Assessment of the person-centered maternity care scale: a global systematic review

Osamuedeme J. Odiase,[a,] Kierra Smith,[b] Grace Ogunfunmi,[b] and Patience A. Afulani[a,c,d]*

[a]Department of Obstetrics, Gynecology & Reproductive Sciences, University of California, San Francisco, USA
[b]San Francisco State University, San Francisco, USA
[c]Department of Epidemiology and Biostatistics, University of California, San Francisco, USA
[d]Institute of Global Health Sciences, University of California, San Francisco, USA

Summary

Background Person-centered maternity care (PCMC) refers to respectful, responsive, and compassionate childbirth care. The PCMC scale enables quantitative measurement of PCMC. Despite the widespread use of the PCMC scale, no global synthesis exists. We, therefore, conducted a global systematic review of studies using the PCMC scale to quantitatively assess women's childbirth experiences, evaluate the scale's psychometric properties, and identify predictors of PCMC.

Methods We searched PubMed, Web of Science, and Embase from inception to September 3, 2024. Included studies used the PCMC scale by Afulani et al. to examine the facility-based childbirth experiences of women in any setting, with no time or language restrictions. Three reviewers independently assessed titles, abstracts, and full texts. We assessed study quality using Joanna Briggs Institute critical appraisal tools. We utilized a standardized extraction template to extract full PCMC and sub-scale scores (standardizing scores to a 0–100 range for easier comparison), predictors, and psychometric properties. The primary outcome is the mean PCMC score.

Findings Our initial search yielded 415 articles, of which 41 publications from 32 independent samples were included. Most studies were conducted in Africa (63%). Mean PCMC scores were generally lower in studies from Africa (under 75), moderate in Asia (60 to over 90), and higher in North America (over 80). The lowest score reported was 38.2/100 (SD = 15.8) in an observational study conducted in Sierra Leone, while the highest was 97.1/100 (SD = 2.9) following an intervention in India. The lowest scoring domain across countries was communication and autonomy, with the lowest score at 18.1/100 in a study in Ethiopia. Positive predictors of PCMC included higher wealth, education, early antenatal care, and birth in lower-level and private health facilities. Inconsistent predictors included age, marital status, and obstetric complications.

Interpretation PCMC is sub-optimal globally, particularly in the domain of communication and autonomy. There are also inequities in PCMC driven by various sociodemographic and health systems-related factors. Interventions to improve women's experiences and to address the inequities are therefore needed.

Funding None.

Keywords: Person-centered maternity care; Respectful maternity care; Maternity care; Maternal health; Quality of care; Experience of care

Introduction

Person-centered maternity care (PCMC) refers to care during childbirth that is respectful and responsive to the needs, preferences, and values of individual women and gender-diverse birthing people (women used subsequently for brevity) and their families. The key components of PCMC include dignified and respectful care, communication and autonomy, and supportive care.[1,2] PCMC's domains of dignity, autonomy, and non-discrimination make it a fundamental right for all people.[3,4] In addition, it represents the interpersonal dimensions and experience of care and thus is an

*Corresponding author. Department of Obstetrics, Gynecology & Reproductive Sciences, University of California, San Francisco, San Francisco, CA 94143, USA.
E-mail address: osamuedeme.odiase@ucsf.edu (O.J. Odiase).

Research in context

Evidence before this study

Women's experiences of non-dignified care, including abuse and lack of privacy, poor communication, and limited shared decision-making in their care, are well documented in the literature. Many women also report experiencing inadequate support, such as being abandoned by care providers and being denied a labor companion during one of the most vulnerable times in their lives. Previous studies have explored women's experiences during childbirth globally, but inconsistencies in measurement have limited comparisons. The person-centered maternity care (PCMC) scale was developed by Afulani et al. and initially validated in Kenya and India in 2017 to address this. Since then, several studies have used the scale to assess PCMC in various global settings. In May 2023, we conducted a search on PubMed for reviews that quantitatively examined women's childbirth experiences. This search yielded three reviews documenting a range of childbirth experiences in low- and middle-income countries. These reviews were, however, limited to individual countries (Ethiopia and India) or specific regions (low- and middle-income countries) and referenced studies that utilized different tools to measure experience of care. We found no global review that assessed women's childbirth experiences using a validated scale, underscoring the need for such a global review. Further, several studies in the reviews used the PCMC scale, and a search on PubMed for studies using the PCMC scale yielded about 20 studies in various settings. There were, however, no reviews on the PCMC scale, motivating the focus of this review.

Added value of this study

This systematic review is the first global review on women's experiences of care during childbirth based on a validated scale, thus providing comparable quantitative experience scores across settings. This review significantly contributes to the literature on PCMC in several ways. First, it highlights the validity and reliability of the PCMC scale in various contexts, suggesting its potential use in cross-country studies. Second,

it highlights gaps in PCMC across all settings and the domains with the most significant gaps, highlighting the need to improve PCMC globally, particularly in improving communication and autonomy. Third, by demonstrating the variability of PCMC scores across different settings, these findings can be used to develop guidance for cut-offs for achievable yet aspirational target scores for PCMC. Fourth, showing changes in PCMC across intervention periods demonstrates the responsiveness of the PCMC score (its ability to detect changes over time) and provides a range of effect sizes for sample size estimation in future intervention studies to improve PCMC. Finally, identifying various factors associated with PCMC across studies highlights variables that should be considered as predictors of PCMC to assess inequities or as confounders in studies to assess intervention or other effects.

Implications of all the available evidence

The findings of this review and those of prior studies highlight the need for interventions to improve PCMC in all settings. Implementation of effective interventions to improve interpersonal communication and respect for women's autonomy is especially needed. In addition, interventions must address the inequities in PCMC to ensure all women receive PCMC regardless of their socioeconomic characteristics, the facility they receive care, or their health status. Interventions to improve PCMC in all facilities will help improve PCMC for all women regardless of where they seek care. Provider-targeted efforts to mitigate biases are, however, needed to ensure that women of low socioeconomic status and other disadvantaged groups are not differentially treated poorly. Activities to empower women to advocate for themselves or have others, such as birth companions, advocate for them could also help improve and reduce inequities. Together with provider training, support, and accountability mechanisms, these could foster a culture of PCMC within health facilities globally.

indicator of quality of care.[2,5] Health systems must, therefore, prioritize the provision of PCMC.[6]

PCMC has significant impacts on maternal and neonatal outcomes through direct and indirect pathways. Poor PCMC, manifesting as disrespectful, abusive, and neglectful care, leads to a lack of, delayed, inadequate, unnecessary, or harmful care, increasing the risk of severe morbidity and mortality from complications.[7–9] Further, components of PCMC are associated with intrapartum outcomes such as shorter labor duration, decreased cesarean and instrumental birth, and decreased need for neonatal resuscitation, as well as postpartum outcomes such as lower risk of postpartum complications, postpartum depression, and newborn complications.[10,11] Studies globally, however, show that women often experience poor PCMC in the

form of disrespectful and non-dignified care, poor communication and autonomy, and lack of supportive care during pregnancy and childbirth.[1,12] There are also significant disparities in the quality of care provided. For example, women from lower-income households are more likely to experience disrespect and abuse.[13] These disparities in PCMC translate to disparities in health outcomes.

Various prior studies have examined the extent of women's experiences during childbirth globally. Early qualitative studies were summarized in a landscape report by Bowser and Hill[14] and, subsequently, a mixed methods review by Bohren et al.[15] Since then, several quantitative studies have been published. However, different quantitative studies operationalized person-centered or respectful maternity care differently using

different tools,[16–18] which limited a quantitative comparison of the extent of PCMC globally. To address this gap, the PCMC scale was developed and initially validated in Kenya and India by Afulani et al.[19,20] to measure women's childbirth experiences in a standardized quantitative manner.

The PCMC scale was developed following rigorous standard procedures for scale development, including literature review, expert review, cognitive interviews, and pretesting. This process ensured the scale has high content validity, relevance, and clarity. Psychometric analysis using survey data from Kenya and India showed high construct and criterion validity, as well as internal consistency. This process is described in detail in the validation publications.[19,20] While other tools have been developed,[21–23] the PCMC scale published by Afulani et al., in 2017 is the most comprehensive validated measure of PCMC. Since its development, several studies have used it to assess PCMC in different settings globally.[24–30] This provides an opportunity to systematically examine PCMC levels quantitatively and identify its predictors globally.

The primary objective of this systematic review is to quantitively assess the levels of PCMC and its subdomain scores globally. The secondary objectives are to examine the psychometric properties of the PCMC scale in various populations and to assess the predictors of PCMC. The findings of this review will aid in advocating for and developing relevant interventions to improve PCMC.

Methods
Search strategy and selection criteria
We systematically reviewed studies using the PCMC scale by Afulani et al. to assess women's experiences during childbirth, adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[31] We employed the PEO (population, exposure of interest, outcome) framework derived from the Joanna Briggs Institute (JBI) 2020 review guidelines to inform our research questions and determine our eligibility criteria.[32]

The search strategies were developed in consultation with a campus librarian. We initially searched PubMed, Embase, and Web of Science databases from September 22, 2017, when the PCMC scale was first published until September 3, 2024. The search terms used for each database are shown in Appendix 1. In addition, we supplemented the database search with a hand-search of articles citing the PCMC scale. Inclusion criteria included studies that used the Afulani PCMC scale to examine the facility-based childbirth experiences of women in any setting, with no time or language restrictions. Studies that did not report any quantitative PCMC data were excluded (Detailed inclusion and exclusion criteria in Appendix 2).

All identified studies were first imported into Zotero,[33] then imported into Covidence,[34] and checked for duplication. After removing duplicate articles, two reviewers (OJO and KS) independently screened the titles and abstracts for eligibility. Three reviewers (OJO, KS, and GO) then assessed the full-text articles using the inclusion and exclusion criteria. Data from the included studies were extracted by three reviewers (OJO, KS, and GO) using a pre-constructed extraction template created on Covidence. We extracted study characteristics, including the title, lead author, publication year, research objectives, and study setting. The setting encompasses the country, region, and the type of healthcare facility where the study was conducted: public facilities (government-owned health facilities), quasi-government health facilities (government-owned but independently managed health facilities), and private facilities (privately owned and operated health facilities, including faith-based and mission facilities). We also extracted participant characteristics (sample size, eligibility criteria, population description, and sociodemographic and obstetric characteristics); outcomes (raw or standardized PCMC, including subdomain scores, standard deviation, and range); psychometric properties (Cronbach's alpha, extracted factors, and other relevant validation findings); and PCMC predictors. Discrepancies identified during the title and abstract screening, full-text review, and extraction stages were resolved through consensus, led by OJO, and with input from the senior author (PAA) where necessary.

Two reviewers (KS and GO) assessed the quality of the included studies (quality appraisal process described in Appendix 3) using the appropriate JBI Critical Appraisal Checklist for each study design. All extracted data were reviewed several times to ensure accuracy. Discrepancies were resolved by OJO, with input from the senior author (PAA) when needed.

Statistics
The primary outcome of this review is the mean PCMC score. The secondary outcomes are mean sub-domain scores. The original PCMC scale has 30 items with three sub-scales for dignity and respect (6 items), communication and autonomy (9 items), and supportive care (15 items).[19,20] Validation in other settings has, however, resulted in versions with slightly different numbers of items than the original scale. In addition, a short 13-item version was developed for instances where the full scale might be too long.[35] Each question on the scale has four response options ranging from 0 to 3, thus generating a raw score ranging from 0 to 90 for the full 30-item scale, and varying maximum scores for other versions and the sub-domains.

To aid comparison across the sub-domains and settings using different versions of the scale, it is recommended that all scores be standardized (rescaled) to

range from 0 to 100. This is achieved by dividing the reported raw PCMC score by the maximum possible score based on the number of items in the scale and multiplying by 100 [i.e., standardized score = (raw score/ over maximum possible score)*100].[1] All extracted PCMC and sub-domain scores were therefore standardized using this approach. We did not report any pooled estimates because of the heterogeneity in the design and different versions of the scales used in the included studies, but we reported on individual studies. Summary tables were used to present the key findings. In addition, we provided a narrative synthesis of the data.

Ethics

This systematic review relied on previously published literature and did not require the collection of new data from human participants. The use of this data was therefore considered exempt from ethical review by the Institutional Review Board at the University of California, San Francisco.

Role of the funding source

This review did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Results

The flowchart of study selection is shown in Fig. 1. The initial search yielded 415 records. After duplicates (n = 325) were removed, the titles and abstracts of 90 studies were screened for eligibility. Forty-four titles and abstracts were excluded for not meeting the eligibility criteria, and 46 underwent full-text review (A list of studies that were excluded at the full-text review stage is in Appendix 4). Ultimately, 41 articles[1,11,13,19,20,24–30,35–63] from 32 studies (i.e., independent samples, which we subsequently refer to as primary studies) met the criteria for inclusion, passed the quality assessment, and were included in the review (Table 1). Where multiple publications were from the same study sample, we

Identification of studies via databases and other sources

Identification

Records identified from: PubMed, Embase, and Web of Science Databases (n = 387)

Additional records identified through a hand search (n = 28)

Screening

Duplicate records removed (n = 325)

Abstracts and titles screened (n = 90)

Records excluded (n = 44)

Eligibility

Full-text articles assessed for eligibility (n = 46)

Full-text articles excluded: Different scale (n = 2) Non-relevant population (n = 2) Different outcomes (n = 1) etc.

Included

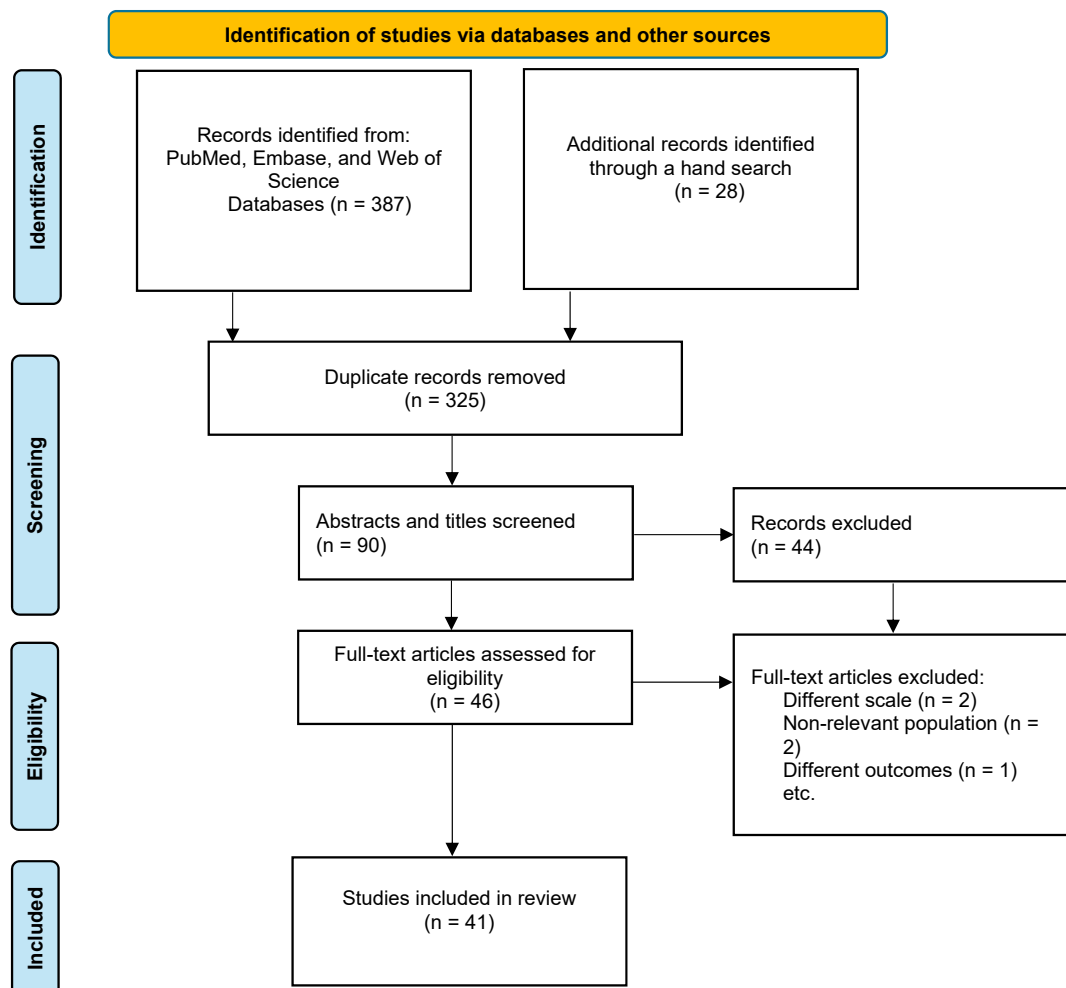Studies included in review (n = 41)

Fig. 1: PRISMA diagram for identification of included studies.

Author and publication year	Study title	Study region	Study dates	Study design	Study objective(s)	Sample size and description	Study setting	Validation	
								Cronbach's alpha (Y/N)	Construct validity (Y/N)
Afulani et al., 2017	[1]Development of a tool to measure person-centered maternity care in developing settings: validation in a rural and urban Kenyan population	Kenya	August 2016–December 2016	Cross-sectional	To develop and validate a person-centered maternity care scale	1387 women who delivered in the 9 weeks preceding the survey (<1 week for urban Kenya)	Public and private/mission facilities	Y	Y
Afulani et al., 2018	[1]Predictors of person-centered maternity care: the role of socioeconomic status, empowerment, and facility type	Kenya	August 2016–September 2016	Cross-sectional	To examine factors associated with PCMC, particularly the role of household wealth, personal empowerment, and type of facility	877 women aged 15–49 years who delivered in the 9 weeks preceding the survey	Public and private/mission facilities	Y	N
Afulani et al., 2018	[2]Validation of the person-centered maternity care scale in India	India	August 2017–October 2017	Cross-sectional	To assess the validity and reliability of the PCMC scale in India	2018 women aged 18–46 years who delivered in the 48 h preceding the survey	Public facilities	Y	Y
Afulani et al., 2018	[1,2,3]Person-centered maternity care in low-income and middle-income countries: analysis of data from Kenya, Ghana, and India	Kenya Ghana India	August 2016–October 2017	Cross-sectional	To present descriptive statistics on PCMC in four settings across three low-income and middle-income countries, and examine key factors associated with PCMC in each setting	Kenya: 1419 women aged 15–49 years who had recently given birth in a health facility (postpartum <9 weeks for rural Kenya, <1 week for urban Kenya). Ghana: 226 women aged 15–49 years who had recently given birth in a health facility (postpartum <8 weeks). India: 2018 women aged 15–49 years who had recently given birth in a health facility (postpartum <48 h)	Public and private/mission facilities	Y	N
Afulani et al., 2019	[3]Can an integrated obstetric emergency simulation training improve respectful maternity care? Results from a pilot study in Ghana	Ghana	March 2017–November 2017	Intervention evaluation: quasi-experimental (pretest-posttest without a control group)	To evaluate the effect of an integrated simulation-based training on provision of RMC	Women (N = 215 for baseline and 318 endline) aged 15–49 years and delivered in a health facility within the preceding 8 weeks	Public and private/mission facilities	Y	Y
Afulani et al., 2019	[1,2,3]Toward the development of a short multi-country person-centered maternity care scale	Kenya Ghana India	August 2016–October 2017	Cross-sectional	To develop a shorter, more simplified PCMC tool that could be applied by program implementers across multiple settings.	Kenya: 1419 women aged 15–49 years who had recently given birth in a health facility (postpartum <9 weeks for rural Kenya, <1 week for urban Kenya). Ghana: 226 women aged 15–49 years who had recently given birth in a health facility (postpartum <8 weeks). India: 2018 women aged 15–49 years who had recently given birth in a health facility (postpartum <48 h)	Public and private/mission facilities	Y	Y

(Table 1 continues on next page)

Articles

Articles

Author and publication year	Study title	Study region	Study dates	Study design	Study objective(s)	Sample size and description	Study setting	Validation	
								Cronbach's alpha (Y/N)	Construct validity (Y/N)
(Continued from previous page)									
Ocansey, K., 2019	[4]Assessing person-centered maternity care at the LEKMA Hospital	Ghana	April 2019–June 2019	Cross-sectional	To identify the proportion of women receiving poor PCMC, the domain of PCMC in which women record low scores and the factors influencing PCMC using a recently developed PCMC scale.	192 women who had recently given birth at the facility	Public facilities	Y	N
Sudhinaraset et al., 2019	[a5]Association between person-centered maternity care and newborn complications in Kenya	Kenya	August 2016–February 2017	Longitudinal	To explore the association between PCMC and newborn-related outcomes in Kenya, including newborn complications and rates of immunization. A secondary aim was to examine the association between PCMC and a woman's intention to deliver in the same facility in the future.	413 women who delivered in government health facilities in Nairobi and Kiambu counties in Kenya	Public facilities	N	N
Dagnaw et al., 2020	[6]Determinants of person-centered maternity care at the selected health facilities of Dessie town, Northeastern, Ethiopia: community-based cross-sectional study	Ethiopia	March 2019–April 2019	Cross-sectional	To assess the determinants of PCMC among mothers who gave birth in health facilities of Dessie Town	317 mothers who gave birth at health institutions of Dessie town	Public and private/mission facilities	Y	N
Montagu et al., 2020	[7]A comparison of intensive vs. light-touch quality improvement interventions for maternal health in Uttar Pradesh, India	India	September 2016–June 2019	Intervention evaluation: quasi-experimental (matched case–control)	To see if a less-demanding Light Touch intervention could produce improvements in person-centered care similar to a full-intensity QI initiative	285 women who had delivered at the health facility in the last seven days were surveyed at baseline and 300 at endline from three intensive intervention facilities. At the Light Touch sites, baseline surveys (n = 300) and Endline surveys (n = 300) were conducted	Public facilities	N	N
Montagu et al., 2020	[7]Results of a person-centered maternal health quality improvement intervention in Uttar Pradesh, India	India	September 2016–December 2018	Intervention evaluation: quasi-experimental (matched case–control)	To identify effective ways to improve person centered care for maternal health services in Uttar Pradesh to improve quality of overall care.	Baseline (N = 570) Endline (N = 600) women aged 18–49 years who had recently delivered at the health facility in the last seven days.	Public facilities	N	N
Kiti et al., 2021	[1]Continuous Labor Support and person-centered Maternity Care: A Cross-Sectional Study with Women in Rural Kenya	Kenya	August 2016–September 2016	Cross-sectional	To assess whether having continuous support during labor is associated with better person-centered maternity care (PCMC) among women in rural Kenya	865 women aged 15–49 years who delivered in the 9 weeks preceding survey completion.	Public and private/mission facilities	Y	N
								(Table 1 continues on next page)	

Author and publication year	Study title	Study region	Study dates	Study design	Study objective(s)	Sample size and description	Study setting	Validation	
								Cronbach's alpha (Y/N)	Construct validity (Y/N)
(Continued from previous page)									
Ogbuabor and Nwankwor, 2021	[8]Perception of Person-Centered Maternity Care and Its Associated Factors Among Post-Partum Women: Evidence From a Cross-Sectional Study in Enugu State, Nigeria	Nigeria	January 2019–March 2019	Cross-sectional	To validate a person-centered maternity care (PCMC) scale and assessed perception of PCMC and its associated factors among postpartum women.	450 postpartum women aged 15–49 years, who delivered in 9 weeks preceding the study constituted the study population.	Public and private/mission facilities	Y	Y
Oluoch-Aridil et al., 2021	[9]Examining person-centered maternity care in a peri-urban setting in Embakasi, Nairobi, Kenya	Kenya	January 2020–May 2020	Cross-sectional	To examine factors associated with PCMC in a peri-urban setting in Kenya	307 women aged between 18 and 49 years, who had delivered within six weeks preceding the study	Public and private/mission facilities	Y	N
Özşahin et al., 2021	[10]Turkish validity and reliability study for the person-centered maternity care scale	Turkey	July 2020–October 2020	Cross-sectional	To adapt the person-centered maternity care scale (PCMCS) developed by Afulani et al., in 2017 to Turkish and to perform the validity and reliability study of this scale	280 mothers who were in the puerperal service of the relevant hospital	Public facilities	Y	Y
Rishard et al., 2021	[11]Correlation among experience of person-centered maternity care, provision of care and women's satisfaction: Cross sectional study in Colombo, Sri Lanka	Sri Lanka	December 2018–April 2019	Cross-sectional	To evaluate the correlations among the degree of PCMC implementation, key indicators of provision of care, and women's satisfaction with maternity care in Sri Lanka	400 women aged 15–49 years old who delivered vaginally (including operative vaginal births)	Public facilities	N	N
Sudhinaraset et al., 2021	[a12] Person-centered maternity care and postnatal health: associations with maternal and newborn health outcomes	Kenya	September 2019–January 2020	Longitudinal	To examine the associations between person-centered maternity care and maternal and newborn health outcomes	1014 women aged 15–49 years who gave birth vaginally to a live, singleton baby within 7 days at a participating facility	Public and private/mission facilities	N	N
Sudhinaraset et al., 2021	[7]Can changes to improve person-centered maternity care be spread across public health facilities in Uttar Pradesh, India?	India	April 2018–June 2019	Intervention evaluation: quasi-experimental (matched case–control)	To examine whether implementation and spread of a Change Package can generate improvements in PCMC	Baseline N = 600; Endline N = 600 women between 18 and 49 that had delivered a baby in the health facility within the previous seven days.	Public facilities	N	N
Afulani et al., 2022	[13]Adaptation of the Person-Centered Maternity Care Scale in the United States: Prioritizing the Experiences of Black Women and Birthing People	United States	January 2020–September 2020	Cross-sectional	To adapt the global Person-Centered Maternity Care (PCMC) scale for use in the United States, with particular attention to the experiences of Black women and birthing people	297 women aged 15 years or older who had given birth in the past year	Not specified	Y	Y
Altman et al., 2022	[13]Factors associated with person-centered care during pregnancy and birth for Black women and birthing people in California	United States	January 2020–September 2020	Cross-sectional	To describe findings from a study that used two validated scales to examine factors associated with experiences of person-centered care during pregnancy and birth among Black birthing people in California	234 women identified as Black/African American, being less than 1 year postpartum, 15 years of age or older, and located in the state of California	Not specified	Y	N
								(Table 1 continues on next page)	

Articles

Author and publication year	Study title	Study region	Study dates	Study design	Study objective(s)	Sample size and description	Study setting	Validation	
								Cronbach's alpha (Y/N)	Construct validity (Y/N)
(Continued from previous page)									
Dagnaw et al., 2022	[14]Person-centered Maternity Care Among Mothers Who Gave Birth in South Wollo Zone Public Hospitals, Northeastern Ethiopia: A Mixed-method Study	Ethiopia	February 2019–March 2019	Mixed-method/cross-sectional	To determine the level of person-centered maternity care among mothers who gave birth in health facilities of South Wollo Zone public hospitals, Northeastern, Ethiopia, 2019 using a mixed-method study	369 mothers who gave birth at health institutions of South Wollo Zone public hospitals 9 weeks prior to the data collection period.	Public facilities	Y	N
Getahun et al., 2022	[15]Person-centered care during childbirth and associated factors among mothers who gave birth at health facilities in Hawassa city administration Sidama Region, Southern Ethiopia	Ethiopia	September 2021–October 2021	Cross-sectional	To assess the level of person-centered care during childbirth and associated factors in Hawassa city administration	564 women who gave birth at selected health facilities in Hawassa city during the study period	Public and private/mission facilities	Y	N
Hughes et al., 2022	[16]Perceptions and predictors of respectful maternity care in Malawi: A quantitative cross-sectional analysis	Malawi	March 2020	Cross-sectional	1) To describe the experience of maternity care in Malawi—using the validated person-centered maternity care (PCMC) scale—from the perspective of women giving birth and 2) to evaluate maternal, provider, and facility/system predictors of respectful care in this setting.	660 women 15 years of age and older who recently gave birth at study facilities	Public and private/mission facilities	Y	N
Mclellan et al., 2022	[17]Examining person-centered maternal care services at the Princess Christian Maternity Hospital, Freetown, Sierra Leone	Sierra Leone	Not specified	Cross-sectional	To explore the quality of care, measured in person-centeredness, received during the maternity experience at the hospital.	100 women aged 16–49 years, who spoke either English or Krio that had a vaginal birth at the hospital in the 9 weeks preceding data collection	Not specified	N	N
Stierman et al., 2022	[18]Understanding variation in person-centered maternity care: Results from a household survey of postpartum women in 6 regions of Ethiopia	Ethiopia	September 2019–September 2020	Cross-sectional	To evaluate the performance of a person-centered maternity care scale in a large, representative household sample of postpartum women, and it describes differences in person-centered maternity care across individuals and communities in Ethiopia	1575 women who were pregnant or <6 weeks postpartum	Not specified	Y	N
Tarekegne, Giru, and Mekonnen, 2022	[19]Person-centered maternity care during childbirth and associated factors at selected public hospitals in Addis Ababa, Ethiopia, 2021: a cross-sectional study	Ethiopia	February 2021–March 2021	Cross-sectional	To assess the status of person-centered maternity care during childbirth and associated factors at public hospitals in Addis Ababa, Ethiopia	384 women who gave birth at selected public hospitals in Addis Ababa	Public facilities	N	N
								(Table 1 continues on next page)	

Author and publication year	Study title	Study region	Study dates	Study design	Study objective(s)	Sample size and description	Study setting	Validation	
								Cronbach's alpha (Y/N)	Construct validity (Y/N)
(Continued from previous page)									
Afulani et al., 2023	[20]Psychometric assessment of the US person-centered prenatal and maternity care scales in a low-income predominantly Latinx population in California	United States	July 2020–June 2023	Cross-sectional	To assess psychometric properties of two scales developed to measure the quality of person-centered care during pregnancy and childbirth in the United States—the Person-Centered Prenatal Care (PCPC-US) and Person- Centered Maternity Care (PCMC-US) scales—in a low-income predominantly Latinx population in California	286 low-income pregnant and birthing people in Fresno, California	Not specified	Y	Y
Barabara et al., 2023	[21]Factors associated with respectful maternity care and influence of HIV status among women giving birth in Kilimanjaro, Tanzania	Tanzania	March 2022–July 2022	Cross-sectional	To examine factors associated with RMC among women giving birth in Tanzania and to examine whether HIV status was associated with self-reported RMC	229 women who gave birth in any of the six study clinics in Kilimanjaro region	Public and private/mission facilities	Y	N
Hameed et al., 2023	[22]Postnatal women's perception on person-centered maternity care in twin cities of Rawalpindi and Islamabad: a descriptive study	Pakistan	June 2019–August 2019	Cross-sectional	To assess the women's perception of PCMC in Pakistan	377 postnatal women who had recently given birth in one of these public hospitals	Public facilities	N	N
Kapula et al., 2023	[1,2,3]Associations between self-reported obstetric complications and experience of care: a secondary analysis of survey data from Ghana, Kenya, and India	Kenya Ghana India	August 2016–October 2017	Cross-sectional	To examine the relationship between experience of care indicators from the Person-Centered Maternity Care (PCMC) scale and obstetric complications	3953 (n = 531 Ghana; n = 1404 Kenya; and n = 2018 India) women aged 15–49 years who had recently given birth (within 9 weeks prior to the survey)	Public and private/mission facilities	N	N
Naito et al., 2023	[23]Validation of the person-centered maternity care scale at governmental health facilities in Cambodia	Cambodia	January 2021–August 2021	Cross-sectional	To adapt the "Person-Centered Maternity Care (PCMC) scale" to the Cambodian context and further determine its psychometric properties	300 women aged 18–49 who recently had a live birth and understood Khmer	Public facilities	Y	Y
Zhong et al., 2023	[24]Cross-cultural adaptation and psychometric properties of the Chinese version of the Person-Centered Maternity Care Scale	China	December 2022–January 2023	Cross-sectional	To translate and determine the psychometric properties of the Person-Centered Maternity Care (PCMC) Scale among Chinese postpartum women.	1235 women who gave birth in the preceding six to eight weeks in the postpartum clinics of two tertiary hospitals in Sichuan Province, China	Not specified	Y	Y
								(Table 1 continues on next page)	

Articles

Articles

Author and publication year	Study title	Study region	Study dates	Study design	Study objective(s)	Sample size and description	Study setting	Validation	
								Cronbach's alpha (Y/N)	Construct validity (Y/N)
(Continued from previous page)									
Alelign et al., 2024	[25]Person-centered maternity care during childbirth and associated factors among mothers who gave birth at public health institutions of Debre Markos town, Northwest Ethiopia, 2022: A cross-sectional study	Ethiopia	May 2022–June 2022	Cross-sectional	To assess the magnitude of PCMC during childbirth and its associated factors among mothers who gave birth at public health institutions of Debre Markos town, Northwest Ethiopia by using the newly validated comprehensive PCMC measurement tool	380 mothers who gave birth at public health institutions of Debre Markos town	Public facilities	Y	N
Dagnaw et al., 2024	[26]Person-centered maternity care and associated factors among women who give birth at public hospitals in South Gondar zone, North West Ethiopia, 2023	Ethiopia	March 2023–May 2023	Cross-sectional	To assess the PCMC and associated factors among women who give birth at public hospitals in the South Gondar zone, Amhara region, North West Ethiopia	763 mothers who give birth at public hospitals in the South Gondar zone	Public facilities	N	N
Doherty et al., 2024	[27]Case for improving respectful care: results from a cross-sectional survey of person-centered maternity care in rural South Africa	South Africa	October 2022–February 2023	Cross-sectional	To provide a quantitative, baseline measure of PCMC in two rural districts in order to inform the future development of a participatory learning and action intervention to improve respectful maternity care	908 postpartum women from postnatal clinics and neonatal units in the district hospitals	Public facilities	Y	N
Kabale et al., 2024	[28]Person-centered maternity care during childbirth and associated factors at public hospitals in central Ethiopia	Ethiopia	January 2023–March 2023	Cross-sectional	To assess the determinants of person-centered maternity care in Central Ethiopia	565 women who gave birth at public hospitals in the West Shewa zone during the study period	Public facilities	N	N
Kaur et al., 2024	[29]Respectful Maternity Care during Childbirth among Women in a Rural Area of Northern India	India	December 2020–January 2021	Cross-sectional	To assess the perception of RMC by women during childbirth in rural areas of North India, quantitatively, by using a validated tool.	485 women who had a childbirth during the 6 months preceding the data collection	Public and private/mission facilities	N	N
Mohammadkhani, 2024	[b30]Translation and adaptation of the person-centered maternity care scale to a Persian-speaking population: a confirmatory factor analysis	Iran	February 2022–July 2022	Cross-sectional	To translate the PCMC scale to Persian followed by an assessment of its reliability and validity for postpartum women in Iran	300 postpartum females who sought newborn thyroid screening services at the preselected integrated healthcare centers	Public, quasi-government, and private/mission facilities	Y	Y
Nakphong et al., 2024	[31]Integrating support persons into maternity care and associations with quality of care: a postpartum survey of mothers and support persons in Kenya	Kenya	September 2019–January 2020	Cross-sectional	To investigate how integrating support persons in maternity care is associated with multiple dimensions of the quality of maternity care	1138 women who gave birth at six high-volume facilities in Nairobi and Kiambu counties in Kenya	Public and private/mission facilities	N	N

(Table 1 continues on next page)

Author and publication year	Study title	Study region	Study dates	Study design	Study objective(s)	Sample size and description	Study setting	Validation	
								Cronbach's alpha (Y/N)	Construct validity (Y/N)
(Continued from previous page)									
Singh et al., 2024	[32]Impact of respectful maternal care training of health care providers on satisfaction with birth experience in mothers undergoing normal vaginal birth: A prospective interventional study	India	November 2022–March 2023	Intervention evaluation: quasi-experimental (pretest-posttest without a control group)	To study the impact of respectful maternity care training of health care providers on RMC and birth satisfaction in mothers undergoing normal vaginal birth	100 low-risk postpartum women who had normal vaginal deliveries within 48 h of study recruitment	Not specified	N	N
Watt et al., 2024	[21]Outcomes of the MAMA Training: A Simulation and Experiential Learning Intervention for Labor and Delivery Providers to Improve Respectful Maternity Care for Women Living with HIV in Tanzania	Tanzania	March 2022–May 2023	Intervention evaluation: quasi-experimental (pretest-posttest without a control group)	To assess the impact of the MAMA training on: 1) providers' attitudes and practices, and 2) patients' experiences of care. We also assess the feasibility and acceptability of the MAMA training to inform future scale-up.	443 (229 in the period before the intervention and 214 in the period after the intervention.) women who gave birth in the six study clinics during the pre-training period (March to July 2022) and post-training period (January to May 2023)	Public and private/mission facilities	Y	N

PCMC = Person-centered maternity care. Note: Studies with the same numbers indicate utilization of the same datasets. [a]Study employed the PCMC scale but did not report full PCMC or sub-domain scores, nor did it report the scale's psychometric properties. [b]Study employed the PCMC and reported psychometrics properties but did not report full PCMC or sub-domain scores.

Table 1: **Characteristics of included studies.**

Articles

prioritized findings from the earliest publication when the entire dataset was used when reporting scores. All studies evaluated for quality were rated high methodological quality based on the JBI criteria, thus satisfying the minimum criteria for inclusion in this review.[64] The summarized methodological quality assessment results are shown in Appendix 5, with additional details in Appendix 6.

The characteristics of the included studies are shown in Table 1. Of the 32 primary studies, two did not report full PCMC or sub-domain scores or psychometric properties,[11,38] and one study only reported the psychometric properties of the scale.[59] The included studies were conducted between 2016[19] and 2023[61] and published between 2017[19] and 2024.[63] Most were observational studies using cross-sectional designs (n = 26), with 25 being purely quantitative[19,20,24,26–30,37,41,42,44,45,48,49,51,52,54,55,57–61,63] and one a mixed-methods study.[47] Two studies employed a longitudinal study design.[11,38] Four intervention studies used quasi-experimental designs: Three pretest-posttest without a control group[36,56,62] and one matched-case control design.[25] All studies were published in English.

In terms of geographical region, 63% (n = 20) of studies were conducted in African countries (Ethiopia,[24,28,47–49,55,57,61] Ghana,[36,37] Kenya,[11,19,38,42,58] Malawi,[45] Nigeria,[27] Sierra Leone,[44] South Africa,[63] and Tanzania[56]), 28% (n = 9) in Asia (Cambodia,[51] China,[52] India,[20,25,60,62] Iran[59] Pakistan,[29] and Sri Lanka[26]), 6% (n = 2) in North America (United States[30,54]), and 3% (n = 1) in Europe (Turkey)[41] (See Appendix 7). Forty-four percent (n = 14) of studies were conducted only in public facilities,[20,25,26,29,37,38,41,47,48,51,55,57,61,63] 37% (n = 12) in both public and private/mission facilities,[11,19,24,27,28,36,42,45,56,58–60] and 19% (n = 6) did not disclose the type of facility.[30,44,49,52,54,62] The size of the study samples ranged from 100[44,62] to 2018[20] participants. Survey procedures and psychometric properties of the PCMC scale are shown in Table 2. Seventy-eight percent (n = 25) of studies employed interviewer-administered surveys,[11,19,20,24–29,36,37,41,42,44,45,47,48,51,54,55,57–59,61,63] 13% (n = 4) used self-administered surveys,[30,49,52,56] and 9% (n = 3) did not disclose the mode of administration.[38,60,62] Fifty-six percent (n = 18) of studies administered the PCMC scale in Indigenous regional languages,[20,24,26,28,29,36,41,44,48,51,52,55–57,59–61,63] 19% (n = 6) in English and Indigenous or notable regional languages (i.e., the Spanish language in the United States), 3% (n = 1) only in English, and 22% (n = 7) did not disclose survey language.[11,25,27,38,47,49,62]

The original 30-item PCMC scale was employed in 18 studies (56%),[11,19,24,26,28,29,38,42,44,45,47,48,55–58,61,63] with 13 studies (41%) using an adapted version of the original scale ranging from 20 to 35 items.[20,25,27,30,36,37,41,51,52,54,59,60,62] Only one primary study[49] used the 13-item short form. Twenty studies reported the internal consistency of the PCMC scale in their sample using Cronbach's alpha,[19,20,24,27,28,30,36,37,41,42,45,47,49,51,52,54–56,59,63] and 10 studies

reported both the internal consistency and construct validity of the PCMC scale using factor analysis.[19,20,27,30,36,41,51,52,54,59] The Cronbach's alpha for the full scale ranged from 0.81 in Malawi[45] to 0.95 in the United States (U.S.).[30] Among the ten studies that reported factor analysis, most supported one dominant factor with between 1 and 4 factors with eigenvalues greater than 1. Most items loaded adequately on the extracted factors. Items that were excluded in some studies due to poor loading following factor analyses are shown in Table 3.

Thirty primary studies reported PCMC scores. Table 3 shows the standardized mean PCMC scores and standard deviations, with raw scores and additional data in Appendix 8. The mean standardized PCMC scores in the studies ranged from 38.2/100 ($SD = 15.8$) in a study in a hospital in Sierra Leone[44] to 97.1/100 ($SD = 2.9$) in a study in public facilities in northern India following a quality improvement intervention to improve PCMC.[25] The highest standardized score pre-intervention was 90.6/100 ($SD = 12.2$), observed in California, U.S., among a sample of predominantly Latine birthing people.[54] In general, mean scores for studies in Africa were less than 75, scores in Asia were between 60 and 90, and scores in North America were over 80.

Twenty-eight primary studies reported sub-scale scores shown in Table 4 (with additional data in Appendix 9). The standardized scores ranged from 49.1/100 in a study conducted in a public hospital in Eastern Turkey[41] to 98.2/100 ($SD = 3.6$) post-intervention in the northern India study mentioned above [25] for dignity and respect; from 18.1/100 in a study conducted in public hospitals in North West Ethiopia[61] to 96.9/100 ($SD = 5.4$) post-intervention in the northern India study[25] for communication and autonomy; and from 28.8/100, pre-intervention, in a study aimed to assess the impact of a respectful maternal care training in a tertiary care center in India[62] to 96.8/100 post-intervention in the northern India study ($SD = 3.0$)[25] for supportive care. The highest pre-intervention subscale scores for dignity and respect and communication and autonomy were in the U.S. study at 94.8/100 ($SD = 10.2$) and 91.3/100 ($SD = 12.1$), respectively,[54] while that for supportive care was 90.2/100 ($SD = 7.2$) in the northern India study.[25]

Four studies assessed changes in PCMC following an intervention,[25,36,56,62] with three showing a significant increase in PCMC scores from baseline to endline in intervention facilities, while one saw a non-significant decrease in scores. Among the studies that showed significant increases in PCMC scores post-intervention, the largest effect size was reported in a study in a tertiary care center in India, where the standardized mean PCMC score increased by 23.6 points from a score of 40.5/100 at baseline to 64.1/100 at endline in the intervention group following implementation of a respectful maternity care training for healthcare providers.[62] The smallest effect size was reported in the northern India study, where the PCMC score increased

Author and publication year	Country [comparator group; time point]	Mode of survey administration (interviewer or self-administered)	Language	Version of scale	Factor structure	Cronbach's alpha
[1]Afulani et al., 2017	Kenya	Interviewer-administered	English, Swahili, and Luo	30-item PCMC Scale	Three factors in rural sample and four in urban sample with a single dominant factor in both	0.86
[1]Afulani et al., 2018	Kenya	Interviewer-administered	English, Swahili, and Luo	30-item PCMC Scale	N/A	0.88
[2]Afulani et al., 2018	India	Interviewer-administered	Hindi	27-item PCMC India Scale	Four factors with a single dominant factor	0.85
[1,2,3]Afulani et al., 2018	Rural Kenya	Interviewer-administered	English, Swahili, and Luo	30-item PCMC Scale	N/A	0.88
	Urban Kenya		English or Swahili, or both			0.83
	Ghana		Mampruli and Kokomba			0.84
	India		Hindi			0.85
[3]Afulani et al., 2019	Ghana [baseline]	Interviewer-administered	Mampruli and Kokomba	24-item PCMC Scale	Three factors with a single dominant factor	0.91
	Ghana [endline]					
[1,2,3]Afulani et al., 2019	Kenya	Interviewer-administered	English, Swahili, and Luo	13-item PCMC Scale	One factor	0.82
	Ghana		Mampruli and Konkomba			0.76
	India		Hindi			0.82
[4]Ocansey, K., 2019	Ghana	Interviewer-administered	Twi, Ga, and English	26-item PCMC Scale	N/A	0.88
[5]Sudhinaraset et al., 2019	Kenya	Not specified	Not disclosed	30-item PCMC Scale	N/A	–
[6]Dagnaw et al., 2020	Ethiopia	Interviewer-administered	Amharic	30-item PCMC Scale	N/A	0.86
[7]Montagu et al., 2020	India [control group; baseline]	Interviewer-administered	Not disclosed	23-item PCMC Scale	N/A	–
	India [control group; endline]					–
	India [intervention group; baseline]					–
	India [intervention group; endline]					–
[7]Montagu et al., 2020	India [control group; baseline]	Interviewer-administered	Not disclosed	23-item PCMC Scale	N/A	–
	India [control group; endline]					–
	India [intervention group; baseline]					–
	India [intervention group; endline]					–
[8]Sudhinaraset et al., 2021	Kenya	Self-administered	Not disclosed	30-item PCMC Scale	N/A	–
[7]Sudhinaraset et al., 2021	India [control group; baseline]	Interviewer-administered	Not disclosed	27-item PCMC India Scale	N/A	–
	India [control group; endline]					–
	India [intervention group; baseline]					–
	India [intervention group; endline]					–
[9]Rishard et al., 2021	Sri Lanka	Interviewer-administered	Tamil and Sinhalese	30-item PCMC Scale	N/A	–
[10]Ogbuabor and Nwankwor, 2021	Nigeria	Interviewer-administered	Not disclosed	22-item PCMC Scale	Two factors with a single dominant factor	0.94
[11]Özşahin et al., 2021	Turkey	Interviewer-administered	Turkish	21-item Turkish version of the PCMC scale	Three factors	0.82
[12]Oluoch-Aridil et al., 2021	Kenya	Interviewer-administered	English or Swahili	30-item PCMC Scale	N/A	0.89
[1]Kiti et al., 2021	Kenya	Interviewer-administered	English, Swahili, and Luo	13-item short PCMC Scale	N/A	0.80
[13]Mclellan et al., 2022	Sierra Leone	Interviewer-administered	Krio	30-item PCMC Scale	N/A	–

(Table 2 continues on next page)

Author and publication year	Country [comparator group; time point]	Mode of survey administration (interviewer or self-administered)	Language	Version of scale	Factor structure	Cronbach's alpha
(Continued from previous page)						
[14]Afulani et al., 2022	United States	Self-administered	English	35-Item PCMC-US Scale	Three factors with a single dominant factor	0.95
[15]Getahun et al., 2022	Ethiopia	Interviewer-administered	Amharic	30-item PCMC Scale	N/A	0.88
[16]Hughes et al., 2022	Malawi	Interviewer-administered	Chichewa or English	30-item PCMC Scale	N/A	0.81
[14]Altman et al., 2022	United States	Self-administered	English	35 item-PCMC-US Scale	N/A	0.95
[17]Dagnaw et al., 2022	Ethiopia	Interviewer-administered	Not disclosed	30-item PCMC Scale	N/A	0.85
[18]Tarekegne, Giru, and Mekonnen, 2022	Ethiopia	Interviewer-administered	Amharic	30-item PCMC Scale	N/A	–
[19]Stierman et al., 2022	Ethiopia	Self-administered	Not disclosed	13-item PCMC Scale [Shortened]	N/A	0.89
[1,2,3]Kapula et al., 2023	Pooled sample (Ghana, Kenya India)	Interviewer-administered	Multiple languages	30-item PCMC Scale	N/A	–
	Rural Kenya		English, Kiswahili, and Luo			–
	Urban Kenya		English and Kiswahili			–
	Ghana		Mampruli and Kokomba			–
	India		Hindi			–
[20]Hameed et al., 2023	Pakistan	Interviewer-administered	Urdu	30-item PCMC Scale	N/A	–
[21]Naito et al., 2023	Cambodia	Interviewer-administered	Khamer	20-item Khmer version of PCMC (Kh-PCMC) scale	Three factors with a single dominant factor	0.86
[22]Zhong et al., 2023	China	Self-administered	Chinese	35-item PCMC-US Scale	Three factors	0.90
[23]Barabara et al., 2023	Tanzania	Self-administered	Kiswahili	30-item PCMC scale	N/A	0.81
[24]Afulani et al., 2023	United States	Interviewer-administered	English or Spanish	35-item PCMC-US Scale	Three factors with a single dominant factor	0.94
[25]Alelign et al., 2024	Ethiopia	Interviewer-administered	Amharic	30-item PCMC Scale	N/A	0.82
[23]Watt et al., 2024	Tanzania [baseline] Tanzania [endline]	Self-administered	Kiswahili	30-item PCMC Scale	N/A	0.89
[26]Kabale et al., 2024	Ethiopia	Interviewer-administered	Afaan Oromo	30-item PCMC Scale	N/A	–
[27]Nakphong et al., 2024	Kenya	Interviewer-administered	English and Kiswahili	30-item PCMC Scale	N/A	–
[28]Mohammadkhani, 2024	Iran	Interviewer-administered	Persian	20-item Persian PCMC Scale	Eight factors examined in confirmatory factor analysis	0.92
[29]Kaur et al., 2024	India	Not specified	Hindi	27-item PCMC India Scale	N/A	–
[30]Dagnaw et al., 2024	Ethiopia	Interviewer-administered	Amharic	30-item PCMC Scale	N/A	–
[31]Singh et al., 2024	India	Not specified	Not disclosed	27-item PCMC Scale	N/A	–
[32]Doherty et al., 2024	South Africa	Interviewer-administered	IsiZulu	30-item PCMC Scale	N/A	0.86

PCMC = Person-centered Maternity Care; IQR = Interquartile range. Notes: Studies with the same numbers indicate utilization of the same datasets. Response options: "Each item has a 4-point frequency response option—0: "No, never," 1: "Yes, a few times," 2: "Yes, most of the time," and 3: "Yes, all the time." A few questions have a "Not Applicable" response option.

Table 2: Summary of study tools, procedures, and psychometric properties.

by 12.1 points from 85.0/100 (SD = 8.1) at baseline to 97.1/100 (SD = 2.9) at endline in the intervention group.[25] Sub-scale scores also increased across studies, with an 87% increase in communication and autonomy scores in a study in Ghana after the implementation of an integrated simulation-based training to improve the provision of respectful maternity care.[36]

Twenty-two included studies[1,13,24,26–28,36,37,42,43,45,46,48–50,53–55,57,60,61,63] assessed the association between PCMC and various factors in multivariate analysis. Significant predictors are presented in Table 5 (with additional details in Appendix 10). Several sociodemographic variables were identified as significant predictors of PCMC, namely age, marital status, parity, literacy, education, employment status, wealth, tribe/ethnicity, shared decision-making, and experience of domestic violence.

Maternal age

Four studies reported significant associations between age and PCMC, but the direction of association was inconsistent. In a study in public and private facilities in Southeast Nigeria, women aged 20 to 29 had the highest PCMC scores, with the lowest PCMC scores among women aged 30 to 49.[27] In Malawi, women aged 15–19 years old and 30–39 years old had higher PCMC than women aged 20 to 29,[45] while a study in Ethiopia

Author and publication year	Country [comparator group; time point]	Standardized mean PCMC score	Standardized minimum PCMC score	Standardized maximum PCMC score	Items in 30 item version excluded from adapted version
[1]Afulani et al., 2017	Kenya	66.4	23.3	100.0	N/A
[1]Afulani et al., 2018	Kenya	65.6	23.3	100.0	N/A
[2]Afulani et al., 2018	India	62.1	19.8	97.5	4 items (Support anxiety, crowding, water, and electricity) excluded because of poor performance in psychometric analysis and question on bribe included because of adequate loading
[1,2,3]Afulani et al., 2018	Rural Kenya	66.1	23.3	100.0	N/A
	Urban Kenya	66.9	24.4	95.6	
	Ghana	51.7	32.2	80.0	
	India	62.0	20.0	96.7	
[3]Afulani et al., 2019	Ghana [baseline]	49.9	–	–	3 items (time to care, delivery support, and crowding) removed because of poor loading and 3 (water, electricity, and perception of enough staff) removed because they were not addressed in the intervention
	Ghana [endline]	71.6	–	–	
[1,2,3]Afulani et al., 2019	Kenya	61.9	5.1	100.0	17 items excluded to develop short scale
	Ghana	40.1	15.4	74.4	
	India	49.7	0.0	100.0	
[4]Ocansey, K.	Ghana	69.9	32.1	88.5	4 items excluded (items not disclosed)
[6]Dagnaw et al., 2020	Ethiopia	64.4	22.2	98.9	
[7]Montagu et al., 2020	India [control group; baseline]	63.4	–	–	7 items excluded (Introduction, privacy, position of choice, support anxiety, crowding, water, and electricity)
	India [control group; endline]	87.5	–	–	
	India [intervention group; baseline]	85.0	–	–	
	India [intervention group; endline]	97.1	–	–	
[7]Montagu et al., 2020	India [control group; baseline]	73.6	–	–	7 items excluded (Introduction, privacy, position of choice, support anxiety, crowding, water, and electricity)
	India [control group; endline]	63.4	–	–	
	India [intervention group; baseline]	80.8	–	–	
	India [intervention group; endline]	97.1	–	–	
[7]Sudhinaraset et al., 2021	India [control group; baseline]	65.8	–	–	4 items (support anxiety, crowding, water, and electricity) excluded because of poor performance in psychometric analysis and question on bribe included because of adequate loading
	India [control group; endline]	62.4	–	–	
	India [intervention group; baseline]	59.5	–	–	
	India [intervention group; endline]	86.6	–	–	
[9]Rishard et al., 2021	Sri Lanka	47.1	15.6	91.1	N/A
[10]Ogbuabor and Nwankwor, 2021	Nigeria	54.5	–	–	8 items excluded (verbal abuse, physical abuse, introduce self, delivery position, time to care, delivery support, crowded, clean water)

(Table 3 continues on next page)

Author and publication year	Country [comparator group; time point]	Standardized mean PCMC score	Standardized minimum PCMC score	Standardized maximum PCMC score	Items in 30 item version excluded from adapted version
(Continued from previous page)					
[11]Özşahin et al., 2021	Turkey	60.5	31.8	98.5	9 items excluded (time to care, introduce self, labor support, delivery support, verbal abuse, physical abuse, crowded, water, and electricity)
[12]Oluoch-Aridil et al., 2021	Kenya	64.7	12.2	94.4	N/A
[1]Kiti et al., 2021	Kenya	62.1	–	–	17 items excluded to develop short scale
[13]Mclellan et al., 2022	Sierra Leone	38.2	–	100.0	N/A
[14]Afulani et al., 2022	United States	89.2	21.0	100.0	6 items excluded (water, electricity, friendly, support anxiety, enough staff, labor support); 11 items added
[15]Getahun et al., 2022	Ethiopia	62.2	36.6	91.1	N/A
[16]Hughes et al., 2022	Malawi	63.9	–	–	N/A
[14]Altman et al., 2022	United States	91.3	–	–	6 items excluded (water, electricity, friendly, support anxiety, enough staff, labor support); 11 items added
[17]Dagnaw et al., 2022	Ethiopia	64.0	21.1	97.8	N/A
[18]Tarekegne, Giru, and Mekonnen, 2022		65.8	36.7	91.1	N/A
[19]Stierman et al., 2022	Ethiopia	50.9	0.0	100.0	17 items excluded to develop short scale
[1,2,3]Kapula et al., 2023	Pooled sample [Ghana, Kenya India]	63.5	–	–	N/A
	Rural Kenya	65.6	–	–	
	Urban Kenya	66.6	–	–	
	Ghana	63.2	–	–	
	India	61.0	–	–	
[20]Hameed et al., 2023	Pakistan	60.0	15.6	88.9	N/A
[21]Naito et al., 2023	Cambodia	73.8	43.3	100.0	10 items excluded (record confidentiality, verbal abuse, physical abuse, introduce self, consent to procedures, trust, clean, electricity, water, and safe)
[22]Zhong et al., 2023	China	84.9	–	–	N/A
[23]Barabara et al., 2023	Tanzania	74.4 (median)	–	–	N/A
[24]Afulani et al., 2023	United States	90.6	19.6	100.0	6 items excluded (water, electricity, friendly, support anxiety, enough staff, labor support); 11 items added
[25]Alelign et al., 2024	Ethiopia	63.1	34.4	93.3	N/A
[23]Watt et al., 2024	Tanzania [baseline]	73.7	–	–	N/A
	Tanzania [endline]	71.7	–	–	
[26]Kabale et al., 2024	Ethiopia	66.9	32.2	92.2	N/A
[27]Nakphong et al., 2024	Kenya	66.7	–	–	N/A
[29]Kaur et al., 2024	India	76.3	–	–	4 items (Support anxiety, crowding, water, and electricity) excluded because of poor performance in psychometric analysis and question on bribe included because of adequate loading
[30]Dagnaw et al., 2024	Ethiopia	47.0	22.2	70.0	N/A
[31]Singh et al., 2024	India [pre-intervention]	40.5	22.2	70.4	4 items (Support anxiety, crowding, water, and electricity) excluded because of poor performance in psychometric analysis and question on bribe included because of adequate loading
	India [post-intervention]	64.1	45.7	80.2	
[32]Doherty et al., 2024	South Africa	61.7	17.8	94.4	N/A

PCMC = Person-centered Maternity Care; IQR = Interquartile range. Notes: Studies with the same numbers indicate utilization of the same datasets. Response options: "Each item has a 4-point frequency response option—0: "No, never," 1: "Yes, a few times," 2: "Yes, most of the time," and 3: "Yes, all the time." Some questions have slight variations in wording for the response option, but all range from 0 to 3. A few questions have a "Not Applicable" response option, which is recoded to the upper middle option (2 or 1 if negatively worded) before scoring.

Table 3: Summary of standardized PCMC scores.

Author and publication year	Country [comparator group; Time point]	Standardized DR Score	DR Cronbach's Alpha	Standardized CA score	CA Cronbach's Alpha	Standardized SC score	SC Cronbach's Alpha
[1]Afulani et al., 2017	Kenya	82.2	0.63	53.3	0.73	67.8	0.72
[2]Afulani et al., 2018	India	78.3	0.70	35.6	0.67	74.2	0.73
[1,2,3]Afulani et al., 2018	Rural Kenya	83.9	0.66	51.5	0.78	67.8	0.75
	Urban Kenya	80.0	0.61	55.9	0.62	67.6	0.72
	Ghana	75.6	0.62	30.7	0.72	54.7	0.66
	India	78.3	0.70	35.6	0.67	71.6	0.71
[3]Afulani et al., 2019	Ghana [baseline]	75.7	0.75	30.8	0.83	51.7	0.82
	Ghana [endline]	86.9		57.7		75.1	
[4]Ocansey, K., 2019	Ghana	58.0	0.67	85.2	0.73	67.4	0.68
[6]Dagnaw et al., 2020	Ethiopia	82.2	0.81	56.9	0.84	61.9	0.85
[7]Montagu et al., 2020	India [control group; baseline]	77.4	–	41.0	–	71.3	–
	India [control group; endline]	85.3	–	78.6	–	84.9	–
	India [intervention group; baseline]	94.4	–	84.7	–	90.2	–
	India [intervention group; endline]	98.2	–	96.9	–	96.8	–
[7]Montagu et al., 2020	India [control group; baseline]	77.9	–	68.3	–	75.1	–
	India [control group; endline]	77.4	–	78.6	–	76.0	–
	India [intervention group; baseline]	94.4	–	41.0	–	71.3	–
	India [intervention group; endline]	98.2	–	96.9	–	96.8	–
[7]Sudhinaraset et al., 2021	India [control group; baseline]	83.0	–	40.9	–	75.9	–
	India [control group; endline]	74.6	–	36.7	–	68.1	–
	India [intervention group; baseline]	76.6	–	48.3	–	66.8	–
	India [intervention group; endline]	86.0	–	82.7	–	89.8	–
[9]Rishard et al., 2021	Sri Lanka	57.2	–	34.6	–	50.5	–
[10]Ogbuabor and Nwankwor, 2021	Nigeria	55.3	0.94	58.8	0.91	51.7	0.82
[11]Özşahin et al., 2021	Turkey	49.1	0.61	57.5	0.77	61.7	0.74
[12]Oluoch-Aridil et al., 2021	Kenya	81.7	–	58.3	–	60.3	–
[13]Mclellan et al., 2022	Sierra Leone	54.0	–	25.9	–	39.2	–
[14]Afulani et al., 2022	United States	92.4	0.87	88.4	0.87	87.2	0.87
[15]Getahun et al., 2022	Ethiopia	81.1	0.78	57.4	0.82	57.6	0.84
[16]Hughes et al., 2022	Malawi	78.9	0.58	45.9	0.63	68.7	0.70
[17]Dagnaw et al., 2022	Ethiopia	81.9	0.79	56.4	0.82	61.6	0.83
[18]Tarekegne, Giru, and Mekonnen, 2022	Ethiopia	87.2	–	54.1	–	64.1	–
[1,2,3]Kapula et al., 2023	Pooled sample (Ghana, Kenya India)	80.1	–	43.2	–	67.8	–
[20]Hameed et al., 2023	Pakistan	72.2	–	51.9	–	60.0	–
[21]Naito et al., 2023	Cambodia	71.3	0.85	74.4	0.76	86.3	0.91
[22]Zhong et al., 2023	China	92.0	0.67	79.1	0.82	84.6	0.84
[23]Barabara et al., 2023	Tanzania	83.3 [Median]	0.71	66.7 [Median]	0.61	75.6 [Median]	0.57
[24]Afulani et al., 2023	United States	94.8	0.79	91.3	0.84	85.8	0.87
[25]Alelign et al., 2024	Ethiopia	83.8	0.60	53.4	0.74	68.3	0.74
[23]Watt et al., 2024	Tanzania [baseline]	79.8	0.70	63.5	0.76	75.3	0.78
	Tanzania [endline]	79.6		61.5		74.6	
[26]Kabale et al., 2024	Ethiopia	59.1	–	73.5	–	58.3	–
[27]Nakphong et al., 2024	Kenya	77.3	–	59.2	–	66.9	–
[28]Mohammadkhani, 2024	Iran	–	0.78	–	0.81	–	0.84
[29]Kaur et al., 2024	India	91.1	–	62.9	–	76.1	–
[30]Dagnaw et al., 2024	Ethiopia	76.2	–	18.1	–	52.7	–
[31]Singh et al., 2024	India [pre-intervention]	48.1	–	47.8	–	28.8	–
	India [post-intervention]	54.3	–	68.2	–	63.0	–
[32]Doherty et al., 2024	South Africa	83.3	0.66	53.7	0.71	57.6	0.79

DR = Dignity and Respect; CA = Communication and Autonomy; SC = Supportive Care. Note: Studies with the same numbers indicate utilization of the same datasets.

Table 4: **Summary of PCMC subdomain scores.**

Significant predictors	Definition for direction of association[a]	Direction of association in included studies		
		Positive	Negative	Other
Age[b]	Positive: Higher PCMC among older women Negative: Lower PCMC among older women	Ogbuabor and Nwankwor, 2021, Nigeria; Hughes et al., 2022, Malawi; Stierman et al., 2022, Ethiopia; Doherty et al., 2024, South Africa	Ogbuabor and Nwankwor, 2021, Nigeria	
Age at marriage[b]	Positive: Higher PCMC among women who married at an older age Negative: Lower PCMC among women who married at an older age		Ogbuabor and Nwankwor, 2021, Nigeria	
Currently married	Positive: Higher PCMC among married women Negative: Lower PCMC among married women	Afulani et al., 2018, rural Kenya; Kapula et al., 2023, Ghana	Afulani et al., 2018, urban Kenya	
Gravidity (Number of pregnancies)[b]	Positive: Higher PCMC with higher gravidity Negative: Lower PCMC with higher gravidity	Rishard et al., 2021, Sri Lanka		
Parity (number of births)[b]	Positive: Higher PCMC with higher parity Negative: Lower PCMC with higher parity	Alelign et al., 2024, Ethiopia	Afulani et al., 2019, Ghana	
Household wealth	Positive: Higher PCMC with higher household wealth Negative: Lower PCMC with higher household wealth	Afulani et al., 2018, rural Kenya; Afulani et al., 2018, India; Afulani et al., 2019, Ghana; A Oluoch-Aridi et al., 2021, peri-urban Kenya; Kapula et al., 2023, urban Kenya; Dagnaw et al., 2024, Ethiopia; Doherty et al., 2024, South Africa		
Employment status	Positive: Higher PCMC among employed Negative: Lower PCMC among employed	Afulani et al., 2018, rural Kenya; Afulani et al., 2018, India	Afulani et al., 2018, urban Kenya; Kapula et al., 2023, Ghana	
Current occupation	Positive: Higher PCMC with self-employment compared to employment in agricultural sector Negative: Lower PCMC with self-employment compared to employment in the agricultural sector		Afulani et al., 2019, Ghana; Ogbuabor and Nwankwor, 2021, Nigeria	
Partner's occupation	Positive: Higher PCMC with partner working as a government salaried worker compared to working in agricultural sector Negative: Lower PCMC with partner working as a government salaried worker compared to working in the agricultural sector	Ogbuabor and Nwankwor, 2021, Nigeria		
Literacy	Positive: Higher PCMC among literate women Negative: Lower PCMC among literate women	Afulani et al., 2018, rural Kenya; Afulani et al., 2019, Ghana; Oluoch-Aridi et al., 2021, peri-urban Kenya; Hughes et al., 2022, Malawi		
Education	Positive: Higher PCMC with higher education Negative: Lower PCMC with higher education	Afulani et al., 2018, India; Getahun et al., 2022, Ethiopia; Stierman et al., 2022, Ethiopia; Kapula et al., 2023, urban Kenya; Alelign et al., 2024, Ethiopia; Kabale et al., 2024, Ethiopia		
Partner's education	Positive: Higher PCMC for partners with higher education Negative: Lower PCMC for partners with higher education		Afulani et al., 2019, Ghana	

(Table 5 continues on next page)

Significant predictors	Definition for direction of association[a]	Direction of association in included studies		
		Positive	Negative	Other
(Continued from previous page)				
Tribe/Ethnic/religious group[c]	Positive: Higher PCMC among women in dominant tribe Negative: Lower PCMC among women in the dominant tribe	Rishard et al., 2021, Sri Lanka	Afulani et al., 2018, rural Kenya	
Caste	Positive: Higher PCMC with scheduled caste/tribe compared to other caste/tribes Negative: Lower PCMC with scheduled caste/tribe compared to other caste/tribes		Kaur et al., 2024, India	
Residence	Positive: Higher PCMC associated with residence in urban localities than in rural localities Negative: Lower PCMC associated with residence in urban localities than in rural localities Other: Other differences by location with mixed context	Dagnaw et al., 2024, Ethiopia	Dagnaw et al., 2020, Ethiopia	Stierman et al., 2022, Ethiopia; Kiti et al., 2021, Kenya
Birth country (US context)	Positive: Higher PCMC among women born in Mexico than among women born in the United States Negative: Lower PCMC among women born in Mexico than among women born in the United States	Afulani et al., 2023, United States		
Participation in decision making	Positive: Higher PCMC with high participation in decision making Negative: Lower PCMC with high participation in decision making		Ogbuabor and Nwankwor, 2021, Nigeria	
Experienced domestic violence	Positive: Higher PCMC with experiences of domestic violence Negative: Lower PCMC with experiences of domestic violence	Ogbuabor and Nwankwor, 2021, Nigeria	Afulani et al., 2018, rural Kenya	
Facility type	Positive: Higher PCMC in health centers and/or private/mission facilities than in public hospitals Negative: Lower PCMC in health centers and/or private/mission facilities than in public hospitals	Afulani et al., 2018, rural Kenya; Afulani et al., 2018, urban Kenya, India; Afulani et al., 2019, Ghana; Dagnaw et al., 2020, Ethiopia; Ogbuabor and Nwankwor, 2021, Nigeria; Getahun et al., 2022, Ethiopia; Stierman et al., 2022, Ethiopia; Alelign et al., 2024, Ethiopia; Kaur et al., 2024, India		
Delivery provider gender	Positive: Higher PCMC with female providers Negative: Lower PCMC with female providers Other: Higher PCMC with both male and female delivery providers than providers of one gender		Hughes et al., 2022; Afulani et al., 2018, India	Afulani et al., 2018, rural Kenya
Delivery provider type	Positive: Higher PCMC with skilled providers (mostly nurses/midwives) compared to unskilled providers Negative: Lower PCMC with higher skilled providers (specialist) compared to less skilled (generalist) providers	Ogbuabor and Nwankwor, 2021, Nigeria; Oluoch-Aridil et al., 2021, peri-urban Kenya; Hughes et al., 2022, Malawi; Stierman et al., 2022, Ethiopia	Altman et al., 2022, United States	

(Table 5 continues on next page)

Significant predictors	Definition for direction of association[a]	Direction of association in included studies		
		Positive	Negative	Other
(Continued from previous page)				
Pregnancy childbirth care attendant continuity	Positive: Higher PCMC when attended by a care provider who had provided ANC for the mothers than attended by a care provider who did not provide ANC Negative: Lower PCMC when attended by a care provider who had provided ANC for the mothers than attended by a care provider who did not provide ANC	Getahun et al., 2022, Ethiopia; Altman et al., 2022, United States		
Type of prenatal care provider most frequently seen	Positive: Higher PCMC with midwife or nurse as most frequently seen prenatal care provider than with a family physician Negative: Lower PCMC with midwife or nurse as most frequently seen prenatal care provider than with a family physician			Altman et al., 2022, United States
Birth provider race concordance	Positive: Higher PCMC when at least one delivery provider was of the same race as the women Negative: Lower PCMC when at least one delivery provider was of the same race as the women	Altman et al., 2022, United States		
Number of health providers present during labor and delivery	Positive: Higher PCMC with more health providers present during labor and delivery Negative: Lower PCMC with more health providers present during labor and delivery			Afulani et al., 2019, Ghana; Dagnaw et al., 2024, Ethiopia
Crowded Wards	Positive: Higher PCMC in less crowded wards Negative: Lower PCMC in less crowded wards	Ocansey, K., 2019, Ghana		
Uninterrupted power supply	Positive: Higher PCMC with more consistent electricity Negative: Lower PCMC with more consistent electricity	Ocansey, K., 2019, Ghana		
Uninterrupted water supply	Positive: Higher PCMC with consistent water supply Negative: Lower PCMC with consistent water supply	Ocansey, K., 2019, Ghana		
Initiation of ANC	Positive: Higher PCMC with prenatal care initiation at first trimester Negative: Lower PCMC with prenatal care initiation at first trimester	Ogbuabor and Nwankwor, 2021, Nigeria; Altman et al., 2022, United States; Oluoch-Aridil et al., 2021, peri-Urban Kenya; Hughes et al., 2022, Malawi		
ANC visits	Positive: Higher PCMC among women who had more ANC visits or contacts Negative: Lower PCMC among women who had more ANC visits or contacts	Tarekegne, Giru, and Mekonnen, 2022, Ethiopia; Stierman et al., 2022, Ethiopia; Kabale et al., 2024, Ethiopia; Doherty et al., 2024, South Africa		
ANC	Positive: Lower PCMC with no ANC Negative: Higher PCMC with no ANC	Tarekegne, Giru, and Mekonnen, 2022, Ethiopia		

Significant predictors	Definition for direction of association[a]	Direction of association in included studies		
		Positive	Negative	Other
(Continued from previous page)				
Time spent in facility before delivery	Positive: Higher PCMC with more time spent at the facility before delivery Negative: Lower PCMC with more time spent at the facility before delivery		Kapula et al., 2023, rural Kenya, India	
Previous history of facility delivery	Positive: Higher PCMC with previous history of facility delivery. Negative: Lower PCMC with previous history of facility delivery	Dagnaw et al., 2024, Ethiopia		
Time of delivery	Positive: Higher PCMC with daytime delivery than with nighttime delivery Negative: Lower PCMC with daytime delivery than with nighttime delivery	Dagnaw et al., 2020, Ethiopia; Tarekegne, Giru, and Mekonnen, 2022, Ethiopia; Kabale et al., 2024, Ethiopia; Doherty et al., 2024, South Africa		
Delivery period	Positive: Higher PCMC among women who delivered during availability of COVID-19 medications than women who delivered in earlier periods Negative: Lower PCMC among women who delivered during availability of COVID-19 medications than women who delivered in earlier periods	Afulani et al., 2023, United States		
Outcome of delivery	Positive: Higher PCMC with no neonatal death Negative: Lower PCMC with no neonatal death	Dagnaw et al., 2020, Ethiopia; Getahun et al., 2022, Ethiopia		
Length of stay at the health facility	Positive: Higher PCMC with longer hospital stay Negative: Lower PCMC with longer hospital stay	Dagnaw et al., 2024, Ethiopia		Afulani et al., 2018, rural Kenya; Dagnaw et al., 2020, Ethiopia; Altman et al., 2022, United States
Presence of a companion	Positive: Higher PCMC with presence of a birth companion or continuous support Negative: Lower PCMC with presence of a birth companion or continuous support	Rishard et al., 2021, Sri Lanka; Kiti et al., 2021, Kenya; Hughes et al., 2022, Malawi; Stierman et al., 2022, Ethiopia		
Companion type	Positive: Higher PCMC with family member or friend as a companion during labor Negative: Lower PCMC with family member or friend as a companion during labor	Kiti et al., 2021, Kenya; Hughes et al., 2022, Malawi; Stierman et al., 2022, Ethiopia;		
Absence of stimulation to labor	Positive: Higher PCMC with absence of stimulation to labor Negative: Lower PCMC with absence of stimulation to labor	Rishard et al., 2021, Sri Lanka		
Delivery in non-supine position	Positive: Higher PCMC with delivery in a non-supine position Negative: Lower PCMC with delivery in a non-supine position	Rishard et al., 2021, Sri Lanka		
Skin-to-skin care	Positive: Higher PCMC with skin-to-skin care Negative: Lower PCMC with skin-to-skin care	Rishard et al., 2021, Sri Lanka		
Breastfeeding education	Positive: Higher PCMC with breastfeeding education Negative: Lower PCMC with breastfeeding education	Barabara et al., 2023, Tanzania		

(Table 5 continues on next page)

Significant predictors	Definition for direction of association[a]	Direction of association in included studies		
		Positive	Negative	Other
(Continued from previous page)				
Facility recommendation	Positive: Higher PCMC with facility recommendation Negative: Lower PCMC with facility recommendation	Barabara et al., 2023, Tanzania		
Cesarean delivery	Positive: Higher PCMC with cesarean delivery Negative: Lower PCMC with cesarean delivery	Stierman et al., 2022, Ethiopia; Kapula et al., 2023, rural Kenya; Doherty et al., 2024, South Africa	Kapula et al., 2023, India; Alelign et al., 2024, Ethiopia	
Obstetric complications	Positive: Higher PCMC with obstetric complications Negative: Lower PCMC with obstetric complications	Ogbuabor and Nwankwor, 2021, Nigeria; Kapula et al., 2023, rural Kenya, Ghana	Hughes et al., 2022, Malawi; Tarekegne, Giru, and Mekonnen, 2022, Ethiopia; Stierman et al., 2022, Ethiopia; Kapula et al., 2023, rural Kenya; Kabale et al., 2024, Ethiopia	
Insurance type	Positive: Lower PCMC with public or no health insurance than with private/employer-sponsored insurance Negative: Higher PCMC with public or no health insurance than with private/employer-sponsored insurance	Altman et al., 2022, United States		
Self-rated health	Positive: Higher PCMC with very good or excellent self-rated health status than with poor, fair, or good self-rated health Negative: Lower PCMC with very good or excellent self-rated health status	Altman et al., 2022, United States; Afulani et al., 2023, United States		
Time since birth for survey completion	Positive: Higher PCMC with longer interval between birth and survey completion Negative: Lower PCMC with shorter interval between birth and survey completion		Altman et al., 2022, United States	
Interview location	Positive: Higher PCMC with interviews over the phone than at health facilities Negative: Lower PCMC with interviews over the phone than at health facilities		Oluoch-Aridil et al., 2021, peri-urban Kenya	
Place of interview	Positive: Higher PCMC with interviews in community Negative: Lower PCMC with interviews in community		Afulani et al., 2018, rural Kenya	

PCMC = Person-centered Maternity Care; ANC = Antenatal Care. Notes: Studies with the same numbers indicate utilization of the same datasets. For studies that used the same datasets, we have reported significant predictors from the earliest publication and only referenced subsequent studies if they reported additional predictors. [a]Positive and Negative definitions do not ascribe value to the direction of the association; they are only a way to help summarize the results. Also, not all publications use the same reference group. [b]These associations were not always linear but summarized based on the general direction. [c]Tribe/ethnicity and religion are combined because of how they were reported in the studies.

Table 5: Reported results for significant associations between PCMC and sociodemographic and obstetric factors in the included studies (n = 22).

reported that women under 20 had the lowest PCMC scores.[49] In a study conducted in public facilities in rural South Africa, women aged 30 to 45 had higher PCMC scores than women aged 16 to 19.[63]

Marital status
Three studies reported significant associations between marital status and PCMC, but the direction of the association was not consistent. In a study in rural Kenya, married women had higher PCMC scores than unmarried women.[13] In contrast, unmarried women had higher PCMC scores than married women in a study in urban Kenya.[1] In a study in rural Ghana, widowed, divorced, or separated women had higher perceptions of PCMC than single women.[50]

Parity
Two studies reported significant associations with parity with inconsistent directions of association. A study in Ethiopia reported higher PCMC with multiparous

women than with primiparous women[56] while an intervention study conducted in Northern Ghana reported lower PCMC with increasing parity.[36]

Socioeconomic status (SES)

Several studies reported the association between various SES-related variables and PCMC, with a generally consistent direction of association. Nine studies reported significant associations between literacy or education and PCMC. Women who reported being literate had higher PCMC scores than women who were illiterate in a study in northern Ghana,[36] rural Kenya,[13] peri-urban Kenya,[42] and Malawi.[45] Secondary-level or college-level education and above were associated with higher PCMC scores than women with primary-level education or no formal education in a study in urban Kenya,[50] a study in northern India,[1] and three studies in Ethiopia.[28,55,57] In another study in Ethiopia, women with a primary school education had higher PCMC scores than those who never attended school.[49] Seven studies assessed the association between wealth and PCMC. Higher household wealth was associated with higher PCMC scores in studies in northern Ghana,[36] rural Kenya,[13] urban Kenya,[50] peri-urban Kenya,[42] northern India,[1] Ethiopia,[61] and rural South Africa.[63] Three studies assessed the association between women's employment status and PCMC. Employment was associated with higher PCMC scores in studies in rural Kenya[13] and northern India,[1] but unemployment was associated with higher PCMC scores in urban Kenya[1] and rural Ghana.[50] In a study in public and private facilities in Southeast Nigeria, farming occupation was associated with higher PCMC scores than being self-employed.[27]

Tribe/ethnicity/Religion/Caste

Three studies reported significant associations between tribe or ethnicity and PCMC. In a study in rural Kenya, Kuria women had higher PCMC scores than Luo women.[13] In a study in Sri Lanka, Sinhalese and Burger women had higher PCMC scores than Muslim women.[26] In a study in rural northern India, women in a scheduled caste or tribe had lower PCMC scores than women from other tribes.[60]

Experience of domestic violence and shared decision-making

Two studies reported significant associations between experiences of domestic violence and PCMC with inconsistent direction of associations. Experiences of domestic violence were associated with poorer PCMC scores in a study in rural Kenya[13] but higher PCMC scores in a study in Southeast Nigeria.[27] In the same Nigeria study, women who did not participate in decision-making reported higher PCMC scores than women who did.[27] Still, there was no significant association between shared decision-making and PCMC in the rural Kenya study.[13]

Thirty-nine obstetric and obstetric-care-related variables were identified as significant determinants of PCMC, notably antenatal care initiation timing,[27,42,45,46] birthing facility type,[1,13,24,27,28,36,49,55,60] provider type and gender,[1,13,27,36,42,45,46,49] mode of birth,[49,50,55,63] birth timing,[24,48,57,63] obstetric complications,[27,45,48–50,57] and a companion's presence during labor.[26,43,45,49]

Antenatal care (ANC) initiation

Four studies assessed the relationship between ANC initiation and PCMC with a consistent direction of association. Initiation of ANC in the first trimester was associated with higher PCMC in all four studies in the U.S. (California),[46] peri-urban Kenya,[42] Southeast Nigeria,[27] and Malawi.[45]

Birth facility type

Nine studies assessed the association between birthing facility type and PCMC, with a consistent direction of association. In five studies in northern Ghana,[36] rural[13] and urban Kenya,[1] northern India,[1] Ethiopia,[55] and Southeast Nigeria,[27] women who gave birth in lower-level public/government facilities (health centers) had higher PCMC scores than women who delivered in higher-level public facilities (hospitals). In studies in Southeast Nigeria,[27] rural Kenya,[13] rural northern India,[60] and Ethiopia,[24,28,49] women who gave birth in private/mission hospitals also had higher PCMC scores than those who gave birth in public hospitals.

Birth provider type and gender

Five studies found significant associations between the type of provider and PCMC with inconsistent directions of association. In studies in Southeast Nigeria,[27] peri-urban Kenya,[42] and Ethiopia,[49] women who reported being assisted at birth by community health workers, non-skilled attendants, and other non-distinguishable providers had poorer PCMC scores than nurses or midwives. In a study in Malawi, women assisted by a nurse or midwife at birth had lower PCMC scores than those assisted by a doctor or clinical officer.[45] In contrast, in a study in the U.S. (California), those whom an obstetrician assisted had lower PCMC scores than those assisted by a nurse or midwife.[46] In an intervention study in northern Ghana, women assisted by more than one skilled provider had lower PCMC scores than those assisted by only a nurse or midwife.[36] Three studies reported significant associations between provider gender and PCMC. In studies in Malawi and northern India, being assisted by a male provider was associated with higher PCMC scores,[1,45] while in a study in rural Kenya, having both male and female providers present at birth was associated with higher PCMC scores than having only a male or female provider.[13]

Obstetric complications, the timing of birth, and mode of birth

Six studies reported significant associations between pregnancy or birth complications and PCMC with an inconsistent direction of the association. Obstetric complications were associated with higher PCMC in studies in northern Ghana,[50] rural Kenya,[50] and Southeast Nigeria,[27] while obstetric complications were associated with poorer PCMC in studies in Ethiopia,[48,49,57] Malawi,[45] and rural Kenya.[50] Four studies assessed the association between timing of birth and PCMC. Daytime birth was associated with higher PCMC in a study in rural South Africa[63] and three studies in Ethiopia.[24,48,57] Four studies assessed the influence of the mode of birth on PCMC. Cesarean birth was associated with higher PCMC in studies in rural Kenya,[50] Ethiopia,[49] and rural South Africa[63] but poorer PCMC in northern India[50] and another study in Northwest Ethiopia.[55]

Presence of a companion during labor

Four studies found significant associations between the presence of a birth companion and PCMC with consistent directions of association. Continuous labor support and the presence of a birth companion were associated with higher PCMC scores in studies in rural Kenya[43] and Sri Lanka,[26] respectively. Regarding the type of birth companion, the presence of family and friends was associated with higher PCMC scores in studies in Ethiopia[49] and rural Kenya.[43] The presence of a male relative was associated with higher PCMC in a study in Malawi.[45]

The *location and timing of interviews* were associated with PCMC scores in three studies, with lower PCMC scores for interviews later in the postpartum period and in the community or over the phone.[1,13,42] Additional predictors are shown in Table 5.

Discussion

We systematically reviewed and synthesized quantitative studies that examined women's facility childbirth experiences using the PCMC scale. Our review highlighted the validity and reliability of the PCMC scale across low, middle, and high-income countries and revealed varying levels of PCMC in different settings. PCMC scores across settings ranged from 38.2/100 (SD = 15.8) to 97.1/100 (SD = 2.9), with the lowest scoring sub-domain across most studies being communication and autonomy. In general, PCMC scores were lowest among the studies conducted in Africa, and higher in the studies in North America (only U.S.), with a wide variation in the range of scores for different studies conducted in Asia. Higher socioeconomic status, starting ANC early, giving birth in a health center or private facility, giving birth during the daytime, and having a companion at birth were consistently associated with higher PCMC; while

other variables including age, marital status, parity, tribe/ethnicity, experience of domestic violence, shared decision-making, type and gender of birth provider, and obstetric complications had inconsistent relationships with PCMC.

The variation in PCMC scores across settings is consistent with findings from previous reviews of women's experience of care during pregnancy and childbirth, which include studies using a variety of quantitative measures and qualitative narratives.[14,15,17,65,66] These reviews all report gaps in women's childbirth experiences, with variations in the extent of mistreatment within and across settings.[14,15,17,65] The factors driving these gaps and disparities in women's childbirth have also been summarized and discussed in prior reviews and include resource limitations such as insufficient infrastructure and heavy workloads, which are key sources of provider burnout; as well as normalization of mistreatment, differential exposure to training on patient-provider interactions, and lack of accountability mechanisms.[67–70] In addition, although earlier studies focused on overt mistreatment such as disrespect and abuse (captured under the dignity and respect domain), which was necessary to draw attention to the problem,[14,15] we find more significant gaps across settings in the communication and autonomy domain. This is reflected in findings from more recent reviews using different tools as well as qualitative studies, demonstrating substantial gaps in areas such as poor information provision, providers not listening and failing to answer questions, poor consenting, and lack of shared decision-making.[65,66,71,72] This is potentially due to earlier greater attention to disrespect and abuse, and that effective communication and autonomy takes more effort and time to improve.[73–75]

The relationships between PCMC and SES, ANC timing, birth facility type, time of birth, and birth companion are consistent with findings from previous reviews and have been variously explained.[15,71,76] Higher SES women may receive higher PCMC because they are able to access facilities providing higher person-centered care, have higher expectations and are more able to advocate for themselves, and provider biases lead to better care for higher SES women.[13,77] Women who initiate ANC in the first trimester may also have higher PCMC because they are more familiar with the healthcare system and may have established positive relationships with their providers.[27,55,78] Prior reviews also indicate a higher quality of interpersonal care and satisfaction with services at private facilities and health centers than at public hospitals due to various reasons, including greater motivation and accountability for responsive and respectful care.[65,71] Further, having a companion during labor and birth is a critical component of PCMC, and companions may advocate for the mother, which increases PCMC in other domains.[10]

The inconsistent relationships also align with prior literature.[71,79] In prior reviews, however, it has been unclear if these differences are driven by the different tools used in measurement or by the situational or context-specific nature of those relationships.[71,79] Our findings are, however, unique in identifying these variations even with the same tool, suggesting the role of contextual relationships, rather than a purely measurement problem. For instance, the relationship between age and PCMC is not linear and is related to various other factors, such as autonomy and empowerment.[27] Adolescents and much older women may both experience poor PCMC due to discrimination based on perceptions regarding the appropriate age for pregnancy.[45] Similarly, higher PCMC among married women may be due to provider discrimination towards unmarried women and the potential advocacy from a partner,[80,81] while higher PCMC scores among unmarried women may be due to higher individual autonomy.[82] The intertwining of gender-based violence and mistreatment, where power and oppression interact to leave women vulnerable to mistreatment or violence,[83] and the normalization of abuse, which leads to underreporting of both experiences[26] may also explain some of the inconsistent associations. The direction of association between these factors and PCMC may thus be shaped by the social norms in different cultural contexts.[84]

Additionally, while some studies suggest that female patients perceive female providers as more empathetic, supportive, and person-centered,[85,86] other studies suggest otherwise.[87] One reason why female providers, who are expected to be more empathic due to their own experiences, may not be is that they may be experiencing higher levels of burnout than male providers due to poor work-life balance, lack of professional autonomy, and gender inequity in the workplace, resulting in poor PCMC.[88] For complications, providers may give more information and involve patients or their families when managing complex cases, possibly due to concerns about legal repercussions in case of poor outcomes.[50] On the other hand, the focus on managing complications may leave patients unsupported and uninformed. The associations with location and timing of interviews are likely due to recall and social desirability bias in responses, which should be considered in interpreting data based on when and where interviews were conducted.

The findings of this review have several implications. First, the range of PCMC scores across settings indicates what levels of PCMC are achievable. While a perfect score of 100 represents the highest possible score, this is likely not achievable across many settings. However, the findings across settings, such as India and the U.S., suggest that a score of 90 and above is possible. Thus, we recommend a cut-off of 90 and above as high PCMC scores, with an aspirational score of 100. We also recommend interventions to improve PCMC in any health facility, health system, sub-region, or country with a PCMC score lower than 90. Where average scores exceed 90 but are below 100, the focus should be on continual improvement for the aspirational goal of a consistent score of 100 for all women. Second, the variation in scores across settings also suggests that interventions targeting context-specific drivers are needed. We therefore recommend a local needs assessment to establish a baseline and identify context specific drivers to be able to identify context-appropriate PCMC interventions. Third, the low communication and autonomy scores across settings call for a focus on this domain. All PCMC-related interventions should, therefore, include activities to improve communication and autonomy. Fourth, the findings highlight the potential of interventions to enhance PCMC and the ability of the PCMC scale to detect such changes. A post-intervention sample in India had the highest PCMC score,[25] which highlights the feasibility of increasing the levels of PCMC even in resource-constrained settings. We, therefore, recommend continual efforts to improve PCMC and the use of the PCMC scale for the evaluation of such interventions. Fifth, the findings imply a need to address the SES inequities to ensure equitable PCMC for all women. Policies and interventions that address factors contributing to poor PCMC in public hospitals are also urgently needed. In addition, efforts to promote early ANC, birth companionships, and care at night will improve PCMC. We recommend that all interventions to improve PCMC should include equity stratifiers relevant to the context, and intervention impacts should be evaluated to ensure interventions also benefit the most disadvantaged. Finally, the mixed findings on some predictors imply a need to continue to examine factors influencing PCMC to understand how they may be shaping PCMC in different contexts. Understanding the intersectionality of the drivers of poor PCMC is critical in addressing them effectively. Questions to identify relevant predictors in each context should, therefore, be included in any PCMC data collection efforts.

There are some limitations to note. First, none of the studies included in the review are based on nationally representative studies. Thus, levels of PCMC should not be interpreted as country-level estimates. Second, we only searched three commonly used databases; thus, we may have overlooked studies not indexed in those databases. However, we addressed this issue by conducting hand searches in Google Scholar of articles that cited the original validation studies. Third, although all studies included in this review used the PCMC scale developed by Afulani et al., different versions of the scale with different subsets of items are used in some studies. This limits the score comparison across studies as some differences may be driven by the items excluded. We have, however, noted the items excluded

from different studies to inform the interpretation of the scores. Although we initially considered generating pooled estimates, the significant variations in study designs, sampling methods, and versions of the PCMC scale used made it misleading to do this. However, the short PCMC scale has recently been included in the service provision assessments, which will generate comparable data across various settings using the same design and assessment tool. This will allow for the generation of nationally representative samples and will enable pooled estimates in the future. Further, given the 13 items in the short scale are included in almost all the different scale versions (although only one study reported scores based on this subset of items), we recommended that future studies using longer versions of the scale report the scores for both the short and full scale to increase the accuracy of cross-setting comparisons and pooled estimates. Additionally, all the studies assessing PCMC predictors were cross-sectional, making it difficult to determine causal relationships; some variables identified as predictors could be co-occurring conditions or consequent to PCMC. Further, other known predictors of patient-provider interactions, such as race and ethnicity, substance use, HIV, and other stigmatized conditions, were not identified as predictors in the included studies due to a lack of racial diversity in the samples or consideration of such variables. Therefore, the predictors identified are not exhaustive, and future studies should continue exploring new potential predictors. Nonetheless, this review contributes significantly to the literature on PCMC. This is the first global review on women's experiences of care during childbirth based on a validated scale to provide quantitative experience scores across settings, thus contributing to a greater understanding of PCMC on a global scale.

We found that PCMC is sub-optimal globally; hence, there is a need to improve PCMC in all settings. Implementing effective interventions to improve interpersonal communication and respect for women's autonomy is especially needed. Recent efforts to ensure women have companions of their choice at birth will help improve women's PCMC.[10] However, integrated efforts to address several domains of PCMC may yield more significant impacts and be more cost-effective.[89] It is also crucial for health systems and facilities to create supportive and enabling environments for providers to foster a culture of PCMC. This should include addressing the underlying health system challenges that lead to provider burnout and interventions that help providers better cope with the unavoidable stressors. Interventions to increase accountability for PCMC are also needed.[69] In addition, interventions must address the inequities to ensure all women receive PCMC regardless of their socioeconomic characteristics, the facility they receive care in, or their health status. Such interventions should address provider biases and ensure procedure standardization during all patient encounters.[90] It is important that healthcare providers are supported, motivated, and held accountable for providing PCMC to all patients.

References
1 Afulani PA, Phillips B, Aborigo RA, Moyer CA. Person-centred maternity care in low-income and middle-income countries: analysis of data from Kenya, Ghana, and India. *Lancet Global Health.* 2019;7:e96–e109.
2 Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the quality chasm: a new health system for the 21st century.* Washington (DC): National Academies Press (US); 2001. http://www.ncbi.nlm.nih.gov/books/NBK222274/. Accessed January 8, 2025.
3 White Ribbon Alliance. *Respectful maternity care: the universal rights of childbearing women.* 2012. chrome-extension://efaidnbmnnnibp-cajpcglclefindmkaj/https://whiteribbonalliance.org/wp-content/uploads/2022/05/WRA_RMC_Charter_FINAL.pdf.
4 *WHO. Prevention and elimination of disrespect and abuse during childbirth.* WHO; 2014. http://www.who.int/reproductivehealth/topics/maternal_perinatal/statement-childbirth/en/. Accessed April 4, 2017.
5 Tunçalp Ö, Were W, MacLennan C, et al. Quality of care for pregnant women and newborns—the WHO vision. *BJOG.* 2015;122:1045–1049.
6 World Health Organization. WHO recommendations: intrapartum care for a positive childbirth experience. https://www.who.int/publications-detail-redirect/9789241550215. Accessed May 20, 2024.
7 Moyer CA, Mustafa A. Drivers and deterrents of facility delivery in sub-Saharan Africa: a systematic review. *Reprod Health.* 2013;10:40.
8 Bohren MA, Hunter EC, Munthe-Kaas HM, Souza JP, Vogel JP, Gülmezoglu AM. Facilitators and barriers to facility-based delivery in low- and middle-income countries: a qualitative evidence synthesis. *Reprod Health.* 2014;11:71.
9 Miller S, Abalos E, Chamillard M, et al. Beyond too little, too late and too much, too soon: a pathway towards evidence-based, respectful maternity care worldwide. *Lancet.* 2016;388:2176–2192.
10 Bohren MA, Hofmeyr GJ, Sakala C, Fukuzawa RK, Cuthbert A. Continuous support for women during childbirth. *Cochrane Database Syst Rev.* 2017;7:CD003766.
11 Sudhinaraset M, Landrian A, Golub GM, Cotter SY, Afulani PA. Person-centered maternity care and postnatal health: associations with maternal and newborn health outcomes. *AJOG Glob Rep.* 2021;1:100005.
12 Bohren MA, Mehrtash H, Fawole B, et al. How women are treated during facility-based childbirth in four countries: a cross-sectional

study with labour observations and community-based surveys. *Lancet.* 2019;394:1750–1763.

13 Afulani PA, Sayi TS, Montagu D. Predictors of person-centered maternity care: the role of socioeconomic status, empowerment, and facility type. *BMC Health Serv Res.* 2018;18:360.

14 Bowser D, Hill K. *Exploring evidence for disrespect and abuse in facility-based childbirth: report of a landscape analysis.* USAID-TRAction Project; 2010. published online Sept 20 https://scholarworks.brandeis.edu/esploro/outputs/report/Exploring-Evidence-for-Disrespect-and-Abuse/9924139025301921. Accessed October 7, 2024.

15 Bohren MA, Vogel JP, Hunter EC, et al. The mistreatment of women during childbirth in health facilities globally: a mixed-methods systematic review. *PLoS Med.* 2015;12:e1001847.

16 Cantor AG, Jungbauer RM, Skelly AC, et al. *Respectful maternity care: dissemination and implementation of perinatal safety culture to improve equitable maternal healthcare delivery and outcomes.* Rockville (MD). 2024. https://doi.org/10.23970/AHRQEPCCER269.

17 Larson E, Sharma J, Nasiri K, Bohren MA, Tunçalp Ö. Measuring experiences of facility-based care for pregnant women and newborns: a scoping review. *BMJ Glob Health.* 2020;5. https://doi.org/10.1136/bmjgh-2020-003368.

18 Dhakal P, Gamble J, Creedy DK, Newnham E. Quality of measures on respectful and disrespectful maternity care: a systematic review. *Nurs Health Sci.* 2021;23:29–39.

19 Afulani PA, Diamond-Smith N, Golub G, Sudhinaraset M. Development of a tool to measure person-centered maternity care in developing settings: validation in a rural and urban Kenyan population. *Reprod Health.* 2017;14:118.

20 Afulani PA, Diamond-Smith N, Phillips B, Singhal S, Sudhinaraset M. Validation of the person-centered maternity care scale in India. *Reprod Health.* 2018;15:147.

21 Vedam S, Stoll K, Martin K, et al. The Mother's Autonomy in Decision Making (MADM) scale: patient-led development and psychometric testing of a new instrument to evaluate experience of maternity care. *PLoS One.* 2017;12:e0171804.

22 Vedam S, Stoll K, Rubashkin N, et al. The Mothers on Respect (MOR) index: measuring quality, safety, and human rights in childbirth. *SSM Popul Health.* 2017;3:201–210.

23 Bohren MA, Vogel JP, Fawole B, et al. Methodological development of tools to measure how women are treated during facility-based childbirth in four countries: labor observation and community survey. *BMC Med Res Methodol.* 2018;18:132.

24 Dagnaw FT, Tiruneh SA, Azanaw MM, Desale AT, Engdaw MT. Determinants of person-centered maternity care at the selected health facilities of Dessie town, Northeastern, Ethiopia: community-based cross-sectional study. *BMC Pregnancy Childbirth.* 2020;20:524.

25 Montagu D, Giessler K, Nakphong MK, et al. A comparison of intensive vs. light-touch quality improvement interventions for maternal health in Uttar Pradesh, India. *BMC Health Serv Res.* 2020;20:1121.

26 Rishard M, Fahmy FF, Senanayake H, et al. Correlation among experience of person-centered maternity care, provision of care and women's satisfaction: cross sectional study in Colombo, Sri Lanka. *PLoS One.* 2021;16:e0249265.

27 Ogbuabor D, Nwankwor C. Perception of person-centred maternity care and its associated factors among post-partum women: evidence from a cross-sectional study in enugu state, Nigeria. *Int J Publ Health.* 2021;66. https://doi.org/10.3389/ijph.2021.612894.

28 Getahun SA, Muluneh AA, Seneshaw WW, Workie SG, Kassa ZY. Person-centered care during childbirth and associated factors among mothers who gave birth at health facilities in Hawassa city administration Sidama Region, Southern Ethiopia. *BMC Pregnancy Childbirth.* 2022;22:584.

29 Hameed S, Mureed S, Chaudhri R, Khan SA, Khan MS. Postnatal women's perception on person-centered maternity care in twin cities of Rawalpindi and Islamabad: a descriptive study. *BMC Pregnancy Childbirth.* 2023;23:52.

30 Afulani PA, Altman MR, Castillo E, et al. Adaptation of the person-centered maternity care scale in the United States: prioritizing the experiences of black women and birthing people. *Womens Health Issues.* 2022;32:352–361.

31 Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ.* 2021;372:n71.

32 Aromataris E, Munn Z. *JBI manual for evidence synthesis.* JBI; 2020.

33 Takats S, Stillman D, Cheslack-Postava F, et al. *Zotero*; 2023. https://www.zotero.org/.

34 Veritas Health Innovation. Covidence systematic review software. www.covidence.org.

35 Afulani PA, Feeser K, Sudhinaraset M, Aborigo R, Montagu D, Chakraborty N. Toward the development of a short multi-country person-centered maternity care scale. *Int J Gynaecol Obstet.* 2019;146:80–87.

36 Afulani PA, Aborigo RA, Walker D, Moyer CA, Cohen S, Williams J. Can an integrated obstetric emergency simulation training improve respectful maternity care? Results from a pilot study in Ghana. *Birth.* 2019;46:523–532.

37 Ocansey K. *Assessing person- centered maternity care at the LEKMA hospital*; 2019. published online July http://ugspace.ug.edu.gh/handle/123456789/32952. Accessed August 23, 2024.

38 Sudhinaraset M, Landrian A, Afulani PA, Diamond-Smith N, Golub G. Association between person-centered maternity care and newborn complications in Kenya. *Int J Gynaecol Obstet.* 2019;148:1–8.

39 Montagu D, Giessler K, Nakphong MK, et al. Results of a person-centered maternal health quality improvement intervention in Uttar Pradesh, India. *PLoS One.* 2020;15:e0242909.

40 Sudhinaraset M, Giessler K, Nakphong M, et al. Can changes to improve person-centred maternity care be spread across public health facilities in Uttar Pradesh, India? *Sex Reprod Health Matters.* 2021;29:1–15.

41 Özşahin Z, Altiparmak S, Aksoy Derya Y, Kayhan Tetik B, İnceoğlu F. Turkish validity and reliability study for the person-centered maternity care scale. *J Obstet Gynaecol Res.* 2021;47:3211–3222.

42 Oluoch-Aridi J, Afulani P, Makanga C, Guzman D, Miller-Graff L. Examining person-centered maternity care in a peri-urban setting in Embakasi, Nairobi, Kenya. *PLoS One.* 2021;16:e0257542.

43 Kiti G, Prata N, Afulani PA. Continuous labor support and person-centered maternity care: a cross-sectional study with women in rural Kenya. *Matern Child Health J.* 2022;26:205–216.

44 Mclellan A, Van Ham PT, Sidney D, Aden A, Lacroix A, Edem-Hotah J. Examining person-centred maternal care services at the princess christian maternity hospital, freetown, Sierra Leone. *Afr J Midwifery Womens Health.* 2022;16:1–12.

45 Hughes CS, Kamanga M, Jenny A, et al. Perceptions and predictors of respectful maternity care in Malawi: a quantitative cross-sectional analysis. *Midwifery.* 2022;112:103403.

46 Altman MR, Afulani PA, Melbourne D, Kuppermann M. Factors associated with person-centered care during pregnancy and birth for Black women and birthing people in California. *Birth.* 2023;50:329–338.

47 Dagnaw FT, Kehali KY, Agago TA, Hailemeskel HS. Person-centered maternity care among mothers who gave birth in South wollo zone public hospitals, Northeastern Ethiopia: a mixed-method study. *Health Serv Insights.* 2022;15:11786329221127946.

48 Tarekegne AA, Giru BW, Mekonnen B. Person-centered maternity care during childbirth and associated factors at selected public hospitals in Addis Ababa, Ethiopia, 2021: a cross-sectional study. *Reprod Health.* 2022;19:199.

49 Stierman EK, Zimmerman LA, Shiferaw S, Seme A, Ahmed S, Creanga AA. Understanding variation in person-centered maternity care: results from a survey of postpartum women in 6 regions of Ethiopia. *AJOG Glob Rep.* 2023;3:100140.

50 Kapula N, Sacks E, Wang DT, Odiase O, Requejo J, Afulani PA. Associations between self-reported obstetric complications and experience of care: a secondary analysis of survey data from Ghana, Kenya, and India. *Reprod Health.* 2023;20:7.

51 Naito YT, Fukuzawa R, Ganchimeg T, et al. Validation of the person-centered maternity care scale at governmental health facilities in Cambodia. *PLoS One.* 2023;18:e0288051.

52 Zhong X, Hu R, Afulani PA, et al. Cross-cultural adaptation and psychometric properties of the Chinese version of the person-centered maternity care scale. *BMC Pregnancy Childbirth.* 2023;23:652.

53 Barabara ML, Cohen SR, Masenga G, et al. Factors associated with respectful maternity care and influence of HIV status among women giving birth in Kilimanjaro, Tanzania. *Birth.* 2024. https://doi.org/10.1111/birt.12787.

54 Afulani PA, Coleman-Phox K, Leon-Martinez D, et al. Psychometric assessment of the US person-centered prenatal and maternity care scales in a low-income predominantly Latinx population in California. *BMC Womens Health.* 2023;23:616.

55 Alelign YA, Melesse MF, Beka E, Alemu AA, Ejigu Meskele N, Asres CG. Person-centered maternity care during childbirth and associated factors among mothers who gave birth at public health

institutions of Debre Markos town, Northwest Ethiopia, 2022: a cross-sectional study. *SAGE Open Med.* 2024;12:20503121231225352.

56 Watt MH, Marchand V, Barabara ML, et al. Outcomes of the MAMA training: a simulation and experiential learning intervention for labor and delivery providers to improve respectful maternity care for women living with HIV in Tanzania. *AIDS Behav.* 2024. https://doi.org/10.1007/s10461-024-04283-5. published online March 14.

57 Kabale WD, Bekele GG, Gonfa DN, Yami AT. Person-centered maternity care during childbirth and associated factors at public hospitals in central Ethiopia. *SAGE Open Med.* 2024;12:20503121241257790.

58 Nakphong MK, Afulani PA, Beltrán-Sánchez H, Opot J, Sudhinaraset M. Integrating support persons into maternity care and associations with quality of care: a postpartum survey of mothers and support persons in Kenya. *BMC Pregnancy Childbirth.* 2024;24:425.

59 Mohammadkhani N. Translation and adaptation of the person-centered maternity care scale to a Persian-speaking population: a confirmatory factor analysis. *BMC Public Health.* 2024;24:1619.

60 Kaur R, Singh T, Kalaivani M, Yadav K, Gupta SK, Kant S. Respectful maternity care during childbirth among women in a rural area of northern India. *Indian J Community Med.* 2024. https://doi.org/10.4103/ijcm.ijcm_839_23.

61 Dagnaw GW, Bizuneh MM, Kassie MB. Person-centered maternity care and associated factors among women who give birth at public hospitals in South Gondar zone, North West Ethiopia, 2023. *PLoS One.* 2024;19:e0303389.

62 Singh M, Baruhee S, Saxena P. Impact of respectful maternal care training of health care providers on satisfaction with birth experience in mothers undergoing normal vaginal birth: a prospective interventional study. *Int J Gynaecol Obstet.* 2024. https://doi.org/10.1002/ijgo.15875. published online Aug 22.

63 Doherty T, Horwood C, Mapumulo S, et al. Case for improving respectful care: results from a cross-sectional survey of person-centred maternity care in rural South Africa. *BMJ.* 2024;2. https://doi.org/10.1136/bmjph-2024-001086.

64 Melo G, Dutra KL, Rodrigues Filho R, et al. Association between psychotropic medications and presence of sleep bruxism: a systematic review. *J Oral Rehabil.* 2018;45:545–554.

65 Gwacham-Anisiobi U, Banke-Thomas A. Experiences of health facility childbirth in sub-Saharan Africa: a systematic review of qualitative evidence. *Matern Child Health J.* 2022;26:481–492.

66 van den Berg MMJ, Dancet EaF, Erlikh T, van der Veen F, Goddijn M, Hajenius PJ. Patient-centered early pregnancy care: a systematic review of quantitative and qualitative studies on the perspectives of women and their partners. *Hum Reprod Update.* 2018;24:106–118.

67 Sen G, Reddy B, Iyer A. Beyond measurement: the drivers of disrespect and abuse in obstetric care. *Reprod Health Matters.* 2018;26:6–18.

68 Rubashkin N, Warnock R, Diamond-Smith N. A systematic review of person-centered care interventions to improve quality of facility-based delivery. *Reprod Health.* 2018;15:169.

69 Reddy B, Thomas S, Karachiwala B, et al. A scoping review of the impact of organisational factors on providers and related interventions in LMICs: implications for respectful maternity care. *PLoS Global Public Health.* 2022;2:e0001134.

70 Lunda P, Minnie CS, Lubbe W. Factors influencing respectful perinatal care among healthcare professionals in low-and middle-resource countries: a systematic review. *BMC Pregnancy Childbirth.* 2024;24:1–9.

71 Kawish AB, Umer MF, Arshed M, Khan SA, Hafeez A, Waqar S. Respectful maternal care experience in low- and middle-income countries: a systematic review. *Medicina (Kaunas).* 2023;59:1842.

72 Mgawadere F, Shuaibu U. Enablers and barriers to respectful maternity care in low and middle-income countries: a literature review of qualitative research. *Int J Clin Med.* 2021;12:224–249.

73 Kwame A, Petrucka PM. A literature-based study of patient-centered care and communication in nurse-patient interactions: barriers, facilitators, and the way forward. *BMC Nurs.* 2021;20:158.

74 Afulani PA, Buback L, Kelly AM, Kirumbi L, Cohen CR, Lyndon A. Providers' perceptions of communication and women's autonomy during childbirth: a mixed methods study in Kenya. *Reprod Health.* 2020;17:85.

75 Kloester J, Willey S, Hall H, Brand G. Midwives' experiences of facilitating informed decision-making – a narrative literature review. *Midwifery.* 2022;109:103322.

76 Habib HH, Mwaisaka J, Torpey K, Maya ET, Ankomah A. Are respectful maternity care (RMC) interventions effective in reducing intrapartum mistreatment against adolescents? A systematic review. *Front Glob Womens Health.* 2023;4. https://doi.org/10.3389/fgwh.2023.1048441.

77 Afulani PA, Ogolla BA, Oboke EN, et al. Understanding disparities in person-centred maternity care: the potential role of provider implicit and explicit bias. *Health Policy Plan.* 2021;36:298–311.

78 Afulani PA, Buback L, Essandoh F, Kinyua J, Kirumbi L, Cohen CR. Quality of antenatal care and associated factors in a rural county in Kenya: an assessment of service provision and experience dimensions. *BMC Health Serv Res.* 2019;19:1–16.

79 Chabbert M, Panagiotou D, Wendland J. Predictive factors of women's subjective perception of childbirth experience: a systematic review of the literature. *J Reprod Infant Psychol.* 2021;39:43–66.

80 Mengistie T, Mulatu T, Alemayehu A, Yadeta TA, Dheresa M. Respectful maternity care among women who gave birth at public hospitals in Hadiya Zone, Southern Ethiopia. *Front Public Health.* 2022;10:949943.

81 Abuya T, Warren CE, Miller N, et al. Exploring the prevalence of disrespect and abuse during childbirth in Kenya. *PLoS One.* 2015;10:e0123606.

82 Osamor PE, Grady C. Autonomy and couples' joint decision-making in healthcare. *BMC Med Ethics.* 2018;19:3.

83 Vedam S, Stoll K, Taiwo TK, et al. The Giving Voice to Mothers study: inequity and mistreatment during pregnancy and childbirth in the United States. *Reprod Health.* 2019;16:77.

84 Schaaf M, Jaffe M, Tunçalp Ö, Freedman L. A critical interpretive synthesis of power and mistreatment of women in maternity care. *PLoS Global Public Health.* 2023;3:e0000616.

85 Nicolai J, Demmel R. The impact of gender stereotypes on the evaluation of general practitioners' communication skills: an experimental study using transcripts of physician-patient encounters. *Patient Educ Couns.* 2007;69:200–205.

86 Jefferson L, Bloor K, Birks Y, Hewitt C, Bland M. Effect of physicians' gender on communication and consultation length: a systematic review and meta-analysis. *J Health Serv Res Policy.* 2013;18:242–248.

87 Rogo-Gupta LJ, Haunschild C, Altamirano J, Maldonado YA, Fassiotto M. Physician gender is associated with press ganey patient satisfaction scores in outpatient gynecology. *Womens Health Issues.* 2018;28:281–285.

88 Karakcheyeva V, Willis-Johnson H, Corr PG, Frame LA. The well-being of women in healthcare professions: a comprehensive review. *Glob Adv Integr Med Health.* 2024;13:27536130241232929.

89 Kasaye H, Sheehy A, Scarf V, Baird K. The roles of multi-component interventions in reducing mistreatment of women and enhancing respectful maternity care: a systematic review. *BMC Pregnancy Childbirth.* 2023;23:1–19.

90 Mira-Catalá P, Hernández-Aguado I, Chilet-Rosell E. Respectful maternity care interventions to address women mistreatment in childbirth: what has been done? *BMC Pregnancy Childbirth.* 2024;24:322.