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SYSTEMATIC REVIEW

The acceptability of implementing patient-reported measures in routine maternity care: A systematic review

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Abstract

Introduction: Patient-reported measures (PRMs) are becoming popular as they might influence clinical decisions, help to deliver patient-centered care, and improve health care quality. However, the limited knowledge and consensus about the acceptability of implementing PRMs in maternity care hinder their widespread use in clinical practice, and evidence-based recommendations are lacking. This systematic review aims to synthesize available evidence on the acceptability of implementing PRMs in routine maternity care.

Material and methods: Literature on the implementation of PRMs in maternity care was electronically searched in six databases (PsycARTICLES, PubMed, Scopus, Web of Science, Cochrane Database of Systematic Reviews, and CINAHL), screened and selected for the topic of "acceptability". Theoretical Framework of Acceptability was used as the basic framework guiding data analysis and synthesis. Evidence was thematically analyzed and synthesized. Mixed Method Appraisal Tool and GRADE-CERQual approach were used to assess the quality of studies and evaluate the confidence in the review findings.

Results: Overall, 4971 articles were screened. From 24 studies, we identified five themes regarding the acceptability of implementing PRMs in routine maternity care: (1) user's action and behavior, (2) stakeholders' attitudes, (3) perceived benefits, (4) perceived challenges and risks, and (5) stakeholders' preferences and suggestions on implementation. While pregnant and postpartum women, health professionals and other stakeholders involved in maternity care were generally positive about the implementation of PRMs in routine care and recognized the potential benefits (eg health improvement, women empowerment, care and services improvement and healthcare system advancement), they pointed out possible challenges and risks in answering PRMs questions, responding to answers, and setting up integrated information systems as well as suggested solutions in the aspects of PRMs data collection, follow-up care, and system-level management. The confidence in the review findings was moderate due to methodological limitations of included studies.

Abbreviations: GRADE-CERQual, confidence in the evidence from reviews of qualitative research; PRM, patient-reported measure; TFA, theoretical framework of acceptability.

An Chen, Kirsi Väyrynen, Aydin Tekay, and Ganesh Acharya equally contributed to this study.

Conclusions: Available empirical evidence suggested that the use of PRMs in routine maternity care is acceptable among stakeholders involved in maternity care and the potential benefits of its integration in routine clinical practice to healthcare improvement has been recognized. However, possible challenges in data collection, follow-up care arrangement and system-level integration should be appropriately addressed.

KEYWORDS
acceptability, healthcare quality, implementation, maternity care, patient reported measure, pregnancy and childbirth

1 | INTRODUCTION

Patient-reported measures (PRMs), also known as self-reported measures (SRMs), are developed as assessment tools and usually structured as questionnaires for capturing patients' perspective of care outcomes (PROMs) and measuring their experiences whilst receiving care (PREMs).[1–4] PRMs have been regarded as driving elements of patient-centered care and value-based care.[5–7] There is growing interest in the systematic use of PRMs in clinical routines to standardize health care process and outcomes measurement, to assess the quality of care and to guide service improvement.[2,4,8] Using PRMs might be particularly important in maternity care, where traditionally less attention has been paid to the measurement of factors contributing to positive healthcare experiences and wellbeing. Recently, pregnant women's preferences, perceptions and experiences have started to become significant factors in care delivery and service improvement. With increasing rate of interventions even among women with low-risk pregnancies and the global trend towards delayed childbearing with associated risk of complications,[9] the demand for women's involvement in care pathway and self-management is increasing. Therefore, the implementation of PRMs in routine maternity care seems justified. However, evidence-based recommendations are still lacking.

It is widely acknowledged that "acceptability" among different stakeholders should be considered for successful implementation of healthcare interventions such as PRMs.[10] While evidence regarding the acceptability of the implementation of PRMs in routine patient care has been established in some medical fields, for example, chronic fatigue,[11] cancer[12] and orthopedics,[13] to our knowledge there is little consensus about the acceptability of implementing PRMs in maternity care, thus hindering widespread use of PRMs in this specific area and limiting evidence-based policy/practice recommendations. This review aims to synthesize scientific evidence on the acceptability of implementing PRMs in routine maternity care based on a systematic review of published literature.

Key message

Routine use of patient-reported measures is acceptable among stakeholders (primarily women and health professionals) involved in maternity care, but improvements are required in data collection, follow-up care arrangement and system-level integration.

2 | MATERIAL AND METHODS

This review on the topic of "acceptability" is part of a larger systematic literature review project that explores existing evidence on the knowledge and experience of implementing PRMs in routine maternity care. The protocol of this review project was prospectively registered in PROSPERO database (CRD42021234501). We followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses guidelines 2020 (PRISMA 2020)[14–16] where applicable.

Our previous publication,[17] presenting synthesized empirical evidence on the "impact" of implementing PRMs in routine maternity care, provides detailed information about the strategies, practices and tools applied in literature searches, study screening, review database formation, data extraction, quality and confidence assessment for the whole review project. Supporting information documents provide further details: the full strategy of the initial search conducted in different databases is provided in Table S1; Table S2 provides a full list of the inclusion and exclusion criteria used for building the review database; Table S3 shows the level of agreement between the researchers while screening the abstracts of the studies; Table S4 lists all the items applied to extract data from literature. We followed the PRESS (Peer Review of Electronic Search Strategies) 2015 guidelines[18] to develop our strategy for searching the literature. Two researchers (AC and KV) were the primary reviewers involved in developing the search strategy with the support of a librarian, and in the selection and quality assessment of the studies for inclusion. Any disagreements regarding the eligibility of studies for inclusion were resolved in consultation with other researchers in the team and a consensus reached.

For this review, focusing on the acceptability of implementing PRMs in maternity care, we only selected from our review database the studies that provided empirical research-based evidence that could be interpreted to reflect the acceptability of implementing of PRMs in routine maternity care. Acceptability is a key concept in implementation research, commonly understood as the action of

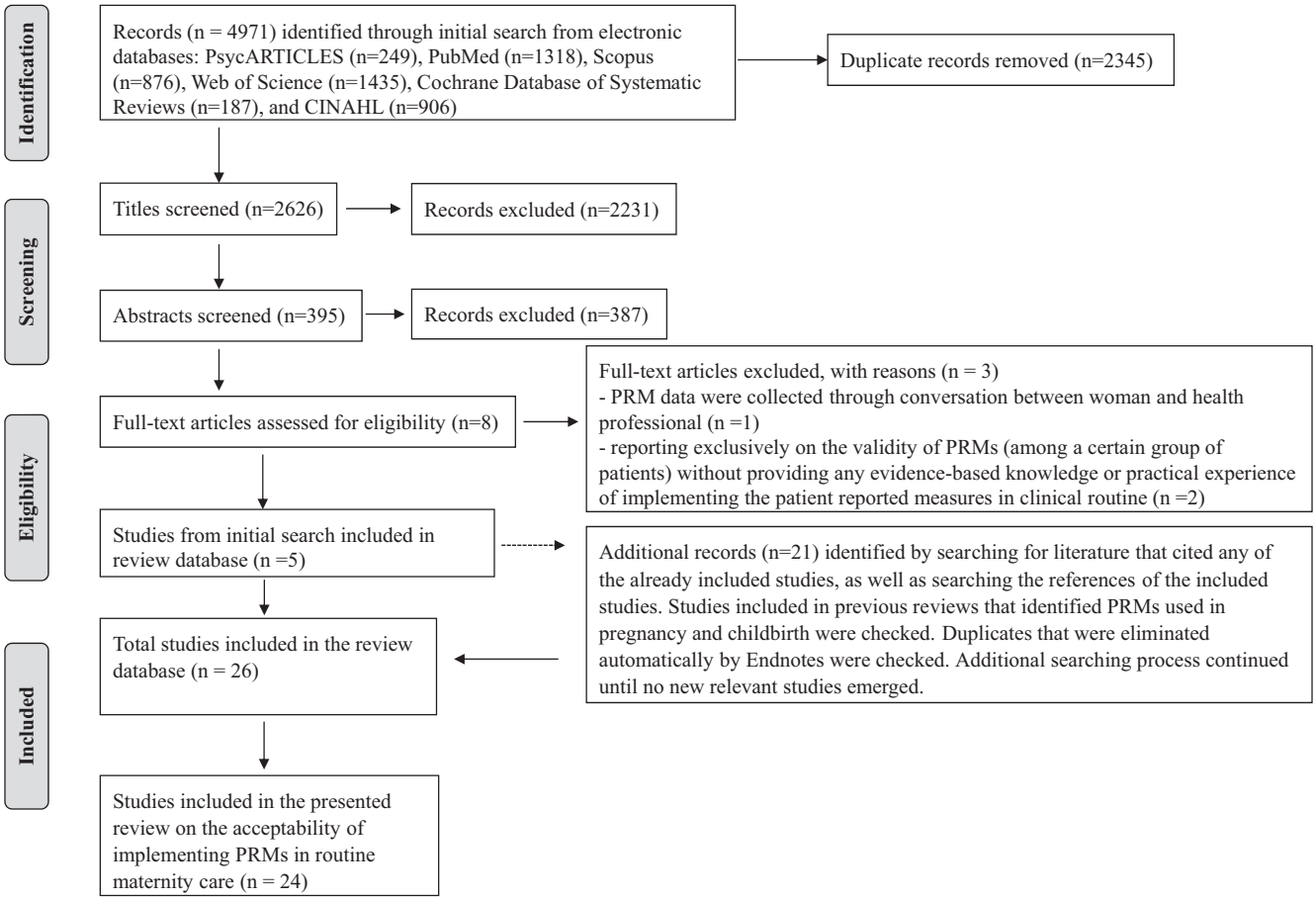

FIGURE 1 Flow diagram of search, screening, and selection process of studies included in the systematic review.

consenting to or the expression of desire to receive or undertake a measure in the future.[19] Following Sekhon et al.[10] for this study we defined the acceptability as a multidimensional construct that reflects the extent to which the stakeholders (any individual, group, or party that has an interest in or will be affected by the implementation of PRMs in routine maternity care, for example, women, health professionals, administrators and policy makers) consider the implementation of PRMs in maternity care routine to be appropriate and feasible, which could be interpreted from their cognitive, emotional and behavioral responses to it. This study used the theoretical framework of acceptability (TFA) developed by Sekhon et al.[10] as the basic framework guiding data analysis and evidence synthesis. The original seven domains of the framework (affective attitude, burden, ethicality, intervention coherence, opportunity costs, perceived effectiveness, and self-efficacy) might be modified and tailored to fit the contents of the studies included in this review and new domains might emerge during data analysis. This review performed descriptive synthesis. All the quantitative and qualitative evidence about the acceptability of using PRMs presented in each study was identified and interpreted by two researchers (AC and KV) and grouped into domains. The qualitative evidence (identified in results, findings, and conclusions) reflecting similar phenomenon was descriptively gathered, and the original texts showing the evidence were extracted and kept. For quantitative evidence, we calculated means and conducted subgroup analysis. After aggregating the evidence from included studies, we refined domains, identified the subthemes under each domain, observed patterns across the studies and made summary for each subtheme.

3 | RESULTS

3.1 | Selection and inclusion of studies

Overall, 4971 records were retrieved from electronic searches in PsycARTICLES (249), PubMed (1318), Scopus (876), Web of Science (1435), Cochrane Database of Systematic Reviews (187) and CINAHL (906). After eliminating duplicates, abstract screening, and full-text reading, five studies from the initial search were added into our review database. Starting with these five studies, we conducted an extensive additional search using snowballing that helped identify another 21 studies. Consequently, a total of 26 studies were included in our database for the systematic review on the implementation of PRMs in routine maternity care. Of these, 24 studies were considered eligible for this review to synthesize evidence on the acceptability of the use of PRMs in maternity care. The search, screening and selection processes are described in Figure 1.

3.2 | Characteristics of studies included in the review on the acceptability of implementing PRMs in routine maternity care

Studies ($n = 24$)[20–43] included in this review were published between 2004 and 2021. An overview of the included studies with selected basic information is provided in Table S7. Table 1 summarizes the characteristics of the studies in terms of countries, geographical areas, publication types, implementation stages, PRMs data collection approaches, health or health care issues addressed by PRMs, study designs and study participants.

TABLE 1 Characteristics of the studies included in the review on the acceptability of implementing patient reported measures (PRMs) in routine maternity care

Characteristics of included studies	Overall ($N = 24$)
Countries	
Australia	4 (16.67%)
United States	5 (20.83%)
Canada	3 (12.50%)
United Kingdom	3 (12.50%)
Netherlands	3 (12.50%)
Spain	2 (8.33%)
Denmark	1 (4.17%)
Finland	1 (4.17%)
Japan	1 (4.17%)
Kenya	1 (4.17%)
Geographical areas	
Europe	10 (41.67%)
North America	8 (33.33%)
Australia	4 (16.67%)
other regions	2 (8.33%)
Publication types	
Journal article	22 (91.67%)
Conference paper	2 (8.33%)
Implementation stage	
Implementation	20 (83.33%)
Prior to implementation/pilot	4 (16.67%)
PRMs data collection approach	
Web-based	9 (37.50%)
Application	7 (29.17%)
Email	1 (4.17%)
Phone-based short text message or voice message	3 (12.50%)
Paper-based	3 (12.50%)
Issues addressed by PRMs	
Mental health related issues	17 (70.83%)
Multiple issues	6 (25.00%)
Mother-infant bonding	1 (4.17%)
Methodology	
Quantitative studies	15 (62.50%)
Qualitative studies	8 (33.33%)
Mixed methods	1 (4.17%)
Study participants ($n = 11045$)	
Women ($n = 10733$, 97.18%)	22 (91.67%)
Professionals (health professionals and other stakeholders) ($n = 312$, 2.82%)	6 (25.00%)

3.3 | Acceptability of implementing PRMs in routine maternity care

This review identified five themes indicating the acceptability of implementing PRMs in routine maternity care, including (1) user's action and behavior, referring to the domain "intervention coherence" of TFA, (2) attitude towards the implementation of PRMs, referring to the domain "affective attitude" and "self-efficacy" of TFA, (3) perceived benefits from the implementation of PRMs, referring to the domain "perceived effectiveness" of TFA, (4) perceived challenges and risks of the implementation of PRMs, referring to the domain "burden" and "opportunity costs" of TFA, and (5) stakeholders' preferences and suggestions on PRMs implementation, which was beyond the TFA framework. Evidence related to the domain "ethicality" suggested by TFA was not observed in the included studies. Subthemes and key findings of each primary theme are displayed in Tables 2–4.

3.3.1 | User's action and behavior

Seventeen studies observed women's actions and behaviors in responding to PRMs questionnaires in routine maternity care, including participation, response, completion, and compliance to follow-up support or care[20,24,26–34,36–40,44] (see Table 2). According to eight studies[26,30,32–34,36,37,39] the average participation rate (the percentage of approached eligible women who expressed willingness, gave consent, or were prepared to answer PRMs questionnaires) was 85.01% and the range was 67.00%–98.50%. Differences between geographical areas in terms of participation were observed, with the highest participation rate in Europe (93.07%) and the lowest in North America (76.43%). Participation varied across different data collection approaches, and was highest with the paper-based approach and lowest with the short text message service (SMS) or automated voice messaging approach. The main reasons for women's refusal to participate included a lack of interest, lack of time, technical barriers, and concerns about the possibility of missing appointments while answering questions at clinic sites.[30,33,37] A total of 11 studies reported on women's responding behavior.[20,24,30–34,36–38,40] The average response rate (the percentage of participating women who answered and submitted PRMs questionnaires) was 64.30%,

TABLE 2 User's action and behavior: Participation in PRMs survey, response to PRMs survey questions, and compliance with follow-up care

User's action and behavior	Key points
Participation (participation rate: the number of women who expressed willingness, gave consent, or prepared to answer PRMs questionnaires/ the number of approached eligible women) Studies ($n = 8$) Doherty et al.,[26] Kim et al.,[30] Kingston et al.,[32] La Porte et al.,[33] Lasheras et al.,[34] Lawson et al.,[36] Marcano-Belisario et al.,[37] Matthey et al.[39]	Average of participation rates: 85.01% (considering sample size of each study) Range of participation rates: 67.00%–98.50% Participation (average) in different geographical areas: Europe, 93.07%; Australia, 80.00%; North America, 76.43%; Others, Japan and Kenya, no relevant data Participation (average) for different data collection tools and platforms: Paper, 98.42%; web, 94.69%; app, 84.06%; SMS or automated voice messaging, 67.78% Other key points • The main reasons of women's refusal to participate included a lack of interest, a lack of time, technical barriers and worry about missing appointments while answering PRMs questions during waiting time at clinic sites (Kim et al.,[30] La Porte et al.,[33] Marcano-Belisario et al.[37])
Response (response rate: the number of respondents who answered and submitted PRMs questionnaires/the number of women who participated) Studies ($n = 11$) Al-Shammari et al.,[21] Depla et al.,[24] Kim et al.,[30] Kim et al.,[31] Kingston et al.,[32] La Porte et al.,[33] Lasheras et al.,[34] Lawson et al.,[36] Marcano-Belisario et al.,[37] Martínez-Borba et al.,[38] Nishizono-Maher et al.[40]	Average of response rates: 64.30% (considering sample size of each study) Range of response rates: 9.10%–100.00% Responses (average) in different geographical areas (for the implementation with multiple data collection points, only responses at the first time point were included in calculation): North America, 80.07%; Europe, 87.68%; Others (Japan and Kenya), 84.56% Responses were different across different tools and platforms App, 82.38%; web, 67.71%; SMS and voice message, 71.51%; Paper, 92.09% • Response rate was lower online (49.10%) than offline (96.80%) (Lasheras et al.)[34] • Response rate online was 98.36% and 99.4% offline (Kingston et al.)[32] • All missing responses in digital form were found in questionnaires that had been filled out on paper. Women replied with a free comment in the margins (of paper) that the question was not applicable to their situation (Depla et al.)[24] • Response rate was lower among women in app (53.1%) than those from web (70.7%) (Martínez-Borba et al.)[38] • The percentage of women who responded to all assessments across the pathway was higher in app (app 9.1% vs. web 4.6%), indicating a higher fidelity and attractiveness to app platform for repeated measurement (Martínez-Borba et al.)[38] The relations between responses and women's characteristics were different • Those who responded were more likely to have at least a high school education, be employed and have food secure households (Kim et al.)[31] • Women's participation (i.e., calling into screen system) was not associated with race, ethnicity, age, parity, or previous history of depression (Kim et al)[31] • Privately insured women were significantly more likely to respond than publicly insured women based on Pearson's chi-squared tests (La Porte et al.)[33] • Married women were significantly more likely to respond than unpartnered women (La Porte et al.)[33] • Response did not vary by race or ethnicity. (La Porte et al.)[33] • There were no differences in the completion rate (response rate) between pregnant and postpartum women. (La Porte et al.)[33] Responses were associated with the timing across maternity care pathway Among the studies with longitudinal measurement: 66.55% response rate at the first time point and 41.95% at the last time point • Self -completed survey completion was highest after the first ANC visit (82.35%), but dropped for the remaining surveys covering a second ANC visit (40.69%), birth care (43.63%), and PNC (38.73%), and lowest in the postnatal care visit (38%) (Al-Shammari et al.)[20] • Responsivity was greatest at the first texted screen in postpartum week 2 (99%), declined by approximately 2% with each texted screen, and fell to 92% ($N = 858$) by the final screen (Lawson et al.)[36] • During pregnancy, the percentage of women who completed the questionnaires via web was 32.2% in the first evaluation and 51.1% in second assessment. In the postpartum, the proportion of women who completed all the questionnaires via web during the first, the second, or the third postpartum assessments were 38.2, 27.3 and 28.7%, respectively (Martínez-Borba et al.)[38] • During pregnancy, the proportion of women who completed the first and the second evaluation via app was 53.1 and 21.7%, respectively. In the postpartum, the percentage of women who completed the first, the second, or the third assessments via app was 13.7, 10.9 and 9.1%, respectively (Martínez-Borba et al.)[38] • 33% of women were not willing to complete the questionnaire at all timepoints across care pathway (Depla et al.)[24] • Momentary reporting led to more responses than periodic reporting (Doherty et al.)[26] • Women's completion of PROM surveys was contingent on attending a participating clinic, at which point payment triggered the survey to be sent to each woman (Al-Shammari et al.)[20] Other key points: • The response rate was similar between the anonymous and nonanonymous (Nishizono-Maher et al.)[40] • No association was observed between survey layouts (scrolling layout vs. paging layout) and the responses (Marcano-Belisario et al.)[37]

TABLE 2 (Continued)

User's action and behavior	Key points
Completion (rate of missing data: the percentage of responses having missing data) Studies ($n = 4$) Depla et al.,[24] Highet et al.,[28] Lasheras et al.,[34] Marcano-Belisario et al.[37]	Average of missing data rates: 22.97% Range of missing data rates: 0.00%–100.00% Completion was various across different data collect tools and platforms • The rate of missing data was higher in the offline format than in the online format. Some women did not adequately complete all paper and pencil questionnaires and 11.06% of participants had some sort of missing data in the offline format. Likewise, in the offline sample, there was considerable incomplete sociodemographic data regarding education level and employment status. There was 0% missing data in the online format (Lasheras et al.)[34] Completion was various across different patient-reported measures and instruments: • There was considerable incomplete sociodemographic data regarding education level and employment status. (Lasheras et al.)[34] • A high rate of missing data appeared at sexual function survey. The proportion of missing responses was 23% (3 of 13 women) for sexual function (PROMIS-SSFAC102); 14% (1 of 7) for breastfeeding confidence screening (BFCONFID); 12% (1 of 8) for fecal incontinence (Wexner); and breastfeeding self-efficacy (BSES-SF) was left blank in the one case where it should have been filled out (100%) (Depla et al.)[24] Other key points: • One reason that women could not complete the questionnaires was that they were called into appointments (Marcano-Belisario et al.)[37]
Compliance (follow-up compliance rate: the number of women who use follow-up support or care/the number of women who were referred or positively screened by PRMs) Studies ($n = 3$) Doherty et al.,[26] Lawson et al.,[36] Reilly & Austin[42]	Average of compliance rates (considering sample size): 66.45% Range of compliance rates: 48.44%–84.62% Compliance was different between postnatal women and pregnancy women • Noncompliance was more notable among postnatal women than among pregnant women (Reilly & Austin)[42]

with a range of 9.10%–100.00%. Response rates across different geographical areas were similar (>80.00%, only including responses at the first time point of data collection) but varied according to the data collection approaches. By aggregating the response rates from different studies, we found that paper-based questionnaires induced more responses (98.42%) than nonpaper forms (67.78%–94.69%). While Martínez-Borba et al.[38] noticed a lower response rate among women using an app than those using web, the synthesized data showed higher response rates with apps than web forms. While some studies[37,40] did not find any strong association between women's responses to PRMs questionnaires and the layout design as well as the identifiability of the questionnaires, Kim et al.[31] and La Porte et al.[33] reported that women's background, for example, education level, employment, insurance status and marital status, was associated with their likelihood of responding to PRM questions. Five studies[20,24,26,36,38] applied longitudinal measurement, where women were asked to respond at more than one time point during the care pathway. Studies reported decreasing response rates in the care pathway, with an average of 66.55% at the first time point and 41.95% at the last time point.[20,36,38] Reported in three studies,[24,27,34] the average of missing data rates (the percentage of responses with missing data) in PRM surveys was 22.97% and the range was 0.00%–100.00%. Studies have shown that missing data are associated with issues measured by PRMs[24,34] and data collection platforms.[34] According to three studies,[26,36,42] the average compliance rate (the percentage of referred or positively screened women who use follow-up support or care) was 66.45% and the range was 48.44%–84.62%. Reilly and Austin[42] reported that noncompliance was more notable among postnatal women than among pregnant women.

3.3.2 | Stakeholders' attitudes

Table 3 presents the evidence on stakeholders' attitudes towards the implementation of PRMs in routine maternity care. There were 15 studies[21–24,26,27,29–33,36,38,42,43] reporting stakeholders' attitudes towards the implementation of PRMs (i.e. how stakeholders perceived PRMs and the implementation), of which 14 studies[21,23,24,26,27,29–33,36,38,42,43] described women's attitudes (sample size: 2420) and three studies[22–24] mentioned attitudes from other stakeholders, including midwives, obstetricians, psychologists, psychiatrists, general practitioners, policy makers, administrators, researchers, educators and insurers (sample size: 47). Positive attitudes of all stakeholders were found in 14 publications,[22,23,26,27,29–33,36,38,42–44] while negative attitudes of all stakeholders were recognized in 10 publications.[21–24,29,30,32,38,40,43] According to the included studies, the majority of stakeholders supported the implementation of PRMs in maternity care routines, with most women willing to answer PRMs questions even at multiple time points across care pathway, to discuss about their answers with professionals and to learn and use digital tools. Negative attitudes were observed, for example, some stakeholders were concerned about

TABLE 3 Stakeholders' attitudes towards the implementation of patient-reported measures (PRMs) in routine maternity care

Issues	Attitudes and descriptions
General attitudes towards PRMs and PRMs implementation Studies ($n = 6$) Chen et al.,[22] Depla et al.,[23] Doherty et al.,[26] Kim et al.,[30] Lawson et al.,[36] Willey et al.[43]	Positive: from women's and professionals' perspectives, it was acceptable to implement PRMs in routine maternity care • All professionals believed that introducing PRMs into maternity care was strongly recommended (Chen et al.)[22] • Professionals expressed willingness to start PRMs implementation (Depla et al.)[23] • Women and professionals favored the implementation of ICHOM (International Consortium of Healthcare Outcome Measures) PBC (Pregnancy and Childbirth) standard set across obstetric care network (Depla et al.)[23] • 65% of women specified that they found the assessments useful (Doherty et al.)[26] • More than half of women like self-reported methods over face-to-face approaches for mental health screening (Kim et al.)[30] • A majority of women either liked (43%) or were neutral (51%) when being asked the questions (Lawson et al.)[36] • The self-screening program was found to be acceptable to women (Willey et al.)[43] • Women were very happy to be asked about emotional health and wellbeing (Willey et al.)[43] • Women said they would recommend it to people in their community (Willey et al.)[43] • Women particularly liked the idea of completing screening on their own as it may offer more privacy and elicit more truthful answers (Willey et al.)[43] Negative: From women's and professionals' perspectives, the importance of PREMs was skeptical • Women and professionals were skeptical about PREMs becoming equally as important as clinical outcome (Depla et al.)[23]
Responding to PRMs questions Studies ($n = 7$) Bayrampour et al.,[21] Johnsen et al.,[29] Kim et al.,[30] Kingston et al.,[32] Martínez-Borba et al.,[38] Willey et al.,[43] Depla et al.[24]	Positive: Women were willing to answer PRMs questions • The women felt obliged to answer PRMs questions (Johnsen et al.)[29] • Over 80% women felt it was easy to understand and respond to PRMs questions (Martínez-Borba et al.)[38] • Over 90% of women would be willing to complete the PRMs questions from home during pregnancy (91%) and postpartum (93%) (Kim et al.)[30] • Overall, women in both e-screening and paper-based screening groups indicated that they would be able to disclose their concerns about their mental health. Women were willing to be asked and disclose their mental concerns regardless of mode of PRMs administration (Kingston et al.)[32] • Some women believed there was enough time and liked the idea of having something to do (answer PRMs questions) while waiting for their appointment (Willey et al.)[43] Negative: Women were reluctant, not willing, not ready or felt uncomfortable to answer PRMs questions • Some women were reluctant to express their thoughts and wishes for the pregnancy, as they were uncertain about who would see the answers and how the problems would be dealt with (Johnsen et al.)[29] • 33% women were not willing to complete the questionnaire at all timepoints across the care pathway (Depla et al.)[24] • Some women were not ready or would not like to share mental health concerns (Bayrampour et al.)[21] • Some women described how they felt uncomfortable completing the screening in the waiting room, particularly if an interpreter was needed, and felt there was a lack of privacy and were concerned that others who spoke the same language would be listening to their answers (Willey et al.)[43]
Longitudinal measurement Studies ($n = 2$) Depla et al.,[24] Martínez-Borba et al.[38]	Positive: Women accepted longitudinal measurement • Most women stated timepoints of data collection and time-investment across the pathway were acceptable: 90% rated it "good" or "short" (Depla et al.)[24] • Despite the longitudinal character of the study and the number of questionnaires included, most women did not consider the time they devoted to answering the questions to be excessive (86.9% in the web sample and 93.8% in the app sample) and did not perceive their daily life had been altered (87.5% in the web sample and 100% in the app sample) (Martínez-Borba et al.)[38] Negative: Women were not willing to response at all time pints • 33% women were not willing to complete the questionnaire at all time points across the care pathway (Depla et al.)[24]
PRMs-based discussion and follow-up care Studies ($n = 1$) Depla et al.[24]	Positive: Women expected and were willing to discuss about their PRMs answers • The majority of women (76%) wanted to discuss their PROM answers with a care professional, and 81% their PREM answers. Most women (86%) preferred an obstetric care professional (obstetrician) to discuss their answers with—none of them chose their general practitioner, an obstetric nurse, or a preventive child healthcare provider. Few women did not want to discuss all domains with one professional, nor wanted all answers transferred in case of referral to a new care professional (Depla et al.)[24] Negative: Professionals did not feel responsible to upon PRMs answers • Professionals did not always feel responsible to act upon PRMs answers (Depla et al.)[24]

TABLE 3 (Continued)

Issues	Attitudes and descriptions
PRMs data collection tools, platforms and devices Studies ($n = 8$) Doherty et al.,[26] Drake et al.,[27] Kim et al.,[30] Kingston et al.,[32] Lawson et al.,[36] Martínez-Borba et al.,[38] Reilly & Austin[42]	Positive: Women accepted digital platforms and tools • 73% (with 10% undecided) of women reported that they would recommend BrightSelf (a mobile app) to a friend and 69% of respondents (with 15% undecided) stated that they would repeat the experience (Doherty et al.)[26] • 92% of women agreed or strongly agreed that the mobile app BrightSelf was easy to use (Doherty et al.)[26] • 95% of women agreed or strongly agreed that they learned quickly to use the mobile app BrightSelf (Doherty et al.)[26] • 47% of women stated that they most liked the quick and easy interaction features of the data collection application BrightSelf (Doherty et al.)[26] • Women were highly satisfied with web- and app-based data collection methods (HappyMom-web and HappyMom-app) (Martínez-Borba et al.)[38] • Over 90% of women felt it was easy to use the HappyMom-web platform or HappyMom-app platform (Martínez-Borba et al.)[38] • Between 50%–75% of women (depending on the HappyMom platform used) would use the application in a future pregnancy, while 62.5%–75.8% of participants would recommend it to other women (Martínez-Borba et al.)[38] • Half of the women (50% in web user sample and 43.7% in app user sample) considered that the HappyMom programme was reliable for the assessment of mental well-being and about three-fourths of women trusted the received information (Martínez-Borba et al.)[38] • A greater percentage of women in the HappyMom - web sample valued the reminders to complete the assessments positively compared to women in the HappyMom - app sample. Women who used the web (compared to app) were more grateful that e-mails were sent to them reminding them to respond to the evaluations (Martínez-Borba et al.)[38] • All women reported that online screening was accessible and helpful (Drake et al.)[27] • Mummatters (a web-based tool) was rated favorably by pregnant and postnatal women in terms of its acceptability (94%–99%), credibility (93%–97%), appeal (78%–91%), and potential to affect a range of health behaviors specific to supporting emotional wellness during the perinatal period (78%–93%) (Reilly & Austin)[42] • Women who are at greater risk of poor emotional health or parenting outcomes or who are experiencing current symptoms of depression are using Mummatters and finding it highly acceptable (Reilly & Austin)[42] • Over 90% of women would be willing to complete the PRMs questions with interactive voice response (IVR) technology as part of routine prenatal care (Kim et al.)[30] • Participants reported high rates of satisfaction with automated phone interviews (Kim et al.)[30] • Women were overwhelmingly supportive of using automated phone interview during and after their pregnancy (Kim et al.)[30] • Most women said that it was easy to use interactive voice response (IVR) and it was helpful (Kim et al.)[30] • More women in the e-screening group strongly or somewhat agreed that they would like to use or did like using a tablet for answering questions on emotional health (57.9% via e-screening vs. 37.2% via paper-based screening) and would or did prefer using a tablet to paper (46.0% via e-screening vs. 29.2% via paper-based screening) (Kingston et al.)[32] • The majority (78%) indicated that they would recommend that all women in the postpartum period be screened for postpartum depression via text messaging (Lawson et al.)[36] • Women had a high degree of satisfaction with the text messaging screen (Lawson et al.)[36] • All women considered translated audio versions of the measures on the iPad to be an excellent idea (Willey et al.)[43] Negative: Women had low interests to use or dislike digital platforms and tools • 12.2% of web users (women) reported difficulties when using the digital platform (HappyMom) (Martínez-Borba et al.)[38] • A quarter of women had low interest in using the presented digital platforms (HappyMom) in the future and recommending it to others (Martínez-Borba et al.)[38] • A minority of women (less than 5.0%) reported that they would not like e-screening because it would feel impersonal (Kim et al.)[30]

the value of PRMs as they were compared with clinical outcomes, some women were not willing to answer questions, and not all professionals feel responsible to respond to and follow up PRMs answers.

3.3.3 | Perceived benefits, challenges, preferences, and suggestions

Table 4 presents stakeholders' perceptions of benefits, challenges, and risks of implementing PRMs in routine maternity care and their preferences and suggestions on PRMs implementation. Thirteen studies[2,1–26,29,30,33,35,38,42,43] reported the benefits of implementing PRMs in routine maternity care as perceived by stakeholders, which included women's health improvement ($n = 8$),[23–26,29,33,38,42] women's empowerment ($n = 10$),[21,23–26,29,30,35,42,43] care and services improvement ($n = 7$),[22–25,29,35,43] and healthcare system advancement ($n = 4$).[22,23,29,35] According to the studies, PRMs could help in monitoring women's health status, identifying health problems, increasing women's awareness of their own health and health behaviors, facilitating communication between women and professionals, and transforming health care.

Eleven studies[21–25,27,29,35,37,42,43] reported primary challenges and risks of implementing PRMs in routine maternity care perceived by

stakeholders, of which nine studies reported issues faced by women when responding to PRMs questionnaires,[21–25,29,35,37,43] 10 revealed issues concerned by stakeholders when dealing with PRMs answers,[21–25,27,29,35,42,43] and five described perceived challenges in setting up information and communications technology (ICT) systems.[21–23,35,43] The major concerns were expressed on the quality and appropriateness of questionnaires, the efforts and workload for professionals in responding to PRMs answers, as well as data security and management.

The majority of studies that investigated stakeholders' perceptions of the challenges and risks were from Europe. Seventeen studies reported PRMs' administration modes, strategies and practices preferred or suggested by the stakeholders for implementing PRMs in maternity care routine,[21–32,35,36,38,42,43] of which 17 studies presented stakeholders' suggestions and preferences on PRMs collection,[21–32,35,36,38,42,43] 13 about dealing with PRMs answers and results,[22–31,35,42,43] and five studies about administration and system-level changes.[22–24,35,38] Highlighted suggestions included high-quality questionnaires with an easy and quick way for women to fill, availability of follow-up care based on PRMs answers, and the integration of PRMs into current care process.

3.4 | Assessment of included studies and synthesized evidence

The overall quality of the studies included in this review was acceptable. Studies varied in methodological quality, from moderate to high. Among these 24 studies, 15 (62.5%, eight qualitative, six quantitative and one mixed methods study)[21–23,25,27,29,31,32,34–37,41–43] were rated as high-quality and nine (37.5%, 9 quantitative studies)[20,24,26,28,30,33,38–40] as medium quality. Main methodological limitations identified across quantitative studies included insufficient information about the representativeness of participants to the target population ($n = 7$)[20,24,28,33,38,39] and the obscurity in the risk of bias caused by nonresponse and missing data (i.e., data related to the acceptability of implementation, for example, women's preferences, experiences, and satisfaction with PRMs questionnaires and modes of data collection) ($n = 5$).[20,24,28,30,33] The overall confidence in the review findings was moderate, mainly because of minor concerns regarding methodological limitations of included studies. The quality assessment of the studies included in the review and the confidence in review findings are shown in Table S5 and Table S6.

4 | DISCUSSION

This review identified five themes (user's action and behavior, stakeholders' attitudes towards the implementation of PRMs, perceived benefits, perceived challenges and risks, and stakeholders' preferences and suggestions on PRM implementation) that could indicate whether PRMs were acceptable in routine maternity care from key stakeholders' perspective. According to the studies, stakeholders were generally positive about the implementation of PRMs in maternity care, recognized the potential benefits and supported the systematic integration of PRMs into routine clinical practice. This main finding was consistent with other reviews that studied the acceptability of using and implementing PRMs in other clinical contexts outside maternity care.[19,45,46]

According to included studies, women's acceptance of PRMs as an integrated part of maternity care could vary with timing, modes, and platforms of PRMs administration. While some studies reported that women expressed their preference for and satisfaction with digital responses to PRMs questions,[21,24,27,29,32] synthesized data from other studies suggested that women were more likely to respond to paper-based questionnaires than web- or app-based ones. This is not a rare phenomenon.[47] Although people are increasingly relying on the Internet and mobiles, which could offer a cheaper, efficient, and convenient mode of data collection, they may nevertheless feel more comfortable answering questionnaires on papers. Technological barriers, a need to make notes or provide free-form answers, lack of adequate instructions or not considering it as an integral part of care but only as a general survey may explain this phenomenon.[25,34] Evidence found by this review indicated that women had a low intention to complete all the questionnaires across the care pathway.[24] Women's response rates to PRM questionnaires were usually high at the beginning of the pathway and would decrease at the following timepoints.[20,24,36,38] The incomplete response to longitudinal measures and missing data at each time point is a considerable issue when implementing PRMs across pathways. However, studies that specifically address this issue are limited. This review found that women were also concerned about the length, quality, and contents of routinely implemented PRMs questionnaires, worried about the possibility of obtaining abnormal results and suspected a tendency to give dishonest answers. Women expected an easy and quick way to respond to relevant PRMs questions and required clear explanations and instructions on PRMs questionnaires.

The studies suggested that most women had a strong desire for follow-up and getting appropriate care to address the problems and issues raised by their answers to PRMs.[23–27,29,30,35,42,43] Women may have specific preferences for professionals with whom they would like to discuss their PRMs answers and the issues they raise,[24] while professionals may not always feel responsible for acting upon PRMs answers. They might be uncertain about the quality of the data provided by women, worry about extra workload, confuse about how to deal with PRMs answers or provide follow-up care, and be concerned about the weak connections and collaboration between different health providers that could hinder the utilization of PRMs data and the provision of integrated care.[21–25,27,29,35,42,43] Stakeholders, mainly health professionals, suggested the need to establish strong collaboration, share thoughts and experiences, clarify responsibility, develop elaborate guidelines and training for handling and utilizing PRMs data and providing appropriate care to women.[22–24,35]

This review could inform further efforts to advance research on the implementation of PRMs in maternity care routines by revealing the weakness of currently available evidence. We noticed that the review findings could be biased by the limited diversity in the current research. Most of the studies identified in this review were from developed countries. The most frequently applied PRMs were associated with mental health, but other aspects of maternal health were largely missing in the implementation research.

TABLE 4 Stakeholders' perceptions of benefits, challenges, and risks of implementing patient-reported measures (PRMs) in routine maternity care and their references and suggestions on PRMs implementation

Theme 3: Perceived benefits of implementing PRMs as a routine part of maternity care	
Subthemes of expected benefits	**Key points**
Health improvement Studies ($n = 8$) Depla et al.,[24] Depla et al.,[23] Doherty et al.,[25] Doherty et al.,[26] Johnsen et al.,[29] Martínez-Borba et al.,[38] La Porte et al.[33], Reilly & Austin[42]	PRMs can bring benefits to women's health • Monitoring health status (Doherty et al.)[26] • Detecting symptoms earlier (Depla et al.)[23,24] • Helping to change health behavior (Reilly & Austin)[42] (Doherty et al.)[25] • Reminding of a healthy lifestyle (Johnsen et al.)[29] • Helping to improve women's health (La Porte et al.[33]) (Martínez-Borba et al.)[38]
Women's empowerment Studies ($n = 10$) Bayrampour et al.,[21] Depla et al.,[24] Depla et al.,[23] Laureij et al.,[35] Doherty et al.,[25] Doherty et al.,[26] Johnsen et al.,[29] Kim et al.,[30] Willey et al.,[43] Reilly & Austin[42]	PRMs can empower women in healthcare process • Increasing women's understanding, self-awareness, self-recognition and self-reflection on their health and health care (Depla et al.,[23] Doherty et al.,[25] Doherty et al.,[26] Johnsen et al.,[29] Laureij et al.,[35] Reilly & Austin,[42] Willey et al.[43]) • Helping women to assess health risks (Doherty et al.,[26] Johnsen et al.,[29] Laureij et al.,[35] Reilly & Austin[42]) • Helping women to compare their status with others, feel "normal" and avoid "alone" feeling (Doherty et al.,[25] Johnsen et al.,[29] Willey et al.[43]) • Facilitating disclosure and encourage women to express their experiences and feelings (Bayrampour et al.,[21] Doherty et al.,[25] Willey et al.[43]) • Helping women to open conversations and raise relevant questions at appointments (Depla et al.,[24] Doherty et al.,[25] Johnsen et al.,[29] Laureij et al.,[35] Willey et al[43]) • Establishing favorable partnership between professionals and women (Johnsen et al.,[29] Laureij et al.[35]) • Supporting shared decision-making (Depla et al.,[24] Johnsen et al.,[29] Kim et al.[30]) • Increasing women's sense of being cared and supported (Johnsen et al.,[29] Willey et al.[43])
Care and services improvement Studies ($n = 7$) Chen et al.,[22] Depla et al.,[24] Depla et al.,[23] Laureij et al.,[35] Johnsen et al.,[29] Doherty et al.,[25] Willey et al.[43]	PRMs can empower health professionals and help to improve care and services • Helping health professionals to better understand women and form an accurate picture of a woman's health and well-being (Chen et al.,[22] Laureij et al.[35]) • Helping health professionals to identify health issues in advance (Depla et al.)[23] • Helping health professionals to prepare visits and improve communication with women (Depla et al.)[23] • Helping health professionals to tailor and customize care and services and provide a better guide (Laureij et al.)[35] • Ensuring a proper use of visits and saving professionals' time (Depla et al.,[23,24] Johnsen et al.[29]) • Showing the results of health professionals' efforts (Johnsen et al.)[29] • Facilitating appropriate care and services and improving care and service quality (Chen et al.,[22] Laureij et al.[35]) • Establishing favorable partnership between professionals and women (Depla et al.,[24] Doherty et al.,[25] Willey et al.[43]) • Supporting shared decision-making (Doherty et al.)[25]
Healthcare system advancement Studies ($n = 4$) Chen et al.,[22] Depla et al.,[23] Laureij et al.,[35] Johnsen et al.[29]	PRMs can facilitate the transformation of healthcare system • Identifying deficiencies and problems in the system to be solved (Depla et al.)[23] • Enabling benchmarking and learning from each other (Depla et al.,[23] Laureij et al.[35]) • Facilitating collaboration between different stakeholders (Chen et al.,[22] Depla et al.,[23] Laureij et al.[35]) • Making value-based payment possible (Chen et al.)[22] • Helping to appropriately allocate resources (Johnsen et al.)[29] • Helping to build a women-centered service culture (Chen et al.)[22] • Helping to build a value-based service culture (Chen et al.)[22] • Facilitating integrated and continuous care (Chen et al.)[22]

(Continues)

TABLE 4 (Continued)

Theme 4: Perceived challenges and risks of implementing PRMs as a routine part of maternity care	
Subthemes of perceived challenges and risks	**Key points**
Responding to PRMs questionnaires Studies ($n = 9$) Bayrampour et al.,[21] Chen et al.,[22] Depla et al.,[24] Depla et al.,[23] Doherty et al.,[25] Johnsen et al.,[29] Laureij et al.,[35] Marcano-Belisario et al.,[37] Willey et al.[43]	Challenges and risks perceived by women when responding to PRMs questionnaires and making women hesitant to disclose answers: • The contents, length, frequency and/or timing of questionnaires are not appropriate (Bayrampour et al.,[21] Chen et al.,[22] Depla et al.,[23,24] Doherty et al.,[25] Johnsen et al.,[29] Laureij et al,[35] Marcano-Belisario et al,[37] Willey et al.[43]) • There is no clear information about the normality of the answers and possible consequences of disclosure. (Bayrampour et al.,[21] Doherty et al.[25]) • Results may cause misunderstanding of own health risks, provoke anxiety and result in over-alarming. (Bayrampour et al.,[21] Depla et al.,[24] Johnsen et al.[29]) • Responding to questionnaires lacks human interaction (Bayrampour et al.)[21] • There is a tendency to give "pleasant" answers and hide the "unpleasant" truth (Johnsen et al.,[29] Laureij et al.[35])
Dealing with PRMs answers and results Studies ($n = 10$) Bayrampour et al.,[21] Chen et al.,[22] Depla et al.,[24] Depla et al.,[23] Doherty et al.,[25] Drake et al.,[27] Johnsen et al.,[29] Laureij et al.,[35] Reilly & Austin,[42] Willey et al.[43]	Challenges and risks perceived by stakeholders when dealing with PRMs answers: • The quality of PRMs answers is not assured (Depla et al.,[23] Doherty et al.,[25] Johnsen et al.,[29] Laureij et al.,[35] Willey et al.[43]) • There is a risk of misunderstanding, misinterpreting or misusing PRMs data (Bayrampour et al.,[21] Chen et al.,[22] Depla et al.,[23] Doherty et al.,[25] Johnsen et al.,[29] Willey et al.[43]) • There is a lack of clear guidelines of how to provide follow-up care (Depla et al.,[23,24] Reilly & Austin[42]) • It causes extra workload for professionals (Chen et al.,[22] Depla et al.,[23,24] Doherty et al.,[25] Johnsen et al.,[29] Laureij et al.[35]) • Fragmented service system characterized by weak connections between organizations fails to effectively use PRMs data (Bayrampour et al.,[21] Chen et al.,[22] Depla et al.,[23] Drake et al.[27])
Setting up ICT systems Studies ($n = 5$) Bayrampour et al.,[21] Chen et al.,[22] Depla et al.,[23] Laureij et al.,[35] Willey et al.[43]	Challenges and risks perceived related to ICT systems to support PRMs data collection, management and use: • Integrating with current information systems (Depla et al.)[23] • Processing and managing PRMs data (Chen et al.,[22] Depla et al.,[23] Laureij et al.[35]) • Ensuring data security and safety (Bayrampour et al.,[21] Depla et al.,[23] Laureij et al.,[35] Willey et al.[43])
Theme 5: Preferences and suggested practices of implementing PRMs as a routine part of maternity care	
Subthemes of preferences and suggestions	**Description and key points**
Collecting PRMs data Studies ($n = 17$) Bayrampour et al.,[21] Chen et al.,[22] Depla et al.,[24] Depla et al.,[23] Doherty et al.,[25] Doherty et al.,[26] Drake et al.,[27] Highet et al.,[28] Johnsen et al.,[29] Kim et al.,[30] Kim et al.,[31] Kingston et al.,[32] Laureij et al.,[35] Lawson et al.,[36] Martínez-Borba et al.,[38] Reilly & Austin,[42] Willey et al.[43]	Stakeholders' preferences and suggestions on data collection: • Quick and easy to fill the questionnaires or giving answers some other ways, preferably using digital devices and tools (Bayrampour et al.,[21] Chen et al.,[22] Depla et al.,[23,24] Doherty et al.,[25,26] Drake et al.,[27] Highet et al. 2019, Kim et al.,[30,31] Kingston et al.,[32] Lawson et al.,[36] Martínez-Borba et al.,[38] Willey et al.[43]) • High-quality questionnaires with relevant measures (Chen et al.,[22] Depla et al.,[24] Laureij et al.[35]) • Explanations and instructions to measures and questionnaires should be available (Bayrampour et al.,[21] Depla et al.,[23,24] Doherty et al. 2018, Johnsen et al.,[29] Laureij et al.,[35] Willey et al.[43]) • Appropriate timing and frequencies of responding to questionnaires should be set. (Depla et al.,[24] Doherty et al.,[25] Laureij et al.,[35] Reilly & Austin[42]) • Privacy should be ensured (Bayrampour et al.,[21] Doherty et al.,[25] Johnsen et al.,[29] Laureij et al.,[35] Willey et al.[43])
Dealing with PRMs answers Studies ($n = 13$) Chen et al.,[22] Depla et al.,[24] Depla et al.,[23] Doherty et al.,[25] Doherty et al.,[26] Drake et al.,[27] Highet et al.,[28] Johnsen et al.,[29] Kim et al.,[30] Kim et al.,[31] Laureij et al.,[35] Reilly & Austin,[42] Willey et al.[43]	Stakeholders' preferences and suggestions on the actions and the process of reacting to PRMs answers and organizing follow-up care: • Possibility for women to explain their answers (Chen et al.,[22] Depla et al.,[23,24] Willey et al.[43]) • Appropriately sharing and presenting PRMs results (Depla et al.,[23,24] Doherty et al.,[25] Highet et al.,[28] Laureij et al.[35]) • Providing information and support to women who need help (Doherty et al.,[25] Drake et al.,[27] Johnsen et al.,[29] Laureij et al.[35]) • Allowing women to discuss their feelings with appropriate professionals and others and providing follow-up care (Depla et al.,[23,24] Johnsen et al.,[29] Laureij et al.,[35] Willey et al.,[43] Kim et al.,[30,31] Reilly & Austin[42]) • Avoiding jeopardizing the relationship between women and professionals when dealing with PREMs answers (Depla et al.,[24] Johnsen et al.,[29] Kim et al.,[30] Laureij et al.,[35] Willey et al.[43]) • Increasing professional skills to deal with PRMs results (Chen et al.,[22] Depla et al.,[23,24] Laureij et al.[35])

TABLE 4 (Continued)

Theme 5: Preferences and suggested practices of implementing PRMs as a routine part of maternity care	
Subthemes of preferences and suggestions	**Description and key points**
Administration and system-level changes Studies ($n = 5$) Chen et al.,[22] Depla et al.,[24] Depla et al.,[23] Laureij et al.,[35] Martínez-Borba et al.[38]	Administration and system-level changes suggested to support implementation of PRMs: • Integrating PRMs into current healthcare services, policies, and healthcare information systems (Chen et al.,[22] Depla et al.,[23,24] Laureij et al.,[35] Martínez-Borba et al.[38]) • Establishing benchmarking and collaboration among healthcare organizations (Depla et al.,[23] Laureij et al.[35]) • Creating a favorable culture environment for PRMs implementation (Chen et al.,[22] Depla et al.,[23] Laureij et al.[35])

TABLE 5 Some suggestions on the implementation of patient-reported measures (PRMs) in maternity care routine

Increasing women's response rate and the quality of answers	Develop or apply relevant, standardized and validated PRMs, and appropriately set timepoints of data collection
	Give clear instructions about responding to PRMs questionnaires and inform women with the normality of health issues as well as the availability of follow-up care
	Explain to the women the purpose of PRMs
	Develop or utilize effective modes of PRMs data collection and customize the platforms and tools
	Provide a possibility for women to explain their answers
Effectively using PRMs data	Motivate professionals by presenting the purpose and benefits of implementing PRMs
	Develop or renew service protocols and care pathways with the integration of PRMs as part of care
	Clarify the roles, tasks and responsibilities of professionals in processing and using PRMs data
	Educate and train professionals and improve their skills of acting upon PRMs results
Building a favorable environment for implementing PRMs	Establish close collaboration between healthcare providers and professionals and facilitate integrated and continuous care
	Develop benchmarking and collaboration among healthcare organizations regarding PRMs
	Appropriately manage PRMs data and integrate it into current information systems

Abbreviation: PRMs, patient-reported measures.

Observations on professionals' practices, behaviors and experiences related to using PRMs data are still lacking. Inconsistency was observed in the evidence about the difference in women's responses to app-mode PRMs questionnaires and web-form ones. In addition, there is no agreement on standards or guidelines for implementing PRMs in maternity care routines or conducting relevant research. Attitudes and views from other important stakeholders, such as women's partners, were missing from the current research. The insufficiency of current evidence requires more research including various measures, diverse outcomes, wider populations, and better-quality data.

This review could provide some practical suggestions on the implementation of PRMs in routine maternity care particularly increasing women's response rate and the quality of answers, making a better use of collected PRMs data, and building a favorable environment for implementing PRMs (see Table 5). Among the suggested practices, applying standardized and validated PRMs may help to develop appropriate PRMs questionnaires, increase the quality of PRMs answers, standardize data analysis and follow-up services, and make benchmarking possible across different units.

To our knowledge, this is the first systematic review on the acceptability of implementing PRMs in routine maternity care. Standard practices and tools, for example, PRESS Evidence-Based Checklist 2015[18] (see Table S8) and updated version of the PRISMA[14–16] (see Table S9), were used in this review while searching the literature and reporting. The extensive literature search included major health research databases and was further supplemented by thorough manual searching. Our analysis was guided by a well-accepted model,[10] ensuring that this topic was systematically examined. Our previous publication presented some limitations that existed in the practice of literature search,[17] which resulted in a large number of studies identified through additional searches. A lack of agreement on PRM's definition and standard terminology hindered the electronic literature search. An agreed definition of PRMs and use of standardized terminology could help to improve the search.

5 | CONCLUSION

This review provides an overview of the existing literature on the implementation of PRMs in routine maternity care and synthesizes the evidence associated with the acceptability of PRMs in routine maternity care. Our results suggest that the routine use of PRMs in maternity care is acceptable among stakeholders. Revealing potential benefits, this review also exposes the uncertainties and challenges

associated with systematically integrating PRMs into clinical practice and suggests a need for further research in this field. We propose relevant strategies and practices for implementation of PRMs in maternity care based on our findings.

AUTHOR CONTRIBUTIONS

AC: conceptualization, methodology, formal analysis, investigation, data curation, writing - original draft, writing - review & editing, visualization, funding acquisition. KV: conceptualization, methodology, formal analysis, investigation, writing - review & editing, funding acquisition. RL, PL and SH: conceptualization, methodology, investigation, writing - review & editing, funding acquisition. AT: conceptualization, methodology, investigation, writing - review & editing, funding acquisition, resources, project administration. GA: conceptualization, methodology, investigation, writing - review & editing.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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