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Prevalence and contributing factors of early initiation of breastfeeding (EIBF) in Ethiopia: a systematic review and meta-analysis

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Abstract

Background Even though the National Infant and Young Child (IYC) Feeding guideline was launched in Ethiopia in 2016, early initiation of breastfeeding is not consistently measured among studies which limit evidence for the development of promotion strategies.

Methods A weighted inverse-variance random effects model was used to estimate the pooled prevalence and contributing factors of early initiation of breastfeeding (EIBF). Heterogeneity was assessed using the I^2 statistic, forest plot, and Egger's test. Data from 22 primary studies across all regional states in Ethiopia were analyzed, including 39,316 mother-infant pairs who had given birth and breastfed within the last two years, from December 11, 2023, to January 16, 2024.

Results The pooled prevalence of EIBF was 67.44% (95% CI: 61.31–73.56, $I^2 = 99.40\%$, $P = 0.001$). Factors contributing to EIBF included urban residency (OR = 2.7, 95% CI: 2.11–3.30), regular antenatal care (OR = 2.44, 95% CI: 1.72–3.15), absence of *prelacteal* feeding (OR = 4.26, 95% CI: 2.93–5.60), secondary or higher education (OR = 2.53, 95% CI: 1.39–3.68), highest maternal wealth index (OR = 2.36, 95% CI: 1.62–3.09), health facility delivery (OR = 3.60, 95% CI: 2.58–4.62), receiving health education during antenatal care (OR = 1.62, 95% CI: 1.40–1.84), and breastfeeding support (OR = 3.56, 95% CI: 2.38–4.73).

Conclusion The prevalence of early breastfeeding initiation (EIBF) remains below WHO targets. Factors like urban residence, higher education, and access to antenatal care and hospital-based delivery services are positively linked to EIBF. To improve rates, health services should enhance community outreach, promote antenatal care, provide early breastfeeding education, and offer professional support immediately after birth.

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Keywords Early (timely) initiation of breastfeeding, Exclusive breastfeeding, Antenatal care, Health education, Breastfeeding counseling

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Background

The World Health Organization(WHO) recommends initiating breastfeeding within one hour of birth, regardless of infant or maternal conditions, followed by exclusive breastfeeding for six months and continued breastfeeding with complementary foods up to two years to ensure optimal health benefits for the infant [1–3].

Early initiation of breastfeeding is a vital component of primary child healthcare, offering significant benefits for both the infant and mother. Starting breastfeeding within the first hour stimulates breast milk production, delivering colostrum—rich in natural antibodies—within the first three days, which bolsters the newborn's immune defenses [2, 4, 5]. It also reduces postpartum hemorrhage by stimulating the release of oxytocin, which contracts the uterus and also it strengthens the mother-infant emotional bond, which has been linked to a lower risk of postpartum depression [4, 6]. Importantly, mothers who initiate breastfeeding early are more likely to exclusively breastfeed for the first six months and continue optimal breastfeeding for two years, significantly reducing neonatal morbidity and mortality by 20–22.3% [7–11].

Despite its invaluable role in promoting infant and maternal health, early initiation of breastfeeding is not universally practiced as per WHO recommends [12]. Only 47% of neonates globally were breastfed within the first hour of birth, falling 23% short of the WHO's 2030 target of 70%. Early initiation of breastfeeding is also crucial for achieving the Sustainable Development Goal of reducing neonatal mortality to below 12 per 1,000 live births worldwide by 2030 [13].

In Ethiopia, the inconsistency in measuring and reporting EIBF across studies limited the development of effective policies and interventions. Previous primary studies yielded inconsistent results, and policy monitoring and evaluation of clinical practices were found to be limited. This review is essential for developing strategies to promote early initiation of breastfeeding. Despite the country launching the National Infant and Young Child Feeding guidelines in 2016, further efforts are needed to enhance implementation [6, 13–16].

The lack of a comprehensive and up-to-date understanding of early initiation of breastfeeding (EIBF) rates and the factors contributing to delays hinders the development of targeted, region-specific strategies to improve breastfeeding practices. While factors such as urban residence, maternal education, antenatal care, and facility-based delivery services have been identified as influential, existing evidence remains fragmented and inconsistent across studies.

By synthesizing data from multiple studies, this systematic review and meta-analysis aim to provide a more accurate estimate of national EIBF coverage and identify key determinants that can be addressed through health policies and interventions. The findings would also contribute to global efforts to achieve the Sustainable Development Goal of reducing neonatal mortality, ensuring that more infants in Ethiopia and similar contexts benefit from early breastfeeding initiation, as recommended by the WHO.

Despite the implementation of the Infant and Young Child Feeding (IYCF) guidelines, the actual practice level of EIBF remains unclear. Therefore, this review provided an updated evidence on the prevalence of EIBF and its contributing factors, offering critical insights for improving breastfeeding practices in Ethiopia.

Methods

The result of this review was reported in accordance with the PRISMA Guidelines for Systematic Reviews and Meta-Analyses (Supplementary file 1). The review and meta-analysis were registered with PROSPERO under ID: CRD42024498671, accessible at PROSPERO.

Search strategy

The adapted **CoCoPop** (Condition, Context, Population) format was used to systematically review the literature, defining early initiation of breastfeeding as starting within the first hour after birth per WHO guidelines.

a. **Condition (Co)**: Early initiation of breastfeeding.
b. **Context (Co)**: Ethiopia.
c. **Population (Pop)**: Mothers with infants aged 0–24 months or mothers who gave birth in the last 24 months.

Using this adapted CoCoPop format, the following review questions were formulated to guide the data search:

1. What is pooled prevalence of early initiation of breastfeeding in Ethiopia?
2. What factors contributing to early initiation of breastfeeding in Ethiopia?

Primary studies were sourced from PubMed, ScienceDirect, Google Scholar, and African Journals Online based on the CoCoPop framework. Core search terms included "prevalence," "incidence," "epidemiology," "proportion," "magnitude," "contributing factors," "early initiation of breastfeeding," "early breastfeeding," "exclusive breastfeeding," "optimal breastfeeding," and "Ethiopia." Search strategies were developed using Boolean operators, and the following strategy was applied during the search conducted from December 11, 2023, to January 16, 2024: [(prevalence[MeSH Terms]) OR (incidence[MeSH Terms]) OR (proportion[MeSH Terms]) OR (epidemiology[MeSH Terms]) OR (magnitude[MeSH Terms]) AND (predictors[MeSH Terms]) OR

(practice[MeSH Terms]) OR (determinants[MeSH Terms]) OR (contributing factors[MeSH Terms]) OR (early initiation of breastfeeding[MeSH Terms]) OR (newborn breastfeeding[MeSH Terms]) OR (optimal breastfeeding[MeSH Terms]) OR (exclusive breastfeeding[MeSH Terms]) AND (Ethiopia)] (Supplementary file 2).

Eligibility

Study selection and data extraction

Downloaded primary studies were managed using EndNote 8 for duplicate removal. Study selection involved two stages: (1) title and abstract screening with title and outcome similarity by two independent reviewers, with disagreements resolved by a third, and (2) full-text review by three reviewers. Data extraction focused on a clear operational definition of early initiation of breastfeeding and for only statistically significant associations (AOR). Two authors extracted data using a standardized Excel sheet, with discrepancies resolved through repetition or a third reviewer's input. To address inconsistencies reported in the primary studies, data transformation was applied to both prevalence and contributing factors before analysis. Prevalence data was transformed using the logit transformation prior to pooling, while odds ratios (ORs) were converted to their natural logarithm form (ln(OR)) to ensure a normal distribution (Supplementary file 3).

Inclusion criteria

Included studies comprised both published and unpublished articles written in English, reporting the prevalence and/or factors associated with early (timely) initiation of breastfeeding in Ethiopia, up to January 2024.

Exclusion criteria

Articles without available full text and qualitative studies were excluded from the review. Additionally, reviews, commentaries, consultant comments, letters, and conference abstracts were not included in the analysis.

Critical appraisal

We used Joanna Briggs Institute's (JBI) quality appraisal criteria [17]. The assessment tool comprises nine key criteria: (1) relevance to the sample frame, (2) suitability of the sampling technique, (3) adequacy of the sample size, (4) clear description of study subjects and settings, (5) comprehensive coverage of data analysis, (6) validity of the method used for condition identification, (7) standardized and reliable measurements for all participants, (8) appropriateness of statistical analyses, and (9) effective management of response rates. Studies were classified as low-risk if they score five or more for quality appraisal checklist (Supplementary file 4). The quality of the studies was independently appraised by two reviewers (TMA and KA), with disagreements resolved by a third reviewer (SDK). The quality scores reflecting the status of the primary studies were reported [18].

Statistical analysis

Data were collected using a Microsoft Excel 2013 workbook, and the meta-analysis was conducted with STATA version 17 statistical software. The heterogeneity of the studies was assessed using the I-squared statistic. Both pooled prevalence analysis and the effect size of contributing factors were estimated using a weighted inverse variance random-effects model.

Results

Literature search

The search strategy identified a total of 141 articles retrieved from databases, libraries, and archives. Of these, 90 were excluded: 47 as duplicates, and 43 due to title differences. A total of 51 full-text articles were screened by title and abstract, leading to 32 articles remaining after full abstract review. Of these, 27 were assessed as eligible, and after reviewing the full texts, 22 articles were included in the systematic review and meta-analysis (Fig. 1).

Characteristics of studies

A total of 22 studies with a combined sample size of 39,316 mother-infant pairs were included in this meta-analysis. Among these, six studies were conducted in the Northwestern regions of Ethiopia [9, 12, 13, 19–21] followed by five studies from multiple regions including North and South of Ethiopia [1, 10, 14, 15, 22]. Two studies were from each parts of Ethiopia namely Central, Southern and West by [23–28] and the remaining studies were from other parts of Ethiopia by [8, 29–31].

Regarding study settings, nineteen of studies were from community based settings [1, 8–10, 12–15, 20, 22, 23, 25, 27, 29, 31, 32] and only three studies were from health institutions [19, 24, 28]. Thirteen studies out of twenty two studies have a sample size greater than 500 with a maximum sample size of $n = 11{,}654$, and the rest with less than 500 with a minimum sample size of $n = 294$ (Table 1).

Meta-analysis

Practice of early initiation of breastfeeding

The presence of publication bias was assessed using Egger's regression test, both without a moderator ($P = 0.860$) and with a moderator ($P = 1.00$), indicating no significant evidence of publication bias (Supplementary File 5). Therefore, the observed heterogeneity in the review may be attributed to variations in certain variables rather than publication bias or small study effects.

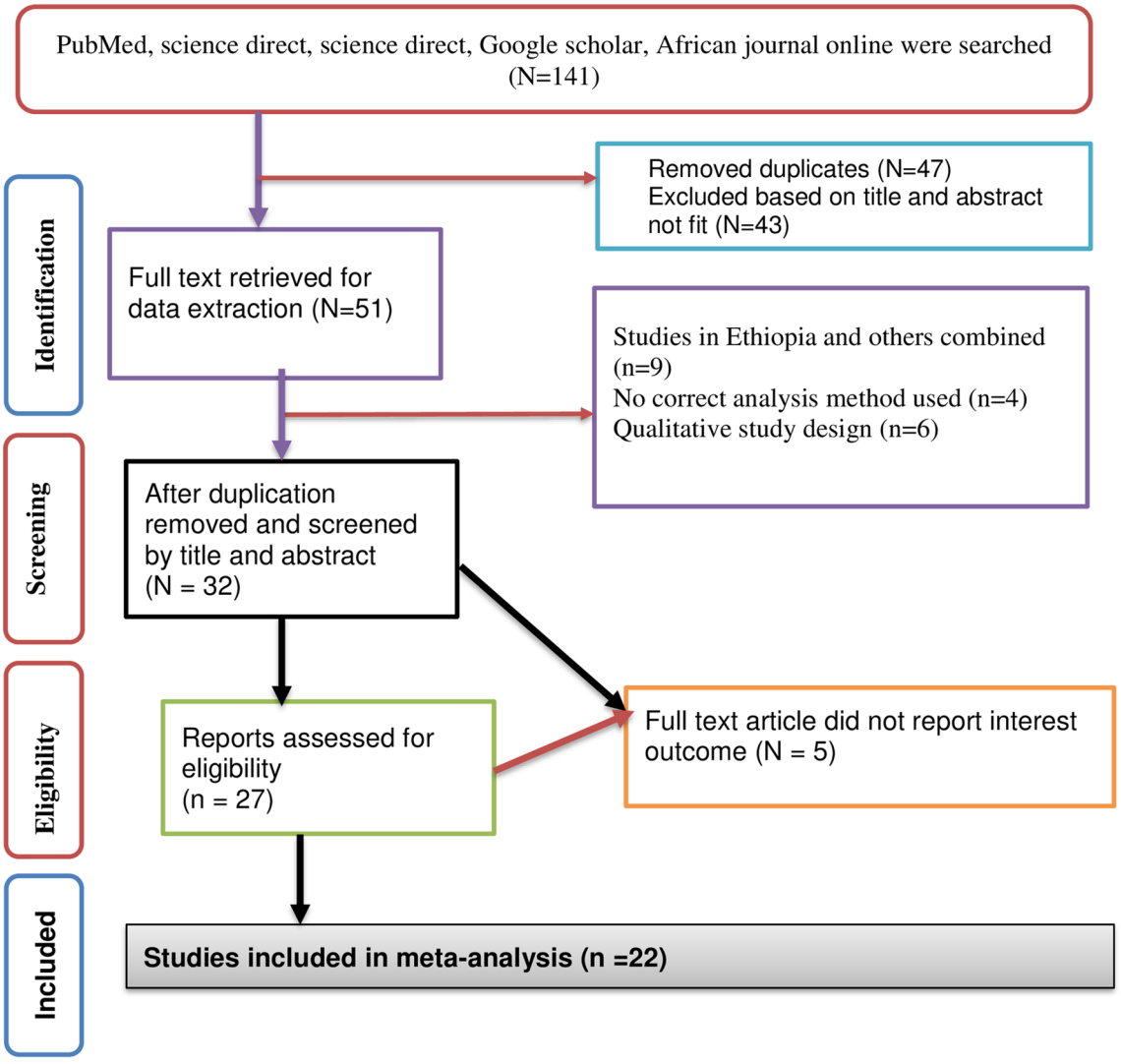

Fig. 1 The study selection process for contributing factors for early initiation of breastfeeding in Ethiopia

The overall pooled prevalence of early initiation of breastfeeding (EIBF) among mothers who gave birth in the past 24 months was 67.44% (95% CI: 61.31–73.56, I^2 = 99.40%, P = 0.001) (Fig. 2).

Subgroup analysis

Subgroup analysis was conducted to address the heterogeneity of the review by categorizing studies based on their settings and sample sizes. However, this approach did not significantly reduce the heterogeneity measurement (I^2). Among the three studies conducted in health facilities, the pooled prevalence of early initiation of breastfeeding (EIBF) was found to be 52.23% (95% CI: 40.23–64.23). In contrast, the pooled effect from nineteen studies set in the community revealed a prevalence of 69.81% (95% CI: 64.02–75.60) (Fig. 3).

In the subgroup analysis based on sample size categories of the primary studies, the pooled prevalence of early initiation of breastfeeding (EIBF) was found to be 67.58% (95% CI: 58.81–76.34) for the nine studies with a sample size of less than 500. For the thirteen studies with a sample size greater than 500, the pooled prevalence was 67.35% (95% CI: 59.24–75.45) (Fig. 4).

Sensitivity analysis

The sensitivity analysis evaluates the effect size with 95% confidence intervals by systematically omitting one study at a time, demonstrating the robustness of the meta-analysis results. The pooled effect size remains consistent, clustering around 67%, with narrow and overlapping confidence intervals reflecting precision and stability. While the omission of studies such as Liben and Yesuf (2016) and Wolde and Birhanu (2015) slightly shifts the effect size, these changes do not significantly impact the overall findings. The consistently significant p-values ($p < 0.001$) further validate the reliability of the effect size estimate.

Table 1 Characteristics and quality status of the studies for EIBF in Ethiopia, 2024

Author and year	Region	Study area	Study setting	Study design	Sample size	Sample size category	Prevalence	Risk of bias
Abie and Goshu, (2019)	Amhara	Northwest Ethiopia	Community	CSD	297	< 500	76.8	Low
Ahmed K.Y., et al., (2019)	Ethiopia	More than one settings	Community	CSD	3861	> 500	75.5	Low
Ayalew D.D., et al., (2022)	Amhara	Northwest Ethiopia	Community	CSD	569	> 500	77.7	Low
Belachew A, (2019)	Amhara	Northwest Ethiopia	Community	CSD	472	< 500	74.5	Low
Beyene M.G., et al., (2017)	SNNP	Southern Ethiopia	Community	CSD	634	> 500	83.7	Low
Bimerew A, Teshome M and Kassa G, M, (2016)	Amhara	Northwest Ethiopia	Community	CSD	739	> 500	73.1	Low
Derso T., et al., (2017)	Amhara	Northwest Ethiopia	Health facility	CSD	6761	> 500	43.9	Low
Gebretsadik G.G and Berhe K, (2023)	Tigray	Northern Ethiopia	Community	CSD	633	> 500	59.6	Low
Hailemariam, T.W., Adeba, E. & Sufa (2015)	Oromia	West Ethiopia	Community	CSD	594	> 500	83.1	Low
John, J.R., Mistry, S.K., Kebede, G. et al., (2019)	Ethiopia	More than one settings	Community	CSD	5546	> 500	74.3	Low
Lakew, Y., Tabar, L. & Haile, D. (2015)	Ethiopia	More than one settings	Community	CSD	11,654	> 500	52	Low
Liben, M.L., Yesuf, E.M. (2016)	Amhara	Northeast Ethiopia	Community	CSD	407	< 500	39.6	Low
Liben M.L, (2015)	Amhara	Northeast	Community	CSD	633	> 500	71.7	Low
Lonsako A.A et al., (2023)	SNNP	Central Ethiopia	Health facility	CSD	403	< 500	47.7	Low
Lucha, T.A., Mengistu, A.K, (2022)	Ethiopia	More than one settings	Community	CSD	1948	> 500	75.2	Low
Sako S. et al.,(2022)	Ethiopia	More than one settings	Community	CSD	2054	< 500	73.56	Low
Setegn T, Gerbaba M, Belachew T. (2011)	Oromia	Souteast Ethiopia	Community	CSD	608	> 500	52.4	Low
Tariku A., et al., (2017)	Amhara	Northwest Ethiopia	Community	CSD	822	> 500	53.3	Low
Tewabe T, (2016)	Amhara	Northeast	Community	CSD	423	< 500	78.8	Low
Tilahun, G., Degu, G., Azale, T. et al., (2016)	Amhara	Central Ethiopia	Community	CSD	416	< 500	62.6	Low
Wolde T. and Birhanu T, (2015)	Oromia	West Ethiopia	Community	CSD	182	< 500	88.5	Low
Workineh, Y., Gultie, T., (2019)	SNNP	Southern Ethiopia	Health facility	PCD	294	< 500	65.7	Low
	Total number of participant mother-infant pairs					39, 316		

CSD-cross-sectional study design, PCD-prospective cohort study design. Data extractors: SDK, TMA and KA from 11 December to 16 January, 2024

Although slight variations in heterogeneity are observed, the results are not heavily influenced by any single study, indicating the findings are robust, with potential outliers warranting further exploration (Fig. 5).

Factors associated with early initiation of breastfeeding

In this review, the factors contributing to early initiation of breastfeeding were analyzed by pooling data from two or more studies and categorizing them into three groups: household, maternal, and health service factors. Factors associated with early initiation of breastfeeding were urban residency, attending antenatal care (ANC) three or more times, avoiding prelacteal feeding, achieving secondary education, being in the highest maternal wealth index category, delivering in a health institution, receiving health information during antenatal care, and counseling about breastfeeding. Specifically, mothers living in urban areas were nearly three times more likely to initiate breastfeeding within the first hour compared to their rural counterparts (AOR 2.7, 95% CI: 2.11–3.30) [1, 13, 14, 19, 30–32]. By pooling of five studies [15, 22, 23, 27, 28] revealed that mothers in the higher wealth index category were nearly twice as likely to practice early initiation of breastfeeding compared to those in lower wealth index categories (AOR = 2.36; 95% CI: 1.62–3.09).

Regarding health services factors, by pooled analysis of six studies [9, 13, 19, 24, 27, 29] revealed that mothers with ANC of three or four times were nearly 2.5 times (AOR = 2.44, 95%CI: (1.72–3.15)) more likely to initiate breastfeeding than their counterparts in health services factor category. By synthesizing data from studies [10, 12, 13, 20, 22, 27, 29], the analysis found that mothers who gave birth in a health facility were nearly four times more likely to initiate breastfeeding early compared to those who delivered at home (AOR = 3.60; 95% CI: 2.58–4.62). Additionally, mothers who received counseling during their antenatal care were nearly twice as likely to initiate early breastfeeding as those who did not receive counseling (AOR = 1.62; 95% CI: 1.40–1.84) [20, 23–25, 30]., Mothers receiving assistance from health professionals for breastfeeding were nearly four times more likely to initiate early breastfeeding compared to those without

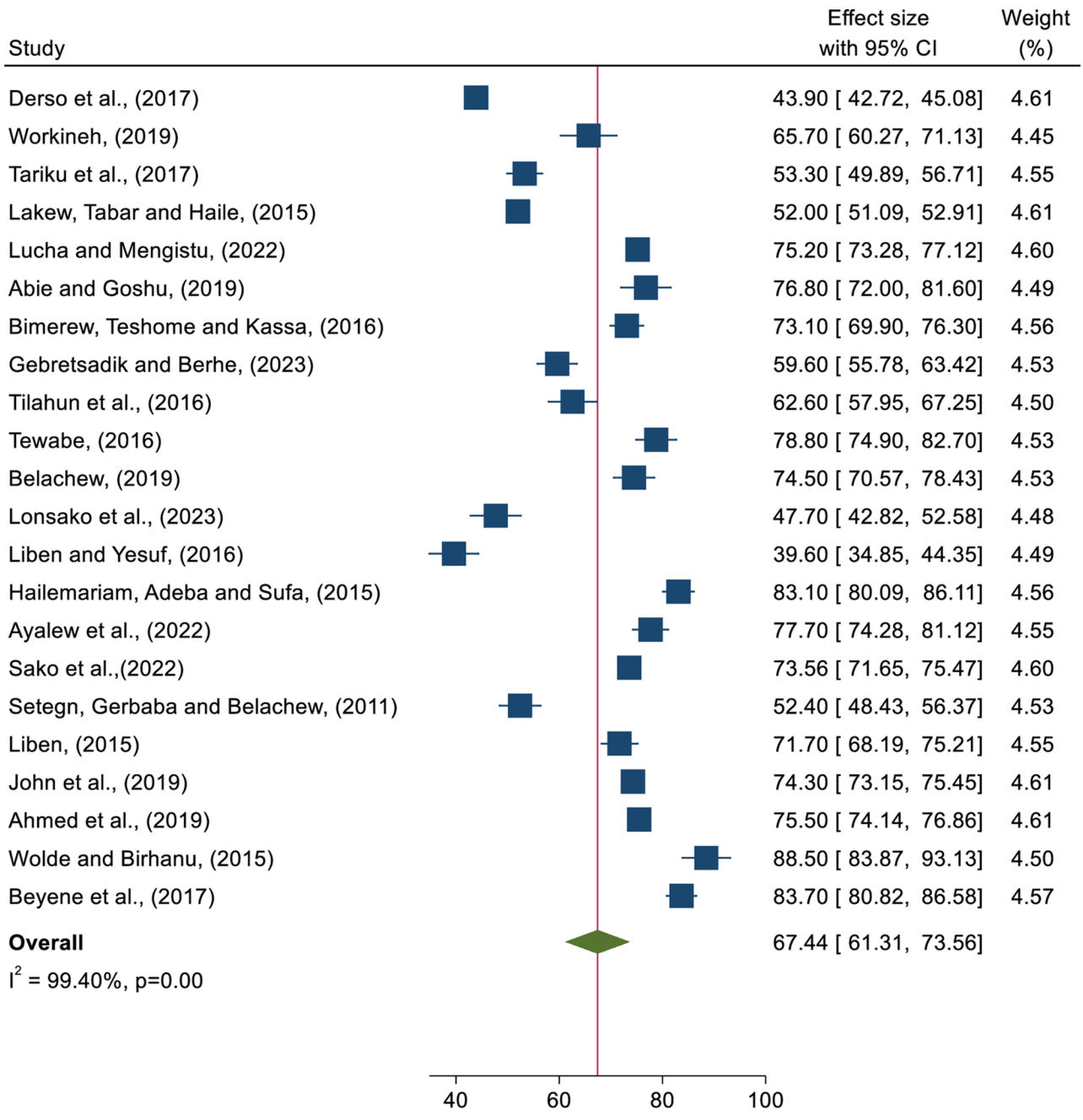

Fig. 2 Forest plot for practice and factors contributing to early neonatal breastfeeding in Ethiopia

such support, with an adjusted odds ratio (AOR) of 3.56 (95% CI: 2.38–4.73).

Mothers who did not practice prelacteal breastfeeding were four times more likely to initiate early breastfeeding compared to those who did (AOR = 4.26; 95% CI: 2.93–5.60), according to the studies [8, 19, 22, 23, 25, 29, 31] in maternal related factor category. Similarly in this factor category, four studies by [8, 28, 31, 32], mothers with secondary and above education level were 2.5 times more likely to practice early initiation of breastfeeding than those educational level below secondary level (AOR = 2.53; 95% CI:1.39–3.68)(Table 2).

Although this review found no correlation between early initiation of breastfeeding (EIBF) and cesarean section (CS) delivery, a study [32] reported that mothers who delivered via CS were 53% less likely to initiate breastfeeding early compared to those who had spontaneous vaginal deliveries (SVD) (AOR = 0.47, 95% CI: 0.09–0.89). This suggests that CS delivery might negatively impact timely breastfeeding initiation.

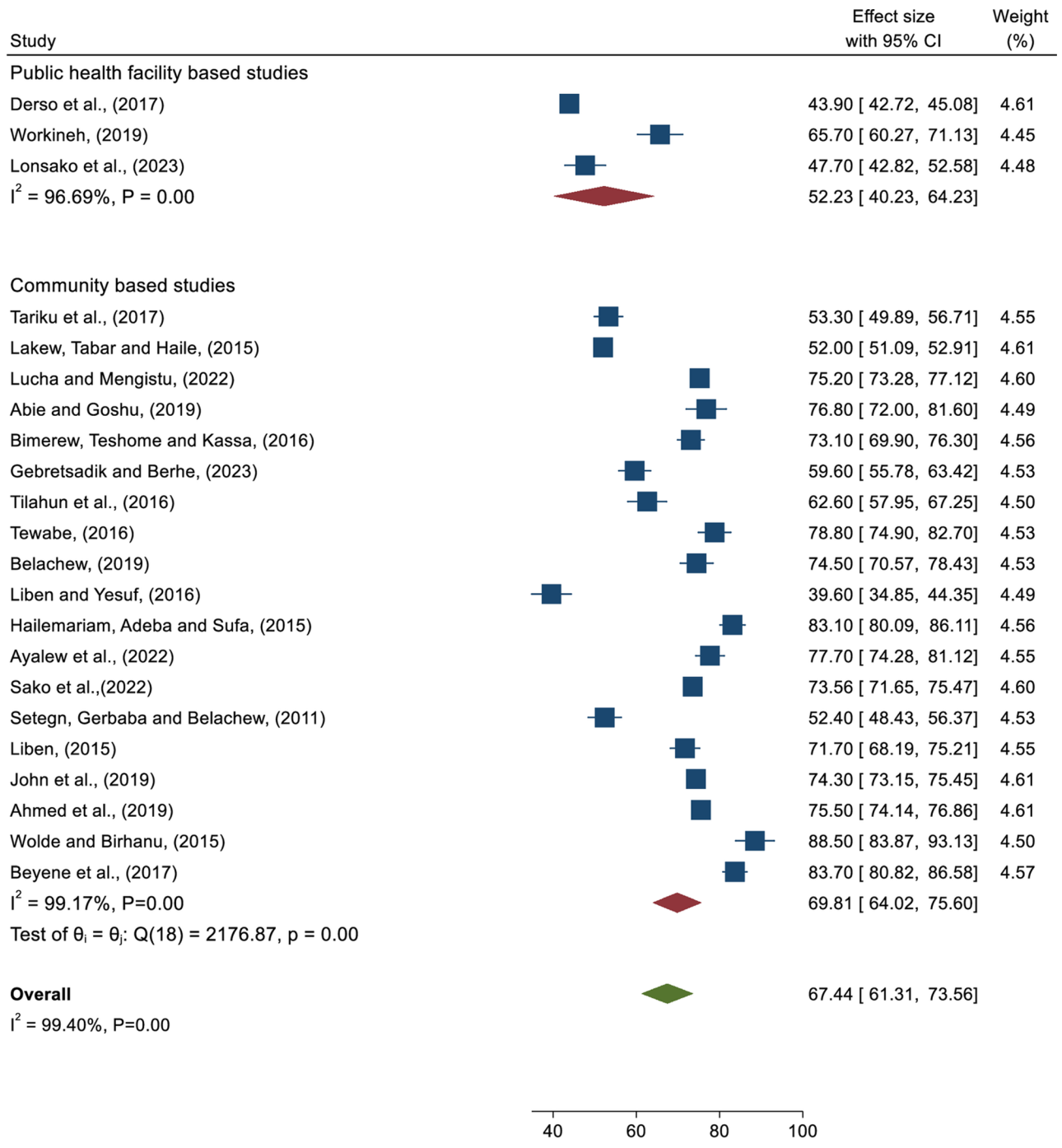

Fig. 3 Subgroup analysis by study settings for EIBF in Ethiopia

Additionally, mothers who had frequent antenatal care utilization and those who experienced complications during the delivery of their last child were 26% and 38% less likely to initiate breastfeeding early, respectively (AOR = 0.74, 95% CI: 0.61–0.87 and AOR = 0.62, 95% CI: 0.26–0.98) [10, 14].

Theoretical framework

This review figured out the Social-Ecological Model (SEM) as a framework, recognizing that EIBF is influenced by multiple interacting factors. At the individual level, maternal education and knowledge enhance breastfeeding awareness. Interpersonal factors, such as family and community support, shape breastfeeding decisions. The institutional level includes healthcare access and skilled birth attendance, which promote early initiation.

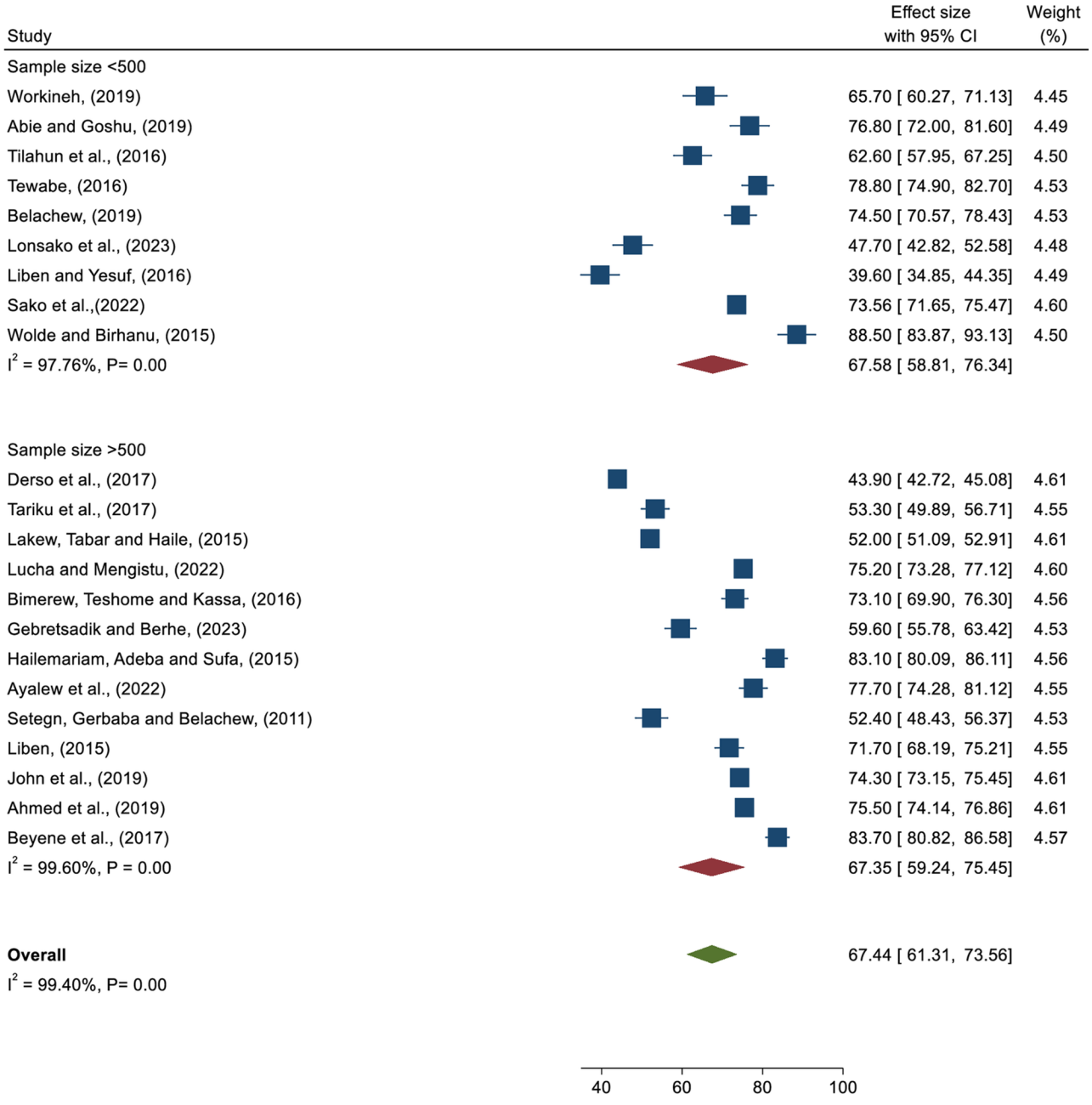

Fig. 4 Subgroup analysis by sample size category for EIBF in Ethiopia

Community factors, like urban-rural differences and cultural norms, affect breastfeeding practices. Lastly, the policy level, through national programs like breastfeeding WHO/UNICEF initiatives, strengthens EIBF uptake by improving hospital practices and public awareness (Fig. 6).

Discussion

The overall prevalence of EIBF was found to be nearly 67% (95% CI: 61.31–73.56), which is comparable to studies from Central Africa (69.31%) and Southern Africa (70.97%) [33]. On contrary, it did not align with findings from 11 sub-Saharan African countries, where the prevalence was 59.22%, ranging from a high of 86.34% in Rwanda to a low of 39.44% in Gambia [34, 35].

In contrast, the pooled prevalence of early initiation of breastfeeding (EIBF) reported in studies from Burundi (85%), Saudi Arabia (86.19%), Malawi (97.30%), Zimbabwe (76.90%), and Namibia (77.20%) was higher than the findings of this review. However, the prevalence estimated in this review was considerably higher than studies from Chad at 23% [43], Tanzania at 51% [44], Nigerian

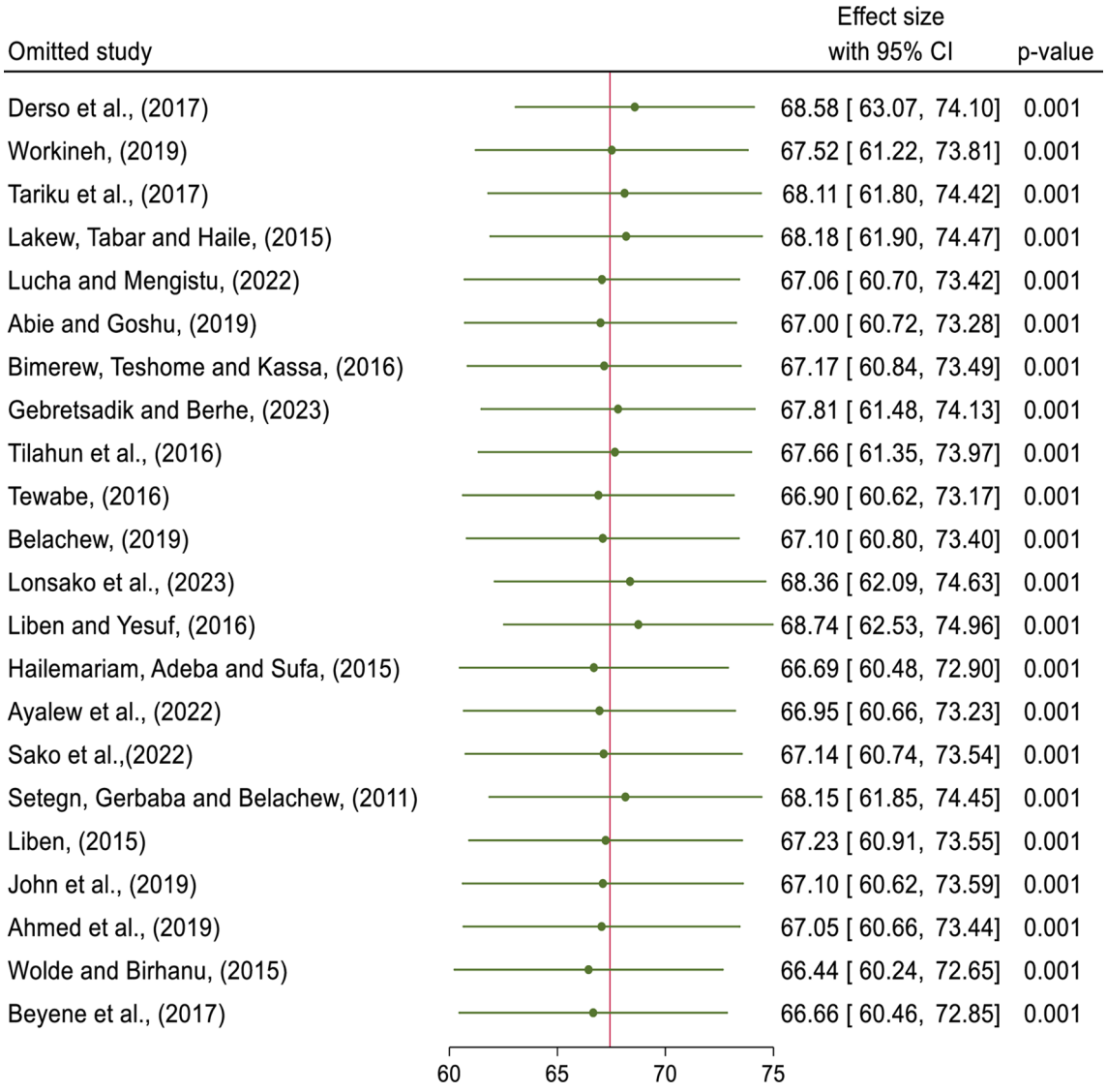

Fig. 5 Sensitivity analysis for EIBF in Ethiopia

at 34.7% [45] and South Sudan at 52% [39]. Similarly, the result of this review was higher than the pooled prevalence in Middle and Eastern African countries which was found to be 34.30% [42]. In a study analyzing data from 35 sub-Saharan African countries, the pooled prevalence of EIBF was 58.30%, with rates ranging from 24% in Chad to 86% in Burundi [43] which was inconsistent compared to this review finding. Across Africa, Asia, and South America, EIBF practices vary significantly, with rates between 11.4% and 83.30% [44]; the lowest prevalence was reported in Congo Brazzaville at 24%, based on data from 32 African countries [45].

The review highlights regional variations in EIBF, stressing the need for targeted interventions in Ethiopia. While comparable to some African countries, Ethiopia lags behind nations with stronger breastfeeding promotion. Strengthening health systems, maternal education, and counseling, alongside policy efforts to improve access, could boost EIBF rates and neonatal health.

Factors contributing to early initiation of breastfeeding (EIBF) were categorized into three groups: household, maternal, and health service factors [46]. In this review, mothers in the higher wealth index category were nearly twice as likely to practice early initiation of breastfeeding compared to those in lower wealth categories. This finding is consistent with studies from other Sub-Saharan African countries, where women in the higher wealth quintile were more likely to initiate breastfeeding early compared to those in the middle and lower wealth quintiles [34]. Similarly, a study from Chad found that women in the higher wealth index were more likely to practice early initiation of breastfeeding compared to their counterparts [47].

Table 2 The pooled effect of factors associated with EIBF in Ethiopia, 2024

Associated factors	Number of articles	Pooled OR (95% CI)	I^2(*P* value)
Urban resident	[1,13,14,19,30–32]	2.7(2.11–3.30)	96.30%(0.00)
Regular antenatal care	[9,13,19,24,27,29]	2.44(1.72–3.15)	93.00%(0.00)
No prelactael feeding	[8,19,22,23,25,29,31]	4.26(2.93–5.60)	98%(0.00)
Secondary or above education level	[8,28,31,32]	2.53(1.39–3.68)	94%%(0.00)
Maternal higher wealth index	[15,22,23,27,28]	2.36(1.62–3.09)	85.7%%(0.00)
Health institution delivery	[10,12,13,20,22,27,29]	3.60(2.58–4.62)	96.40%(0.00)
Health information at antenatal care	[13,25,32]	1.62(1.40–1.84)	0.52%(0.04)
Breastfeeding support within an hour after birth	[20,23–25,30]	3.56(2.38–4.73)	95.34%(0.00)

Studies from Chad and Sub-Saharan Africa found that married and employed women were less likely to practice EIBF. However, factors such as media exposure, multiparity, rural residence, primary education, and regular TV watching increased the likelihood of EIBF [37, 40, 45, 48].

Mothers with secondary education or higher were more likely to practice early initiation of breastfeeding, consistent with findings from Sub-Saharan Africa. Education, media exposure, and maternal knowledge of neonatal danger signs all positively influenced breastfeeding initiation [37, 40, 45, 48].

In terms of health service-related factors, mothers who attended antenatal care three or four times were more likely to initiate breastfeeding compared to those with fewer visits. This finding differs from studies in other sub-Saharan African countries, where women attending more than four ANC visits were less likely to practice early initiation of breastfeeding. Additionally, women who delivered via spontaneous vaginal delivery were significantly more likely to initiate breastfeeding early compared to those who had a cesarean section. Similarly, the twenty nine sub-Saharan African countries, those mothers gave birth via cesarean section were 33% less likely to practice than those delivered via SVD [47, 49].

However, women who delivered in health institutions were almost twice as likely to practice early initiation of breastfeeding (EIBF) compared to those who delivered at home. Additionally, those who practiced skin-to-skin contact during delivery were 1.5 times more likely to initiate breastfeeding early than those who did not. Cesarean delivery was associated with a significant reduction

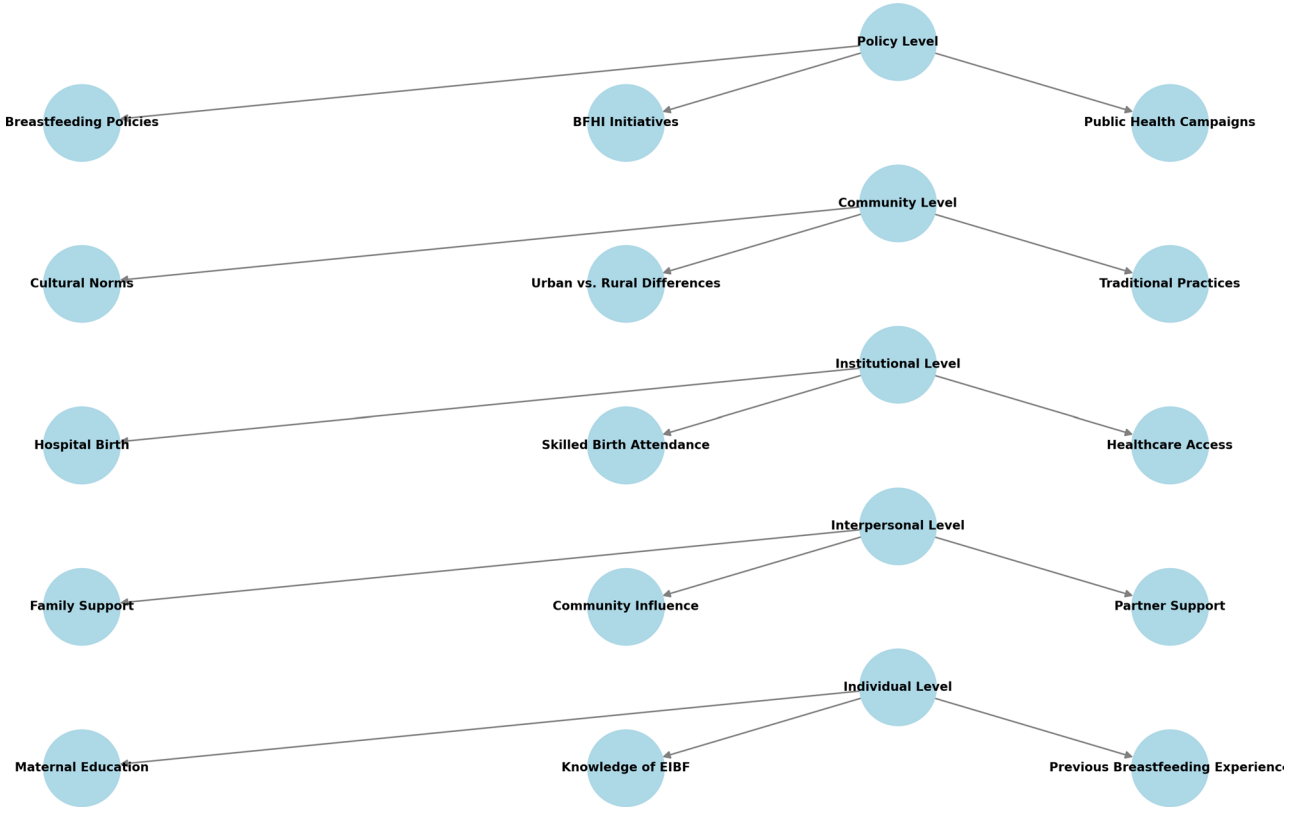

Fig. 6 Conceptual frameworks for EIBF in Ethiopia

in the likelihood of early initiation of breastfeeding (EIBF), with a 53% lower rate compared to spontaneous vaginal delivery. This finding aligns with data from Tanzania, where cesarean delivery also decreased the odds of EIBF. Similar trends were observed in Nigeria and Malawi, where women who delivered in health facilities or through spontaneous vaginal deliveries had higher rates of EIBF compared to those who had cesarean Sect. [41].

Similarly, a study in Zimbabwe found that women who had cesarean section (CS) deliveries were significantly less likely to practice early initiation of breastfeeding (EIBF) compared to those who delivered via spontaneous vaginal delivery (SVD) [37].

National data from Malawi indicated that women with singleton births were almost twice as likely to practice early initiation of breastfeeding (EIBF) compared to those with multiple births [36]. In Zimbabwe, early skin-to-skin contact increased EIBF likelihood by 1.5 times, while skilled birth attendance nearly quadrupled it. In Papua New Guinea, facility births had lower EIBF rates, but skin-to-skin contact improved them. Cesarean delivery reduced EIBF likelihood by 72% [50].

Pooling studies [20, 23–25, 30], mothers assisted by health professionals were nearly four times more likely to practice EIBF. In Namibia, SVD with trained skilled attendants tripled EIBF odds over CS and quadrupled them over unskilled attendants [38].

The findings highlight the multifaceted influences on early initiation of breastfeeding (EIBF), emphasizing the critical role of socioeconomic, maternal, and health service-related factors. Higher wealth status, media exposure, and maternal education were strong enablers, while employment and cesarean delivery were barriers to EIBF. Health service factors, including antenatal care attendance, institutional delivery, and skin-to-skin contact, significantly increased EIBF likelihood. These insights underscore the need for targeted interventions promoting EIBF, particularly among low-income and employed mothers, through improved antenatal education, enhanced facility-based delivery services, and breastfeeding-friendly policies in workplaces and communities.

Contribution of the review

By providing national estimates and identifying associated factors for early initiation of breastfeeding, this review equips policymakers with the evidence needed to make informed decisions regarding maternal and neonatal health. This is crucial for addressing neonatal morbidity and mortality related to improper breastfeeding practices, such as delayed initiation and prelacteal feeding. Consequently, healthcare professionals—including nurses, midwives, and doctors—working in maternity and neonatal care, as well as service directors, can prioritize these findings in the maternal and child health care standards in Ethiopia.

Conclusion

Early initiation of breastfeeding (EIBF) in Ethiopia falls below the World Health Organization (WHO) target. This review identifies key factors influencing EIBF, categorized into household, maternal, and health service factors. Positive associations include urban residence, multiple ANC visits, avoiding prelacteal feeding, secondary education, high wealth index, institutional delivery, and breastfeeding counseling. Negative associations include cesarean section delivery, more than four ANC visits, and delivery complications. It is recommended that healthcare professionals actively promote EIBF and that further health facility-based studies focus on women delivering via cesarean section.

Limitation and strength

This review, based on data from over 39,000 women-infant pairs, is the first in the past five years to present pooled estimates and factors associated with early initiation of breastfeeding (EIBF) in Ethiopia. The findings highlight a significant issue, suggesting the need for further research, particularly in clinical settings like hospitals, to understand its impact on child development. Future studies should focus on observational methods to more accurately assess EIBF practices and improve understanding of the issue in Ethiopia.

Abbreviations

ANC	Ante Natal Care
AOR	Adjusted Odds Ratio
CI	Confidence Interval
CS	Cesarean Section
CSD	Cross-sectional Study Design
SNNP	Southern Nations Nationalities and People
EIBF	Early initiation of breastfeeding
MCH	Maternal and Child Health
SVD	Spontaneous Vaginal Delivery
WHO	World Health Organization

Supplementary Information

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Supplementary Material 1: Supplementary file 1: PRISMA Checklist

Supplementary Material 2: Supplementary file 2: Search results

Supplementary Material 3: Supplementary file 3: Data extraction

Supplementary Material 4: Supplementary file 4: JBI quality appraisal checklist

Supplementary Material 5: Supplementary file 5: Egger's test

Author contributions

S.D. initiation of the idea for review and drafted the protocol and supervised the overall process in this review. K.A. reviewed the drafted protocol and writing up edition. T.M. data extraction and data analysis. D.K. editing and

overall commenting of the manuscript. E.F. revising the result draft writing. All authors reviewed the manuscript.

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Data availability
Data are available as supplementary file in the manuscript.

Declarations

Human Ethics and Consent to Participate
Not applicable.

Patient and public involvement
Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this systematic review and meta-analysis.

Competing interests
The authors declare no competing interests.

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