Mashhad University of Medical Sciences (MUMS)

Reviews in Clinical Medicine

Clinical Research Development Center Ghaem Hospital

Methodological Quality of Researchs on Breastfeeding Support Instruments: A Critical Appraisal Review

Nahid Maleki[1*], Zahrasadat Hosseinivaeaz[2], Morvarid Nehi[2]

[1]*Department of Midwifery, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran.*

[2]*Department of Nursing and Midwifery, MMS.C., Islamic Azad University, Mashhad, Iran.*

ARTICLE INFO

Article type
Systematic review

Article history
Received: 27 Dec 2025
Accepted: 17 June 2026

Keywords
Breastfeeding
Support
Instruments
Inventory
critical review

ABSTRACT

Introduction: Breastfeeding provides substantial health benefits for mothers and infants; however, exclusive breastfeeding rates remain below recommended levels in many settings. Social support from family members, peers, and healthcare providers plays a critical role in promoting successful breastfeeding. Given the increasing use of breastfeeding support instruments in research and practice, understanding the methodological quality of studies reporting these instruments is important. This review aimed to critically appraise the methodological quality of studies related to breastfeeding support instruments.

Methods: A systematic critical appraisal review was conducted following a structured literature search in PubMed, Scopus, ScienceDirect, Cochrane Library, SID, and Magiran for studies published in English or Persian up to September 2025. three reviewers independently screened records and selected eligible studies. Methodological quality was assessed using the Mixed Methods Appraisal Tool (MMAT, 2018). Data extraction was performed independently and discrepancies were resolved through consensus.

Results: Of 65 full-text articles assessed for eligibility, 18 studies met the inclusion criteria, including 16 quantitative and 2 qualitative studies. Among quantitative studies, most demonstrated appropriate sampling strategies (87.5%), appropriate measurements (100%), and suitable statistical analyses (100%). However, only 18.75% of studies used representative samples of the target population, and several studies provided insufficient information regarding nonresponse bias. The two qualitative studies met almost all MMAT quality criteria.

Conclusion: The included studies generally demonstrated strong methodological quality in measurement procedures and analytical approaches. Nevertheless, important limitations were identified in sample representativeness and reporting practices, which may affect the generalizability of findings. Future research should prioritize rigorous sampling methods, transparent reporting, and appropriate management of missing data to strengthen the evidence base related to breastfeeding support instruments.

Please cite this paper as:
Maleki N, Hosseinivaeaz Z, Nehi M. Methodological Quality of Research on Breastfeeding Support Instruments: A Critical Appraisal Review. *Reviews in Clinical Medicine*. 2026;13(3): 194-204

***Corresponding author**: Nahid Maleki, Department of Midwifery, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran*

Email: malekimidwife@gmail.com

Doi: 10.22038/rcm.2026.93876.1578

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction

Breastfeeding is widely recognized as one of the most effective public health interventions for improving maternal and infant health outcomes [1]. Despite its well-documented benefits, breastfeeding initiation and continuation rates remain suboptimal in many regions of the world [2]. As a result, healthcare systems and researchers have increasingly emphasized the need for evidence-based breastfeeding support programs [3]. Central to the development, implementation, and evaluation of these programs are measurement instruments designed to assess various dimensions of breastfeeding support. These instruments may evaluate perceived emotional and informational support, support provided by healthcare professionals, family and peer support, service-related factors, and broader sociocultural influences affecting breastfeeding behaviors [4, 5]. Over the past decades, numerous breastfeeding support instruments have been developed and applied across different populations and settings. Consequently, a growing body of research has emerged involving instrument development, adaptation, validation, and application studies [6, 7].

The methodological quality of these studies is critical because weaknesses in study design, sampling procedures, data collection, or analytical methods may affect the credibility, interpretation, and applicability of findings derived from breastfeeding support instruments.

Although individual studies have reported various breastfeeding support instruments, there has been limited attention to systematically examining the methodological quality of the research underpinning these instruments. Evaluating the methodological rigor of such studies can help identify strengths and limitations within the existing evidence base, inform interpretation of reported findings, and guide future research in this field [8-11]. Therefore the aim of this critical appraisal review was to systematically evaluate the methodological quality of studies related to breastfeeding support instruments using the Mixed Methods Appraisal Tool (MMAT, 2018) and to identify methodological strengths, limitations, and areas for future improvement in research on breastfeeding support measurement.

Methods

In this study, a systematic critical appraisal review was conducted using the following electronic databases as the most appropriate resources to identify both English and Persian language published studies: Pub Med, Scopus, Science Direct, Cochrane, SID, Magiran and Google Scholar using equivalent keywords up to September 2025. Search keywords were (breastfeeding support OR breastfeeding or infant feeding or lactation) AND (inventory OR scale OR tool OR instrument OR assessment) in the title, abstract, or keywords. This review was conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines. A review protocol was not registered. A team of four reviewers conducted the search and selection processes (NM, ZH, MN and….). All of aforementioned databases were searched for published articles in English and Persian languages. Many of the search attempts generated duplicate articles, or articles which were unrelated to the study, which were not considered in the reviews. In addition, reference section of relevant articles, were manually checked to identify further missed articles by electronic search.

Studies were eligible if they:

(1) reported the development. adaptation. validation. application. or evaluation of a breastfeeding support instrument;
(2) used quantitative. qualitative. or mixed-methods designs;
(3)were published in English or Persian; and
(4) were available as full-text articles.

Studies were excluded if they:
(1)did not involve a breastfeeding support instrument;
(2)were conference abstracts editorials. letters. dissertations. or review articles; or
(3) lacked sufficient methodological information for appraisal.

A total of 65 studies were initially identified through systematic searches across databases. Specifically, 65 articles were retrieved from international sources including PubMed (n = 19), Scopus (n = 16), and Science Direct (n = 19), while 11 studies were identified in Persian databases, namely SID (n = 6) and Magiran (n = 5). After removing 11 duplicate records, 54 unique articles remained. Abstracts were screened for relevancy, and resulting the exclusion of 36 non-eligible studies. Finally, 18 studies met all inclusion criteria and were involved in the final review. The detailed screening process is illustrated in the PRISMA flow diagram (Figure 1). Methodological quality was assessed using the Mixed Methods Appraisal Tool (MMAT, 2018).

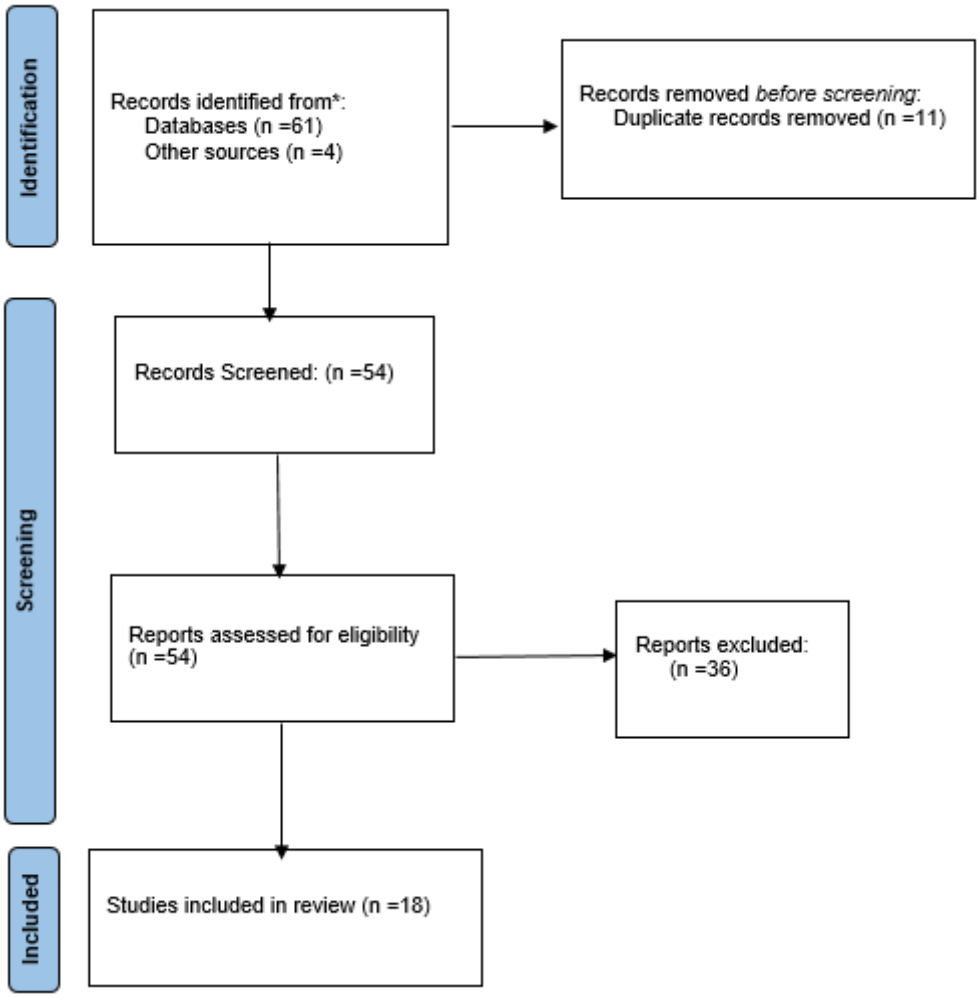

Figure 1. PRISMA flow diagram for selection of eligible studies

The MMAT evaluates the methodological rigor of studies across different research designs, including qualitative, quantitative and mixed-methods approaches and includes five methodological criteria for each study category such as: sampling appropriateness, representativeness of participants, adequacy of measurements, completeness of outcome data, and suitability of data analysis procedures. Following the developers' recommendations, an overall numerical quality score was not calculated. Instead, each criterion was evaluated individually and reported as "Yes," "No," or "Can't tell." Results of the appraisal were summarized in tabular form and narratively synthesized. The data obtaining from the included studies were carried out by NM, MN and ZH independently according to a predefined checklist, consist of; first author, year, location, design, objectives, sample size, tool name, number of items, dimensions, scoring, score range, and theoretical framework. Data were assessed by two reviewers and disparities were resolved by discussion with a third researcher (NM). Overall, there was complete agreement between the two reviewers. The extracted data was summarized by all authors independently/working together, and a brief description of the findings for each study was provided.

Results

Study Selection and Characteristics of Included Studies

Of the 62 full-text articles assessed for eligibility, 18 studies met the inclusion criteria and were included in this review. The study selection process is illustrated in the PRISMA flow diagram (Figure 1). The characteristics of the included studies are presented in Table 1.

Table 1. The characteristic of eighteen studies included into systematic review.

3	2	1	NO.
Yeşilçiçek Ç, et al.,2024, Turkey [14]	Velho et al., 2024, Brazil [13]	Sezer, HK et al, 2024, Turkey [12]	Authors, Year, Location
Methodological (Scale Development)	Methodological study (Validation study)	methodological study	Design
To develop and validate a scale to investigate the working mothers' perceptions of workplace breastfeeding support in Turkey	to describe the process of cross-cultural adaptation of the Breastfeeding Self-Efficacy Scale—Short Form among Fathers for use in Brazil	Development and psychometric evaluation of the paternal support scale of breastfeeding	Objectives
325 working and breastfeeding mothers	131 fathers	203 fathers with babies 0-6 months of age who were actively breastfed be-tween January and June 2022	Sample size
Breastfeeding Support Scale in the Workplace (BSSW)	BSES-SFF-Br	Paternal Support Scale of Breastfeeding (PSSB)	Tool name
9 (final)	14 items	21-item	No. of Items
1. Manager support 2. Environmental support	3 dimensions: Emotional Support, Practical Support, Breastfeeding Knowledge	one-dimensional	dimensions
5-point Likert scale (1 = Not at all suitable to 5 = Completely suitable)	5-point Likert scale (1 = strongly disagree to 5 = strongly agree)	Scale from 1 = strongly disagree to 5 = strongly agree for each item.	Scoring
9 to 45 (higher score = more perceived support)	18–90	The scale ranges from 21 to 105 points. There is no defined cutoff point. A higher total score indicates a greater level of support provided by fathers to their spouses during breastfeeding.	score Range
Based on the key factors identified through the literature review and interviews, Items categorized into 5 dimensions in draft stage	Based on Bandura's concept of self-efficacy and social support theory	Not discussed	Theoretical Framework

7	6	5	4
Keiko Nanishi, et al., 2021, Japan [18]	Saglam et al., 2023, Turkey [17]	Mashayekh-Amiri S, et al.,2023, Tabriz, Iran[16]	Gayesa RT et al.,Ngai FW, 2024, Ethiopia [15]
Instrument development and psychometric evaluation – literature review, expert validation, pilot testing, longitudinal survey	Methodological (scale development)	Cross-sectional descriptive survey	Cross-sectional study with translation and psychometric validation
To develop and validate a scale that measures breastfeeding support from lay and professional persons among mothers in Japan, and to assess its predictive validity	To develop a valid and reliable scale to evaluate workplace breastfeeding support for working women	To evaluate the psychometric properties of the Persian version of the Exclusive Breastfeeding Social Support Scale (EBFSS) during the postpartum period	Translate the exclusive breastfeeding social support scale into the Afaan Oromo language (EBFSS-AO) and test its psychometric properties among Ethiopian women
243 mothers (main study), 27 mothers (pilot testing)	490 working women attending a hospital in Turkey	348 women with EBF in the first four months after delivery for construct validity , A group of experts(n = 10), a	Everything I send you, write in English. 160 women after childbirth (for test-retest: 48 people)
Breastfeeding Support Scale (final version: 11 items)	Workplace Breastfeeding Support for Working Women Scale (WBSWWS)	Exclusive Breastfeeding Social Support Scale (EBFSS) for Persian version	Exclusive Breastfeeding Social Support Scale – Afaan Oromo version (EBFSS-AO)
11 (originally 31, reduced through factor analysis)	31	16-item	16
Support from breastfeeding peers and healthcare professionals Practical help Emotional support and help with breastfeeding	1.Physical Work Environment (9 items) 2.Manager Support (5 items) 3.Co-worker Support (5 items) 4.Workflow (4 items)	1. Emotional Support (8 items) 2. Instrumental Support (3 items) 3. Informational Support (5 items)	Instrumental Support (5 items), Emotional Support (5 items), Informational Support (6 items)
5-point Likert scale (1 = strongly disagree to 5 = strongly agree); some reverse-coded items	5-point Likert scale (1 = not at all, 5 = very appropriate)	3-point Likert scale: 0 = (didn't help at all). 1 = (Helped less than requested). 2 =(Helped as requested)	Three-point Likert scale (1 = Rarely, 2 = Sometimes, 3 = Often)
Not explicitly stated, but each item scores 1–5 → total range likely 11 to 55	31 to 155 (higher score = more support)	0 to 32 (higher scores indicate greater social support)	Total scale range: 16–48
Social Ecological Model and House's typology of social support (emotional, instrumental, informational, appraisal)	Developed based on literature and expert input; tested with EFA and CFA for construct validity	Based on social support theory in the context of exclusive breastfeeding	Based on social support theory in the context of exclusive breastfeeding

Rev Clin Med 2026; Vol 13 (No 3)
Published by: Mashhad University of Medical Sciences (Reviews in Clinical Medicine)

10	9	8
Moriwaki, C et al.,2016 Japan [21]	Rosa M. Bermejo et al., 2016, Spain [20]	Boateng, GO et al., 2018 Uganda [19]
"Scale Development and Validation Study with data collection from couples at a single time point (1 month postpartum)"	Cross-sectional study	observational cohort
Develop a Breastfeeding Support Scale for Couples (BSSC) and to examine its reliability and validity.	To develop an instrument to measure variables that influence health care professionals' behavior with regard to the protection, promotion, and support of breastfeeding, especially one that related to the Baby-Friendly	Develop and validate a tool to measure EBFSS in low-income settings.
Subjects were 324 wives who came for their 1-month postpartum checkup and their husbands. Valid responses obtained from 159 husbands (97.0%) and 303 wives (93.5%) were then subjected to analysis	201 maternal and child health professionals (189 final analysis)	at 1 (n=238) and 3 (n=237) months post-partum
Breastfeeding Support Scale for Couples (BSSC)	QPBS-EMCA (Questionnaire of Professional Breastfeeding Support of the EMCA Program)	Exclusive Breastfeeding Social Support:(EBFSS)
A scale for husbands comprised of 10 questions and two factors, and a scale	49	16 items
The BSSC scale for husbands has two factors: "Considerations for the wife" (7 items, α=0.89) and "Cooperation with child-rearing and housework" (3 items). For wives, it comprises three factors: "Considerations for the wife" (7 items,), "Cooperation with child-rearing and housework" (3 items), and "The husband's desire for wife's breastfeeding" (4 items,).	Beliefs Scale: 16 items Attitudes Scale: 13 items Subjective Norms Scale: 12 items	Three dimensions of support emerged: Instrumental, Emotional and Informational
not explicitly stated	uses a 5-point Likert scale for scoring, with responses ranging from 1 (Strongly Disagree) to 5 (Strongly Agree)	Three and included (1) no help at all, (2) less than you would like, (3) as much as you would like.
not explicitly stated	Beliefs: 16–80 ،Attitudes: 13–65 ،Subjective Norms: 12–60 ،Behavioral Intention: 8–40	Instrumental: 3-9 Emotional: 8-24 Informational: 5-15
not explicitly stated	Theory of Reasoned Action (TRA) + Global Criteria for BFHI + WHO Code (1981)	To develop the scale, local and international breastfeeding experts were consulted on modifications to the Hughes' Breastfeeding Social Support Scale.

13	12	11
Moran V, et al., 1999; England [7]	Hojnacki SE, et al.,, 2012 USA [22]	Hirani, SAA et al., 2013 Pakistan [5]
Methodological research	Instrument development & pilot study	methodological research
To The development and validation of the Breastfeeding Support Skills Tool breastfeeding support	Develop op and pilot an instrument to measure formal company breastfeeding support	develop and test the psychometric properties of the 'Perceived Breastfeeding Support Assessment Tool' (PBSAT
31 working midwives	151 companies	200 breast-feeding working mothers
Managers' Attitude Toward Breastfeeding Support Questionnaire	Company Breastfeeding Support Survey	Perceived Breastfeeding Support Assessment Tool' (PBSAT
30	16	29-item
Not mentioned	Time support (7 items), Structural support (9 items), Demographics & benefits (12 items)	two dimensions, 'workplace environmental support' (12 items; and 'social environmental support'(17 items)
Likert scale	Each item scored 0 (not available), 1 (partially available), 2 (fully available); subscales summed for total support score	not explicitly stated
Not explicitly stated	0-26	In view of the coding assigned to the answer categories, the lower mean scores indicated more support towards breast feeding, whereas, the higher mean scores revealed lesser support for the breast-feeding working mothers.
The Breastfeeding Support Skills Tool developed has demonstrated reliability and validity. assessment tool, clinical skills, breast feeding	Work-family balance, workplace climate concepts	The Socio-ecological model by Bronfenbrenner (1979) has served as the basis for the development of this instrument.

16	15	14
Greene Sally W. et al.,2008 Michigan, USA [25]	Bai Y, et al., 2008, Indiana, USA [24]	Rojjanasrirat, W et al., 2010, Midwestern United States [23]
Cross-sectional, survey	Cross-sectional survey	cross-sectional methodological design
To validate an instrument measuring employees' perceptions of workplace breastfeeding support	Develop and validate a short questionnaire to measure mothers' perception of workplace breastfeeding support	Psychometric Evaluation of the Employer Support for Breastfeeding Questionnaire (ESBQ)
104	66 working mothers (primiparous, 6–12 months postpartum, had initiated breastfeeding)	380 business owners, managers, or supervisors
Employee Perceptions of Breastfeeding Support Questionnaire (EPBS-Q)	Workplace Breastfeeding Support Scale (WBSS)	Employer Support for Breastfeeding Questionnaire (ESBQ)
41	12	The scale consisted of 46 items
Two: (1) Company policies/work culture (23 items), (2) Manager/co-worker support (18 items)	1. Technical support 2. Environmental support 3. Facility support 4. Peer support	8 subscales that measure attitude (direct attitude, behavioral beliefs,outcome evaluation), subjective norm (overall direct subjective norm, normative beliefs, motivation to com-ply), perceived behavioral control (direct measure), andintention to support breastfeeding (direct
4-point Likert scale (Strongly agree to strongly disagree) for most items; 4 items as Yes/No	A seven-point Likert scale	The survey measures Attitude, Subjective Norm, Perceived Behavioral Control, and Intention to Support Breastfeeding using various subscales. Attitude: Measured directly (5 items, 5-point semantic differential) and via belief
Not explicitly specified	not explicitly stated	The survey measures Attitude (Direct: 5-25; Belief Composite: 11-275), Subjective Norm (Direct: 5-point; Belief Composite: 4-100), Perceived Behavioral Control (9-item: 9-45), and Intention to Support Breastfeeding (1-item: 1-5). Higher scores generally indicate more positive attitudes, greater subjective norms, and stronger perceived control.
Ecological framework	not explicitly stated	The article's theoretical framework is the Theory of Planned Behavior (TPB). The ESBQ was developed using this theory, which explains behavior through three main constructs: Attitude, Subjective Norm, and Perceived Behavioral Control. These factors

18	17
Greene Sally W& Olson B.,2008 Michigan, USA [27]	Fuk Tan Chow, 2009, Michigan, USA [26]
Instrument development study	Instrument development (qualitative approach: focus groups, expert review, cognitive interviews)
To develop an instrument to measure female employees' perceptions of workplace breastfeeding support.	Develop an instrument to assess manager attitudes toward breastfeeding support in the workplace
Examination of the literature, reviews with experts, and Fourteen one-on-one interviews were conducted with	Five focus groups with a total of 25 participants (11 men and 14 women) 2. Experts' input for content review (n=20) and item's fit (n=17)
Employees' Perceptions of Workplace Breastfeeding Support (no formal short name)	Manager Attitudes Toward Workplace Breastfeeding Support
54	Final: 83 items
Company policies/work culture, Manager support, Co-worker support, Workflow, Physical environment	4 subscales derived from thematic analysis: a)Individual Support for Breastfeeding, (b) Company Support for Breastfeeding, (c) Concerns and Benefits of Breastfeeding,(d) Experience with Breastfeeding,
4-point Likert scale (Strongly agree to strongly disagree) for most items; 4 items as Yes/No	Dichotomous agree/disagree or four-point Likert rating scale.
Not specified; each item scored individually; no total score reported in article	not explicitly stated
Social Ecological Model	Based on Wolfe & Smith (2007) model; subscales derived from focus group themes analyzed via NVivo

Methodological Quality Assessment

The methodological quality appraisal findings are presented in Tables 2 and 3.

Among the 16 quantitative studies, 14 studies (87.5%) met the first MMAT criterion regarding the appropriateness of the sampling strategy for addressing the research question. In contrast, only 3 studies (18.75%) met the criterion related to sample representativeness, while 11 studies (68.75%) did not meet this criterion and 2 studies (12.5%) provided insufficient information for assessment. These findings suggest that although sampling approaches were generally appropriate, the representativeness of study samples was often limited.

All quantitative studies met the criterion concerning the appropriateness of measurements for addressing the research question. Likewise, all studies satisfied the criterion related to the suitability of statistical analyses. Regarding nonresponse bias, 10 studies (62.5%) met the criterion, whereas 4 studies (25%) lacked sufficient reporting and 2 studies (12.5%) did not adequately address this issue. Among the quantitative studies, the studies conducted by Mashayekh-Amiri et al (2023) [16] and Boateng et al (2018) [19] met all five MMAT criteria. The study by Sezer et al (2024)[12] did not meet the criterion related to sample representativeness, while the study by Yeşilçiçek Çalık et al (2024) did not meet the criterion concerning nonresponse bias[28]. Nevertheless, these studies fulfilled the remaining methodological criteria. Two qualitative studies, Greene and Olson (2008) [27] and Chow et al (2009) [26] were also included in the review. Both studies satisfied all five MMAT criteria, indicating strong methodological coherence between the research questions, data collection methods, analysis procedures, and interpretation of findings. Overall, the methodological appraisal revealed notable strengths in sampling strategy, measurement procedures, and statistical analyses across the included studies. However, recurring limitations were identified in sample representativeness and the reporting or management of nonresponse bias. These methodological concerns should be considered when interpreting and generalizing the findings of studies involving breastfeeding support instruments.

The detailed quality assessment of the included studies is presented in Tables 2 and 3.

Table 2. MMAT rating of quantitative study

NO	Author (Year)	Methodological quality criteria				
		MMAT 1	MMAT 2	MMAT 3	MMAT 4	MMAT 5
1	Sezer et al. (2024)[12]	+	0	+	+	+
2	Velho et al. (2024)[29]	+	-	+	0	+
3	Yeşilçiçek Çalık et al. (2024)[28]	+	+	+	0	+
4	Gayesa et al. (2024)[15]	0	0	+	+	+
5	Mashayekh-Amiri et al. (2023)[16]	0	+	-	+	0
6	Yesildere Saglam et al. (2023)[17]	+	-	+	0	+
7	Nanishi et al. (2021)[18]	+	0	+	+	+
8	Boateng et al. (2018)[19]	+	+	+	+	-
9	Bermejo et al. (2016)[20]	0	-	+	-	+
10	Moriwaki et al. (2016)[21]	+	0	+	+	+
11	Hirani et al. (2013)[5]	+	-	+	+	+
12	Hojnacki et al. (2012)[22]	+	-	+	-	+
13	Wolfe and Olson (2012)[30]	-	0	+	+	-
14	Rojjanasrira et al. (2010)[23]	0	-	+	0	+
15	Bai et al. (2008)[24]	0	+	+	+	0
16	Greene et al. (2008)[25]	+	0	+	0	+

Table 3. MMAT rating of qualitative study.

NO	Author (Year)	Methodological quality criteria				
		MMAT 1	MMAT 2	MMAT 3	MMAT 4	MMAT 5
1	Chow et al. (2009)[26]	0	+	+	0	+
2	Greene & Olson (2008)[27]	+	+	0	+	0

+ = Yes, - = No, 0 = can't tell. MMAT 1: Is the qualitative approach appropriate to answer the research question? MMAT 2: Are the qualitative data collection methods adequate to address the research question? MMAT 3: Are the findings adequately derived from the data? MMAT 4: Is the interpretation of results sufficiently substantiated by data? MMAT 5: Is there coherence between qualitative data sources, collection, analysis, and interpretation? MMAT, Mixed Methods Appraisal Tool.

Discussion

This critical appraisal review examined the methodological quality of studies related to breastfeeding support instruments using the Mixed Methods Appraisal Tool (MMAT, 2018). The findings provide important insights into the strengths and limitations of the existing evidence base and highlight methodological considerations for future research involving breastfeeding support instruments.

Methodological Quality of Included Studies

The MMAT appraisal indicated that most included studies demonstrated strengths in measurement procedures and statistical analyses. All quantitative studies met the MMAT criteria related to the appropriateness of measurements and statistical analyses, suggesting that the selected methods were generally suitable for addressing the stated research questions. In addition, most studies employed sampling strategies that were aligned with their research objectives.

Despite these strengths, important methodological limitations were identified. Sample representativeness emerged as the most frequent weakness, with only a small proportion of studies meeting the corresponding MMAT criterion. This finding suggests that many studies relied on samples that may not adequately reflect the broader populations for whom breastfeeding support interventions and assessments are intended. Similar concerns have been reported in health research, where limited representativeness may reduce the generalizability of study findings (11).

Another recurring limitation involved nonresponse bias and insufficient reporting of participant recruitment and retention procedures. In several studies, the lack of detailed information regarding response rates and missing data management made it difficult to assess the potential impact of nonresponse on study findings. These issues may affect the interpretation and transferability of evidence generated from studies involving breastfeeding support instruments (8,14).

Methodological Trends and Implications

The findings suggest that research related to breastfeeding support instruments has generally adopted appropriate measurement and analytical approaches. However, methodological rigor in sampling and reporting remains inconsistent. The frequent use of convenience sampling and cross-sectional designs may limit the extent to which findings can be generalized across different populations and settings. Given the diversity of breastfeeding experiences across sociocultural and healthcare contexts, future studies should prioritize more representative sampling strategies and transparent reporting practices.

The high methodological quality observed in the included qualitative studies highlights the value of qualitative inquiry in this field. Qualitative research provides contextual understanding of breastfeeding support experiences and can contribute to the development of more comprehensive and contextually relevant research questions and assessment approaches (15).

Implications for Future Research

The findings of this review indicate that future studies involving breastfeeding support instruments should strengthen methodological rigor by improving sample representativeness, minimizing nonresponse bias, and enhancing transparency in reporting. Greater attention to these issues would improve the quality, interpretability, and generalizability of evidence generated in this field.

Furthermore, although the present review focused on the methodological quality of studies, future reviews may benefit from examining the psychometric properties of breastfeeding support instruments using dedicated evaluation frameworks such as the COSMIN methodology. Such reviews could provide complementary evidence regarding instrument validity, reliability, and measurement performance.

Limitations

Several limitations should be acknowledged. First, only studies published in English and Persian were included, which may have resulted in the omission of relevant studies published in other languages. Second, the review focused on the methodological quality of studies using the MMAT framework and did not evaluate the psychometric properties of breastfeeding support instruments. Therefore, the findings should not be interpreted as evidence regarding the validity, reliability, or overall quality of the instruments themselves. Finally, the relatively small number of qualitative studies limited comparisons across methodological traditions.

Future research should continue to improve methodological quality in studies involving breastfeeding support instruments and may also undertake dedicated psychometric reviews to evaluate instrument performance across different populations and contexts.

Ethics approval and consent to participate

Not applicable

Consent for publication

Not applicable

Availability of data and materials

The data that support the findings of this study are available on request from the corresponding author.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work
reported in this paper.

Funding

This research received no funding

Authors' contributions

Writing – review & editing, Writing – original draft, Supervision, Software, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization: N.M

Writing – original draft, Resources, Methodology, Formal analysis, Conceptualization: Z.H

Writing – review & editing, Supervision, Validation, and Methodology: M.N

Acknowledgements

Not applicable

References

1. Maleki Saghooni Nahid, Kareshki Hossein, Esmaily Habibollah, Mirzaii Najmabadi Khadigeh. A Qualitative Study Exploring Breastfeeding Mother's Perceptions and Experiences of Appraisal Support Needs in Iran. Journal of midwifery & reproductive health [Internet]. 2022; 10(2):3210-3219. Available from: https://sid.ir/paper/1055471/en
2. Karimi, F.Z., et al., The effect of mother-infant skin to skin contact on success and duration of first breastfeeding: A systematic review and meta-analysis. Taiwanese Journal of Obstetrics and Gynecology, 2019. 58(1): 1-9.
3. Maleki, N. and K. Mirzaei, Breastfeeding mothers' informational support needs: a qualitative study in Iran. Journal of Qualitative Research in Health Sciences, 2025. 14(1): 1-8.
4. Amirian, M., K.M. Najmabadi, and N. Maleki, Instrumental Support Needs of Breastfeeding Mothers: A Qualitative Study. Journal of Midwifery and Reproductive Health, 2026. 14(4): p. 5755.
5. Hirani, S.A.A., et al., Perceived Breastfeeding Support Assessment Tool (PBSAT): Development and testing of psychometric properties with Pakistani urban working mothers. Midwifery, 2013. 29(6): 599-607.
6. Grassley, J.S., B.S. Spencer, and D. Bryson, The development and psychometric testing of the S upportive N eeds of A dolescents B reastfeeding S cale. Journal of Advanced Nursing, 2013. 69(3): p. 708-716.
7. Moran, V.H., et al., The development andvalidation of the Breastfeeding Support Skills Tool (BeSST). Clinical Effectiveness in Nursing, 1999. 3(4): 151-155.
8. Ho, Y.J. and J.M. McGrath, A review of the psychometric properties of breastfeeding assessment tools. Journal of Obstetric, Gynecologic, and Neonatal Nursing, 2010. 39(4): 386-400.
9. Irani, M., N. Maleki, and R.L. Roudsari, Assessing the quality of randomized controlled trials published in relation to the efficacy of massage therapy on labor pain intensity using CONSORT criteria. 2017.20(S):56-67.
10. Raskovalova, T., et al., Breastfeeding Assessment Score: Systematic review and meta-analysis. Pediatrics, 2015.

135(5): 1276-1285.
11. Tuthill, E.L., et al., Breastfeeding self-efficacy: A critical review of available instruments. Journal of human lactation, 2016. 32(1): 35-45.
12. Sezer, H.K., et al., Development and psychometric evaluation of the paternal support scale of breastfeeding. Journal of Pediatric Nursing, 2024. 75: 149-157.
13. Hong, Q.N., et al., The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. Education for information, 2018. 34(4): 285-291.
14. Fewtrell, M.S., et al., How much loss to follow-up is acceptable in long-term randomised trials and prospective studies? Archives of disease in childhood, 2008. 93(6): 458-461.
15. Gayesa, R.T., Y.J. Xie, and F.W. Ngai, Psychometric evaluation of the Afaan Oromo version of the exclusive breastfeeding social support scale among Ethiopian women. Midwifery, 2024. 138: 104154.
16. Mashayekh-Amiri, S., et al., Examining psychometric properties of the Iranian version of exclusive breastfeeding social support scale (EBFSS). BMC psychology, 2023. 11(1): 234.
17. Sağlam, H.Y., et al., Workplace breastfeeding support for working women: A scale development study. European Journal of Obstetrics & Gynecology and Reproductive Biology: X, 2023. 20: 100239.
18. Nanishi, K., J. Green, and H. Hongo, Development of the breastfeeding support scale to measure breastfeeding support from lay and professional persons, and its predictive validity in Japan. PeerJ, 2021. 9: 11779.
19. Boateng, G.O., et al., Measuring exclusive breastfeeding social support: Scale development and validation in Uganda. Maternal & child nutrition, 2018. 14(3): e12579.
20. Bermejo, R.M., et al., Development and assessment of a questionnaire to study protection, promotion, and support of breastfeeding. Journal of Obstetric, Gynecologic & Neonatal Nursing, 2016. 45(2): 166-179.
21. Moriwaki, C. and M. Haku, Development of a breastfeeding support scale for couples. The Journal of Medical Investigation, 2016. 63(1.2): 96-103.
22. Hojnacki, S.E., et al., Development and piloting of an instrument that measures company support for breastfeeding. Journal of Human Lactation, 2012. 28(1): 20-27.
23. Rojjanasrirat, W., et al., Psychometric evaluation of the employer support for breastfeeding questionnaire (ESBQ). Journal of Human Lactation, 2010. 26(3): 286-296.
24. Bai, Y., C.-Y.J. Peng, and A.D. Fly, Validation of a short questionnaire to assess mothers' perception of workplace breastfeeding support. Journal of the American Dietetic Association, 2008. 108(7): 1221-1225.
25. Greene, S.W., Development and Piloting of the Employee Perceptions of Breastfeeding Support Questionnaire. Michigan State University. Department of Food Science and Human Nutrition.2008.152-153.
26. Chow, F.T., Development of an instrument designed to measure manager attitudes toward workplace breastfeeding support. Michigan State University.2009.120-125.
27. Greene, S.W. and B.H. Olson, Development of an instrument designed to measure employees' perceptions of workplace breastfeeding support. Breastfeeding Medicine, 2008. 3(3): 151-157.
28. Yeşilçiçek Çalık, K., Y. Kanbay, and E. Küçük, Development of a breastfeeding support scale in the workplace and psychometric properties of Turkish version: a validity and reliability. Women & Health, 2024. 64(9): 745-758.
29. Velho, M.F., et al., Validation of a scale to measure fathers' confidence in supporting breastfeeding. Revista Da Associacao Medica Brasileira, 2024. 70(12): e20241270.
30. Wolfe, P.E.W. and P.B.H. Olson, Development, content validity, and piloting of an instrument designed to measure managers' attitude toward workplace breastfeeding support. Journal of the Academy of Nutrition and Dietetics, 2012. 112(7): 1042-1047.