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Factors influencing the acceptability and utilization of contraceptives among women of reproductive age: A systematic review and meta-analysis

Christiana Ebele Dike
Department of Midwifery & Child Health, World Bank Africa Centre of Excellence for Public Health & Toxicological Research, University of Port Harcourt, Port Harcourt, Nigeria.

Elkenah Ndie
Department of Nursing Science, Faculty of Health Sciences, National Open University of Nigeria, Jabi - Abuja.

Inumanye Ojule
Department of Preventive and Social Medicine, College of Health Sciences, University of Port Harcourt, Port Harcourt, Nigeria.

Helen Simon Nwafor
Department of Midwifery & Child Health, World Bank Africa Centre of Excellence for Public Health & Toxicological Research, University of Port Harcourt, Port Harcourt, Nigeria

Abstract---Background: Improving reproductive health outcomes depends on women of reproductive age accepting and using contraceptives. Despite the advantages of contraceptives, many women of reproductive-age who wish to prevent pregnancy do not use any kind of contraceptives, and many have unmet contraceptive needs that result in unwanted pregnancies and it's associated problems. ***Aim***: The aim of this systematic review is to examine the factors influencing women of reproductive age's acceptance and utilization of

Corresponding author: *Dike, C.E.; Email: ebyzion70@gmail.com*
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contraceptives. ***Methods***: The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA 2020) guided this review. A comprehensive search was conducted across PubMed, AJOL, Scopus, Google Scholar, and reference lists for studies on women of reproductive age published between 2014 and 2024. The search, carried out from October 2 to October 10, 2024, used MeSH terms and PICO- framework and yielded 1,557 records. Screening occurred in three stages: title and abstract review, full-text assessment, and final selection using predefined eligibility criteria. A total of 19 articles met the eligibility criteria and were included in the review. Data was extracted based on the study characteristics. The Critical Appraisal Skills Programme (CASP) checklist was used to appraise the methodological quality of the studies. A meta-analysis was then performed to generate pooled effect estimates. ***Results***: Multiple factors such as maternal and paternal age, marital status, parity, education, residence, religion, knowledge, partner support, attitudes, and healthcare access influenced the utilization of contraceptives. The meta-analysis showed no significant overall association between combined determinants and use (AOR = 1.60; 95% CI: 0.94–2.74). However, knowledge improvement, spousal support, and healthcare access increased use (AOR = 1.99; 95% CI: 1.40–2.83), while religion reduced use (AOR = 0.71) with notable geographic differences across countries. ***Conclusion***: The review identified key factors influencing utilization of contraceptive among reproductive-age women, highlighting the need for targeted interventions to improve uptake and reproductive health outcomes.

MeSH Keywords---Women of reproductive age, childbearing women, factors influencing, determinants, barriers, contraceptive methods, family planning methods, birth control methods.

Introduction

In 2020, preventable factors associated to pregnancy and delivery claimed the lives of about 800 women every day (WHO, 2024). Postpartum hemorrhage, unsafe abortion, and infections are major contributors to maternal mortality and morbidity (WHO, 2024), with unintended pregnancy and unsafe abortion standing out as major causes (Halder et al., 2024). Sixty-one percent (61%) of all unwanted pregnancies globally result in abortion (United Nations, 2022). It is essential to prevent unwanted pregnancies by making sure these women have access to contraception, safe abortion services up to the legal limit, and high-quality post-abortion care in order to prevent these maternal fatalities (WHO, 2024).

By enabling women to avoid unintended pregnancies and the associated maternal morbidity and mortality, contraceptives are crucial and continue to be a global intervention in achieving reproductive health (Yeboah et al., 2023). It entails the deliberate avoidance of pregnancy through a variety of methods. It enables people

and couples to choose the spacing between pregnancies and have the number of children they choose (Maitanmi et al., 2021).
According to recent projections, universal access to family planning services will prevent 54,000 unintended births, 79,000 maternal deaths, and 1.2 million child deaths (Ahuru and Nzoputam 2020).

Contraceptives are effective in preventing unwanted pregnancies, yet 1.9 billion reproductive-aged women still do not use any type of birth control (Yeboah et al., 2023; UN, 2022) and 164 million women have an unfulfilled demand for birth control (World Health Organization (WHO), 2023). Unmet need for family planning is defined as the proportion of married women who desire to delay or halt childbearing but are not utilizing family planning (National Population Commission (NPC) [Nigeria] and ICF, 2019).

The World Health Organization states that unmet family planning needs led to high fertility rates and ultimately rapid population growth (Dejene et al., 2021). This is a serious public health concern, especially in low- and middle-income countries where access, barriers and cultural resistance still exist. The acceptability and utilization of contraceptives are influenced by a number of factors, as reported by Williams et al. (2021). Therefore, the purpose of this study is to evaluate the factors affecting women of reproductive age's acceptance as well as utilization of contraceptives. The findings of this study may be useful in identifying suitable interventions to support women in accepting and utilizing contraceptives.

Systematic Review Question

1. What are the factors influencing the acceptability and utilization of contraceptive methods among women of reproductive age?

Methods

Study Design and Search Strategy

This systematic review was conducted and reported in accordance with published Reporting Items for Systematic Reviews and Meta-analysis (PRISMA 2020) (Page et al., 2021) With the help of a skilled librarian, a thorough, methodical literature search was carried out utilizing a well-thought-out approach. AJOL, Scopus, and PubMed, Google Scholar were searched for pertinent studies on factors influencing the acceptability and utilization of contraceptives among women of reproductive age. The search was carried out between October 2, 2024, and October 10, 2024, and it was restricted to only peer reviewed articles. Additionally, the reference lists were used to do a manual reference search.

To ensure a thorough and methodical selection of pertinent studies, the search approach was done using the PICO framework (Population, Intervention, Comparison, and Outcome). Both free-text and restricted vocabulary terms were used. Medical Subject Headings (MeSH) and pertinent keywords were used in the PubMed search. The MeSH terms were carefully selected to reflect the key concepts of the review and were combined with appropriate free-text terms to maximize retrieval of eligible studies.

To maximize the retrieval of relevant research, the MeSH terms were carefully chosen to represent the main ideas of the review and were paired with relevant free-text terms. The MeSH terms were modified into equivalent keywords and phrases for other databases (AJOL, Scopus, Google Scholar, and reference lists) in order to suit each database's searching system. The search terms used were "women of reproductive age," "reproductive-aged women," "women in reproductive years," "childbearing women"; "factors influencing," "determinants," "barriers," "contraceptive use," "contraceptive utilization," "contraceptive acceptability," "family planning methods," and "birth control methods." Boolean operators "OR" and "AND" were used to combine related terms appropriately. The search was limited to human studies.

Characteristics of included studies

The study's characteristics were based on the PICO framework, specifically: Women of reproductive age (15–49 years old) make up the population (P). In this context, the Intervention (I) refers to the variables under investigation that affect the utilization of contraceptives. These variables may include social, economic, cultural, religious, knowledge, educational attainment, parity, and health-related factors, among others, that affect women's acceptance and utilization of contraceptive methods. In this study, comparison (C) is not relevant. The acceptability and utilization of any contraceptive methods (pills, patches, injectables, condoms, diaphragms, implants, intrauterine devices (IUDs), etc.) among women of reproductive age is the study's outcome (O). The discovery of particular factors impacting the acceptance and utilization of contraceptives is another secondary objective.

Eligibility Criteria

Inclusion Criteria
Study Eligibility **(selection)**: Studies on the variables affecting the acceptability and utilization of contraceptives were considered in this systematic review. Women between the ages of 15 and 49 who were of reproductive age (pregnant, postpartum, non-pregnant, married, and single) made up the study participants. The review comprised cross-sectional, mixed-method, and case-control studies.

Exclusion Criteria
Study Eligibility (non-selection): Studies published in languages other than English, non-reviewed articles and research concentrating on the use of contraceptives by men and adolescents were not included in this systematic review.

Screening Process
All the searched articles identified for review were imported into a reference management software (Mendey) and duplicated studies were removed. Three steps were used in the screening procedure. In the initial phase, five graduate students with training evaluated the titles and abstracts of every article found for relevance under the authors' supervision. In the second phase, pertinent articles were screened for full text records, and the reference lists of the full text records were searched for more pertinent papers.

The authors reviewed full-text papers in the third step of the screening procedure using the eligibility criteria for inclusion and exclusion. Two reviewers separately chose and assessed the reports. The PRISMA flow chart 2020 was utilized to provide an overview of the articles' selection process.

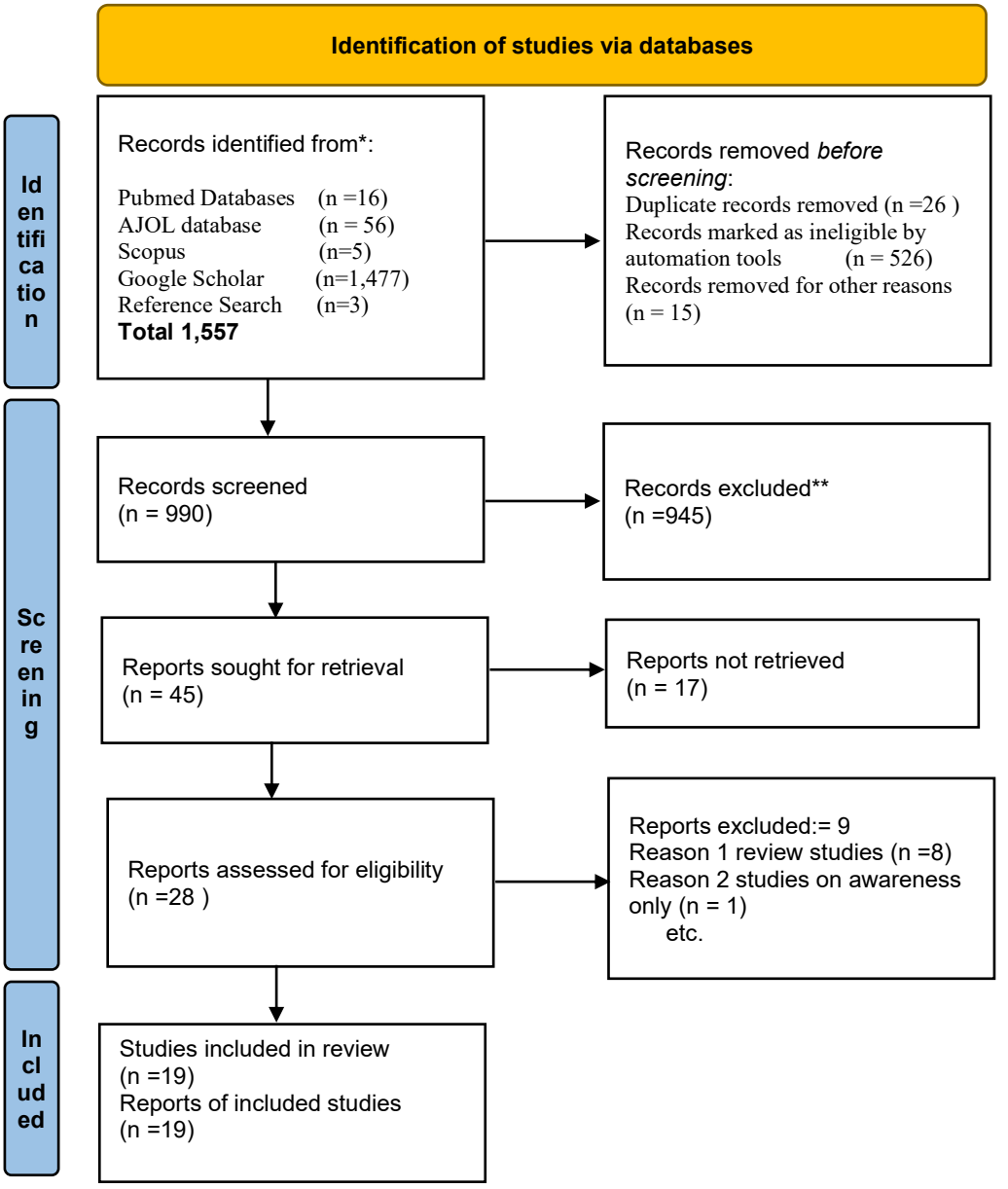

Figure 1: A PRISMA flow diagram of article selection process

Data Extraction

Data extraction was done using a defined form. This procedure was put in place to guarantee the accuracy and dependability of the articles that were extracted

and to resolve disagreements between extractors by holding regular online meetings. Data was extracted based on the study characteristics (e.g., author(s), the title of the study, year of publication, country, research objectives, methodology, target population, sample size, factors investigated, and major findings.

Quality assessment

Using the Critical Appraisal Skills Programme (CASP) (Critical Appraisal Skills Programme [CASP], 2024) (Supplementary Table 2), two independent authors, UD and AC, assessed the quality of the study. Eleven criteria with yes, no, and can't tell answers were included in the critical appraisal program checklist. The operations that followed were intended to be addressed by these parameters: 1. Did the study focus on a specific problem? 2. Did the writers choose a suitable approach to address their query? 3. Were the subjects chosen in a suitable manner? 4. Were the metrics used to lessen bias appropriately measured? 5. Did the data collection method address the research question? 6. Were there enough participants in the study to reduce chance? 7. How were the results presented and what was the main outcome? 8. Was the data analysis sufficiently rigorous? 9. Is there a clear statement of findings? 10. Can the results be applied to the local population? 11. How valuable is the research? Studies that received a score of 50% or higher on the quality assessment indicators were considered low risk.
The research papers included in this study were of a moderate quality, according to the findings of the quality evaluation conducted by two researchers

Data Synthesis

After the data was compiled, a narrative synthesis was conducted to summarize the results, categorizing the factors influencing the acceptability and utilization of contraceptives into key factors such as socio-demographic factors (age, marital status, parity, level of education, religion, and place of residence). Socio-economic factors-wealth index and other factor such as Health care access, perception, knowledge, and spouse support. To document the data and descriptive details for every study that was included, the researchers prepared a table. The data gathered provided reliable evidence that addressed the research problem.

Table 1 Summary of Reviewed Articles

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
Barriers to contraceptive utilization and Associated Factors among Reproductive Age Women of	Gebrehiwot 2023	Ethiopia	Assessed the barriers and challenges that hindered the uptake of contraceptive use among refugee	Cross-sectional study	Women of reproductive age	532	Residence (Urban vs. Rural): Discussion with Partner on Reproductive Goals:	2.593 2.817	1.513, 4.444 1.681, 4.721

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
Eritrean Refugee in North West Tigray, Ethiopia			women						
Determinants of contraceptive usage among married women in Shiraz, Iran.	Khadijeh, et.al., 2017	Iran	To investigate the determinants of contraceptive usage and fertility behavior among married women of reproductive age in Shiraz county, Iran.	cross-sectional design		626	Spousal age difference Place of Residence (urban) Polygamy	OR = 0.806, OR= 0.136, OR 0.127, P < 0.001	0.896-0.996,P < 0.001). 2.46-20.99, P < 0.001) 0.023-0.823, P < 0.001
Factors influencing contraceptive use among women of reproductive age in plantation farming communities in South-South Nigeria.	Undelikwo, et.al., 2023	Nigeria	To investigate the determinants of contraceptive use among women of reproductive age in plantation farming communities.	A cross-sectional study	Women of reproductive age	609	Location: urban Age: 20-29 years15-19 years 30-39 years also had higher odds: Education Level: secondary education tertiary education	2.29 4.50 3.87 0.07 0.20	1.33-3.94, p=0.003) 1.46-13.87, p=0.009). 1.00-14.90, p=0.05). 0.013-0.39, p=0.003 0.008-4.67, p=0.315
Determinants of Modern Contraceptive Use Among Women of Reprodu	Kebede & Minal 2022	Ethiopia	To identify the types of contraceptives used by women and the factors affecting	Cross-sectional design	married women in the reproductive age	157	Age 20-24 years 30-34 years 35-39 years Educational Status Illiterate	2.327 1.133 0.370 0.488 2.002;	Not specified Not specified

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
ctive Age in Rural Awi Zone, Ethiopia			the use in the rural Kebeles of Ani Zone				Elementary Edu. (Grades 1-8)	0.080 53.5%	1.109 - 3.610) 0.02 - 0.30
							Number of Living Children	88.5% 75.2%	
							Religion		
							Husbands support Income		
Modern Family Planning Utilization and Its Associated Factors among Currently Married Women in Rural Eastern Ethiopia: A Community-Based Study	Malutu, et al., 2020	Ethiopia	To assess the utilization of modern family planning methods and identify the factors influencing their acceptability and utilization among currently married women of reproductive age	A community-based cross-sectional study design.	Women of reproductive age	555	Knowledge of Modern Family Planning Methods:	AOR = 16.958	4.768, 60.316
							Husband Approval:	AOR = 3.590	2.170, 5.936
							Couple's Discussion:	AOR = 2.852 AOR = 2.295	1.759, 4.623 1.528, 3.447
							Desire for Additional Child	AOR = 0.018	0.005, 0.063
							Previous Use of Contraception	AOR = 2.295	1.528, 3.447
							Desire for Additional Child:	AOR = 2.340	1.531, 3.576
							Male Involvement in Decisions about Family Planning:		
Determinants of Family Planning Service Utilization and Health Facility Delivery in Six Regions of Ethiopia:	Ejeta et.al., 2021	Ethiopia	To assess the determinants of family planning (FP) service utilization and delivery at health facilities in six regions of Ethiopia	Cross sectional design	Women of reproductive age	7,938	Woman's Decision-Making	1.95	1.38 – 2.76
							Husband's Support	4.19	3.33 – 5.25
							Availability of a Family Health Card	1.28	1.09 – 1.51
							Household Visit by a Health Extension	1.02 2.30 9.08	0.86 – 1.21

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
							Worker (HEW)		
							Previous Visit to a Health Facility		1.70 – 3.12
								3.61	
							Women's Perception of Receiving Respectful Care		6.93 – 11.89
							Women's Antenatal Care (ANC) Visits During Last Pregnancy		2.12 – 6.16
Family planning use; prevalence, pattern and predictors among women in an urban slum in Enugu, Nigeria	Aniwada etal., 2017	Nigeria	To assess the predictors to acceptability and utilization of contraceptive methods among women of reproductive age	cross-sectional study	Reproductive age	281	**Age**:Women aged 25-34 years and aged 24 years and below.	0.22	0.10-0.48
							Women aged above 35 years and aged 24 years and below.	0.32	0.12-0.83
							Marital Status:	p < 0.001	
								0.25	0.08-0.80
							Number of Children: Women with 1-3 children	0.22	0.06-0.81
							Women with more than 3 children	p < 0.001	
							Occupation and Socioeconomic factors:	1.03	0.59-1.80
							Religion/Demographics:	39.1%	
							Availability of Family Planning Centers	79.7%	
							Fear of side effects		
Prevalence and Determinants of Contraceptive Utilization Among	Adilo, 2017	Ethiopia	To assess the prevalence and determinants of contraceptive utilization among reproductive-age	cross-sectional study design	HIV-positive women of reproductive age.	313	**Being married**	AOR = 4.27	1.23 - 14.79
							Disclosure of HIV status to a sexual partner:	AOR = 4.46	1.42 - 14.07

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
Reproductive Age Women Living with HIV/AIDS in Addis Ababa, Ethiopia; A Cross Sectional Study Design			women living with HIV/AIDS in Addis Ababa, Ethiopia				Use of condoms during the last sexual intercourse:	AOR = 5.99	2.85 - 12.59
Inequality gaps in modern contraceptive use among women of reproductive age in Nigeria between 2003 and 2018	Bolarinwa, et.al., 2024	Nigeria	To examine the inequality gaps in modern contraceptive use and associated factors among women of reproductive age in Nigeria between 2003 and 2018 1.	Cross sectional design	Nigeria Demographic and Health Surveys (NDHS) for the years 2003 and 2018 Was used	The study utilized a sample size of 5,336 for the year 2003 and 29,090 for the year 2018.	Urban residents: **Educational Level** Primary education **Age of Women** **20-49 years** compared to those aged 15-19. **Wealth Status (Quintile)** Richest quintile showed higher contraceptive use compared to those in the poorest quintile. Poorest quintile	**13.94 %** (2003) and **18.21 %** (2018). **11.18 %** in 2003 and **14.07 %** in 2018. **8.75 %** among women aged 20–49 in 2003 to **12.70 %** in 2018. **20.53 %** in 2003 and **22.23 %** in 2018 **3.58 %** in 2003 and **3.65**	

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
								% in 2018.	
Barriers to Contraceptive Uptake among Women of Reproductive Age in a Semi-Urban Community of Ekiti State, Southwest Nigeria.	Durowada et.al., 2017	Nigeria	To identify the barriers to the use of modern contraceptives among women of reproductive age	Cross-sectional study	Women of reproductive age	503	Marital Status **Religion** Christians Muslims **Level of Education** Secondary and tertiary education **Desire for More Children**	68.8% 68.8%; 27.0%. 68.8% 39.5%	p=0.028 p=0.041.
Factors associated with uptake of postpartum family planning services in Dodoma City Council, Tanzania	Ezekiel, 2020	Tanzania	To determine the proportion and factors associated with the uptake of postpartum family planning	A cross-sectional study	Women of reproductive age	209	**Occupation**: Self-employed women: Unemployed women: 71.2% use contraceptive Employed women **Mode of Payment for Health Services**-**Community Health Fund (CHF)**: Women using **National Health Insurance Fund (NHIF)**: Women paying by cash **Number of Antenatal Care (ANC) Visits**: Women with **4 or more ANC visits**:	AOR: 0.5 AOR: 0.2 AOR: 2.4 AOR: 2.7 46.6% AOR: 2.9	0.25–0.74 0.05–0.31 1.09–6.42 1.54–5.99 1.24–6.89
Contraceptive Practices and Determinants of Current	Duru et.al., 2018	Imo, Nigeria	to assess the prevalence, patterns, and determinants of	a community-based	Women of reproductive age		**Knowledge about contraception**	AOR: 1.95 AOR:	1.35–2.81 0.43–0.89

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
Contraceptive Use in Borno State, Nigeria			contraceptive use among women of reproductive age	descriptive cross-sectional design			Pentecostal religion	0.614 47.8%	
							Partner Influence	43.5%	
							Wanting more children	14.2% 9.9%	
							Not being married		
							Fear of side effects/health problems		
Prevalence and Determinants of Modern Contraceptive Methods Use among Women of Reproductive Age in Rural Setting	Martin, et.al., 2019	Tanzania	To assess the prevalence and determinants of modern contraceptive use among women of reproductive age	A community-based analytical cross-sectional study	Women of reproductive age	602	**Age of the Respondent** 25-49 years vs. 15-24 years:	AOR = 1.42	1.02–1.99
							Employment Status	AOR = 2.42	1.13–5.18
							Education Level	AOR = 2.45	1.38–4.35
							Women with formal education	AOR = 2.44 AOR = 1.94	1.74–3.42 1.17–3.20
							Spousal Communication	78.7%	
							Access to contraceptives		
							Marital Status		
Contraceptive awareness and ts determinants for use among women of reproductive age.	Mane et.al., 2023	Indian	To assess contraceptive awareness and identify the determinants influencing the utilization and acceptability of contraceptive methods among women of	A cross-sectional study	Women of reproductive age	359	**Occupation** Housewives Working women.	105 (48.6 %) 111 (51.4 %).	
							Level of Education Illiterate	2	

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
			reproductive age.					(10%) used; 13 (90%) did not.	
							Primary		
							Secondary.	4 (25%) used; 12 (75%) did not.	
							Higher secondary		
							Area of Residence Urban	16 (34.8 %) used; 31 (65.2 %).	
							Rural	70 (62.5 %) used; 42 (37.5 %).	
							Religion Hindus		
							Muslim	112 (50%) used	
							Number of Children One child	104 (47.3 %).	
							More than one	128 (59.4 %) used	
							History of Abortion No.	128 (59.4 %) used	
							Yes	105 (48.6 %) used	
								14	

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
								(6.5%) used 192 (88.9 %) used 17 (7.9%) .	
Modern contraceptive utilization and associated factors among postpartum women in Kena Woreda, Konso Zone, South Ethiopian Regional State, Ethiopia,	Moloro, et.al., 2024	Ethiopia	To assess postpartum modern contraceptive utilization and associated factors among postpartum women	A mixed type community-based cross-sectional study design	Postpartum women	605	Menses Resumed: Knowledge of Modern Contraceptives: Family Planning Counseling during Antenatal Care Visits	AOR = 1.63 AOR = 1.53 AOR = 1.63	1.02, 2.59 1.03, 2.26) 1.10, 2.42
Contraceptive Use and the Associated Factors among Women of Reproductive Age in Jazan City, Saudi Arabia	Mahfouz, et al. 2023	Saudi Arabia	To assess the knowledge, attitudes, and practices related to contraception among women of childbearing age in Jazan City.	Analytical cross-sectional study design.	Women of reproductive age	450	Husband's Involvement: **Age** 20–34 and 15–24. **Number of Children** 1–2 children, and > 2 children	15.6% 7.7 37.3% 62.7%	 4.4–13.5
Factors Influencing the Acceptability and Utilization of Contraceptive Methods among Women of Reproductive Age in Talensi District, Upper East Region, Ghana	Apanga, and Adam 2015	Ghana	To investigate the factors that influence the decision of women in fertility age to go for family planning services.	Descriptive cross sectional design	Women of reproductive age	280	**Educational Level** **Parity (Number of Children** Opposition from husbands Misconceptions	AOR: 1.079 AOR: 1.312 90% 83%	0.367 – 1.823 0.863 – 1.785
Long-Acting Reversible Contraception Uptake and Associated Factors among	Ontiri, 2019	Kenya	To evaluate factors associated with the uptake of LARC methods among women of reproductive age	Cross sectional	Women of reproductive age	423	Education Level: Tertiary **Religion:** Protestant women	2.58 0.42 31.8%	1.10–6.03 0.24–0.73, p = 0.002

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
Women of Reproductive Age in Rural Kenya			in Kakamega County				**Fertility Intention:** No desire more children	AOR 3.77	1.37–10.42, p = 0.01
							Desire for children after 2 years	AOR 2.94	1.07–8.08, p = 0.037
							Age at First Birth: 20 or older utilize LARC compared to those who had their first birth at age 19 or younger.	AOR 2.07	1.23–3.47, p = 0.006
Factors affecting utilization of modern contraceptive methods among women of reproductive age in Ethiopia	Beyene, et. al., 2023	Ethiopia	to determine factors affecting modern contraceptive use among women of reproductive age in Ethiopia	Cross sectional	Women of reproductive age	8,885	**Age:** Ages 25-34compared to <25 years)	OR 0.799	P=0.087
							Ages 35-44 compared to those under 25	OR = 0.529	P=0.003
							Ages 45 and above compared to those under 25	OR=0.210;	P < 0.001
							Highest Educational Level: Primary Education	OR = 1.509	P < 0.001.
							Secondary Education	OR=1.971	p < 0.001
							Higher ;Education	OR=2.168	p = 0.009
							Religion: Protestant compared to Orthodox Christians,	OR = 0.793	p = 0.179).
							Muslim	OR=0.527	p = 0.003.
								OR=0.823	p = 0.566.
								OR = 18.580	p < 0.001

Title	Author(s) and Year	Country	Objectives	Methods	Target Population	Sample Size	FACTORS INVESTIGATED	AOR	95% CI
							compared to Orthodox Christians	OR = 6.311	p < 0.001.
							Others: other religious backgrounds are not significantly different in their contraceptive use compared to Orthodox Christians	OR = 3.414	p < 0.001
								OR = 4.257	p < 0.001.
								OR = 1.322	p = 0.008
							Marital Status: Married		
							Divorced, widowed		
							Number of Living Children: 1-3 Children		
							4 or More Children		
							Wealth Index: Middle Wealth Index		

Results

Studies Identified

The literature search from PubMed, AJOL, Scopus and Google Scholar identified 1554 potential relevant articles including 3 from the reference list searching making it a total of 1557. After removing duplicates and screening for eligibility, 45 articles remained for further evaluation, and following detailed assessment, a further 26 articles were excluded because of inability to access the full text, reviewed studies, and studies on only awareness respectively. The remaining 19 relevant articles were included within this review. Refer to (figure 1).

Study characteristics of included studies

The studies under consideration utilized a cross-sectional study design. All the 19 studies included in the study were cross-sectional studies The geographic distribution of the studies were as follows: seven studies were conducted in Ethiopia, five in Nigeria, one in Iran, two from Tanzania, one in India, one in Ghana, one in Saudi Arabia, and one in Kenya. The sample sizes of studies ranged from 157 to 29,090.

The factors that influenced acceptability and utilization of contraceptives
A number of factors were found to affect the acceptability and utilization of contraceptives from the 19 studies that were reviewed. These factors include socio-demographic factors, socioeconomic factors such as wealth index, maternal knowledge of contraceptives, husband support and approval, maternal perception and attitude, and healthcare system factors.

Synthesis Assertion 1: **Socio-demographic Factors that influence acceptability and utilization of contraceptives**
Parents' age, marital status, parity, education level, place of residence, and religion were all taken into consideration as socio-demographic factors in this analysis. These factors reported a wide range of AOR and 95% confidence intervals (upper limit and lower limit) from several studies and were found to statistically affect the acceptability and utilization of contraceptives.

Age and Contraception
According to this study, women between the ages of 20 and 29 were more likely to use contraceptives than those between the ages of 15 and 19 (Mahfouz et al., 2023). Undelikwo (2023), Bolarinwa et al. (2018), and Ontiri et al. (2019), reported that women between the ages of 20 and 29 had considerably greater odds of using contraceptives than those between the ages of 15 and 19, with an Adjusted Odds Ratio (AOR) of 4.50 (95% CI: 1.46-13.87, p=0.009). Additionally, Kebede and Minale (2022) reported that women in the 20–24 age range had greater odds (OR = 2.327) of using modern contraceptives than the reference group in the 40–44 age range.

The idea that using contraceptives at a younger age (15–19 years old) could result in infertility or other reproductive health issues later in life may be the cause of this trend. According to Khadijieh et al. (2017), the chance of using contraceptives falls as the spousal age gap increases (OR = 0.914, P < 0.001). This may be explained by the fact that fertility naturally decreases with age, which lessens the perceived need for contraception. Due to their diminished reproductive capacity, older couples frequently do not view contraception as necessary, which results in lesser contraceptive use. Conversely, Apanga (2015) reported that there was no statistically significant correlation between age and the usage of contraceptives (OR = 0.024, 95% CI: 0.231–1.658, P = 0.21).The direct correlation between age and contraceptive uptake in the study population may have been weakened by other characteristics, such as economic position, marital influence, or educational level, which were more important in influencing contraceptive use.

Marital status and Contraception
Research indicates that the use of contraceptives is significantly influenced by marital status, with married women using them differently than single or divorced women (Undelikwo et al., 2023). Adilo (2017) discovered that having a partner and being married had a substantial impact on the use of contraceptives (AOR = 4.27, 95% CI: 1.23–14.79). In a similar vein, married women had a much higher likelihood of using modern contraceptives than single women (p < 0.001), as reported by Beyene et al. (2023). This could be attributed to the widespread belief in society that married women should be the primary users of contraceptives

because single women are frequently thought to have no urgent need for family planning.

However, Apanga (2015) found no statistically significant correlation (OR = 0.512, 95% CI: 0.172–1.342, p = 0.12) between marital status and the utilization of family planning services. Similarly, Duru (2018) reported that married status had no significant impact on ever using contraception (p > 0.05), indicating that factors other than marital status might be more important in determining the utilization of contraceptives.

Parity and Contraception

Research indicates that greater parity is linked to more family planning services being used. Apanga (2015) observed that women with higher parity were more likely to utilize contraceptives compared to those with lower parity (OR = 1.312, 95% CI: 0.863–1.785, p = 0.03). Mahfouz et al. (2023) revealed that women who had several children were more likely to utilize contraceptives. Additionally, Kebede and Minale (2022) noted that the number of living children had a substantial impact on the utilization of modern contraceptives, with women without children having reduced odds of using them (OR = 0.080).

Malute (2020) also found that modern contraceptive use was more than twice as common among women who did not want more children (AOR = 2.295, 95% CI: 1.528–3.447). According to Beyene et al. (2023), women with four or more children were substantially more likely to use modern contraception than women without children (OR = 4.257, p < 0.001). In a similar vein, Ontiri (2019) discovered that compared to women who planned to conceive within two years, those who did not want more children had a contraceptive utilization rate of 31.8% and were nearly four times more likely to use long-acting reversible contraceptives (LARC) (aOR = 3.77, 95% CI: 1.37–10.42, p = 0.01). This trend may be explained by the fact that women with higher parity may believe they have had enough children and utilize contraception to avoid unwanted pregnancies and the health risks they provide.

Education level and Contraception

Evidence indicates that knowledge and use of contraceptives are significantly influenced by educational attainment. According to Khadijieh et al. (2017), couples with lower levels of education used less contraception since they knew less about them. Similarly, Mane (2023) discovered a statistically significant correlation between the use of contraception and the degree of knowledge about it (p = 0.0001).

Additionally, Duru et al. (2018) found that education had a substantial impact on the use of contraceptives; respondents with tertiary education were more likely than those with less education to have ever used contraception (X^2 = 6.044, p = 0.001; OR = 2.80, 95% CI: 1.43–5.48). Furthermore, Apanga (2015) found that women with formal education were more likely than those without to use family planning services (OR = 1.079, 95% CI: 0.367–1.823, p = 0.01). According to Beyene et al. (2023), women who had completed primary school were more likely to use modern contraception than those who had not (OR = 1.509, p < 0.001).

Undelikwo et al. (2023), however, discovered that women with secondary education had considerably lower odds of using contraceptives than those without any education (AOR = 0.07, 95% CI: 0.013–0.39, p = 0.003). In contrast, women with university education were more likely to use long-acting reversible contraceptives (LARC) than those with only primary education or no education at all (AOR = 2.58, 95% CI: 1.10–6.03), as determined by Ontiri et al. (2019). According to these results, having more education increases one's knowledge, awareness, and confidence regarding the use of contraceptives, which increases acceptability and use of family planning methods.

Compared to their rural counterparts, women who live in cities are much more likely to utilize contraception. According to Gebrehiwot et al. (2023), respondents from urban regions were almost 2.6 times more likely than those from rural settings to use contraceptives. Khadijeh et al. (2017) found that women who lived in urban regions were substantially more likely than those who lived in rural areas to use contraceptives (OR = 7.68, P < 0.001). This discrepancy could be explained by the fact that urban areas have more access to family planning services, healthcare facilities, and information than rural locations, which may have fewer of these resources.

Religion and Contraception

Religious prohibitions have a huge impact on the low use of contraceptives, especially in areas where the majority of people follow religious beliefs that oppose family planning. Malutu (2020) discovered that low contraceptive usage was significantly influenced by religious limitations in a region where 84.9% of study participants were Muslims. According to Beyene et al. (2023), Muslim women were much less likely than Orthodox Christians to use modern contraception (OR = 0.527, p = 0.003). As reported by Ontiri et al. (2019), Protestant women were less likely than Catholic women to use long-acting reversible contraception (LARC) (OR = 0.42, 95% CI: 0.24–0.73, p = 0.002).

Furthermore, Aniwade (2017) found that 11.0% of the contributing factors for contraceptive use were related to religion. Strict religious teachings and the dissemination of false information inside religious networks may be the cause of this decreased use of contraceptives among some religious groups. Modern family planning techniques are sometimes greeted with resistance and decreased acceptance since contraception is mistakenly seen as a tool for population control rather than reproductive health.

Synthesis assertion 2: **Socioeconomic factors that influence acceptability and utilization of contraceptives**

In this context, "socioeconomic factors" refers to the study participants' wealth index. This is because having enough money makes it easier to acquire healthcare, education, and knowledge, which allows people to make educated reproductive decisions.

Index of Wealth and Contraception

Women's access to healthcare services, particularly modern-day contraception, is strongly correlated with their socioeconomic position. According to study findings, women in the wealthiest quintile (quintile 5) used modern contraceptives at the

highest rates, rising from 20.53% in 2003 to 22.23% in 2018 (Bolarinwa et al., 2018). In a similar vein, Beyene et al. (2023) found that women in the middle wealth index had a considerably higher likelihood of using modern contraception than women in the lower wealth category (OR = 1.322, p = 0.008).
This highlights the substantial correlation between access to healthcare and financial stability, supporting the idea that wealth has a direct impact on health outcomes, including the use of contraceptives.

Synthesis assertion 3: **Other factors that influence acceptability and utilization of contraceptives**
Maternal awareness/knowledge of contraceptives, husband support and approval, maternal perception and attitude, and healthcare variables are other factors that may affect the acceptability and use of contraceptives. The prevalence of contraceptives was influenced by these factors in one way or another.

Knowledge of contraceptives and Contraception
According to the reviewed research, enhancing the use of contraceptive methods requires knowledge of these methods. For example, Duru (2018) found that people who knew more about contraceptives were far more likely to have used any kind of contraception than people who didn't (X^2 = 26.420, p < 0.0001, OR: 1.95; 95% CI: 1.35–2.81). In a similar vein, Malutu et al. (2020) discovered that women who knew about contemporary family planning techniques were roughly seventeen times more likely to use them than those who didn't (AOR = 16.958, 95% CI: 4.768–60.316). Kebede and Minale (2022) emphasized the importance of contraceptive knowledge, reporting a Pearson's chi-square value of 25.906 and a p-value of 0.000, which demonstrates a significant association between knowledge and contraceptive use. Additionally, Moloro et al. (2024) proved that mothers possessing substantial knowledge of modern contraceptives had a 1.53-fold increased likelihood of utilizing them (AOR = 1.53, 95% CI: 1.03–2.26). This implies that mothers are better able to select the best option for themselves if they are aware of various forms of contraception. They are also more likely to be informed of the benefits and potential risks, which increases their confidence in the use of contraceptives.

Husband's support/ disapproval and Contraception
Research suggests that the utilization of contraceptives is significantly influenced by marital communication. According to Malutu (2020), women who talked to their husbands about family planning were almost three times as likely to use current methods of contraception than women who failed to (AOR = 2.852, 95% CI: 1.759–4.623). In a similar vein, Mahfouz et al. (2023) highlighted the significance of male engagement in family planning, pointing out that a husband's involvement had a significant impact on the usage of contraception (15.6%). This was further supported by Gebrehiwot et al. (2023), who reported that women who talked to their partners about their reproductive objectives were approximately 2.8 times more likely to use contraceptives (AOR = 2.817, 95% CI: 1.681–4.721). On the other hand, some research confirms husband disapproval as a deterrent to using contraceptives.

According to Durowade et al. (2017) and Martin et al. (2019), 25.5% and 34.7% of women, respectively, stated that their husbands' disapproval was a significant

barrier to their use of contraceptives. This supports the premise that "two cannot walk together unless they agree," which holds that decision-making in a relationship requires mutual consent.

Maternal Perceptions/Attitudes and Contraception

According to Apanga and Adam (2015), 83% (191/230) of respondents cited family planning misconceptions as a major obstacle. In a similar vein, Aniwada (2017) discovered that 9.3% of women refrained from using contraceptives because they were worried about negative side effects. Durowade et al. (2017) also noted that 14.6% (23/157) of women were influenced by fear of side effects, illustrating how false information and perceived health hazards can have a substantial impact on the uptake of contraceptives.

Health-related factors and Contraception

The use of contraceptives is significantly influenced by healthcare considerations. Women who received family planning counseling during prenatal care visits were 1.63 times more likely to use contraceptives (AOR = 1.63; 95% CI: 1.10–2.42), as stated by Moloro et al. (2024). In a similar vein, Martin et al. (2019) revealed a strong correlation between higher odds of current contraceptive use and free access to contemporary contraception (OR = 1.94; 95% CI: 1.17–3.20). These results emphasize the significance of counseling and access to healthcare in encouraging the use of contraceptives.

Meta-Analysis Findings

Total Pooled Impact of Factors on the Use of Contraceptives.

To answer the research question on the factors influencing women of reproductive age's acceptability and utilization of contraceptive methods, a meta-analysis was carried out. An adjusted odds ratio (AOR) of 1.60 (95% CI: 0.94–2.74) was obtained from the pooled analysis of all 19 included studies. The correlation was not statistically significant since the confidence interval included the null value of 1.0, despite the fact that this indicates a tendency toward higher contraceptive utilization linked to several variables. Significant variety in effect sizes was shown by substantial heterogeneity across studies (I^2 = 91%) (Table 3, Figure 2).

Table 3: Summary Statistics on Meta-Analysis from Included Studies on Determinants of Contraceptive Use

Statistic	Value
Pooled effect estimate (AOR)	1.60
95% Confidence Interval	[0.94, 2.74]
Heterogeneity (I^2)	91%
Tau² (between-study variance)	0.6454
P-value for heterogeneity	< 0.01
Model	Random-effects (HK)

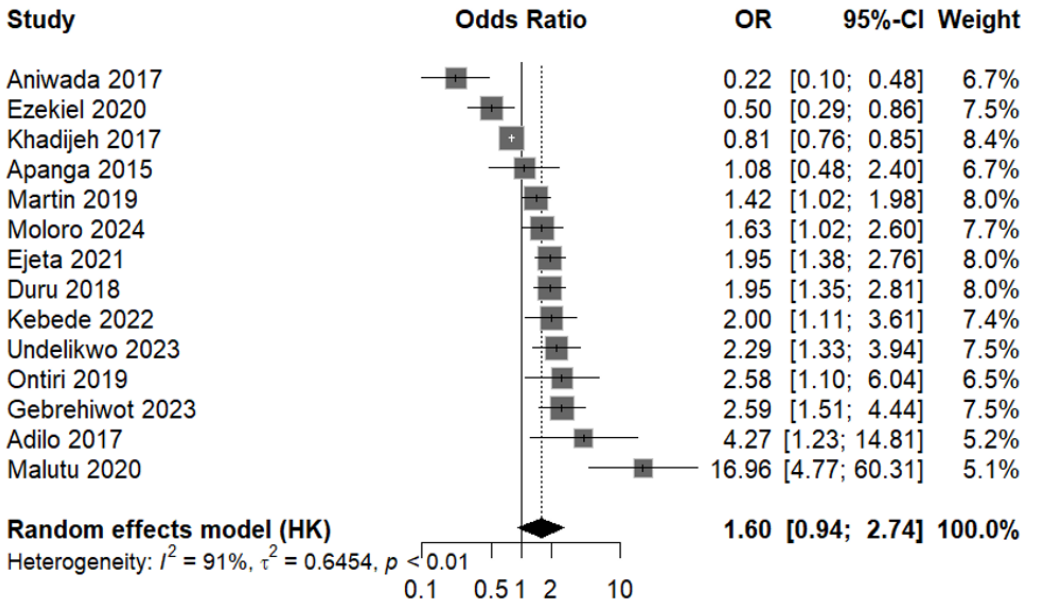

Figure 2: Forest Plot of Pooled Adjusted Odds Ratios from Included Studies on Determinants of Contraceptive Use

Effect of Intervention-Level Determinants

Subgroup analysis was used to assess how intervention-level factors affected the use of contraceptives. A statistically significant positive correlation was found in the pooled AOR of 1.99 (95% CI: 1.40–2.83) for studies that focused on interventions such boosting healthcare access, improving marital communication, and improving knowledge about contraception. This subgroup showed moderate heterogeneity (I^2 = 86%).

The largest positive correlations between contraceptive use and intervention-level characteristics were partner conversation, approval, and knowledge about contraception. On the other hand, with a pooled AOR of 0.71 (95% CI: 0.53–0.95), religion was found to be the sole factor that was negatively correlated with the use of contraceptives (Table 4, Figure 3).

Table 4: Summary Statistics on Meta-Analysis from Included Studies on Determinants of Contraceptive Use by Intervention

Statistic	**Value**
Pooled effect estimate (AOR)	1.99
95% Confidence Interval	[1.40, 2.83]
Heterogeneity (I^2)	86%
Tau² (between-study variance)	0.1823
P-value for heterogeneity	< 0.01
Model	Random-effects (HK)

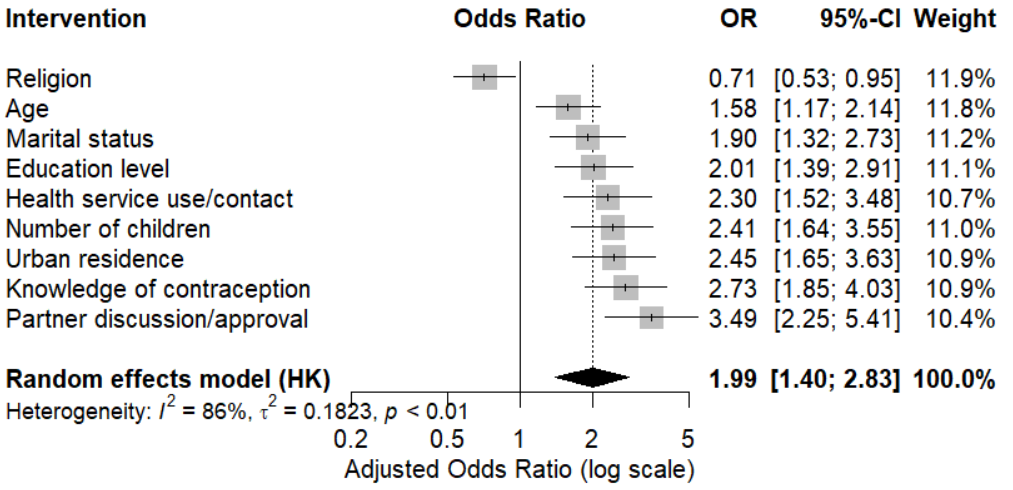

Figure 3: Sub-group Analysis of Pooled Effect Estimates of Key Determinants of Contraceptive Use by Intervention-Level

Country-Level Differences in Determinants of Contraceptive Use

Additional variation in the relationships between factors and contraceptive use was shown by subgroup analysis by country. A non-significant overall connection was shown by the pooled AOR across countries, which was 1.48 (95% CI: 0.65–3.37). However, Individual country estimates varied substantially:

Higher positive correlations between factors and contraceptive use were seen in Ethiopian and Tanzanian studies, with pooled AORs greater than 1.6.

Iranian studies, on the other hand, showed a substantial negative correlation (AOR = 0.36; 95% CI: 0.14–0.93), indicating a reduced use of contraceptives in that setting.

These variations demonstrate how culturally and regional circumstances affect the acceptability and utilization of contraceptives (Table 5, Figure 4).

Table 5: Summary Statistics on Meta-Analysis from Included Studies on Determinants of Contraceptive Use by Country

Statistic	Value
Pooled effect estimate (AOR)	1.48
95% Confidence Interval	[0.65, 3.37]
Heterogeneity (I^2)	72%
Tau² (between-study variance)	0.4222
P-value for heterogeneity	< 0.01
Model	Random-effects (HK)

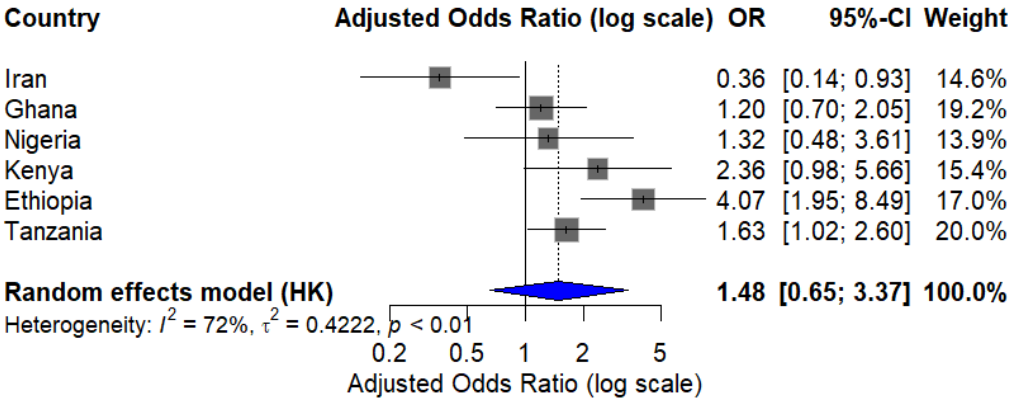

Figure 4: Sub-group Analysis of Pooled Effect Estimates of Key Determinants of Contraceptive Use by Country

Assessment of Publication Bias

Figure 5's funnel plot shows a slight asymmetry: a number of studies with higher standard errors are located to the right of the pooled effect, whereas comparatively few are on the left. A pattern like this may be a sign of publication bias favoring studies that shows stronger positive correlations with the use of contraceptives. However, genuine between-study heterogeneity (such as differences in study design or population) can also result in asymmetry. A z-value of 1.9487 (p = 0.0513) was obtained using Egger's regression test for funnel-plot asymmetry (Table 6). This finding suggests a borderline tendency towards small-study effects even if it slightly misses conventional significance (p < 0.05).

The limit (intercept) estimate projected as the standard error approaches zero is 1.2932 (95% CI 0.5708 – 2.0156), which is still above 1.0. This suggests that the aggregated determinants maintain a positive association with contraceptive utilization even when potential bias is taken into consideration. Overall, the data suggests that publication bias may exist, although it is not conclusive. The small asymmetry and borderline Egger's test emphasize the need to interpret the pooled effect cautiously and to take into account unpublished or continuing investigations in future updates, even though the overall conclusions are still reasonable.

Table 6: Funnel Plot to Assess Publication Bias in the Meta-Analysis of Contraceptive Use Studies

Statistic	Value
Egger's Test z-value	1.9487
Egger's Test p-value	0.0513
Limit Estimate (as sei → 0)	1.2932
Limit Estimate 95% CI Lower Bound	0.5708
Limit Estimate 95% CI Upper Bound	2.0156

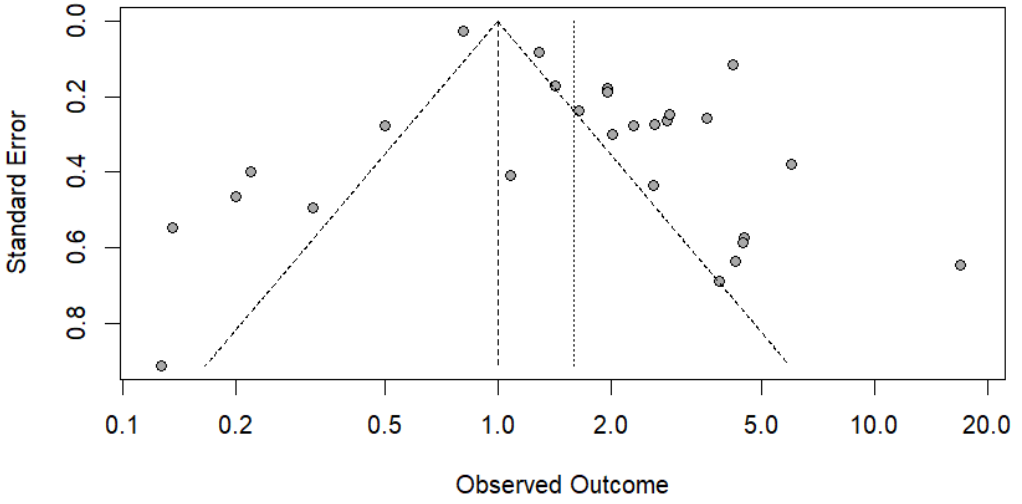

Figure 5: Funnel Plot to Assess Publication Bias in the Meta-Analysis of Contraceptive Use Studies

Discussion

This systematic review shows that women's acceptance and use of contraceptives are influenced by multiple interrelated factors, including level of education, residence, religion, socioeconomic status, knowledge, spousal support, perceptions, and health system factors. Higher educational level and better knowledge significantly increase contraceptive utilization by improving awareness, confidence, and informed decision-making. Urban residence and higher socioeconomic status are associated with greater use due to better access to healthcare services and information. Religious beliefs and spousal approval strongly shape contraceptive use, with misconceptions, cultural norms, and husband disapproval acting as major barriers. Additionally, misconceptions, fear of side effects, and limited access to counseling and affordable services reduce uptake, highlighting the importance of effective health education and accessible family planning services.

Conclusion

Although this systematic review highlights the various factors influencing the acceptability and utilization of contraceptives among women of reproductive age, contraceptives are still necessary and a cost-effective way to promote reproductive health. Its acceptance and utilization have been found to be influenced by socioeconomic level, mother's knowledge regarding contraceptives, spousal support, healthcare variables, and socio-demographic factors.

Therefore, to clear up misconceptions and increase the utilization of contraceptives, ongoing public health education and awareness initiatives are crucial. Access to free or affordably priced contraception and financial stability greatly increase utilization rates. In order to promote acceptance and collaborative decision-making, male participation in family planning programs is essential. To dispel myths and encourage responsible reproductive decisions, religious interventions are required.

Finally, strengthening healthcare systems through quality contraceptive counseling, addressing concerns about side effects, and implementing community-based interventions will be essential in overcoming existing barriers.

Strengths

The study has a number of strengths that increase its validity and applicability. It uses a systematic review methodology to conduct a full literature review, ensuring an organized and comprehensive analysis of the existing research on the variables affecting the acceptance and utilization of contraceptives. By methodically classifying the population, interventions, and outcomes, the application of existing frameworks—especially the PICO framework—ensures organization and clarity. Furthermore, by ensuring that only studies that satisfy predefined quality criteria are included.

Finally, the study effectively pinpoints modifiable elements that can be addressed in interventions, like knowledge and partner support, providing useful information for upcoming initiatives meant to increase the use of contraceptives.

Limitations

The review's restriction to English-language studies raises the possibility of linguistic bias and leaves out important studies written in other languages. The chronological span, which includes publications from 2014 to 2024, can overlook earlier significant studies that are still pertinent in the developing field of reproductive health. Another issue is that although the study finds a number of variables that affect the acceptance and utilization of contraceptives, it might not adequately examine how these variables interact, which would restrict a more thorough comprehension of their combined impact.

Implications for Policy and Practice

The results of this systematic study indicate that family planning policies should be comprehensive and equity-focused, addressing the main factors that influence women of reproductive age's acceptance and utilization of contraceptives. To increase women's understanding and dispel myths regarding contraceptives, the

government and health authorities should give priority to community-based reproductive health education initiatives and female education. Since spouse support has a major impact on the use of contraceptives, policies should also encourage male participation in family planning through focused awareness campaigns and couple-centered counseling.

Recommendations

In order to ensure that everyone is aware of contraceptive methods, educational programs should concentrate on community-based awareness campaigns and school-based reproductive health education. Through participation programs and counseling services that promote open communication, partner involvement initiatives should promote male participation in family planning. Increasing access to healthcare services through telemedicine options, mobile clinics, and a variety of contraceptive options is crucial, especially for women living in remote areas. Accessibility can be further enhanced by addressing socioeconomic barriers through financial aid programs and transportation solutions. With feedback systems in place to improve services, ongoing research and evaluation should track patterns in the utilization of contraceptives. In order to foster acceptance and dispel myths, community engagement initiatives should make use of peer education programs and the influence of religious and community leaders.

References

Adilo, T.M,. (2017).Prevalence and determinants of contraceptive utilization among reproductive age women living with HIV/AIDS in Addis Ababa, Ethiopia; A Cross Sectional Study Design". *EC Gynaecology 4.3 (2017): 97-112.*

Aniwada, E.C, Okpoko, C.C, Uleanya, N, and Okechi, U.C (2017).Family planning use: prevalence, pattern and predictors among women in an urban slum in Enugu, Nigeria. *Nigerian Journal of Medicine 26(1):59* DOI: 10.4103/1115-2613.278835

Apanga, P. A., & Adam, M. A. (2015). Factors influencing the uptake of family planning services in the Talensi District, Ghana. *The Pan African medical journal*, *20*, 10. https://doi.org/10.11604/pamj.2015.20.10.5301

Beyene, K. M., Bekele, S. A., & Abu, M. K. (2023). Factors affecting utilization of modern contraceptive methods among women of reproductive age in Ethiopia. *PloS one*, *18*(11), e0294444. https://doi.org/10.1371/journal.pone.0294444

Bolarinwa O. A. (2024). Inequality gaps in modern contraceptive use and associated factors among women of reproductive age in Nigeria between 2003 and 2018. *BMC women's health*, *24*(1), 317. https://doi.org/10.1186/s12905-024-03167-z

Critical Appraisal Skills Programme (CASP). (2024). CASP checklists. Retrieved from https://casp-uk.net

Dejene H, Abera M, Tadele A (2021) Unmet need for family planning and associated factors among married women attending anti-retroviral treatment clinics in Dire Dawa City, Eastern Ethiopia. PLoS ONE 16(4): e0250297. https://doi.org/10.1371/journal.pone.0250297

Durowade, K. A., Omokanye, L. O., Elegbede, O. E., Adetokunbo, S., Olomofe, C. O., Ajiboye, A. D., Adeniyi, M. A., & Sanni, T. A. (2017). Barriers to

Contraceptive Uptake among Women of Reproductive Age in a Semi-Urban Community of Ekiti State, Southwest Nigeria. *Ethiopian journal of health sciences*, *27*(2), 121–128. https://doi.org/10.4314/ejhs.v27i2.4

Duru, C.B, Emelumadu, O.F, Iwu, A.C, Ohanle, I, Agunwa, C.C, Nwaigbo, E, and Ndukwu, E.N (2018). Prevalence, pattern and determinants of contraceptive use among Women of Reproductive Age (15-49 Years) In rural communities in Imo State, Nigeria. International Journal of Science and Healthcare Research (www.ijshr.com) 2 Vol.3; Issue: 2; April-June 2018

Ejeta, L.T., Demeke, H.Z., Desta, B, F., Kibret, M,A., Gebre, G.K., Beshir, I. A., Gari, L. T., Tsegaye, Z. T., & Tefera, B.B. (2021). Determinants of Family Planning Service Utilization and Health Facility Delivery in Six regions of Ethiopia: A Population-Based Cross-Sectional Study. *Ethiop. J. Health Dev.2021;35 (SI-5)*

Ezekiel, M. J., Akwary, E.R., Mbotwa, C.H., & Mosha, I.H.(2022). Factors associated with uptake of postpartum family planning services in Dodoma City Council, Tanzania: A cross-section study. Tanzania Journal of Health Research Volume 23, (1) https://dx.doi.org/10.4314/thrb.v23i1.10 1

Gebrehiwot, S, Abera, G., & Berhe, A.(2023). Barriers to Contraceptive Utilization and Associated Factors among Reproductive Age Women of Eritrean refugee in North-West Tigray, Ethiopia 2017: a mixed study. *Research Square*; 2023. DOI: 10.21203/rs.3.rs-2659832/v1.

Halder, S., Majumdar, B. K., Amir, M., & Moon, I. J. (2024). Maternal Mortality and Morbidity Following Unsafe Abortion in a Tertiary Medical College Hospital. *European Journal of Medical and Health Sciences*, *6*(1), 67–72. https://doi.org/10.24018/ejmed.2024.6.1.1972

Kebede and Minale (2023) Determinants of Modern Contraceptive Use among Women of Reproductive Age Living in Rural Areas in Awi Zone, Ethiopia. *Ethiopian Journal of Social Sciences / Vol. 8 No. 1 (2022) / Articles*

Khadijeh, A. , Khoo, S. Leng , Malek, N. Malina , Yasin, S. Mat and Ahmadi, A. (2017). Determinants of Contraceptive Usage among Married Women in Shiraz, Iran. *Journal of Midwifery and Reproductive Health*, *5*(4), 1041-1052. doi: 10.22038/jmrh.2017.8771

Mahfouz, M. S., Elmahdy, M., Ryani, M. A., Abdelmola, A. O., Kariri, S. A. A., Alhazmi, H. Y. A., Almalki, S. H. M., Adhabi, O. M., Ali Hindi, S. M., Muqri, N. M., & Towhary, B. A. (2023). Contraceptive Use and the Associated Factors among Women of Reproductive Age in Jazan City, Saudi Arabia: A Cross-Sectional Survey. *International journal of environmental research and public health*, *20*(1), 843. https://doi.org/10.3390/ijerph20010843

Maitanmi, J .O, Tanimowo, M. F, Maitanmi B. T, Okondu, O. E, Olubiyi, S K, Tola, Y. O, Akinokum, T.R.T, Akingbade, O. (2021). Factors Influencing Choice of Contraceptives among Women of Reproductive Age Attending Lagos State University Teaching Hospital, Nigeria. J Res Dev Nurs Midw 2021; 18 (2) :8-10 URL: http://nmj.goums.ac.ir/article-1-1308-en.html

Mane, S.M., Aghav, P.A, Karad, S.D., & Kharde, A.L.(2023).Contraceptive awareness and its determinants for use among women of reproductive age: A cross sectional study. *Magna Scientia Advanced Research and Reviews, 2023, 09(01), 093–100* DOI: https://doi.org/10.30574/msarr.2023.9.1.0132

Martin, V. , Msuya, S. , Kapologwe, N. , Damian, D. , John, B. & Mahande, M. (2019) Prevalence and Determinants of Modern Contraceptive Methods Use among Women of Reproductive Age (15 - 49 Years) in Rural Setting: A Case of

Kishapu District, Shinyanga Region. *Advances in Sexual Medicine*, 9, 53-66. doi: 10.4236/asm.2019.94005.

Moloro, A. H., Beza, S. W., & Kumsa, M. A. (2024). Modern contraceptive utilization and associated factors among postpartum women in Kena Woreda, Konso Zone, South Ethiopian Regional State, Ethiopia, 2023: mixed type community based cross-sectional study design. *Contraception and reproductive medicine*, *9*(1), 31. https://doi.org/10.1186/s40834-024-00292-w

Mulatu, T., Sintayehu, Y., Dessie, Y., & Deressa, M. (2020). Modern Family Planning Utilization and Its Associated Factors among Currently Married Women in Rural Eastern Ethiopia: A Community-Based Study. *BioMed research international*, *2020*, 6096280. https://doi.org/10.1155/2020/6096280

National Population Commission (NPC) [Nigeria] and ICF. 2019. 2018 Nigeria DHS Key Findings. Abuja, Nigeria and Rockville, Maryland, USA: NPC and ICF.

Ontiri, S., Ndirangu, G., Kabue, M., Biesma, R., Stekelenburg, J., & Ouma, C. (2019). Long-Acting Reversible Contraception Uptake and Associated Factors among Women of Reproductive Age in Rural Kenya. *International journal of environmental research and public health*, *16*(9), 1543. https://doi.org/10.3390/ijerph16091543

Page, M. J, McKenzie, J.E, Bossuyt, P.M, Boutron, I, Tammy C Hoffmann, T.C, Mulrow, C.D, Shamseer, L, Tetzlaff, J.M, Akl, E.A, Brennan, S.E, Chou, R, Glanville, J, Grimshaw, J.M, Hróbjartsson, A, Lalu, M.M, Li, T, Loder, E.W, Mayo-Wilson, M, McDonald, S, McGuinness, L,A, Lesley A Stewart, L.A, Thomas, J, Tricco, A.C, Welch, V.A, Whiting, P, & Moher, D, (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews BMJ 2021; 372 :n71 doi:10.1136/bmj.n71

Undelikwo, V. A., Ikpi, N. E., & Bassey, G. E. (2023). Factors Influencing Contraceptive Use Among Women of Reproductive Age in Plantation Farming Communities in South-South Nigeria. *African journal of reproductive health*, *27*(2), 67–75. https://doi.org/10.29063/ajrh2023/v27i2.7

United Nations Department of Economic and Social Affairs Population Division (2022).World Family Planning. Meeting the changing needs for family planning: Contraceptive use by age and method. https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2023/Feb/undesa_pd_2022_world-family-planning.pdf

United Nations, (2022).World Population Prospects 2022: Summary of Results July 2022 . https://www.un.org/development/desa/pd/ .

United Nations, (2022).World Population Prospects https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results.pdf

United Nations, Department of Economic and Social Affairs, Population Division (2022). Estimates and Projections of Family Planning Indicators 2022.

United Nations, Department of Economic and Social Affairs, Population Division (2022). World Contraceptive Use 2022

WHO, (2022) Contraception https://www.who.int/health-topics/contraception#tab=tab_1

WHO, (2023) Family planning/contraception methodshttps://www.who.int/news-room/fact-sheets/detail/family-planning-contraception

World Health Organization. World Health Organization News;(2023). Global progress in tackling

Yeboah, I., Agyekum, M. W., Okyere, J., Mensah, R. O., Essiaw, M. N., Appiah, H., Conduah, A. K., Koduah, S. N. K., & Christian, A. K. (2023). Use of any contraceptive method among women in rural communities in the eastern region of Ghana: a cross-sectional study. *BMC public health*, *23*(1), 1925. https://doi.org/10.1186/s12889-023-16795-1

Yeboah, I., Agyekum, M. W., Okyere, J., Mensah, R. O., Essiaw, M. N., Appiah, H., Conduah, A. K., Koduah, S. N. K., & Christian, A. K. (2023). Use of any contraceptive method among women in rural communities in the eastern region of Ghana: a cross-sectional study. *BMC public health*, *23*(1), 1925. https://doi.org/10.1186/s12889-023-16795-1