.

#### Technical skills

This domain focuses on patients’ perception of their doctors’ knowledge. Thus, it encompasses fundamentally how patients perceive the doctors’ knowledge about their case.<sup>16</sup> This domain was the most investigated by seven studies.<sup>12 15 17 19 21–23</sup> These articles collectively painted the importance of the technical skills of medical providers in justifying the patients’ satisfaction. For example, Alharethy *et al* revealed that patients boosted their satisfaction with medical outcomes after the surgery. This indicated that patients were unsure about the technical skills of doctors before the surgery. Another study found that

patients were in doubt about the doctor’s ability to diagnose diabetic retinopathy through photo screening only.<sup>19</sup> Similarly, Al Shareef *et al* noted that 18% of patients had concerns about medical assessment through telemedicine as they believed face-to-face treatment was optimum. Moreover, patients using telepsychiatry services indicated that doctors need more training before conducting such a session online.<sup>22</sup> However, patients’ happiness was observed because of dentists’ technical skills.<sup>23</sup> Additionally, almost all patients were satisfied with the technical abilities anaesthesiologists had performed to control their pain levels.<sup>12</sup> Mahrous and Hifnawy detailed that patients were content with the dentists’ technical skills as they ensured the quality of fillings and treatment.

#### Personal qualities

The domain explains some physicians’ characteristics, such as caring and humaneness.<sup>16</sup> Almalky *et al*’s study was the only study that addressed this category. They reported that patients expressed their satisfaction with psychiatrists’ thoroughness and carefulness.

#### Availability and accessibility

This domain focuses on doctors’ availability and accessibility and whether patients are taking the required time or are being rushed.<sup>16</sup> The domain was found in five studies.<sup>12 15–17 20</sup> On the one hand, a study indicated that high patient dissatisfaction was recorded as they were concerned that it would take a long time to be seen by a doctor.<sup>19</sup> Abass *et al* reported that unsatisfied patients indicated their complaints about doctors’ unavailability. On the other hand, Almalky *et al* demonstrated that patients using telepsychiatry services were happy with the amount of time and space provided by psychiatrists to express their concerns. Also, participants enjoyed online services as it was easy and convenient to have access to medical professionals.<sup>21</sup> Dental patients expressed high

satisfaction as they had fast service of seeing the dentists and getting treated.<sup>17</sup>

## DISCUSSION

Healthcare reform has been introduced in many countries, encompassing various objectives to improve the overall healthcare system, including enhancing PS. In the Netherlands, administrative reforms incorporated a competition mechanism in healthcare to improve patient efficiency and medical satisfaction.<sup>24</sup> In the SA, the Obama administration prioritised medical insurance as a key aspect of healthcare reform, seeking to strengthen the government's role and improve patient and medical staff satisfaction.<sup>25</sup> Similarly, in Saudi Arabia, health system reform was initiated to elevate service quality, with one of the goals being to meet PS in healthcare services.<sup>26</sup>

The factors influencing satisfaction levels are diverse, and the literature reflects varying results. For instance, there is an ongoing assessment of PS with health services offered by the public health sector in Saudi Arabia, reporting a satisfaction rate of approximately 81.51% in 2023.<sup>27</sup> Despite the availability of free healthcare services, patients tend to favour the private sector, where the satisfaction level was found to be higher.<sup>28</sup>

Technical skills found a main domain behind the PS level among patients in the academic health centre, which is similar to the literature that technical care is one of the significant determinants of PS in the Gulf countries.<sup>29</sup> The communication domain was ranked second among patients. In the Saudi health system, it is estimated that the proportion of healthcare providers will exceed 42 840 in 2030. However, only 17% of them will be Saudi, which evidently will impact the quality of communication channels and may hinder the privatisation of the health system.<sup>30</sup> Furthermore, another systematic review by Senitan *et al*<sup>8</sup> has indicated that communication with language barriers is considered the primary barrier to quality care by healthcare providers in Saudi Arabia. In primary healthcare centres, communication still appears to be the second main domain behind PS, and it is found that patients prefer visiting emergency care instead of primary healthcare for faster access to the services.<sup>8</sup> Therefore, there is a need to study the challenges faced by PS from the perspective of Saudi patients. Developing training programmes to enhance interpersonal skills would also be beneficial, especially for non-Arabic-speaking healthcare providers in hospitals. Additionally, healthcare leaders should play a role in mentoring these skills to improve overall outcomes. PS outcomes are crucial for quality assurance,<sup>31</sup> making it essential to understand patients' opinions and their needs to achieve the highest quality services possible.<sup>32 33</sup>

This review revealed a discrepancy between patients' experiences and the overall high satisfaction rates. In a study conducted in Kuwait assessing overall PS, the reported satisfaction rate was over 95%. However, when participants were asked about their satisfaction with

individual services, the average satisfaction rate decreased to around 88%.<sup>33</sup> This is similar to what Williams and Calnan found, which demonstrated that although overall consumer satisfaction levels were high, more detailed and specific inquiries uncovered higher levels of expressed dissatisfaction.<sup>34</sup> For example, Abass *et al* showed inconsistency in overall satisfaction with the information provided by healthcare providers, which is a subdomain of communication. It showed diverse values, with 34% satisfaction when patients were asked more detailed questions.<sup>20</sup>

Since the discrepancy in findings is expected in PS research and literature is scarce on PS, there is a need to craft a PS definition that reflects the Saudi context to prevent misleading outcomes. Additionally, the assessment of PS should involve the use of a valid and trustworthy scale. Employing theory-based interpretations and standardised scales can help identify areas that require focused attention. Furthermore, conducting more behavioural, cultural and sociodemographic studies is crucial for future PS projects.

## Limitation

The first limitation pertains to the number of studies; the number of included studies was small, and most were conducted in Riyadh. Likewise, the sample size was limited for many of the included studies. Consequently, the results may not represent PS in university hospitals across Saudi Arabia. Second, most of the research employed cross-sectional methodologies to assess PS, potentially introducing information bias. Third, the findings in several studies were vague or unintentionally misleading, resulting in inconclusive results. Lastly, there is a scarcity of studies that employed theory-based interpretations or frameworks to assess PS in the region.

## Conclusion

In conclusion, technical skill is a crucial factor for PS in academic health centres in KSA.

However, differences in findings from PS projects in healthcare suggest a need for implementing a unified tool for evaluating PS to ensure generalisability and minimise missed opportunities for service improvement. PS is a significant outcome indicator for any health system; improving its level will facilitate the reform of the health system in KSA to meet the vision of privatisation 2030. Furthermore, preparing healthcare providers, particularly those for whom Arabic is a second language, to understand Saudi culture is vital to bridging the communication gap with patients.

**Contributors** AAA conceptualised the project, formulated the methodology and authored the method section, abstract, methods, analysis and dissection, including limitations and conclusion. He appraised the studies and checked their qualities. SAA crafted the introduction, assessed the methodology, synthesised data from databases and compiled reports in Excel sheets. Additionally, SAA drafted the section on the analysis, focusing on the Domains of Patient Satisfaction. ES ensured the project's overall quality by scrutinising various project versions. Collaboratively working to enhance writing, ES also took on the responsibility of proofreading all sections of the project. All authors actively participated in the revision process and approved the final paper.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

**Patient consent for publication** Not applicable.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** Data are available in a public, open-access repository. All data relevant to the study are included in the article or uploaded as online supplemental information.

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