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RESEARCH ARTICLE

Evaluation of Levels and Determinants of Patient Satisfaction with Primary Health Care Services in Saudi Arabia: A Systematic Review and Meta-Analysis

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Abstract

Background The Saudi Ministry of Health makes continual efforts to provide high-quality preventive services through a large network of primary health care (PHC) centers. Patient satisfaction is integral to measuring health outcomes and the quality of these services.

Methods We searched the Cochrane, EMBASE, and Google Scholar databases for studies investigating patient satisfaction with PHC services in Saudi Arabia in the past 10 years. The risk of bias and heterogeneity across the included studies were assessed with Newcastle Ottawa scale and I^2 test, respectively. Review Manger version 5.311 was used for data analysis with the random effect model. The quality of evidence of each outcome was measured with the GRADE approach.

Results The review included 3302 Saudi residents from six observational studies conducted in different regions of Saudi Arabia. Most studies included in the review had low risk of bias regarding the studied domains. The review indicated moderate overall satisfaction with PHC services (77.00%) among participants. More than 60% of the participants (63.11% and 82.59%) were satisfied with the continuity and communication of PHC services, respectively, whereas, less than half (41.73% and 46.92%) were satisfied with the accessibility of the PHC services and the health education provided at these centers. Moreover, low satisfaction was found among older patients and those with low educational levels. Other sociodemographic factors did not determine patient satisfaction.

Conclusion and Recommendations This review indicated a moderate level of overall patient satisfaction with respect to the targeted satisfaction level for Saudi Ministry of Health 2023 PHC services of 85%. Additional efforts and continuing evaluation by health care providers will be crucial to address the weaknesses in PHC services.

Keywords PHC services · Saudi Arabia · Patient satisfaction · Consumer satisfaction

Abbreviations

PHC	Primary health care
MOH	Ministry of health
OR	Odds ratio
CI	Confidence interval
GRADE approach	Grading of recommendations assessment, development and evaluation

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1 Background

Primary health care (PHC) services in Saudi Arabia comprise a large network of PHC centers covering most of the country. The Saudi Ministry of Health makes continual efforts to provide high quality preventive services through these centers [1].

Patient satisfaction is defined as the extent to which patients feel that their needs and expectations are being met by the services provided. Patient "expectations are the core

of the concept of satisfaction and the outcome of seeking care, whereas the patients compare the experience against the expectations that they had" [2, 3].

Patient satisfaction is predicted by many factors, including accessibility, continuity of health care, treatment length, communication skills, and competence of health care staff. Satisfied patients are more likely to develop a good relationship with the health system and to adhere to prescribed medical treatments, thus improving both patient compliance and the continuity of care, and ultimately achieving better health outcomes [4].

Patient satisfaction with the provided health services is an integral component for measuring health outcomes and quality of care. This parameter is considered highly important for improving the quality and accessibility of healthcare services while controlling costs [5]. Assessing patient satisfaction and identifying the viewpoints of unsatisfied patients on health care services are important to identify potential areas for improvement. Thus, most health systems worldwide focus on patient satisfaction as a cornerstone in health care planning and delivery [6]. Therefore, this review was aimed at exploring patient satisfaction with PHC services in Saudi Arabia.

2 Objectives

1. Determine the level of patient satisfaction with PHC services in Saudi Arabia.
2. Study the determinants of this satisfaction.

3 Methods

3.1 Inclusion and Exclusion Criteria

The review included all available studies in the English language determining the level of patient satisfaction with PHC services in Saudi Arabia in the past 10 years. We excluded studies conducted outside Saudi Arabia and those investigating the satisfaction of healthcare providers.

3.2 Search Methods

We searched the Cochrane, Trip, EMBASE, and Google Scholar databases for eligible articles, and reviewed the reference lists of those articles to identify further studies. We used the following search terms: primary health care centers, OR Saudi Arabia and patients' satisfaction, OR consumers' satisfaction.

3.3 Trial Participants

The inclusion criteria were adult male or female Saudi residents visiting PHC centers.

3.4 Outcome Measures

The endpoint of this review was the level of overall patient satisfaction with PHC services. Other outcome measures included underlying factors that could potentially determine this satisfaction.

3.5 Data Collection and Extraction

Two authors independently conducted the research process. The abstracts of the searched articles were evaluated for the inclusion criteria. Eligible articles were collected and reviewed, and the following study characteristics were extracted: study design, setting, duration, objectives, participants, and outcome measures.

3.6 Assessment of Risk of Bias

Two authors independently assessed the quality of the included studied according to Newcastle Ottawa scale for observational studies. They assessed the risk of bias in terms of selection, comparability, and outcome bias, and assigned categories of low, unclear, or high risk of bias. With respect to selection bias, studies were considered to have a low, unclear, or high risk of bias if they scored 3, 1–2, or 0 points, respectively. For comparability bias, studies were considered to have a low, unclear, or high risk of bias if they scored 2, 1, or 0 points, respectively. For outcome bias, studies were considered to have a low, unclear, or high risk of bias if they scored 3, 2, or 1 point, respectively [7].

3.7 Assessment of Heterogeneity

The I^2 test was used to assess the heterogeneity across the included studies. On the basis of Higgins et al., we graded the heterogeneity as low/insignificant ($I^2 < 30\%$), moderate ($I^2 = 30–60\%$), substantial ($I^2 = 60–75\%$), or considerably significant ($I^2 > 75\%$) [8].

3.8 Assessment of Quality of Evidence

Two authors assessed the quality of evidence of each outcome measure independently. They graded the evidence as high, moderate, low, or very low, according to the four items in the Grading of Recommendations Assessment,

Development and Evaluation (GRADE) approach: study design, precision, heterogeneity, and directness [9].

3.9 Measurement of Outcome

We used Review Manger (RevMan) version 5.311 for data analysis with the random effect model [10]. Data are reported as odds ratios (ORs) with 95% confidence intervals (CIs).

4 Results

4.1 Search Results

We reviewed the titles of 94 articles and removed eight duplicate articles. Subsequently, the abstracts of 86 articles were reviewed, and 46 articles were excluded. The remaining 40 articles were assessed for the eligibility criteria. Six articles met the inclusion criteria and were included in the study. The details of this search process are explained in the PRISMA flow diagram (Fig. 1).

4.2 Characteristics of the Included Studies

This systematic review and meta-analysis included six cross-sectional studies [11–16] conducted in various regions of Saudi Arabia. All included studies were aimed at assessing patient satisfaction with PHC services, and most studies investigated the factors determining this satisfaction, primarily background variables. The characteristics of these studies are extracted and explained in Table 1.

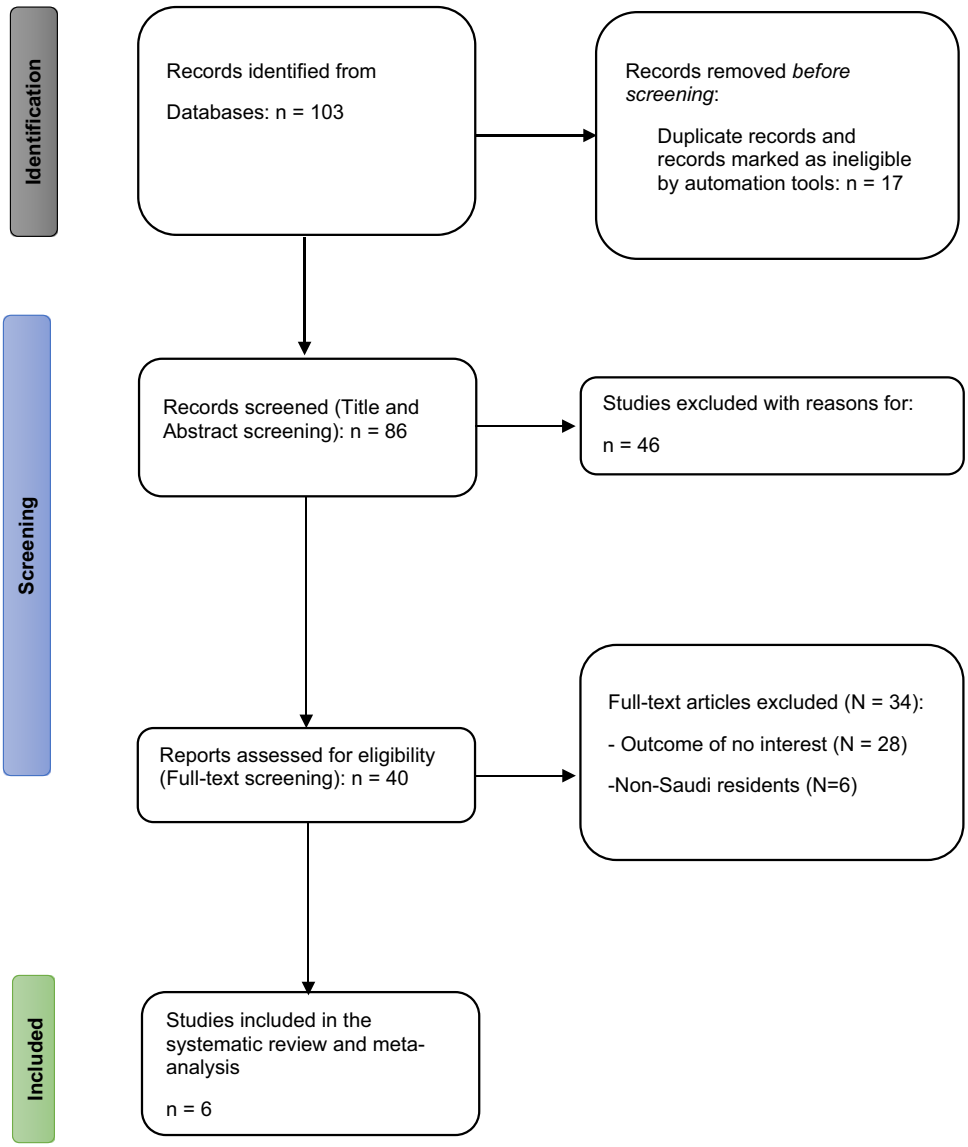

Fig. 1 Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) flow diagram

Table 1 Characteristics of the included studies

Study	Description	Study design	Setting/duration	Objectives	Participants	Outcome
Alfaqeeh et al. [11]	Access and utilization of PHC services, comparing urban and rural areas of Riyadh province, Kingdom of Saudi Arabia	Cross-sectional interview questionnaire survey	PHC centers in urban and rural areas of Riyadh province, Saudi Arabia, from January to July 2014	Examine factors influencing the access to, and experiences of, PHC centers in urban and rural areas of Riyadh province, Kingdom of Saudi Arabia	935 responses (495 urban and 440 rural) in people > 18 years of age who attended a recruiting PHC center	High satisfaction among patients at all PHC centers was recorded. Significant differences were observed between urban and rural PHC centers regarding different items
Makeen et al. [12]	Predictors and outcomes of patient satisfaction with PHC services in the Jazan region, Saudi Arabia	Cross-sectional interview questionnaire survey	PHC centers in Jazan region, Saudi Arabia, from January to March 2018	Evaluate levels and determinants of patient satisfaction with PHC services in Jazan region, Kingdom of Saudi Arabia	837 patients > 18 years of age attending PHC centers in Jazan region	Patient satisfaction was > 70%. Participants were highly satisfied with health care workers (91.6%), the administration (84.2%), the reception staff (83.5%), and respect for privacy (81.0%)
Ghazwani and Al-Jaber [13]	Satisfaction of patients with diabetes attending diabetic clinics at PHC centers in Abha city	Cross-sectional study	Two PHC centers (Al-Manhal and Qabel) in Abha city, Aseer region, Saudi Arabia, from March to July 2014	Assess patient satisfaction with the main aspects of PHC provided at the chronic disease clinic	600 patients with type 2 diabetes who registered at the two selected PHC centers	A total of 87% of patients were satisfied, 13% were dissatisfied, 44% were moderately satisfied, and 43% were highly satisfied
Almoajel et al. [14]	Patient satisfaction with PHC in Jubail city, Saudi Arabia	Cross-sectional study	PHC centers in SWCC Compound, Jubail city, Saudi Arabia, from November to December 2013	Assess patient satisfaction with Participation was voluntary and confidentiality was different aspects of primary health care services	200 patients visiting PHC centers in SWCC Compound, Jubail city, Saudi Arabia	Patients are generally fluctuated positively toward the level of general practice care; however, some aspects of care required improvement
Al Ali and Elzubair [15]	Physician practice and attendee satisfaction at a PHC center in Dammam, Saudi Arabia, in 2013	Cross-sectional study	PHC center in Dammam, Saudi Arabia, from June to August 2013	Estimate the proportion of physicians with a good patient rapport and the proportion of satisfied attendees	374 attendees and 27 physicians	A total of 51.9% of physicians had good patient rapport, and 50.5% of attendees were satisfied with the rapport with their physicians
Mohamed et al. [16]	Patient satisfaction with PHC centers' services in Majmaah city, Kingdom of Saudi Arabia	Cross-sectional facility-based study	Four PHC centers in Majmaah city, Saudi Arabia in 2015	Determine patient satisfaction with the PHC services provided in Majmaah city, Saudi Arabia, to identify the reasons underlying satisfaction	370 patients, of both sexes and all ages, attending the four PHC centers	The patient satisfaction level was 82%. The reasons underlying satisfaction were cleanliness of the facilities and technical competency of the staff (33.1% and 24.2%, respectively)

Abbreviation: *PHC* primary health care

4.3 Trial Participants

The review included 3302 Saudi residents attending recruiting PHC centers in the following regions of Saudi Arabia: Jazan city ($N=837$) in Makeen et al. [12]; Abha city ($N=600$) in Ghazwani and Al-Jaber [13]; Riyadh province ($N=935$) in Alfaqeeh et al. [11]; Dammam city ($N=374$) in Al Ali and Elzubair [15]; Jubail city ($N=200$) in Almoajel et al. [14]; and Majmaah city ($N=370$) in Mohamed et al. [16]. The participants were ≥ 18 years of age, and 55.72% were men.

4.4 Risk of Bias Among the Included Studies

In the current review, the risk of bias in most studies was found to be low; high risk of bias was not found in any included studies. Nevertheless, selective bias in the study by Almoajel et al. [14], and outcome bias in the studies by Al Ali and Elzubair, Almoajel et al., Ghazwani and Al-Jaber, and Makeen et al. [12–15], had unclear risk of bias (Fig. 2).

4.5 Outcome Measures

The main outcome measure of the current review was overall patient satisfaction with PHC services. In addition, we measured patient satisfaction regarding the different items of PHC services and the determinants of this satisfaction. The overall patient satisfaction with PHC services among the participants in the six included studies was 77.0%. Patient satisfaction regarding the different items of PHC services

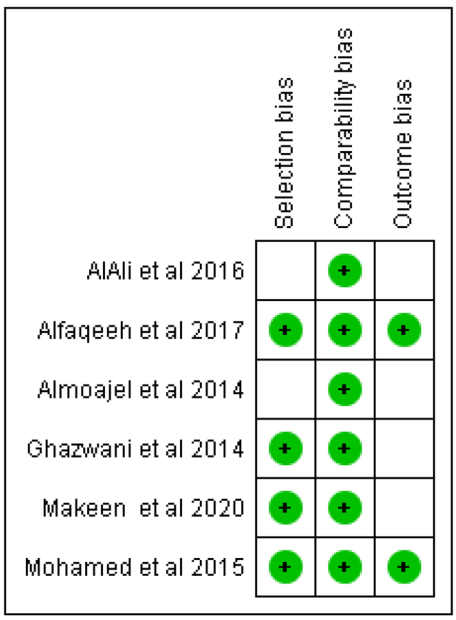

Fig. 2 Summary of risk of bias among the included studies, as judged by the authors

was reported in different ways among the included studies, as follows.

Al Ali and Elzubair [15] reported only the overall satisfaction (50.53%) and determinants of this satisfaction, e.g., age, ($P<0.0001$), educational level ($P<0.0001$), having chronic illness ($P<0.0001$), and having an appointment ($P<0.0001$).

Mohamed et al. [16] reported the overall satisfaction (81.7%) and reasons underlying this satisfaction, including cleanliness (33.1%), technical competencies of staff (24.2%), respect and good handling (23.2%), good services (8.3%), and others (11.2%).

In the study by Ghazwani and Al-Jaber [13], the overall satisfaction was 84.0%, and patient satisfaction with PHC services was reported as satisfaction with pre-clinical (40.0%), clinical (45.7%), and post-clinical (25.8%) services.

Almoajel et al. [14] found a very low overall satisfaction of 27.5%, and reported patient satisfaction with accessibility, continuity, humanness, comprehensiveness, and communication items.

In contrast, Makeen et al. [12] and Alfaqeeh et al. [11] reported overall satisfaction (70.11% and 87.27%, respectively) and patient satisfaction toward each service separately.

To examine patient satisfaction with the different aspects of PHC services, we summarized items into accessibility, continuity, humanness and communication, and availability of health education.

The pooled estimate of the overall satisfaction with the accessibility item was 41.73%, and the main points included satisfaction with the distance to the PHC center, working hours, and waiting times. The overall satisfaction with distance to the PHC centers was 45.81% in Alfaqeeh et al., Almoajel et al., Ghazwani et al., and Makeen et al. [11–14], (45.81%, 20%, 86.0%, 40.0%, and 69.72%, respectively). Alfaqeeh et al. and Almoajel et al. [11, 14] reported poor satisfaction with PHC working hours (13.83%). Approximately half (54.85%) the studied participants in Almoajel et al., Ghazwani et al., and Makeen et al. [12–14], were satisfied with the waiting times (38.5%, 40.0%, and 69.72%, respectively).

For the continuity item, the pooled estimate of overall satisfaction was 63.11%, and the main points included vaccination, follow up, medical records, and referral service. The pooled estimates of satisfaction with these items were 70.03%, 56.75%, 66.50%, and 61.02%, respectively, on the basis of Almoajel et al. and Makeen et al. [12, 14].

For the communication item, the pooled estimate of the overall satisfaction was 82.59%, comprising respect, good listening, confidentiality, communication with receptionists, and answering of questions by staff. The satisfaction levels for these items were 85.99%, 67.03%, 67.78%, 78.24%, and 64.89%, respectively, on the basis of Alfaqeeh

et al., Almoajel et al., Makeen et al., Mohamed et al., and Ghazwani and Al-Jaber [11–14, 16].

The last item was satisfaction with the availability of health education in the PHC centers. The pooled estimate for the satisfaction for this item was 46.92%, on the basis of Almoajel et al., Ghazwani and Al-Jaber, and Makeen et al. [12–14].

Figure 3 shows the forest plot analysis of overall patient satisfaction with PHC services among 1544 patients in four cross-sectional studies. Approximately three-fourths of men and women (73.70% and 74.68%, respectively) were satisfied with the PHC services, and the remainder were either not satisfied or unsure. Gender was not a significant factor in patient satisfaction (OR = 0.46, CI = 0.15–1.37, $P = 0.16$). Significant heterogeneity was observed in the analysis ($I^2 = 91\%$, $P < 0.00001$), which was attributable to the differences in the evaluation items among the included studies (i.e., methodological heterogeneity). We considered the quality of evidence of this outcome to be low, owing to significant heterogeneity and the observational designs of the included studies.

The forest plot of the determinants of patient satisfaction with PHC services is shown in Fig. 4. The analysis included 2440 participants in four included studies. The level of satisfaction was found to be low among patients older than 55 years and those with low educational levels (37.45% and 22.93%, respectively), and a significant difference was observed between studied groups (OR = 3.43, CI = 1.20–9.85, $P = 0.02$ and OR = 2.13, CI = 1.34–3.40, $P = 0.002$, respectively). Other sociodemographic factors did not determine patient satisfaction, including gender (OR = 0.46, CI = 0.15–1.39), marital status (OR = 1.13, CI = 0.71–1.81), and income (OR = 0.71, CI = 0.32–1.55). Significant heterogeneity was found in the analysis ($I^2 = 61\%$, $P < 0.03$). We judged the quality of evidence of this outcome to be low. We downgraded the quality by two levels because of the observational design of the included studies and the significant heterogeneity.

5 Discussion

5.1 Summary of the Main Results

The review included 3302 patients from six observational studies conducted in various regions of Saudi Arabia. The participants were Saudi residents ≥ 18 years of age attending PHC centers; 55.72% of the participants were men. Most studies included in the review had low risk of bias regarding the studied domains. Among participants, moderate overall satisfaction (77.00%) toward PHC services was found. More than 60% of the studied participants (63.11% and 70.83%) were satisfied with the continuity and communication items of PHC services, respectively. However, accessibility to PHC services and the health education provided had low patient satisfaction (41.73% and 46.92%, respectively). In addition, patients with low educational levels and those above 55 years of age had low satisfaction (22.93% and 37.45%, respectively). Other sociodemographic factors did not determine patient satisfaction.

5.2 Comparison with Findings from Other Studies

Patient satisfaction is considered a measure of healthcare quality and is a notable goal among many medical institutions globally [17]. Patient satisfaction is dynamic and thus requires continual assessment to ensure improvement in health services [18]. In this review, we analyzed published articles concerning patient satisfaction with PHC services in Saudi Arabia. We found an overall satisfaction among studied participants of 77%. This result is similar to those from studies conducted by Almuhanadi et al. and Al Emadi et al. [19, 20], who have found that approximately 75–80% of patients visiting PHCs in Bahrain and Qatar were generally satisfied.

Likewise, Owaidh et al. [21], have found a satisfaction level of 79.6% regarding facility cleanliness, quietness, and design among studied participants in Al-Baha city, Saudi Arabia. Moreover, Alshowair et al. [5], have found

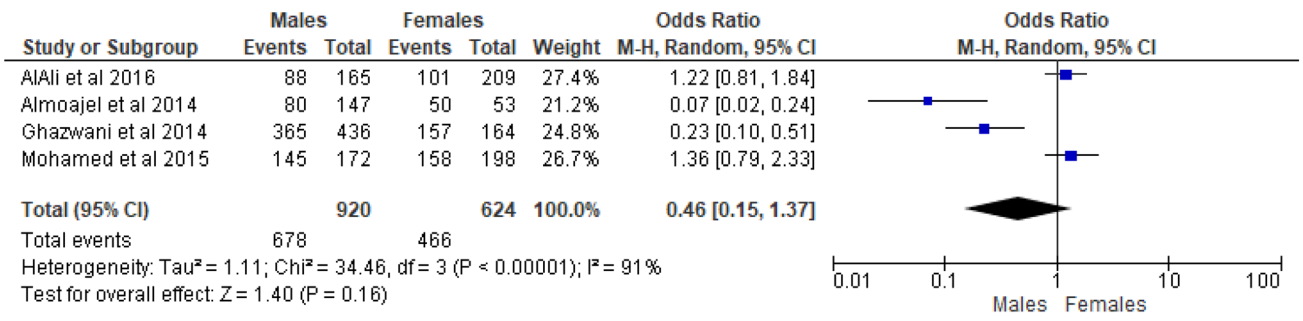

Fig. 3 Forest plot of overall patient satisfaction with primary health care services

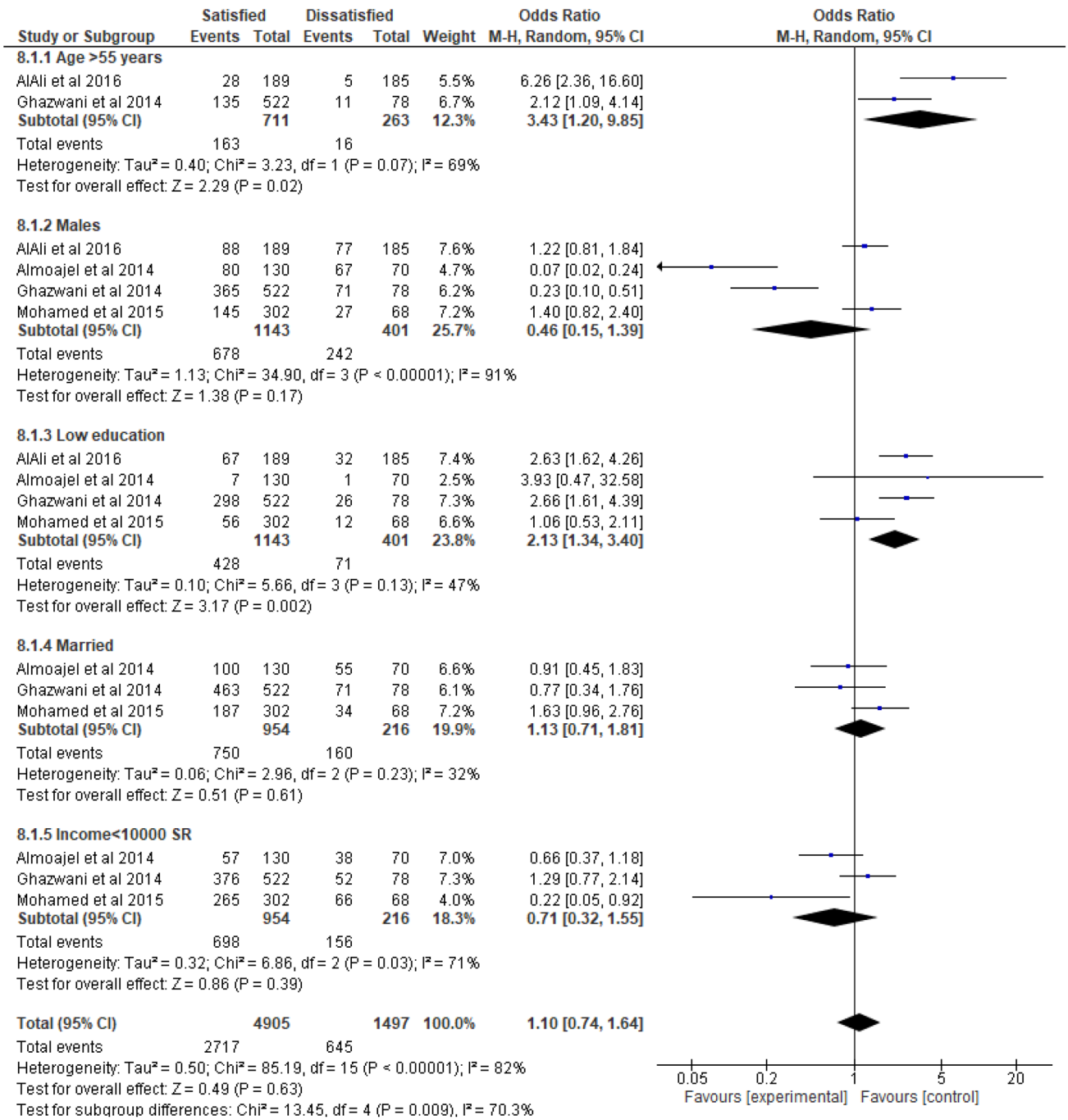

Fig. 4 Determinants of patient satisfaction with primary health care services

an overall patient satisfaction of 73.2% in specialized reference clinics in Riyadh, and high satisfaction regarding all service domains.

In contrast, lower satisfaction (62.4%) has been reported by both Al-Sakkak et al. in Saudi Arabia [1] and Gao et al. in rural China [22]. The latter study applied a methodological design for measuring patient satisfaction, which was suggested to reflect the actual performance of the medical teams and consequent effects on patients' health.

In contrast, Alshammari et al. [23], have studied patient satisfaction in six PHC centers in Hail city, Saudi Arabia. They have found relatively moderate overall patient satisfaction, as indicated by a mean score of 3.60 on a scale from 1 to 5. Similarly, Abdallah et al. [24] have found a mean

score of 3.68 for patient satisfaction in the same city. The higher level of satisfaction found in the current review might be explained by improvements in the quality of health care services as a result of the efforts of the Saudi Ministry of Health.

Nevertheless, the current review indicated that 63% and 71% of patients were satisfied with the continuity of care and communication from PHC staff, respectively. This finding was in line with those from studies conducted by Vainieri et al., Raivio et al., and Lautamatti et al. [25–27], which have revealed increased patient satisfaction associated with continuous assignment to specific physicians at each visit and adequate communication with those physicians. Similarly, Alshammari et al. [23] have reported the highest level of satisfaction with communication with staff, including friendliness, courtesy, personal interest, reassurance, respect, support, and time offered to the patients. However, Owaidh et al. [21] have reported opposite findings, in which communication had the lowest satisfaction among studied participants in Al-Baha city, Saudi Arabia; the authors have suggested that language barriers may explain this finding [28]. Responsiveness is defined as the non-medical aspects of treatment, such as the environment and interpersonal relationships between physicians and patients [29].

Nikoloski et al. [29] have examined health system responsiveness in Saudi Arabia by using national representative data, and have found overall high responsiveness across multiple dimensions.

For the accessibility item, we found a very low (41.73%) pooled estimate of overall satisfaction, including satisfaction with the distance to the PHC center, working hours, and waiting times. This finding was consistent with those from Alshammari et al. [23] and Abdallh et al. [24], who have found the lowest level of satisfaction for access to medical care, including the availability of physicians. This finding indicates that the accessibility item did not sufficiently improve since 2005 and requires more attention by health care providers. However, Al-Sakkak et al. [1] have found a moderate satisfaction score (62.4%) for care accessibility in Riyadh city, Saudi Arabia.

Although this review found that less than 50% of studied participants were satisfied with the health education provided in PHC centers, Hamadeh et al. [30], have reported that more than 70% of Lebanese patients are satisfied with health education services.

Previous studies have identified determinants of patient satisfaction with PHC services, including gender [31], easy accessibility of care, perceived physician competence [32], and younger physicians [33]. Other factors associated with high patient satisfaction include longer consultation times, the use of a regular doctor, and the continuity of health care services [30, 34]. In the current review, satisfaction was low among low educated patients and those above 55 years of age, and a significant difference between satisfied and dissatisfied patients was found. Similarly, Karaca and Durna [35] have reported that patients 56 years or older in Turkey have low satisfaction with health services. Nevertheless, Sitzia and Wood [36], have reported that older British individuals are more satisfied with health treatment. In addition, older British respondents have been reported to be happier, either because they are more sociable and welcoming than younger respondents, or because they have greater regard and concern for health care providers [37]. These findings are consistent with those from Al-Sakkak et al. [1] and Alshammari et al. [23]; the latter study has stated that older patients, particularly those with moderate income, are more satisfied with relationships with physicians and staff. Moreover, previous studies have found higher levels of satisfaction among people with lower education levels [1, 38]. Likewise, Nikoloski et al. [29] have found that health status, age, and nationality are the main variables predicting health system responsiveness.

In agreement with findings from Owaidh et al. [20] and Al-Sakkak et al. [1], other sociodemographic variables including gender, marital status, and income were not found to be significant factors affecting the satisfaction level among the studied participants. However, Alshammari et al. [23] have found higher satisfaction among female patients with low income.

5.3 Limitations and Potential Bias Encountered During the Review Process

In this systematic review and meta-analysis, we searched most major databases for eligible articles. The references of the selected articles were also searched to identify further studies. Two authors independently conducted all process in this review, and any disagreements were resolved by discussion. Therefore, bias was unlikely to have been introduced in this review. Nevertheless, the cross-sectional design of the studies included in the review is an important limitation that diminishes the quality of evidence of the outcome measure.

6 Conclusion and Recommendations

This review indicated moderate overall patient satisfaction with PHC services in Saudi Arabia. More efforts and continuous evaluation by health care providers will be crucial to address weaknesses in PHC services.

Author Contributions NMR conceptualized the study. NMR and ANA wrote and edited the review. All authors have read and agreed to the published version of the manuscript.

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Data Availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Conflict of Interest The authors have no relevant affiliations or financial involvement with any organization or entity with a financial interest in, or financial conflict with, the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties.

Ethical Approval Not applicable.

Consent to Publication Not applicable.

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