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Determinants of Early Initiation of Breastfeeding among Mothers in Sub-Saharan Africa: A Systematic Review and Meta-Analysis, 2010–2025

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Case Report

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Abstract

Background

Early initiation of breastfeeding, within the first hour of life, is a cost-effective strategy to improve neonatal survival and reduce morbidity. Despite its benefits, EIBF remains low in SSA. This study aimed to estimate the pooled prevalence of EIBF and its determinants.

Methods

Following PRISMA, studies from January 2010 to December 2025 were saved from key databases. Data were extracted in Excel and analyzed in STATA 17 using a random-effects model. Study quality, heterogeneity (I^2), and publication bias were assessed. Protocol: PROSPERO CRD: 420251272129.

Results

Thirty-one studies, including 23,585 mothers, were analyzed. The pooled prevalence of EIBF was 58.98% (95% CI: 52.42–65.55). significantly associated with EIBF was vaginal delivery (AOR: 4.30; 95% CI: 3.21–5.76), place of residence (AOR: 2.30; 95% CI: 2.00–3.39), ≥ 4 antenatal visits (AOR: 1.82; 95% CI: 1.29–2.57), maternal education ≥ primary level (AOR: 1.69; 95% CI: 1.08–2.63), maternal knowledge (AOR: 2.42; 95% CI: 1.56–3.76), multiparity (AOR: 1.67; 95% CI: 1.24–2.24), facility delivery (AOR: 1.95; 95% CI: 1.29–2.94), immediate skin-to-skin contact (AOR: 2.23; 95% CI: 1.34–3.71), colostrum feeding (AOR: 2.65; 95% CI: 1.91–3.67), good neonatal condition (AOR: 2.95; 95% CI: 1.96–4.42), absence of postpartum complications (AOR: 2.67; 95% CI: 1.03–6.92), and support from healthcare providers (AOR: 2.51; 95% CI: 1.60–3.95).

Conclusion

Early initiation of breastfeeding in Sub-Saharan Africa remains below recommended levels. Strengthening health facilities and training skilled healthcare providers are essential, and future implementation strategies are needed to reduce neonatal mortality and morbidity.

Introduction

Early initiation of breastfeeding (EIBF), defined by the World Health Organization as putting a newborn to the breast within the first hour following birth, is a critical, evidence-based intervention that substantially improves neonatal survival and maternal health outcomes (1). Initiating breastfeeding during this crucial window ensures that newborns receive colostrum, the first milk, which is rich in nutrients and immunologically active components such as immunoglobulins, growth factors, and bioactive substances essential for protecting against infection and supporting early development (2). Moreover,

timely initiation of breastfeeding promotes maternal-infant bonding and significantly increases the likelihood of sustained and exclusive breastfeeding practices (3). Despite strong global recommendations, EIBF remains inadequately practiced in many low- and middle-income countries, particularly in sub-Saharan Africa (SSA), a region that continues to bear a disproportionate burden of neonatal mortality (4). Delayed initiation of breastfeeding represents a major public health concern and reflects persistent inequities in access to quality maternal and newborn health services across the region (5). Although national and international efforts have actively promoted EIBF, its prevalence remains considerably below recommended levels in SSA (6). Many countries in the region fall short of the World Health Organization and UNICEF recommendation that at least 70% of newborns initiate breastfeeding within the first hour of life (7).

Regional estimates show that only about 55–57% of newborns are breastfed within the first hour of birth. A few countries reach 85–95% coverage, while others, such as Guinea, report alarmingly low rates of 15–17% (8). A secondary analysis of nationally representative data from 33 SSA countries reported that EIBF prevalence ranged widely from 17% to 95%, with more than half of the countries documenting timely breastfeeding initiation in fewer than 50% of neonates (9). These findings highlight significant missed opportunities to improve neonatal health outcomes, as a large proportion of infants in the region do not benefit from this early, protective practice (10). According to the UNICEF State of African Children 2025 report, early initiation across the African Union is approximately 52%, with subregional differences of about 50% in Central Africa and 69% in Eastern Africa (11). National estimates also show wide variability, ranging from 25.8% in Guinea to 61.8% in Mauritania, reflecting the impact of cultural norms, health system capacity, and challenges in service delivery (8). Overall, pooled estimates consistently show that early initiation of breastfeeding coverage in Sub-Saharan Africa remains between 50% and 60%, well below global targets and marked by substantial heterogeneity both within and between countries (6). In Ethiopia, despite national infant and young child feeding policies and ongoing promotion efforts, a substantial proportion of infants still experience delayed breastfeeding initiation, with a pooled prevalence of 67.44%(12).

Failure to initiate breastfeeding within the first hour of life exposes newborns to an increased risk of infection and mortality due to delayed access to the immunoprotective properties of colostrum (13). Globally, timely initiation of breastfeeding could prevent up to 22% of neonatal deaths; yet, low rates in many Sub-Saharan African countries hinder progress toward Sustainable Development Goals on health equity and child survival (14). Studies in Sub-Saharan Africa have reported multiple factors affecting early initiation of breastfeeding, including cultural practices such as prelacteal feeding, limited access to skilled birth attendants, high rates of home delivery, caesarean sections, and socioeconomic disparities (15). Nevertheless, most studies focus on reporting prevalence and context-specific factors, with limited synthesis of the most consistent determinants at the regional level. Findings vary due to differences in population characteristics, study design, and contextual factors, making it difficult to identify key predictors of early breastfeeding initiation across Sub-Saharan Africa. Although several national systematic reviews, particularly from Ethiopia, provide valuable localized evidence, an updated and comprehensive regional synthesis covering the past fifteen years is still lacking. Despite the well-

established role of early initiation of breastfeeding in reducing neonatal morbidity and mortality, its prevalence remains low in many Sub-Saharan African countries, and progress toward recommended targets has been slow. The lack of consolidated regional evidence limits policymakers' and program planners' ability to identify high-impact, scalable interventions. Therefore, a systematic review and meta-analysis examining the prevalence and determinants of early initiation of breastfeeding in Sub-Saharan Africa from 2010 to 2025 is urgently needed to address evidence gaps, reconcile inconsistencies, and provide up-to-date regional evidence. Focusing on this period ensures inclusion of contemporary studies that reflect current maternal and newborn health policies and practices. This study aimed to estimate the pooled prevalence of early initiation of breastfeeding and identify its associated factors in Sub-Saharan Africa.

Research questions

What is the pooled prevalence of early initiation of breastfeeding among mothers in Sub-Saharan Africa?

Which factors are associated with early initiation of breastfeeding among mothers in Sub-Saharan Africa?

Materials and Methods

Registration of Study Protocol and Search Strategy

This systematic review and meta-analysis was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The review protocol was prospectively registered in the International Prospective Register of Systematic Reviews (PROSPERO) under registration number CRD: 420251272129.

A comprehensive and systematic literature search was undertaken using multiple electronic databases, including PubMed, HINARI, and ScienceDirect. In addition, supplementary searches were conducted using Google and Google Scholar to identify potentially relevant primary studies that may not have been indexed in the selected databases. These additional searches were intended to ensure broad coverage of both published and grey literature relevant to the study objectives.

The search strategy was developed using the Condition, Context, and Population (CoCoPop) framework to ensure a structured and reproducible approach. All core components of the review question were clearly defined prior to initiating the search, and only studies meeting the predefined eligibility criteria were considered for inclusion. Database-specific search strings were constructed using appropriate Boolean operators ("AND" and "OR") to combine relevant keywords and synonyms.

Studies published between January 30, 2010, and December 30, 2025, were considered eligible for inclusion. The following key terms were applied across databases and search engines: ("early initiation

of breastfeeding" OR "timely initiation of breastfeeding") AND ("determinants" OR "predictors" OR "associated factors" OR "related factors") AND ("Sub-Saharan Africa" OR "SSA"). The detailed search strategy for each database is provided in Supplementary File 1.

Eligibility criteria

Inclusion criteria

This systematic review and meta-analysis included observational studies, specifically cross-sectional, cohort, and case-control designs published in the English language, that reported the prevalence of early initiation of breastfeeding (EIBF) and/or examined factors associated with EIBF among mothers in Sub-Saharan Africa. Only studies with complete and extractable data relevant to the review objectives were considered eligible. Publications released between January 30, 2010, and December 30, 2025, were included in the analysis.

Exclusion criteria

Studies were excluded if early initiation of breastfeeding was not assessed as an outcome variable. In addition, narrative reviews, qualitative studies lacking quantitative data suitable for meta-analysis, expert opinions, case reports, editorials, commentaries, conference abstracts, correspondence, and methodological papers were excluded from the review.

Study selection process

All identified studies were imported into EndNote X7 reference management software to remove duplicates. Following duplicate removal, two reviewers (AEA and BAM) independently screened the titles and abstracts of the remaining articles to identify potentially eligible studies or those requiring further assessment. The full texts of the selected articles were then saved and evaluated against the inclusion and exclusion criteria to determine final eligibility for the systematic review and meta-analysis.

Measurement of the outcomes

The primary outcome of this systematic review and meta-analysis was the pooled prevalence of early initiation of breastfeeding (EIBF) among mothers in Sub-Saharan Africa. In each included study, the prevalence of EIBF was defined as the proportion of mothers who initiated breastfeeding within the first hour following childbirth, calculated by dividing the number of mothers who met this criterion by the total number of breastfeeding mothers included in the study and multiplying the result by 100. The secondary outcome was the identification of factors associated with early initiation of breastfeeding. Information on these associated factors was extracted from the primary studies, and effect estimates were summarized using adjusted odds ratios (AORs) with corresponding 95% confidence intervals, where

such data were reported. Subsequently, both the pooled prevalence of early initiation of breastfeeding and the pooled effect sizes of the associated determinants were estimated using meta-analytic techniques.

Data extraction and management

Data from all eligible studies were independently extracted by two authors (AEA and BAM) using a standardized data abstraction form developed in Microsoft Excel. Initially, articles were screened based on titles and abstracts, followed by a full-text review to determine final eligibility. All potentially relevant records were imported into EndNote, where duplicate entries were systematically identified and removed to avoid overlapping data. For each included study, the following information was extracted: study identification details (first author and year of publication), country and region, study design, sampling method, prevalence of early initiation of breastfeeding (EIBF), associated factors, adjusted odds ratios (AORs) with 95% confidence intervals (CIs), methods used to assess publication bias, and risk-of-bias scores. The extracted data were compiled into a structured database to facilitate subsequent analysis.

This systematic approach ensured comprehensive capture of all relevant variables, enabling a thorough assessment of determinants influencing early initiation of breastfeeding among mothers in Sub-Saharan Africa. Any discrepancies encountered during article selection or data extraction were resolved through discussion among the reviewers until agreement was reached.

Quality assessment for included studies

The quality of the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for prevalence and observational studies. The checklist contains nine items, each scored to evaluate methodological rigor, with total scores interpreted as follows: 0–4 = low quality, 5–7 = medium quality, and ≥ 8 = high quality. Only studies scoring ≥ 5 were considered of sufficient quality and included in the final meta-analysis (16) (Table 1).

Table 1
Descriptive summary of studies included in the systematic review of EIBF in SSA.

Authors' name	Study year	Country	Study design	Sampling method	Sample size	EIBF (%)	Quality score
Ali F et al.,2020 (22)	2020	Tanzania	Prospective cohort	Retrospective	1644	70	High
Armdie AZ et al.,2024 (33)	2024	Ethiopia	cross-sectional	Prospective	2564	77.8	High
Ayalew DD et al.,2019 (43)	2019	Ethiopia	cross-sectional	Retrospective	569	77.7	High
Ayalew G et al.,2024 (42)	2024	Ethiopia	cross-sectional	Systematic	467	73.7	High
Beyene MG et al.,2017 (71)	2017	Ethiopia	cross-sectional	Retrospective	634	83.7	High
Boakye-Yiadom APet al.,2021(32)	2021	Ghana	Prospective cohort	Systematic	382	39.4	High
Boksh Z et al.,2018 (47)	2018	Burkina Faso	Cross-sectional	Retrospective	157	41	High
Cyprien KK et al.,2025 (46)	2025	Ethiopia	Quasi-experimental	Systematic	320	61	High
Exavery A et al.,2015 (25)	2015	Tanzania	cross-sectional	Retrospective	889	51	High
Gebremeskel SG et al.,2019 (35)	2019	Ethiopia	cross-sectional	Retrospective	803	61.9	High
Gebretsadik GG et al.,2020 (44)	2020	Ethiopia	cross-sectional	Retrospective	248	63.6	High
Getnet B et al.,2020 (34)	2020	Ethiopia	cross-sectional	Systematic	349	51.9	High
Hermann ND et al.,2020 (48)	2020	Cameroon	cross-sectional	Systematic	250	38.8	High
Horii N et al.,2017 (29)	2017	Nigeria	cross-sectional	Retrospective	1026	89	High
Kiwango F et al.,2020 (23)	2020	Tanzania	Longitudinal cohort	Retrospective	866	71.1	High
Liben ML et	2015	Ethiopia	cross-	Retrospective	623	71.7	High

EIBF=Early initiation of breast feeding

Authors' name	Study year	Country	Study design	Sampling method	Sample size	EIBF (%)	Quality score
al.,2015 (38)			sectional				
Liben ML et al.,2016 (37)	2016	Ethiopia	cross-sectional	Retrospective	403	39.6	High
Lyellu HY et al., 2020 (24)	2020	Tanzania	cross-sectional	Prospective	413	83.1	High
Mugadza G et al.,2017 (72)	2017	Zimbabwe	cross-sectional	Prospective	200	44	High
Mukashyaka J et al .,2019 (28)	2019	Rwanda	cross-sectional	Systematic	187	20.4	High
Mukashyaka J et al.,2020 (27)	2020	Rwanda	cross-sectional	Systematic	187	20.5	High
MULINDWA YJ et al.,2025 (20)	2025	Uganda	cross-sectional	Systematic	404	41.2	High
Muchiri IM et al., 2022 (31)	2022	Kenya	cross-sectional	Systematic	108	58.3	High
Nkoka O et al.,2019 (30)	2019	Malawi	cross-sectional	Retrospective	6351	76.9	High
Meikena HK et al., 2023 (49)	2023	Ethiopia	cross-sectional	Retrospective	385	58.2	High
Setegn T et al.,2011 (40)	2011	Ethiopia	cross-sectional	Retrospective	608	52.4	High
Shirima LJ et al .,2022 (21)	2022	Tanzania	cross-sectional	Retrospective	669	62.2	High
Tilahun G et al.,2016 (36)	2016	Ethiopia	cross-sectional	Retrospective	409	62.9	High
Tongun JB et al .,2019 (26)	2019	Sudan	cross-sectional	Prospective	806	48.1	High
Wolde T et al.,2014 (39)	2014	Ethiopia	cross-sectional	Retrospective	174	88.5	High
Zewdu F et al.,2025 (41)	2025	Ethiopia	cross-sectional	Systematic	885	74.7	High

EIBF=Early initiation of breast feeding

Data synthesis and statistical analysis

The extracted data were first entered into Microsoft Excel and subsequently exported to Stata version 17 for statistical analysis. Findings were presented through descriptive summaries, tables, and forest plots. For each study, the standard error of the prevalence was calculated using the binomial distribution formula. Between-study heterogeneity was evaluated using the I^2 statistic, with values interpreted as low (< 25%), moderate (25–50%), and high (> 75%) heterogeneity (17).

The overall prevalence of early initiation of breastfeeding (EIBF) in Sub-Saharan Africa was estimated using a random-effects meta-analysis model (DerSimonian and Laird), which accounts for substantial heterogeneity across studies and is generally considered more robust than a fixed-effect model. To explore potential sources of heterogeneity, subgroup analyses were conducted based on country, region, and study population characteristics. Additionally, sensitivity analyses, including a leave-one-out approach, were performed to assess the impact of individual studies on the pooled estimates.

Pooled prevalence estimates and associated 95% confidence intervals (CIs) were presented in tables and forest plots. Publication bias was assessed by visual inspection of funnel plot symmetry and statistically evaluated using Egger's regression test, with p-values < 0.05 considered indicative of potential bias. When evidence of publication bias was detected, the trim-and-fill method was applied to adjust for missing studies (18). Effect estimates for associated determinants were summarized using odds ratios (ORs) with corresponding 95% CIs and illustrated through forest plots.

Results

Study selection

The database search initially yielded a total of 309 records. After removing 109 duplicate entries, 200 studies remained for title and abstract screening. Of these, 120 studies were excluded for not meeting the study objectives. The full texts of the remaining 80 articles were then assessed for eligibility. During full-text review, 50 studies were excluded due to factors such as differences in study context, insufficient or irrelevant data, outcomes not aligned with the primary outcome of interest, or qualitative study designs. Ultimately, 31 studies met the predefined inclusion criteria and were included in the meta-analysis (19–49) (Fig. 1).

Figure 1 : PRISMA flow diagram showing the selection of studies on early initiation of breastfeeding in Sub Saharan Africa.

Characteristics of the included studies

This systematic review and meta-analysis incorporated thirty- one primary studies, encompassing a total of 23,585 mothers from various countries within Sub-Saharan Africa. Among these studies, three employed prospective or retrospective cohort designs, while the remainder consisted of cross-sectional and quasi-experimental studies. Quality assessment using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist yielded scores ranging from seven to nine, reflecting medium to high methodological

quality (Table 2). The included studies were conducted across multiple regions and healthcare settings within SSA, capturing diverse maternal populations and breastfeeding practices. This broad representation provides a comprehensive overview of early initiation of breastfeeding practices across the region.

Table 2
JBI quality assessment of EIBF in Sub Saharan Africa.

Authors, publication year	Country	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total score (9)
Ali F et al.,2020	Tanzania	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Armdie AZ et al.,2024	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Ayalew DD et al.,2019	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Ayalew G et al.,2024	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Beyene MG et al.,2017	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Boakye-Yiadom APet al.,2021	Ghana	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Boksh Z et al.,2018	Burkina faso	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Cyprien KK et al.,2025	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Exavery A et al.,2015	Tanzania	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Gebremeskel SG et al.,2019	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Gebretsadik GG et al.,2020	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Getnet B et al.,2020	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Hermann ND et al.,2020	Cameroon	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Horii N et al.,2017	Nigeria	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Kiwango F et al.,2020	Tanzania	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Liben ML et al.,2015	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Liben ML et al.,2016	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Lyellu HY et al., 2020	Tanzania	Y	Y	Y	Y	Y	Y	Y	Y	Y	9

Authors, publication year	Country	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total score (9)
Mugadza G et al.,2017	Zimbabwe	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Mukashyaka J et al .,2019	Rwanda	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Mukashyaka J et al.,2020	Rwanda	Y	Y	Y	Y	Y	Y	Y	Y	N	8
MULINDWA YJ et al.,2025	Uganda	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Muchiri IM et al., 2020	Kenya	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Nkoka O et al.,2019	Malawi	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Meikena HK et al., 2023	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Setegn T et al.,2011	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Shirima LJ et al .,2022	Tanzania	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Tilahun G et al.,2016	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Tongun JB et al .,2019	Sudan	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Wolde T et al.,2014	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Zewdu F et al.,2025	Ethiopia	Y	Y	Y	Y	Y	Y	Y	Y	N	8

Authors, publication year	Country	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total score (9)
Key: Y = Yes; N = No											
Question codes:											
1. Was the sample frame appropriate to address the target population?											
2. Were study participants sampled in an appropriate way?											
3. Was the sample size adequate?											
4. Were the study subjects and the setting described in detail?											
5. Was the data analysis conducted with sufficient coverage of the identified sample?											
6. Were valid methods used for the identification of the condition?											
7. Was the condition measured in a standard, reliable way for all participants?											
8. Was there appropriate statistical analysis?											
9. was the response rate adequate, and if not, was the low response rate managed appropriately?											

Table 3 : A trims and fills analysis of publication bias for the prevalence of EIBF in Sub Saharan Africa.

Studies	Effect size	(95% CI)	
Observed	60.00	54.68,	65.31
Observed + Imputed	58.96	52.53,	65.39

Pooled Prevalence of Early Initiation of Breastfeeding

The pooled prevalence of early initiation of breastfeeding (EIBF) among mothers in Sub-Saharan Africa was estimated at 58.96% (95% CI: 52.53–65.39), indicating that just over half of mothers initiate breastfeeding within the first hour after birth. Prevalence estimates varied across individual studies, reflecting differences in study populations, regional healthcare access, cultural norms, and socio-economic conditions. This moderate level of EIBF underscores the need for targeted interventions to enhance timely breastfeeding initiation across the region. Substantial heterogeneity was observed among the included studies (I^2 = 98.84%, $p < 0.001$), warranting the use of a random-effects meta-analysis model to derive the pooled estimate (Fig. 2).

Figure 2: Forest plot showing the pooled prevalence early initiation of breast feeding in

Saharan Africa.

Publication Bias and Trim-and-Fill Analysis

Publication bias was evaluated using both visual and statistical approaches. Funnel plot analysis was performed to assess the symmetry of the included studies, and visual inspection indicated asymmetry, suggesting the presence of possible publication bias (Fig. 3A). This finding was corroborated by Egger's regression test, which demonstrated statistically significant small-study effects ($p < 0.001$).

To account for the potential influence of unpublished or missing studies, a nonparametric trim-and-fill method was applied. Following adjustment, the pooled prevalence of early initiation of breastfeeding (EIBF) among mothers in Sub-Saharan Africa was estimated at 58.96% (95% CI: 52.53–65.39%) (Fig. 3B). Despite evidence of publication bias, the adjusted estimate remained stable; indicating that the pooled prevalence result is robust and reliable.

Figure 3 : Funnel plot analysis of studies assessing the prevalence of early initiation of breastfeeding in Sub-Saharan Africa, shown before adjustment (a) and after adjustment (b).

Heterogeneity and sub-group analysis

To investigate potential sources of variability in the reported prevalence of early initiation of breastfeeding (EIBF), subgroup analyses were performed according to country and region. Regionally, the highest prevalence of EIBF was observed in West Africa at 64.25% (95% CI: 15.65–112.86), whereas the lowest prevalence was reported in East Africa at 59.59% (95% CI: 53.72–65.40) (Fig. 4). These results indicate that regional differences, including disparities in access to maternal and neonatal healthcare services and variations in socio-demographic factors, likely contribute to the heterogeneity in early breastfeeding practices across Sub-Saharan Africa.

Figure 4 : A forest plot showing the sub-group analysis of early initiation of breast feeding by study area.

A leave-one-out sensitivity analysis

A leave-one-out sensitivity analysis was conducted to assess the influence of individual studies on the overall pooled prevalence of early initiation of breastfeeding (EIBF). The analysis demonstrated that excluding any single study did not significantly change the pooled estimate, with all point estimates remaining within the confidence interval of the overall analysis (Fig. 5). This indicates the robustness and stability of the meta-analytic findings.

Figure 5 : A one-leave-out sensitivity analysis of early initiation of breast feeding in Africa.

Meta-regression analysis

A meta-regression analysis was performed alongside subgroup and sensitivity analyses to explore potential sources of between-study heterogeneity. Study-level characteristics, including year of publication and sample size, were included as covariates in a random-effects meta-regression model.

The analysis revealed that none of the evaluated moderators significantly explained the substantial heterogeneity observed across studies. After adjusting for potential publication bias using a left-sided trim-and-fill method, the pooled prevalence of early initiation of breastfeeding (EIBF) decreased slightly from 60.00% (95% CI: 54.68–65.31) to 58.96% (95% CI: 52.53–65.39). This minor reduction is likely attributable to small-study effects, as smaller studies reporting lower prevalence estimates may have been underrepresented. However, sample size did not emerge as a statistically significant predictor of heterogeneity in the meta-regression, suggesting that the observed change cannot be fully explained by the examined covariates.

The inability of the meta-regression to identify significant sources of heterogeneity may reflect the limited number of included studies, residual confounding, and the inherent limitations of relying on aggregated study-level data. The substantial unexplained heterogeneity likely arises from unmeasured factors, including variations in population characteristics, differences in the definition and measurement of EIBF, maternal exposure to breastfeeding counseling during antenatal and immediate postnatal care, maternal nutritional status and peripartum health conditions, as well as differences in delivery practices and health-system support for breastfeeding across study settings. These findings emphasize the need for cautious interpretation of pooled prevalence estimates and highlight the methodological challenges of synthesizing highly heterogeneous evidence in systematic reviews and meta-analyses (Table 4).

Table 4
Meta-regression for factors associated EIBF in Sub Saharan Africa.

Variable	Coefficient	Std. err	z	P-value	[95% CI
sample size	0.0053	0.0027	2.01	0.045	.00. 0.00013, 0.01044
study year	-0.154	0.896	-0.17	0.864	--1. -1.910, 1.60
_cons	366.33	1809.03	0.20	0.84	-3179.30, 3911.96

Factors Associated with Early Initiation of Breastfeeding

Among the 31 included primary studies, 21 reported statistically significant factors associated with early initiation of breastfeeding (EIBF) (19–49). Using a random-effects meta-analysis, several key determinants of EIBF were identified.

Vaginal delivery emerged as a strong predictor, with mothers who delivered vaginally being significantly more likely to initiate breastfeeding within the first hour compared to those who did not (AOR = 4.30; 95% CI: 3.21–5.76). Place of residence was also associated with timely initiation of breastfeeding; mothers from identifiable residences were more likely to practice EIBF than those whose residence status was unspecified (AOR = 2.30; 95% CI: 2.00–3.39).

Mothers who attended four or more antenatal care (ANC) visits were more likely to initiate breastfeeding early than those with fewer visits (AOR = 1.82; 95% CI: 1.29–2.57). Likewise, mothers with good knowledge of breastfeeding were more likely to practice EIBF compared to those with limited knowledge

(AOR = 2.42; 95% CI: 1.56–3.76). Maternal education at the primary level or higher was positively associated with EIBF, compared with mothers with less than primary education (AOR = 1.69; 95% CI: 1.08–2.63).

Multiparous mothers were more likely to initiate breastfeeding within the first hour than primiparous mothers (AOR = 1.67; 95% CI: 1.24–2.24). Birth in a health facility with skilled birth attendants also significantly increased the likelihood of EIBF compared with home deliveries (AOR = 1.95; 95% CI: 1.29–2.94). Immediate skin-to-skin contact following birth was another significant predictor (AOR = 2.23; 95% CI: 1.34–3.71).

Additionally, mothers who practiced colostrum feeding were more likely to initiate breastfeeding early than those who did not (AOR = 2.65; 95% CI: 1.91–3.67). Neonates in good health at birth were more likely to be breastfed within the first hour compared with those with poor neonatal condition (AOR = 2.95; 95% CI: 1.96–4.42). Mothers without postpartum complications had higher odds of early breastfeeding initiation compared to those experiencing complications (AOR = 2.67; 95% CI: 1.03–6.92). Finally, receiving support from healthcare providers significantly increased the likelihood of EIBF compared to mothers who did not receive such support (AOR = 2.51; 95% CI: 1.60–3.95) (Table 5).

Table 5
Factors associated with early initiation of breast feeding mothers in Sub Saharan Africa.

Study	ES	[95% CI]	% Weight
Vaginal delivery	4.500	2.882, 7.026	2.01
MULINDWA YJ et al.,2025			
Nkoka O et al.,2019	3.150	2.40, 4.13	2.56
Muchiri IM et al.,2020	7.140	2.33, 21.89	0.72
Gebremeskel SG et al.,2020	4.59	1.99, 10.57	1.09
Zewdu F et al.,2025	5.630	3.64, 8.71	2.04
D + L pooled ES	4.30	3.21, 5.76	8.42
Residence	2.73	1.07, 6.96	0.93
Shirima LJ et al.,2022			
Exavery A et al.,2015	1.92	1.13, 3.26	1.77
Nkoka O et al.,2019	1.98	1.50, 2.61	2.55
Boakye-Yiadom AP et al.,2021	1.92	1.14, 3.23	1.80
Armdie AZ et al.,2024	3.29	1.86, 5.83	1.65
Liben ML et al.,2016	3.80	2.35, 6.14	1.91
Setegn T et al.,2011	4.10	2.31, 7.29	1.64
D + L pooled ES	2.60	2.00, 3.39	12.25
≥ 4 ANC contact	2.30	1.40, 3.79	1.85
MULINDWA YJ et al.,2025			
Boakye-Yiadom AP et al.,2021	1.14	1.04, 1.25	2.98
Getnet B et al., 2020	2.20	1.23, 3.92	1.64
Wolde T et al., 2014	10.60	3.11, 36.19	0.62
Ayalew DD et l.,2022	1.85	0.96, 3.58	1.44
Boksh Z et al.,2018	1.43	1.14, 1.80	2.68
D + L pooled ES	1.82	1.29, 2.57	11.21
Maternal age ≥ 25 years old	1.28	1.02, 1.61	2.68
MULINDWA YJ et al.,2025			

Study	ES	[95% CI]	% Weight
Boakye-Yiadom AP et al.,2021	1.04	1.01, 1.07	3.04
Ayalew DD et l.,2022	2.76	1.21, 6.28	1.11
D + L pooled ES	1.24	0.93, 1.66	6.83
Maternal knowledge	3.20	1.90, 5.40	1.79
MULINDWA YJ et al.,2025			
Lyellu HY et al.,202	3.01	1.56, 5.81	1.44
Exavery A et al.,2015	1.73	1.23, 2.43	2.35
D + L pooled ES	2.42	1.56, 3.76	5.58
Maternal primary education and above	1.09	1.01, 1.18	3.00
Ali F et al.,2020			
Gebremeskel SG et al	1.99	1.36, 2.92	2.21
Liben ML et al.,2016	2.00	1.18 3.38	1.78
Cyprien KK et al.,2025	2.20	1.30 3.73	1.77
D + L pooled ES	1.69	1.08, 2.63	8.76
Being multiparous mothers	2.60	1.54, 4.40	1.78
MULINDWA YJ et al.,2025			
Ali F et al.,2020	1.12	1.03, 1.22	2.99
Nkoka O et al.,2019	1.96	1.19, 3.23	1.85
Armdie AZ et al.,2024	1.42	1.08, 1.86	2.56
Liben ML et al.,2016	1.69	1.00, 2.84	1.79
Ayalew G et al.,2024	2.25	1.32, 3.84	1.75
D + L pooled ES	1.67	1.240 2.238	12.72
Skilled birth delivery	2.13	1.01, 4.49	1.25
Armdie AZ et al.,2024			
Ayalew G et al.,2024	1.95	1.01, 3.77	1.44
Gebretsadik GG et al.,2020	4.75	1.71, 13.19	0.82
Boksh Z et al.,2018	1.47	1.20, 1.80	2.76
D + L pooled ES	1.95	1.29, 2.94	6.28

Study	ES	[95% CI]	% Weight
Immediate skin to skin contact	6.10	3.38, 11.00	1.61
MULINDWA YJ et al.,2025			
Shirima LJ et al.,2022	2.40	1.52, 3.80	1.97
Ali F et al.,2020	1.38	1.29, 1.47	3.02
Armdie AZ et al.,2024	1.59	1.12, 2.25	2.33
D + L pooled ES	2.23	1.34, 3.71	8.92
Colostrum feeding	2.10	1.24, 3.56	1.77
Liben ML et al.,2015			
Wolde T et al., 2014	5.26	1.44, 19.21	0.57
Zewdu F et al.,2025	2.89	1.85, 4.52	2.01
D + L pooled ES	2.65	1.91, 3.69	4.36
Good neonatal condition	2.50	1.33, 4.70	1.50
MULINDWA YJ et al.,2025			
Armdie AZ et al.,2024	3.31	1.95, 5.62	1.77
D + L pooled ES	2.95	1.97, 4.42	3.27
Postnatal counseling	2.07	1.86, 3.93	2.23
Setegn T et al.,2011			
Boksh Z et al.,2018	1.39	1.15, 1.68	2.80
D + L pooled ES	1.90	0.99, 3.63	5.03
No postpartum complication	1.68	1.02, 2.76	1.86
Armdie AZ et al.,2024			
Ayalew G et al.,2024	4.44	2.34, 8.42	1.48
D + L pooled ES	2.67	1.03, 6.92	3.34
Receiving support from healthcare providers	3.10	1.71, 5.63	1.59
MULINDWA YJ et al.,2025			
Ayalew G et al.,2024	1.95	1.01, 3.77	1.44
D + L pooled ES	2.51	1.60, 3.95	3.03

Overall, these findings highlight the multifactorial determinants of early initiation of breastfeeding and underscore the importance of interventions that focus on maternal education, access to quality maternal healthcare services, and active healthcare provider support to improve timely breastfeeding initiation in Sub-Saharan Africa.

Discussion

This systematic review and meta-analysis assessed the pooled prevalence of early initiation of breastfeeding (EIBF) among mothers in Sub-Saharan Africa (SSA). The pooled prevalence was 58.96% (95% CI: 52.53–65.39), indicating that nearly two-fifths of mothers do not initiate breastfeeding within the first hour after birth. Compared with previous studies, this prevalence is lower than findings reported in Ethiopia (67.44%; 95% CI: 61.31–73.56) (12), Ethiopia 61.4% (50), Malaysia 77.8% (51), Malaysia 62.1% (52), and Central America 76% (53), Conversely, it is higher than rates reported in Saudi Arabia 43.6% (54), Anglophone and francophone West African countries 48.7%(55), Ethiopia 52.4% (56), Kathmandu, Nepal 47.3%(57), Northwestern Romania 24.3% (58), Middle Eastern countries 34.3% (59), Maharashtra 45.2% (60), India 43.5% (61) and Jordan 22.3% (62). These differences may be attributed to variations in study settings, sample sizes, data collection periods, healthcare infrastructure, availability and competence of healthcare professionals, measurement tools, and socioeconomic disparities. Larger sample sizes often provide more stable and generalizable estimates, whereas smaller studies may show higher variability. Socioeconomic status influences access to healthcare, maternal education, and nutrition, all of which can enhance EIBF rates. Cultural practices, social support systems, timing of data collection, maternal knowledge, and population characteristics such as age and parity also contribute to observed differences in EIBF. This review identified multiple determinants of timely breastfeeding initiation.

Vaginal delivery was strongly associated with EIBF, with mothers who delivered vaginally being over four times more likely to initiate breastfeeding within the first hour compared to those who delivered by cesarean section (AOR = 4.30), consistent with findings from Romania (63), Jordan (62). This association likely reflects the physiological and procedural advantages of vaginal delivery, including faster maternal recovery, reduced pain, and greater maternal alertness, which facilitate immediate breastfeeding. In contrast, cesarean delivery often involves anesthesia, postoperative discomfort, and routine clinical care that may delay mother–infant interaction.

Mothers whose place of residence was specified were more than two times more likely to practice timely initiation of breastfeeding compared with those whose residence was not specified (AOR = 2.30), a finding that is consistent with studies conducted in Ethiopia (12, 64, 65). This may reflect improved access to maternal and child health services, greater exposure to health education, and higher health facility delivery coverage in these areas.

Mothers who had four or more antenatal care (ANC) contacts were nearly two times more likely to initiate breastfeeding within the first hour compared with those who had fewer than four ANC contacts

(AOR = 1.82), a finding that is consistent with studies conducted in Ethiopia (12), Bangladesh (66), Frequent ANC contacts provide counseling on maternal and newborn care, including early breastfeeding, increase confidence, and facilitate preparedness for timely initiation.

Similarly, mothers with good knowledge of breastfeeding were nearly three times more likely to initiate breastfeeding early than those with poor knowledge (AOR = 2.42), a finding that is consistent with a study conducted in Saudi Arabia (65). This association may be explained by the fact that mothers with better breastfeeding knowledge are more aware of its benefits for both the newborn and them, understand the recommended practices, and are therefore more confident and motivated to initiate breastfeeding within the first hour after birth.

Mothers with education at the primary level or above were nearly two times more likely to initiate early initiation of breastfeeding (EIBF) compared with those with less than primary education (AOR = 1.69), a finding that is consistent with studies conducted in Saudi Arabia and Ethiopia (12, 65). Educated mothers are more likely to access and comprehend health information, adhere to professional guidance, attend ANC, and make informed decisions regarding newborn care.

Multiparous mothers were nearly two times more likely to initiate breastfeeding within the first hour compared with primiparous mothers (AOR = 1.67), a finding that is consistent with studies conducted in six low and middle-income countries (67), Bangladesh(66). Previous childbirth experience enhances maternal confidence, practical skills, and familiarity with early breastfeeding practices.

Mothers who gave birth in health facilities with skilled birth attendants were nearly two times more likely to practice early initiation of breastfeeding than those who delivered at home (AOR = 1.95), a finding that is consistent with studies conducted in Ethiopia (12, 50), West African States (68), Jordan(62). This is likely attributable to immediate professional support, counseling, and assistance with correct positioning and attachment.

Immediate skin-to-skin contact after birth was two times more likely to initiate early breastfeeding than those not practicing skin-to-skin contact (AOR = 2.23), a finding that is consistent with studies conducted in Malaysia (51), Romania (58), and Bangladesh (66). Immediate skin-to-skin contact facilitates early initiation of breastfeeding by stimulating neonatal feeding reflexes, enhancing maternal milk production, and calming the newborn, whereas infants without this contact may be more stressed, less responsive, and experience delays in breastfeeding.

Mothers who practiced colostrum feeding were more likely to initiate breastfeeding early compared with those who did not feed colostrum (AOR = 2.65), a finding that is consistent with studies conducted in Bangladesh (69). Mothers who feed colostrum are more likely to initiate breastfeeding early because it reflects cultural acceptance and maternal readiness and stimulates neonatal suckling and milk production, naturally prompting timely breastfeeding within the first hour.

Newborns with good neonatal condition were nearly three times more likely to be breastfed within the first hour compared with those with poor neonatal condition (AOR = 2.95), a finding that is consistent with studies conducted in Malaysia (51). Newborns with good neonatal condition are more likely to initiate breastfeeding within the first hour because they are alert, active, and able to coordinate sucking and swallowing, whereas babies with poor condition may require medical support and stabilization, delaying early feeding.

Mothers without postpartum complications were also more likely to initiate breastfeeding early than those who experienced postpartum complications (AOR = 2.67), a finding that is consistent with studies conducted in the South Asia region (70). Mothers without postpartum complications are more likely to initiate breastfeeding early because good maternal health enables immediate care, facilitates positioning and attachment, and reduces delays caused by illness, fatigue, or medical interventions, promoting timely breastfeeding initiation.

Lastly, receiving support from healthcare providers was significantly associated with early initiation of breastfeeding compared with not receiving such support (AOR = 2.51), a finding that is consistent with studies conducted in Ethiopia (12). Mothers who receive support from healthcare providers are more likely to initiate breastfeeding early, as guidance on positioning and breastfeeding technique increases confidence and facilitates timely feeding, whereas lack of support can delay initiation.

According to WHO and UNICEF, initiation of breastfeeding within the first hour is a key indicator of optimal newborn care and a critical strategy to reduce neonatal morbidity and mortality. Despite regional variation, early initiation of breastfeeding in Sub-Saharan Africa remains suboptimal. While substantial heterogeneity exists across studies, the pooled prevalence provides a broad regional estimate rather than a precise measure for all contexts. Moderate-to-low rates highlight persistent gaps in maternal and newborn care practices.

Addressing these gaps requires context-specific, equity-focused interventions targeting both demand- and supply-side determinants. Improving access to quality antenatal, intrapartum, and postnatal care particularly for socioeconomically disadvantaged populations promoting facility-based deliveries, supporting vaginal births where medically appropriate, ensuring immediate skin-to-skin contact, and integrating comprehensive breastfeeding counseling into routine care are critical. Interventions should also address maternal education, cultural practices, and health system readiness tailored to local contexts.

At the policy level, these findings underscore the need for sustained investment in maternal and newborn health programs that prioritize breastfeeding support. Strengthening health worker training, implementing the Baby-Friendly Hospital Initiative, and enhancing monitoring and evaluation systems to track progress toward national, regional, and global breastfeeding targets are essential. Community engagement, advocacy, and long-term institutional commitment are vital to ensure uptake and sustainability of effective interventions.

Although reliance on secondary data and heterogeneity limit causal inference, this review provides robust regional evidence to guide policy and program prioritization and identify gaps requiring high-quality, context-specific primary research. Coordinated efforts among governments, healthcare providers, development partners, and communities are essential to improve early initiation of breastfeeding and advance neonatal survival and maternal health outcomes across Sub-Saharan Africa.

Strengths and limitations of the study

To our knowledge, this systematic review and meta-analysis is the first to provide a rigorously combined, region-wide estimate of early initiation of breastfeeding (EIBF) across Sub-Saharan Africa, synthesizing data from multiple countries to establish a comprehensive regional benchmark. While previous studies have focused on country-specific analyses or multilevel approaches, none have produced an integrated pooled estimate for the region. The pooled prevalence of 58.96%, below the WHO global target of 70%, highlights a substantial regional gap and underscores the public health significance of this synthesis. Methodological strengths include the use of robust quantitative techniques, such as forest plot evaluation, subgroup and sensitivity analyses, and meta-regression incorporating study year and other covariates, which enhance analytical rigor and allow exploration of temporal and contextual variation.

However, the pooled estimate exhibited very high heterogeneity (I^2 = 98.84%), reflecting substantial variability across countries in population characteristics, cultural norms, health system capacity, survey timing, and study methods. Although meta-regression was performed, much of the heterogeneity remained unexplained, suggesting the influence of unmeasured contextual and methodological factors. Evidence of potential publication bias indicates that studies reporting higher EIBF prevalence or statistically significant findings may have been preferentially published, possibly inflating the pooled estimate. Variations in measurement and reporting across studies, as illustrated in forest plots, also limit comparability. Finally, the predominance of cross-sectional observational designs and reliance on self-reported timing of breastfeeding initiation may introduce recall and social desirability biases, limiting causal inference and affecting the precision of pooled estimates.

Conclusions and Recommendations

This systematic review and meta-analysis shows that early initiation of breastfeeding (EIBF) in Sub-Saharan Africa remains below the WHO-recommended target of 70%, reflecting persistent gaps in optimal breastfeeding practices across the region. Multiple interrelated determinants were identified, including vaginal delivery, urban residence, four or more antenatal care contacts, maternal primary education or higher, maternal breastfeeding knowledge, multiparity, facility-based delivery, immediate skin-to-skin contact, colostrum feeding, good neonatal condition, absence of postpartum complications, and support from healthcare providers. These findings underscore the critical role of both maternal preparedness and health system support in facilitating timely breastfeeding initiation.

From a policy perspective, governments and stakeholders should prioritize integrating EIBF promotion into national maternal and newborn health programs, strengthen antenatal and intrapartum counseling, and ensure health facilities are equipped to support immediate postnatal breastfeeding practices. Interventions should also address disparities related to urban–rural residence and maternal education and incorporate EIBF indicators into routine monitoring and evaluation frameworks. For healthcare providers, targeted capacity-building initiatives are essential to enhance counseling skills, promote skin-to-skin contact, support colostrum feeding, and provide timely assistance to mothers experiencing delivery-related challenges.

Future research should emphasize high-quality, standardized, and longitudinal studies to refine the evidence base, improve comparability across contexts, and guide progress toward global breastfeeding targets. These efforts are vital to inform evidence-based interventions and policy strategies aimed at improving early breastfeeding practices and advancing neonatal and maternal health outcomes across Sub-Saharan Africa.

Abbreviations

ANC: Antenatal care, AOR: Adjusted odds ratio, CDR: Clinical Data Repository, CI: Confidence interval, JBI: Joanna Briggs Institute’s, SSA: Sub-Saharan Africa, SDGs: Sustainable Development Goals, UNICEF: United Nations International Children's Emergency Fund, WHO: World health organization

Declarations

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Authors’ contributions

The research team collaboratively developed the search strategy. AEA, TAZ, DMG, BAM, SAM, and MYB conducted the systematic review, performed the data analysis, and drafted the initial manuscript. AEA, TAA, KKD, DAB, and ATA critically reviewed the manuscript and contributed to data interpretation and manuscript refinement. All authors read and approved the final version of the manuscript.

Ethical approval and consent to participate

This study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The review protocol was registered with the International Prospective Register of Systematic Reviews (PROSPERO) under the reference number CRD420251272129. As this study was based exclusively on previously published data, ethical approval and informed consent to participate were not required.

Consent for publication

Not applicable

Availability of data and materials

All data generated or analyzed during this study are included in this published article and its supplementary materials. Additional information is available from the corresponding author upon reasonable request.

Competing interests

The authors have declared that they have no competing interests

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References

1. Alvarado YM. Impact of a Guideline Upon Exclusive Breastfeeding Rates at a Hospital Setting. Grand Canyon University; 2025.
2. Kalbermatter C, Fernandez Trigo N, Christensen S, Ganal-Vonarburg SC. Maternal Microbiota, Early Life Colonization and Breast Milk Drive Immune Development in the Newborn. Front Immunol. 2021;12:683022.
3. Horner D, Jepsen JRM, Chawes B. Maternal dietary patterns, breastfeeding duration, and their association with child cognitive function and head circumference growth: A prospective mother-child cohort study. 2025;22(4):e1004454.
4. Kinshella MW, Prasad S, Hiwa T, Vidler M, Nyondo-Mipando AL, Dube Q et al. Barriers and facilitators for early and exclusive breastfeeding in health facilities in Sub-Saharan Africa: a systematic review. 2021;6(1):21.
5. Ghosh A. Delaying factors influencing the maternal health care disparities in developing countries: A scoping review. Women Health. 2025;65(4):340–75.
6. Terefe B, Belachew TB, Asmamaw DB, Wassie GT, Azene AG, Eshetu HB, et al. Determinants of early initiation of breastfeeding following birth in West Africa: A multilevel analysis using data from multi-country national health surveys. PLoS ONE. 2024;19(5):e0302143.
7. Boccolini CS, Lacerda EMA, Bertoni N, Oliveira N, Alves-Santos NH, Farias DR et al. Trends of breastfeeding indicators in Brazil from 1996 to 2019 and the gaps to achieve the WHO/UNICEF 2030 targets. 2023;8(9).
8. Koray MH, Wanjiru JN, Kerkula JS, Dushimirimana T, Mieh SE, Curry T, et al. Factors influencing exclusive breastfeeding in Sub-Saharan Africa: analysis of demographic and health surveys. BMC

Public Health. 2025;25(1):1790.

9. Takahashi K, Ganchimeg T, Ota E, Vogel JP, Souza JP, Laopaiboon M, et al. Prevalence of early initiation of breastfeeding and determinants of delayed initiation of breastfeeding: secondary analysis of the WHO Global Survey. Sci Rep. 2017;7:44868.
10. Zeitlin J, Manktelow BN, Piedvache A, Cuttini M, Boyle E, van Heijst A, et al. Use of evidence based practices to improve survival without severe morbidity for very preterm infants: results from the EPICE population based cohort. BMJ. 2016;354:i2976.
11. Nkrumah J, Abuosi AA, Nkrumah RB. Towards a comprehensive breastfeeding-friendly workplace environment: insight from selected healthcare facilities in the central region of Ghana. BMC Public Health. 2021;21(1):1647.
12. Kebede SD, Forster EM, Agmas K, Aytenew TM, Creedy DK. Prevalence and contributing factors of early initiation of breastfeeding (EIBF) in Ethiopia: a systematic review and meta-analysis. BMC Public Health. 2025;25(1):1377.
13. Colonetti T, de Carvalho Florêncio I, Figueiredo P, Colonetti L, Rodrigues Uggioni ML, da Rosa MI. Colostrum Use and the Immune System of Premature Newborns: A Systematic Review and Meta-Analysis. 2022;38(3):487–500.
14. North K, Gao M, Allen G, Lee AC. Breastfeeding in a Global Context: Epidemiology, Impact, and Future Directions. Clin Ther. 2022;44(2):228–44.
15. Hmone MP, Dibley MJ, Li M, Alam A. A formative study to inform mHealth based randomized controlled trial intervention to promote exclusive breastfeeding practices in Myanmar: incorporating qualitative study findings. BMC Med Inf Decis Mak. 2016;16:60.
16. Zeng X, Zhang Y, Kwong JS, Zhang C, Li S, Sun F, et al. The methodological quality assessment tools for preclinical and clinical studies, systematic review and meta-analysis, and clinical practice guideline: a systematic review. J evidence-based Med. 2015;8(1):2–10.
17. Ioannidis JP. Interpretation of tests of heterogeneity and bias in meta-analysis. J Eval Clin Pract. 2008;14(5):951–7.
18. Begg CB, Mazumdar M. Operating characteristics of a rank correlation test for publication bias. Biometrics. 1994;50(4):1088–101.
19. Mugadza G. Early breastfeeding initiation and incidence of neonatal sepsis in Chipinge District Zimbabwe. Int J Contemp Pediatr 2017.
20. MULINDWA YJ, PREDICTORS OF EARLY-BREASTFEEDING INITIATIONAMONGMOTHERS WHO DELIVERED, AT KAWEMPE AD NAGUREFERRALHOIPTALS., KAMPALA UNGANDA: Cavendish University Uganda; 2025.
21. Shirima LJ, Mlay HL, Mkuwa S, Fabian A, Mushy SE, Ngalesoni FN et al. Early initiation of breastfeeding and associated factors among mothers with children < 2 years in Simiyu region, Tanzania. 2022.
22. Ali F, Mgongo M, Mamseri R, George JM, Mboya IB, Msuya SE. Prevalence of and factors associated with early initiation of breastfeeding among women with children aged < 24 months in Kilimanjaro

region, northern Tanzania: a community-based cross-sectional study. Int Breastfeed J. 2020;15(1):80.

23. Kiwango F, Mboya IB, John B, Hashim T, Msuya SE, Mgongo M. Prevalence and factors associated with timely initiation of breastfeeding in Kilimanjaro region, northern Tanzania: a cross-sectional study. BMC Pregnancy Childbirth. 2020;20(1):505.
24. Lyellu HY, Hussein TH, Wandel M, Stray-Pedersen B, Mgongo M, Msuya SE. Prevalence and factors associated with early initiation of breastfeeding among women in Moshi municipal, northern Tanzania. BMC Pregnancy Childbirth. 2020;20(1):285.
25. Exavery A, Kanté AM, Hingora A, Phillips JF. Determinants of early initiation of breastfeeding in rural Tanzania. Int Breastfeed J. 2015;10(1):27.
26. Tongun JB, Tumwine JK, Ndeezi G, Sebit MB, Mukunya D, Nankunda J, et al. The effect of health worker training on early initiation of breastfeeding in south Sudan: A hospital-based before and after study. Int J Environ Res Public Health. 2019;16(20):3917.
27. Mukashyaka J, Mukarubayiza R, Habumugisha E, Sunday F-X, Muganwa K, Mbarushimana V, et al. Early initiation of breastfeeding among postpartum mothers at two Rwandan hospitals. Rwanda J Med Health Sci. 2020;3(2):181–92.
28. Mukashyaka J. Early breastfeeding initiation among mothers in post-partum at selected Rwandan Hospitals. University of Rwanda; 2019.
29. Horii N, Allman J, Martin-Prével Y, Waltisperger D. Determinants of early initiation of breastfeeding in rural Niger: cross-sectional study of community based child healthcare promotion. Int Breastfeed J. 2017;12(1):41.
30. Nkoka O, Ntenda PA, Kanje V, Milanzi EB, Arora A. Determinants of timely initiation of breast milk and exclusive breastfeeding in Malawi: a population-based cross-sectional study. Int Breastfeed J. 2019;14(1):37.
31. Muchiri IM. Factors Associated With the Initiation of Breastfeeding Within One Hour of Delivery at Kenyatta. National Hospital: University of Nairobi; 2022.
32. Boakye-Yiadom AP, Nguah SB, Ameyaw E, Enimil A, Wobil PNL, Plange-Rhule G. Timing of initiation of breastfeeding and its determinants at a tertiary hospital in Ghana: a cross-sectional study. BMC Pregnancy Childbirth. 2021;21(1):468.
33. Armdie AZ, Ejigu BA, Seme A, Desta S, Yihdego M, Shiferaw S. Magnitude and determinants of early initiation and exclusive breastfeeding at six weeks postpartum: evidence from the PMA Ethiopia longitudinal survey. Int Breastfeed J. 2024;19(1):1.
34. Getnet B, Degu A, Yenealem F. RETRACTED ARTICLE: Prevalence and associated factors of early initiation of breastfeeding among women delivered via Cesarean section in South Gondar zone hospitals Ethiopia, 2020. Maternal Health Neonatology Perinatol. 2020;6(1):6.
35. Gebremeskel SG, Gebru TT, Gebrehiwot BG, Meles HN, Tafere BB, Gebreslassie GW, et al. Early initiation of breastfeeding and associated factors among mothers of aged less than 12 months

children in rural eastern zone, Tigray, Ethiopia: cross-sectional study. BMC Res Notes. 2019;12(1):671.

36. Tilahun G, Degu G, Azale T, Tigabu A. Prevalence and associated factors of timely initiation of breastfeeding among mothers at Debre Berhan town, Ethiopia: a cross-sectional study. Int Breastfeed J. 2016;11(1):27.
37. Liben ML, Yesuf EM. Determinants of early initiation of breastfeeding in Amibara district, Northeastern Ethiopia: a community based cross-sectional study. Int Breastfeed J. 2016;11(1):7.
38. Liben ML. Determinants of early initiation of breastfeeding among mothers: the case of Raya Kobo District, Northeast Ethiopia: a cross-sectional study. Int J Nutr Food Sci. 2015;4(3):289–94.
39. Wolde T, Birhanu T, Ejeta E. Prevalence and determinants of timely initiation of breastfeeding among lactating mothers of urban dwellers in western Ethiopia: a community based cross sectional study. Food Sci Qual Manage 2014;31.
40. Setegn T, Gerbaba M, Belachew T. Determinants of timely initiation of breastfeeding among mothers in Goba Woreda, South East Ethiopia: A cross sectional study. BMC Public Health. 2011;11(1):217.
41. Zewdu F, Mekonnen S, Atenafu A. Early initiation of breastfeeding and exclusive breastfeeding practices and associated factors among first-time mothers attending governmental maternal and child health clinics in Gondar town, Northwest Ethiopia: a mixed method study. Int Breastfeed J. 2025;20(1):27.
42. Ayalew G, Gessesse AD, Tigabu D, Admass ZE, Girma B, Ayehu M, et al. Timely initiation of breastfeeding and its associated factors among immediate postpartum mother-newborn pairs in Debre Tabor comprehensive specialized hospital, South Gondar Zone, North West, Ethiopia. BMC Pregnancy Childbirth. 2024;24(1):735.
43. Ayalew DD, Kassie BA, Hunegnaw MT, Gelaye KA, Belew AK. Determinants of early initiation of breastfeeding in West Belessa District, Northwest Ethiopia. Nutr Metabolic Insights. 2022;15:11786388211065221.
44. Gebretsadik GG, Tkuwab H, Berhe K, Mulugeta A, Mohammed H, Gebremariam A. Early initiation of breastfeeding, colostrum avoidance, and their associated factors among mothers with under one year old children in rural pastoralist communities of Afar, Northeast Ethiopia: a cross sectional study. BMC Pregnancy Childbirth. 2020;20(1):448.
45. Beyene MG, Geda NR, Habtewold TD, Assen ZM. Early initiation of breastfeeding among mothers of children under the age of 24 months in Southern Ethiopia. Int Breastfeed J. 2016;12(1):1.
46. Cyprien KK, Augustine D, Isabelle D, Amorissani F. Determinants of early initiation of breastfeeding in Côte d'Ivoire: a hospital-based study. BMC Pediatr. 2025;25(1):802.
47. Boksh Z. Early initiation of breastfeeding and its association in rural areas of Burkina Faso. Open J Epidemiol 2018.
48. Hermann ND, Moyo GPK, Ejake L, Félicitée N, Evelyn M, Linda M, et al. Determinants of breastfeeding initiation among newly delivered women in Yaounde, Cameroon: a cross-sectional survey. Health Sci Dis. 2020;21:20–4.

49. Meikena HK, Yimer NB, Liben ML. Determinants of early initiation of breastfeeding in children under 59 months' old in northeast Ethiopia. Afr J Midwifery Women's Health. 2023;17(2):1–9.
50. Alebel A, Dejenu G, Mullu G, Abebe N, Gualu T, Eshetie S. Timely initiation of breastfeeding and its association with birth place in Ethiopia: a systematic review and meta-analysis. Int Breastfeed J. 2017;12:44.
51. Johar N, Mohamad N, Saddki N, Tengku Ismail TA, Sulaiman Z. Factors Associated with Early Breastfeeding Initiation among Women Who Underwent Cesarean Delivery at Tertiary Hospitals in Kelantan, Malaysia. Korean J Fam Med. 2021;42(2):140–9.
52. Tasnim T, Islam MH, Kurshed AAM, Islam S, Sultana S, Karim KMR. Evaluation of infant and young child feeding practices in low-income areas of Dhaka, Bangladesh: insights from a cross-sectional study using the 2021 WHO/UNICEF guideline. 2025;15(3):e093064.
53. Atyeo NN, Frank TD, Vail EF, Sperduto WAL, Boyd DL. Early Initiation of Breastfeeding Among Maya Mothers in the Western Highlands of Guatemala: Practices and Beliefs. J Hum Lact. 2017;33(4):781–9.
54. Ahmed AE, Salih OA. Determinants of the early initiation of breastfeeding in the Kingdom of Saudi Arabia. Int Breastfeed J. 2019;14:13.
55. Lewis-Koku MO, Fleming CAK, Pachuau LN, Elmighrabi NF, Agho KE. Early initiation of breastfeeding in anglophone and francophone West African countries: Systematic review and meta-analysis of associated factors. Public Health. 2025;247:105900.
56. Habtewold TD, Mohammed SH, Endalamaw A, Mulugeta H, Dessie G, Berhe DF et al. Proximal and distal factors predicting timely initiation of breast feeding in Ethiopia: a systematic review and meta-analysis. medRxiv 2019:19000497.
57. Acharya S, Khanal C, Dahal AS, Maharjan M, Bhandari B. The determinants of early initiation of breastfeeding practice among mothers attending a tertiary hospital, Kathmandu. J Nepal Pediatr Soc. 2019;39(3):168–73.
58. Cozma-Petruţ A, Badiu-Tişa I, Stanciu O, Filip L, Banc R, Gavrilaş L et al. Determinants of Early Initiation of Breastfeeding among Mothers of Children Aged Less than 24 Months in Northwestern Romania. Nutrients 2019;11(12).
59. Alzaheb RA. A Review of the Factors Associated With the Timely Initiation of Breastfeeding and Exclusive Breastfeeding in the Middle East. Clin Med Insights Pediatr. 2017;11:1179556517748912.
60. Jeyakumar A, Jungari S. Prevalence and Determinants of Early Initiation (EI), Exclusive Breastfeeding (EBF), and Prelacteal Feeding among Children Aged 0–24 Months in Slums of Pune City. Maharashtra. 2021;60(3):377–93.
61. Mary JJF, Sindhuri R, Kumaran AA, Dongre AR. Early initiation of breastfeeding and factors associated with its delay among mothers at discharge from a single hospital. Clin Exp Pediatr. 2022;65(4):201–8.
62. Fendi A, Alkhaldi SM, Othman A, Al-Hamdan Z, Alshyyab M. Predictors of early initiation of breastfeeding among women in Jordan. Br J Midwifery. 2023;31(4):196–203.

63. Cozma-Petruţ A, Badiu-Tişa I, Stanciu O, Filip L, Banc R, Gavrilaş L, et al. Determinants of early initiation of breastfeeding among mothers of children aged less than 24 months in northwestern Romania. Nutrients. 2019;11(12):2988.
64. Alebel A, Dejenu G, Mullu G, Abebe N, Gualu T, Eshetie S. Timely initiation of breastfeeding and its association with birth place in Ethiopia: a systematic review and meta-analysis. Int Breastfeed J. 2017;12(1):44.
65. Ahmed AE, Salih OA. Determinants of the early initiation of breastfeeding in the Kingdom of Saudi Arabia. Int Breastfeed J. 2019;14(1):13.
66. Hasan M, Hassan MN, Khan MSI, Al Banna MH. Prevalence and Determinants of Early Initiation of Breastfeeding Among Mothers in Dhaka City, Bangladesh: a Cross-sectional Study. SN Compr Clin Med. 2020;2(12):2792–8.
67. Patel A, Bucher S, Pusdekar Y, Esamai F, Krebs NF, Goudar SS, et al. Rates and determinants of early initiation of breastfeeding and exclusive breast feeding at 42 days postnatal in six low and middle-income countries: A prospective cohort study. Reproductive Health. 2015;12(2):S10.
68. Ezeh OK, Ogbo FA. Factors Associated with the Early Initiation of Breastfeeding in Economic Community of West African States (ECOWAS). 2019;11(11).
69. Ahmed S, Mahmud N, Farzana N, Parvin MI, Alauddin M. Early Initiation of Breastfeeding (EIBF) and Its Associated Factors Among Mothers With Infants Aged 0 to 6 Months in Jashore District, Bangladesh: A Cross-Sectional Study. J Am Nutr association. 2023;42(8):737–45.
70. Sharma IK, Byrne A. Early initiation of breastfeeding: a systematic literature review of factors and barriers in South Asia. Int Breastfeed J. 2016;11(1):17.
71. Beyene MG, Geda NR, Habtewold TD, Assen ZM. Early initiation of breastfeeding among mothers of children under the age of 24 months in Southern Ethiopia. Int Breastfeed J. 2017;12(1):1.
72. Mugadza G, Zvinavashe M, Gumbo Z, Stray-Pedersen B. Early breastfeeding initiation and incidence of severe neonatal jaundice in Chipinge district Zimbabwe. Int J Contemp Pediatr. 2017;4(6):1922.

Figures

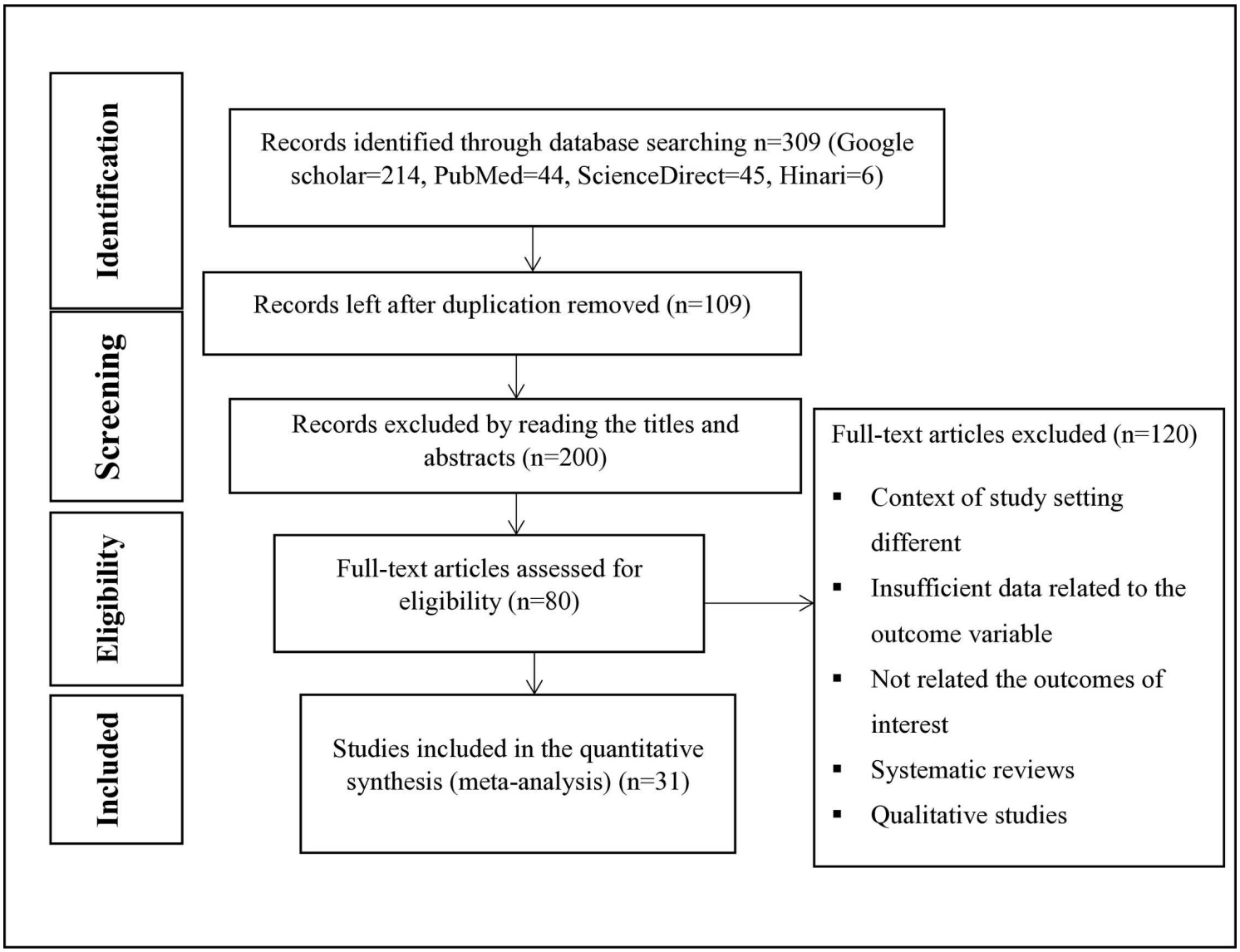


Figure 1

PRISMA flow diagram showing the selection of studies on early initiation of breastfeeding in Sub Saharan Africa.

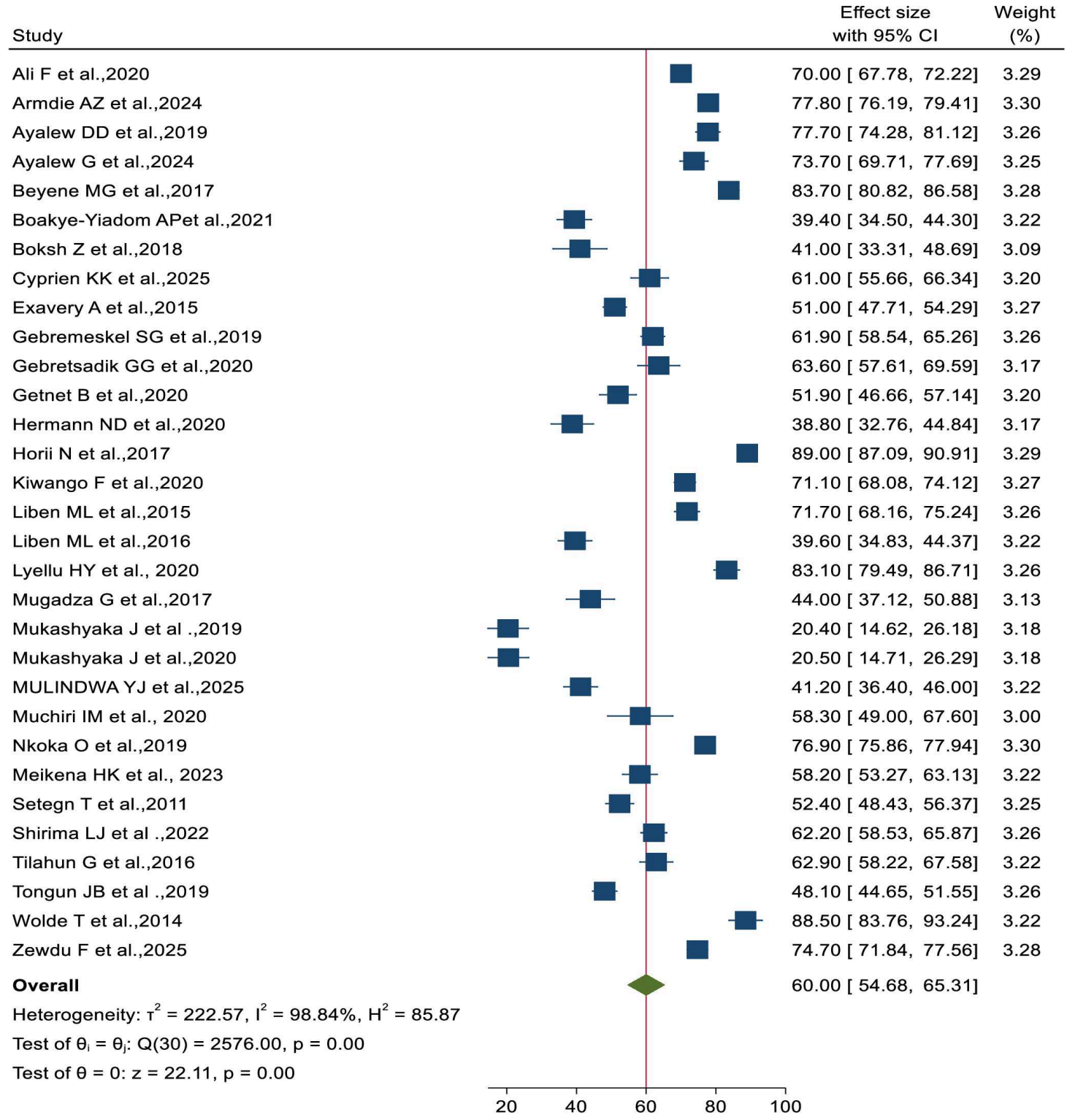
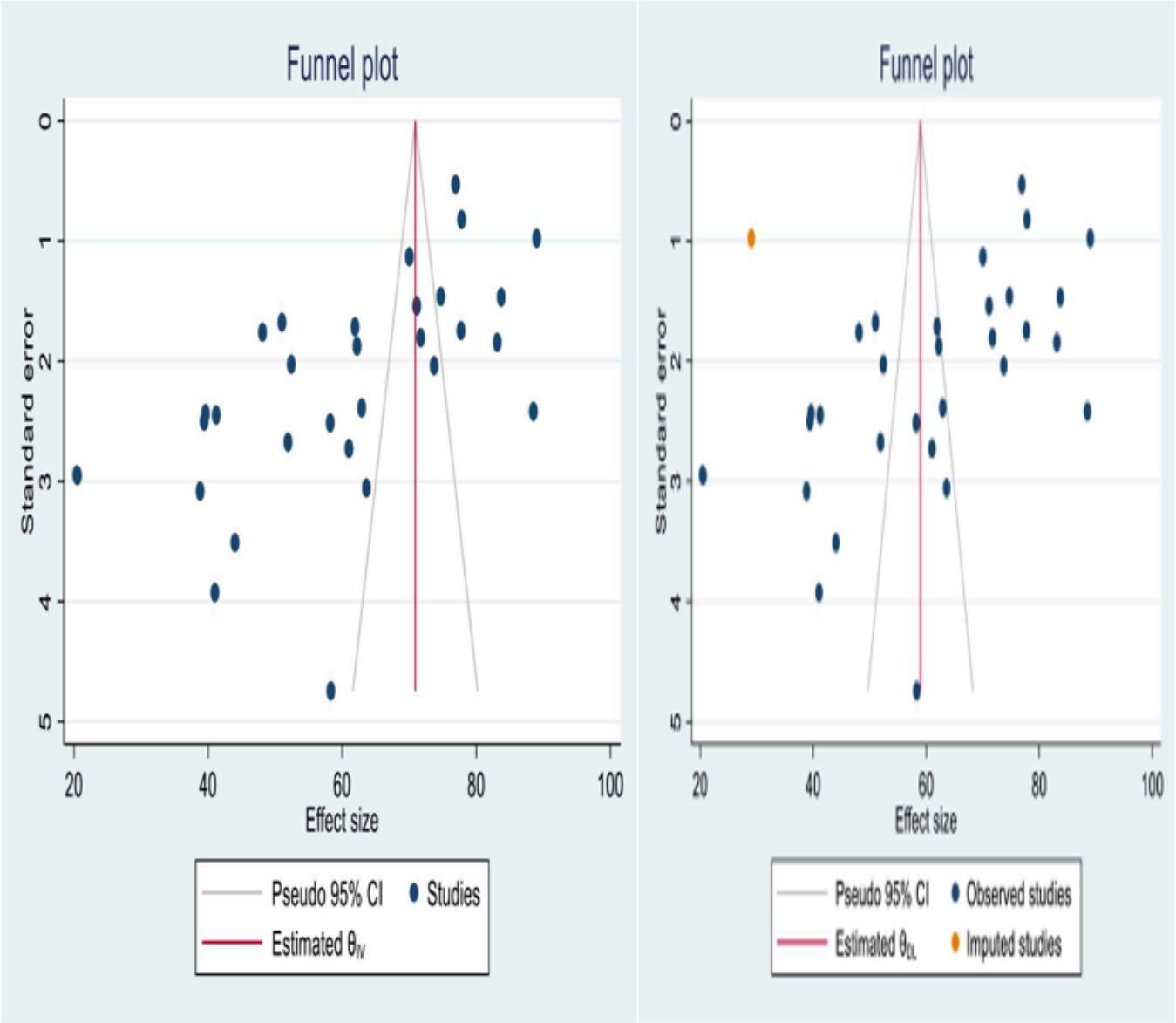


Figure 2

Forest plot showing the pooled prevalence early initiation of breast feeding in Saharan Africa.



A B

Figure 3

Funnel plot analysis of studies assessing the prevalence of early initiation of breastfeeding in Sub-Saharan Africa, shown before adjustment (a) and after adjustment (b).

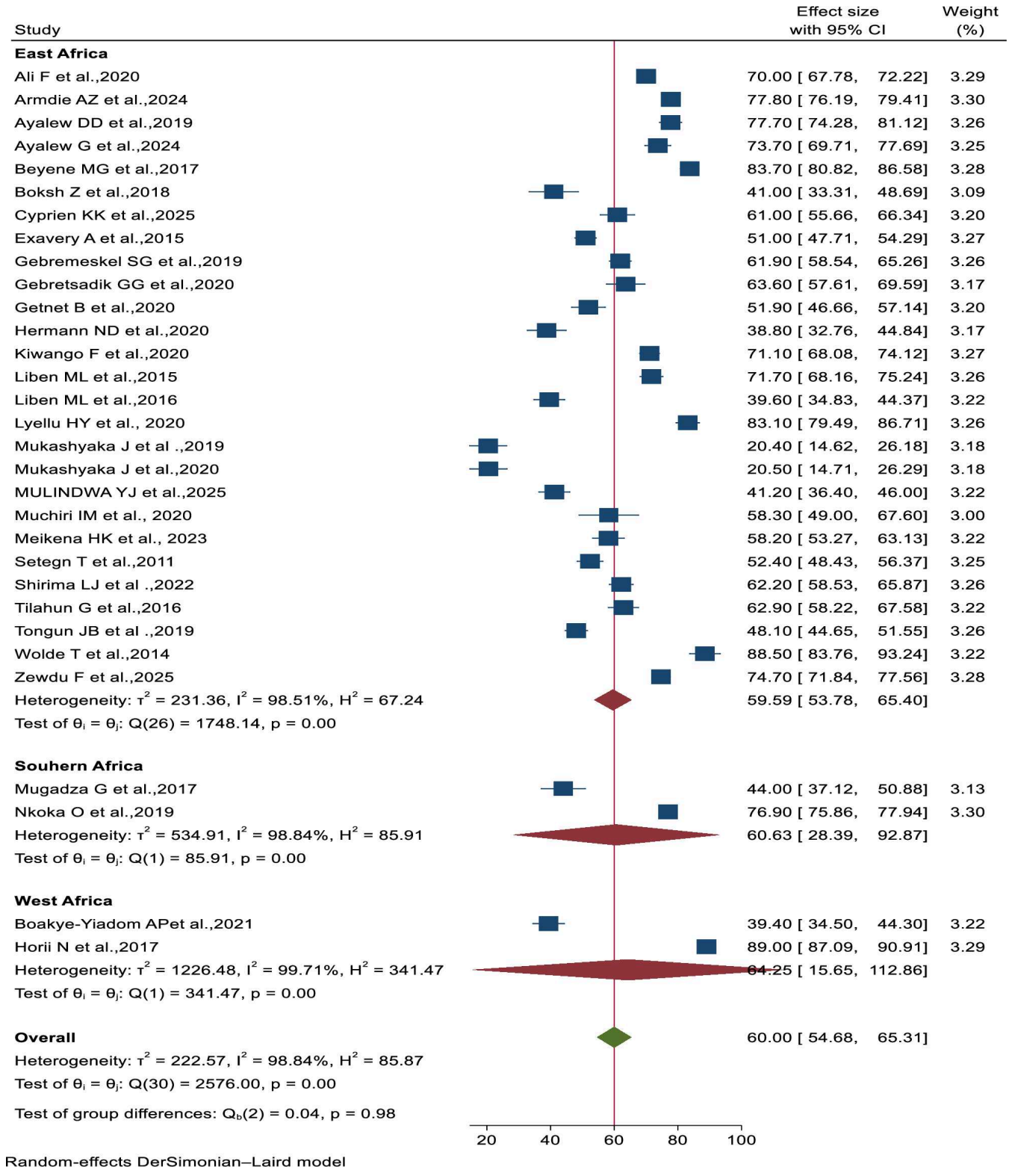


Figure 4

A forest plot showing the sub-group analysis of early initiation of breast feeding by study area.

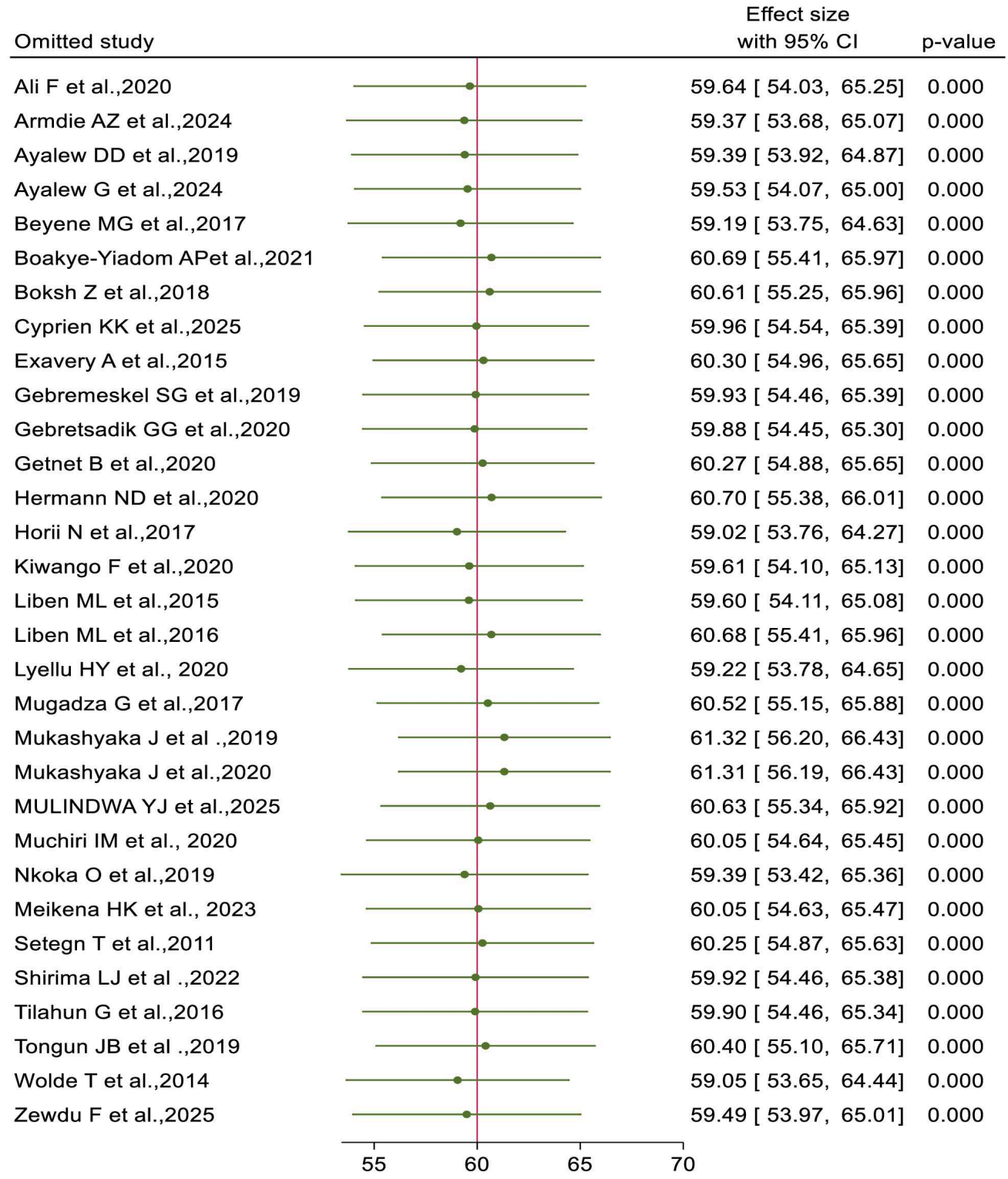


Figure 5

A one-leave-out sensitivity analysis of early initiation of breast feeding in Africa.

Supplementary Files

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- AdditionalfilePRISMAChecklist.docx
- AdditionalfileDataextraction.xlsx
- Supplementaryfile1.docx