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Meta-Analysis

Meta Analysis: The Effects of Attitude, Spouse Support, and Education Level on Men Participation in Male Contraceptive Use

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ABSTRACT

Background: One of the government's strategies to support women's equal rights is to issue a policy in which people of reproductive age, both men and women, are expected to participate in the Family Planning program as an effort to raise awareness, willingness and ability of the community to improve their welfare independently. This study aims to analyze the influence of attitude, partner support, and level of education on men's participation in the use of contraception.
Subjects and Method: This was a systematic review and meta-analysis. The study population was men of reproductive age. Intervention= positive attitude, strong partner support, and high education. Comparison= negative attitude, weak support, and low education. Outcome= the use of contraceptives. Data search was carried out systematically using electronic databases from Pubmed, Google Scholar, Europe PMC, Science Direct and Springer Link. Keywords used "Attitude" AND "Partner support" OR "Discuss with partner" AND "Educational status" OR "Educational level" AND "Men participation" OR "Men Involvement" AND "Contraception" OR "Family Planning" OR "Vasectomy" OR "Condom". The selection of primary articles used the PRISMA flowchart which was analyzed using Review Manager 5.3.
Results: Six studies showed that men with a positive attitude were 3.69 times more likely to use contraception than men with a negative attitude (aOR= 3.69; 95% CI= 2.23 to 6.09; p<0.001). Six studies showed that men with strong partner support are 2.48 times more likely to use contraception than men with weak partner support (aOR= 2.48; 95% CI= 2.04 to 3.02; p<0.001). Eight studies showed that men with a high level of education increased the likelihood of male contraceptive use (aOR= 2.07; CI 95%= 1.45 to 2.96).
Conclusion: Positive attitude, strong partner support, and a high education increase the use of male contraceptives.

Keywords: attitude, partner support, level of education, contraception.

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BACKGROUND

Worldmeters data (2020), the total population in the world is 7,794,798,739 people with a Total Fatality Rate of 2.5 live births per woman each year, this birth rate is still the same as the world TFR in 2015. Accord-

ing to estimates by The United Nations (UN) the world's population will increase to 8 billion in 2023. Worldmeters noted that in Asia had a TFR of 2.2 KH per woman, while in Indonesia the TFR reached 2.3 KH per woman in 2020 (Worldmeters, 2021).

The coverage of active family planning participants according to modern contraceptive methods in 2020, namely injection contraceptive methods 72.9%, pills, 19.4%, IUDs 8.5%, implants 8.5%, MOW 2.6%, condoms 1.1%, and MOP 0.6%. From the results of this coverage, it can be seen that most of the participation of acceptors using family planning is still dominated by women (Ministry of Health Republic of Indonesia, 2021).

The attitude of men in giving a positive assessment of contraceptive methods has a higher tendency to use contraceptives. Research in Ontario, Canada states that married men have 2 times more positive attitudes towards using contraceptive methods (condoms) compared to unmarried men (Etowa et al., 2021). Research in Saudi Arabia states that men's attitudes towards using contraceptive methods are significantly related to men's knowledge of contraceptive methods, where <10% of men know that there are hormonal contraceptive methods for men (Sait et al., 2021).

Discussions with partners regarding family planning in terms of decision making are 3 times higher for men to use family planning services (Prata et al., 2017). Research in Eastern Ethiopia states that men who frequently discuss sexual and reproductive health with their partners are 2 times more likely to participate in the use of family planning, as many as 59.3% of men participate in the use of family planning because they have partners who support the use of contraceptive methods (Mulatu et al., 2022).

Research in the Eastern District of Sissala, regarding the involvement of men in the use of family planning services, shows that men with secondary or higher education are more likely to use contraceptive methods than those who do not (Abigail et al., 2022). Another study in Kondala, West Ethiopia showed that men with a high level of education were 2 times more likely to participate in the use of family planning services than men with lower secondary education (Assefa et al., 2021).

Based on this background, a comprehensive review is needed regarding the factors causing the low participation of men in the use of contraceptives. This review aims to analyze the influence of attitude, partner support and level of education on men's participation in the use of contraceptives.

SUBJECTS AND METHOD

1. Study Design

This research is quantitative with a meta-analytic study design, using secondary data from the results of pre-existing research. This review will be analyzed using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines.

The article search process was carried out comprehensively through the Pubmed electronic database, Google Scholar, Science Direct, Europe PMC and Springer Link

The keyword for search article is: “Attitude” AND “Partner support” OR “Discuss with partner” AND “Educational status” AND “Man participation” OR “Men Involvement” AND “Contraception” OR OR “Vasectomy” OR “Condom”.

2. Step to do Meta-Analysis

The meta-analysis was carried out in five steps as follows:

1) Formulate research questions in the PICO format (Population, Intervention, Comparison, Outcome).
2) Search for primary study articles from various electronic and non-electronic databases.
3) Conduct screening and critical assessment of primary research articles.
4) Perform data extraction and synthesize effect estimates into RevMan 5.3.
5) Interpret and conclude the results

3. Inclusion Criteria

The researcher developed inclusion criteria to make it easier to find articles, namely full paper articles, articles mentioning attitudes, partner support, and educational level related to men's participation in the use of contraceptives, articles with men of reproductive age (15-69 years), articles with a cross-sectional study design. and published in English.

4. Exclusion Criteria

Exclusion criteria in this study were mixed studies, for example male and female contraceptive users, male contraceptive users with sexually transmitted infections such as HIV.

5. Operational Definition of Variables

Attitude is a response both positive and negative in determining a decision.

Spouse support is assistance provided by a partner in the form of information.

The level of education is the level of education taken starting from elementary, secondary, and higher education.

Contraceptives are a tool or action taken to prevent pregnancy

6. Instruments

This systematic review was carried out following the PRISMA flow diagram guidelines, with an assessment of the quality of the articles using the Critical Appraisal Skills Program for Cross-Sectional (CEBMa, 2014), including:

a. Do the research objectives clearly address the focus/problem of the research?
b. Is the research method (research design) suitable for answering the research question?
c. Is the research subject selection method clearly written?
d. Does the sampling method give rise to bias (selection)?
e. Does the research sample take represent the designated population?
f. Was the sample size based on pre-study considerations?
g. Is the measurement method achievable?
h. Are the research instruments valid and reliable?
i. Was statistical significance assessed?
j. Was a confidence interval given for the main outcome?
k. Are there any confounding factors that have not been taken into account?
l. Are the results applicable to your research?

7. Data Analysis

The articles that have been collected are selected according to predetermined criteria. Data processing uses RevMan 5.3 to determine the influence of male participation on the use of contraceptives. Variation of research data is divided into Fixed Effect Model and Random Effect Model. The results of data processing are presented in forest plot and funnel plot graphs.

RESULTS

The article selection process used the PRISMA flow diagram which can be seen in Figure 1, where the total articles in the initial search process were 1,410 articles. Furthermore, as many as 964 articles were screened and 228 articles with full text were obtained whose feasibility was tested, so that the total articles obtained were 10 articles. Figure 2 shows the distribution of articles on the African continent, namely 1

article from West Africa (South East Nigeria) and 9 articles from East Africa (North Ethiopia, South Ethiopia, West Ethiopia, East Ethiopia, Southwest Ethiopia and Northwest Ethiopia).

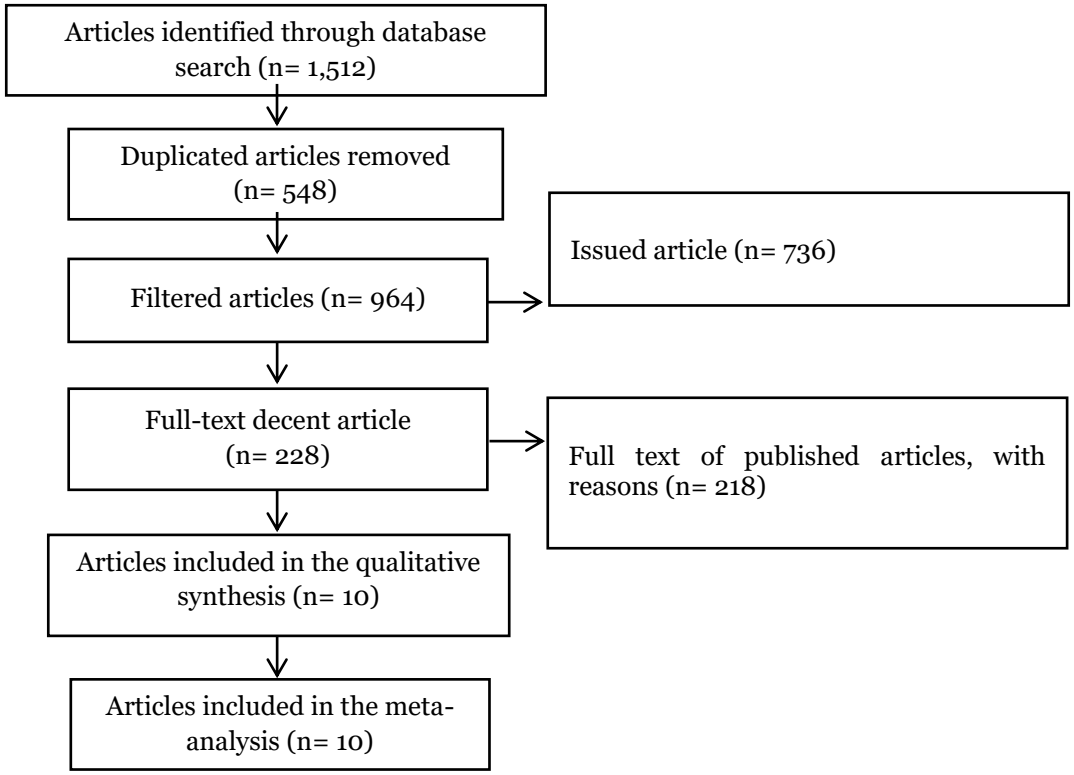

Figure 1. Results of Prisma Flow Diagrams

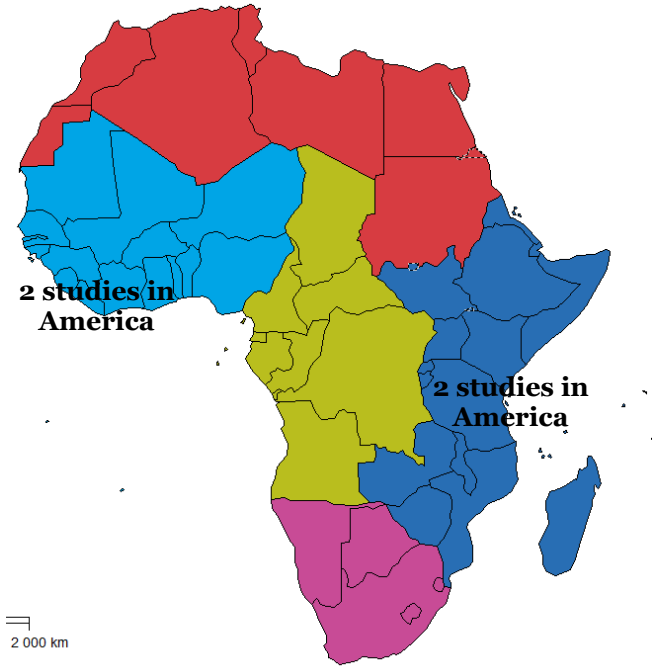

Figure 2. Resarch Distribution Map

Table 1. Assessment of article quality with a cross-sectional study design.

Primary Study	Criteria												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
Degu A et al. (2021)	2	2	2	2	2	1	2	2	2	2	2	2	23
Ayele et al.	2	2	2	2	2	0	2	2	2	2	2	2	22
Wondim et al. (2020)	2	2	2	2	2	0	2	2	2	2	2	2	22
Amuzie *et al.* (2022)	2	2	2	2	2	0	2	2	2	2	2	2	22
Mulatu *et al.* (2022)	2	2	2	2	2	0	2	2	2	2	2	2	22
Nesro *et al.* (2020)	2	2	2	2	2	0	2	2	2	2	2	2	22
Temach *et al.* (2017)	2	2	2	2	2	0	2	2	2	2	2	2	22
Girum *et al.* (2017)	2	2	2	2	2	0	2	2	2	2	1	2	22
Geltore dan Lakew (2022)	2	2	2	2	2	0	2	2	2	2	2	2	22
Demissie *et al.* (2021)	2	2	2	2	2	0	2	1	2	2	2	2	21

Notes= 2= Yes; 1= Can't tell; 0= No

Table 2. Description of the study on the influence of respondents' attitudes on men's participation in the use of male contraception.

Author (Year)	Country	Sample	Study Design	Population	Inter-vention	Comparison	Outcome	aOR (CI 95%)
Degu Ayele et al. (2021)	West Ethiopia	413	Cross-sectional	Married men aged 21-51 years	positive attitude	Negative attitude	Use of contraceptives	2.47 (1.58 to 3.86)
Ayele et al. (2020)	Ethiopia	402	Cross-sectional	Married men aged 20-56 years	positive attitude	Negative attitude	Use of contraceptives	4.80 (2.61 to 8.80)
Wondim et al. (2020)	North Ethiopia	620	Cross-sectional	Married men aged 15-49 years	positive attitude	Negative attitude	Use of contraceptives	2.27 (1.53 to 3.35)
Nesro et al. (2020)	Ethiopia	422	Cross-sectional	Married men aged 20-69 years	positive attitude	Negative attitude	Use of contraceptives	7.81 (4.25 to 14.38)
Girum et al. (2017)	Southwestern Ethiopia	391	Cross-sectional	Married men aged 15-59 years	positive attitude	Negative attitude	Use of contraceptives	1.8 (1.2 to 3.2)
Geltore dan Lakew (2022)	South Ethiopia	382	Cross-sectional	Married men aged 20-65 years	positive attitude	Negative attitude	Use of contraceptives	10.9 (4.3 to 27.8)

Table 3. Description of the study of the effect of partner support on men's participation in the use of male contraception.

Author (Year)	Country	Sample	Study Design	Population	Intervention	Comparison	Outcome	aOR (CI 95%)
Degu Ayele et al. (2021)	West Ethiopia	413	Cross-sectional	Married men aged 21-51 years	Strong support	Weak support	Use of contraceptives	1.547 (0.685 to 3.495)
Ayele et al. (2020)	Ethiopia	402	Cross-sectional	Married men aged 20-56 years	Strong support	Weak support	Use of contraceptives	1.77 (0.573 to 5.469)
Wondim et al. (2020)	Northern Ethiopia	620	Cross-sectional	Married men aged 15-49 years	Strong support	Weak support	Use of contraceptives	2.51 (1.692 to 3.722)
Amuzie et al. (2022)	Southeastern Nigeria	588	Cross-sectional	Married men aged 25-45 years	Strong support	Weak support	Use of contraceptives	3.15 (2.16 to 4.62)
Mulatu et al. (2022)	Eastern Ethiopia	577	Cross-sectional	Married men aged 20-50 years	Strong support	Weak support	Use of contraceptives	2.05 (1.40 to 3.02)
Girum et al. (2017)	Southwestern Ethiopia	391	Cross-sectional	Married men aged 15-59 years	Strong support	Weak support	Use of contraceptives	2.9 (1.67 to 4.72)

Table 4. Description of the study of the effect of partner support on men's participation in the use of male contraception.

Author (Year)	Country	Sample	Study Design	Population	Intervention	Comparison	Outcome	aOR (CI 95%)
Degu Ayele et al. (2021)	West Ethiopia	413	Cross-sectional	Married men aged 21-51 years	High education level	Low education level	Use of male contraceptives	4.702 (1.26 to 17.552)
Ayele et al. (2020)	Ethiopia	402	Cross-sectional	Married men aged 20-56 years	High education level	Low education level	Use of male contraceptives	1.142 (0.373 to 3.492)
Wondim et al. (2020)	Northern Ethiopia	620	Cross-sectional	Married men aged 15-49 years	High education level	Low education level	Use of male contraceptives	1.64 (1.124 to 2.624)
Nesro et al. (2020)	Ethiopia	422	Cross-sectional	Married men aged 20-69 years	High education level	Low education level	Use of male contraceptives	1.03 (0.43 to 2.49)
Temach et al. (2017)	Northwest Ethiopia	872	Cross-sectional	Married men aged 21-50 years and over	High education level	Low education level	Use of male contraceptives	4.10 (2.48 to 6.75)
Girum et al. (2017)	Southwestern Ethiopia	391	Cross-sectional	Married men aged 15-59 years	High education level	Low education level	Use of male contraceptives	1.5 (1.04 to 3.15)
Geltore dan Lakew (2022)	Southern Ethiopia	382	Cross-sectional	Married men aged 20-65 years	High education level	Low education level	Use of male contraceptives	2.97 (1.46 to 6.04)
Demissie et al. (2021)	Northwest Ethiopia	382	Cross-sectional	Married men aged 20-30 years	High education level	Low education level	Use of male contraceptives	2.39 (1.084 to 5.260)

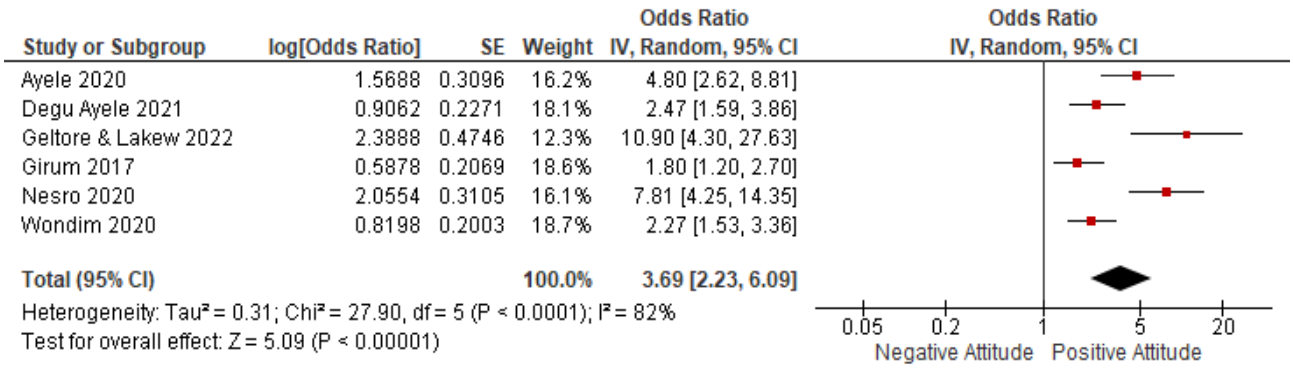

Figure 3. Forest plot of the influence of men's attitudes towards use of male contraceptives

The forest plot in Figure 3 showed that there is an effect of a positive male attitude towards the use of male contraception, and this effect is statistically significant. Men with a positive attitude were 3.69 times more likely to use contraception than men with a negative attitude (aOR= 3.69; 95% CI= 2.23 to 6.09). The forest plot in Figure 3 also shows highly heterogeneous variation in effect estimates between primary studies subjected to meta-analysis, with I^2= 82% (p<0.001).

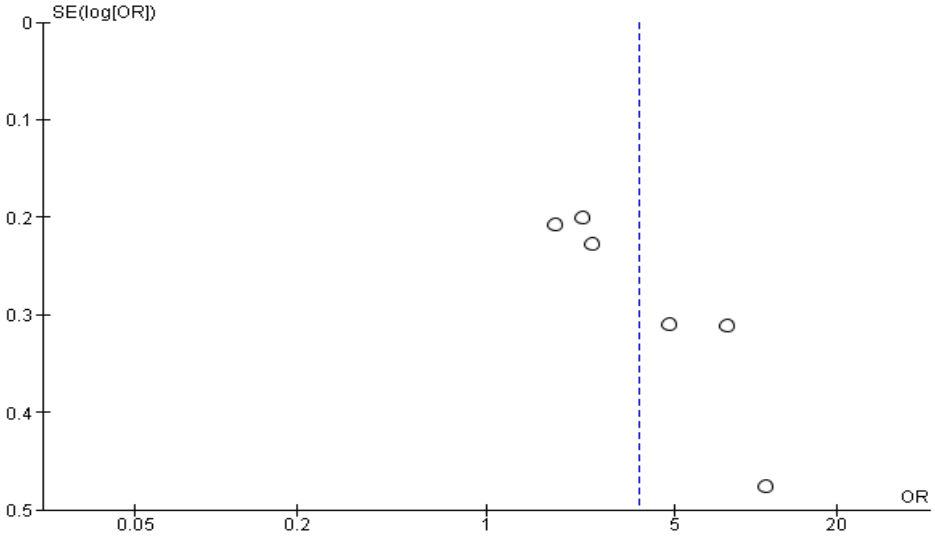

Figure 4. Funnel plot of the influence of men's attitudes towards the use of male contraceptives

The funnel plot in Figure 4 showed the distribution of effect estimates that are not symmetrical. The distribution of effect estimates lies more to the right of the estimated average vertical line than to the left, thus indicating publication bias. Because the distribution of effect estimates lies to the right of the average vertical line in the funnel plot which is the same as the average effect estimate in the forest plot which lies to the right of the hypothesis 0 line, this bias magnifies the true effect (over estimate).

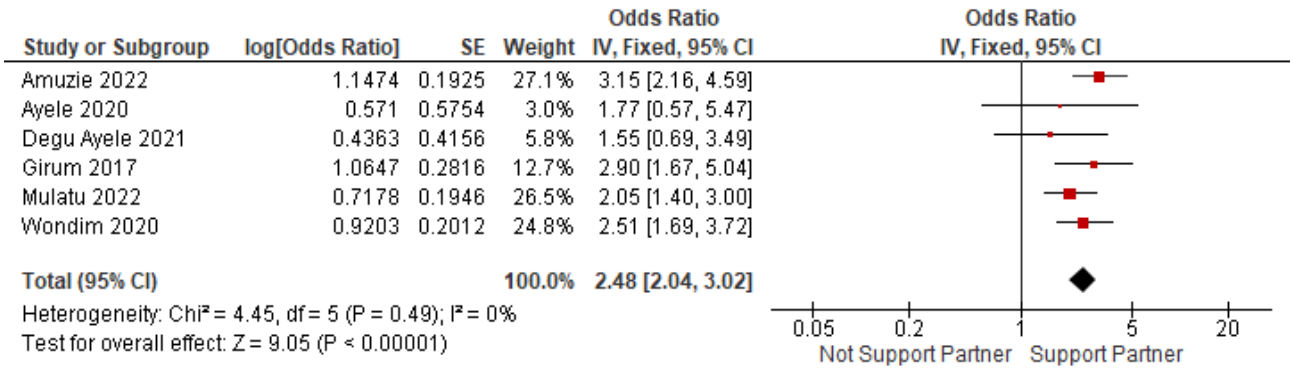

Figure 5. Forest plot of the effect of partner support on the use of male contraceptives

The forest plot in Figure 5 showed that there is a strong effect of partner support on the use of male contraceptives, and this effect is statistically significant. Men with strong partner support are 2.48 times more likely to use contraception than men with weak partner support (aOR= 2.48; 95% CI= 2.04 to 3.02). The forest plot in Figure 5 also shows a very homogeneous variation in effect estimates between the primary studies that were subjected to meta-analysis, with I2= 0% (p< 0.001).

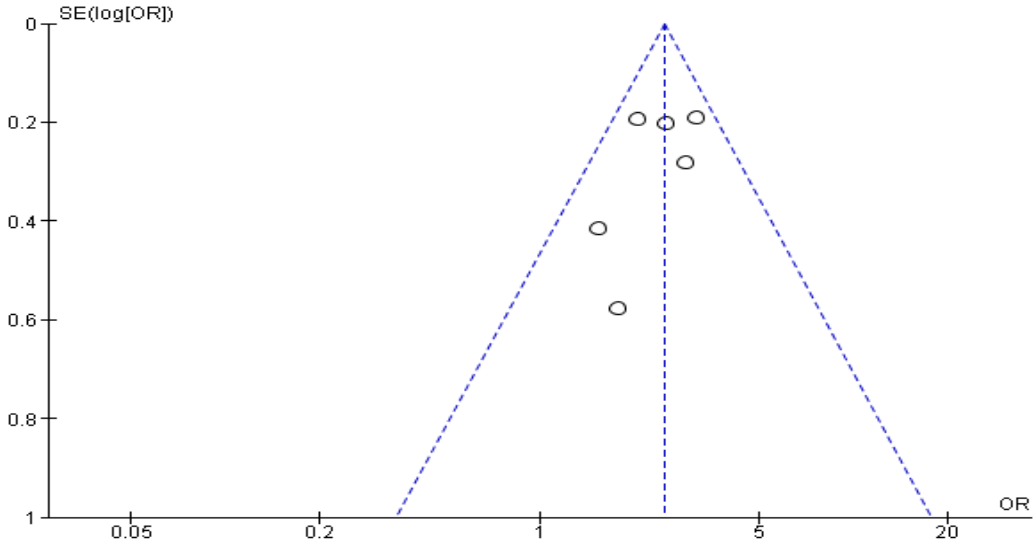

Figure 6. Funnel plot of the effect of partner support on the use of male contraception

The funnel plot in Figure 6 showed the distribution of effect estimates that are not symmetrical. The distribution of effect estimates lies more to the left of the estimated average vertical line than to the right and there is 1 plot that intersects with the vertical line, thus indicating publication bias. Because the distribution of effect estimates lies more to the left of the average vertical line in the funnel plot and the average effect estimate in the forest plot lies to the right of the hypothesis 0 line, this bias minimizes the true effect (under estimate).

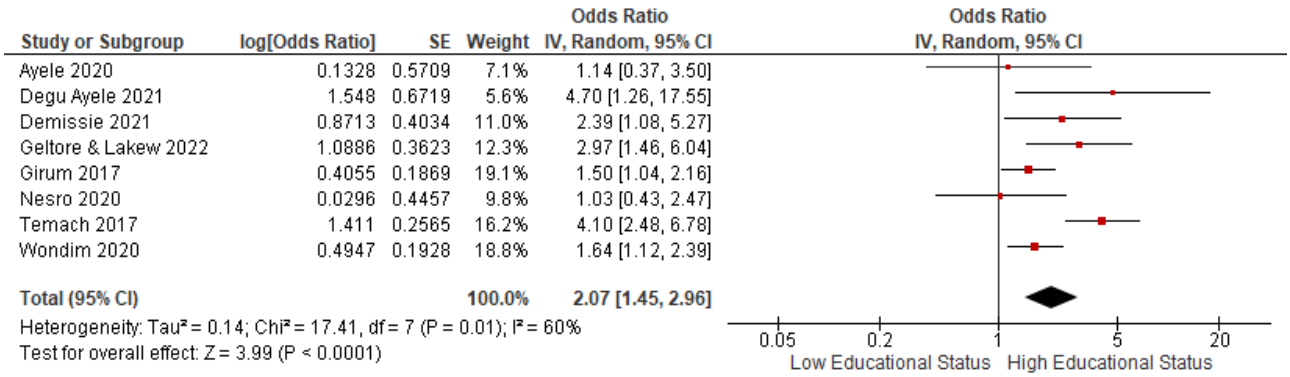

Figure 7. Forest plot of the effect of education level on the use of male contraceptives

The forest plot in Figure 7 showed that there is an effect of higher education level on the use of male contraception, and this effect is statistically significant. Men with higher levels of education are 2.07 times more likely to use contraception than men with lower levels of education (aOR= 2.07; 95% CI= 1.45 to 2.96). The forest plot in Figure 7 also shows highly heterogeneous variation in effect estimates between primary studies subjected to meta-analysis, with I2 = 60% (p<0.001).

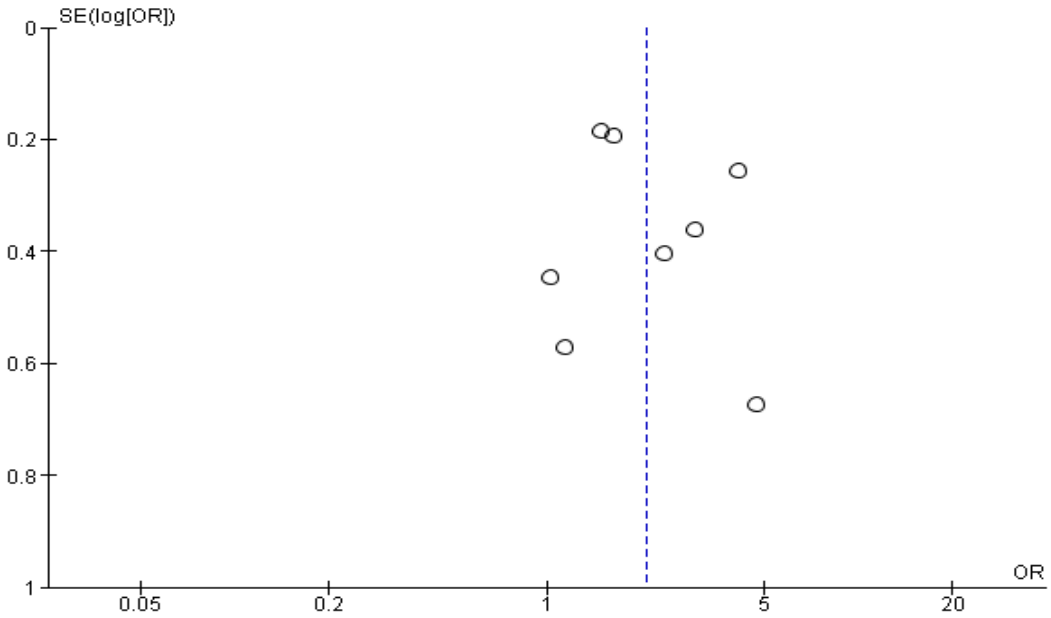

Figure 8. Funnel plot of the effect of education level on the use of male contraceptives

The funnel plot in Figure 8 shows the distribution of effect estimates that are not symmetrical. The distribution of effect estimates lies more to the right of the estimated average vertical line than to the left, thus indicating publication bias. Because the distribution of effect estimates lies more to the right of the estimated average vertical line in the funnel plot which is the same as the average effect estimate in the forest plot which lies to the right of the hypothesis 0 line, this bias magnifies the true effect (over estimate.

DISCUSSION

This review examines the effect of attitude, partner support, and level of education on men's participation in contraceptive use. This study uses 10 articles from primary research sources identified from 2017 to 2022, which control for one or several confounding factors where each article has a statistical result that is reported, namely the adjusted odds ratio (aOR).

1. **The influence of men's attitudes towards the use of male contraception.**

There are 6 observational research articles as a source of meta-analysis of the influence of attitudes towards the use of male contraception. The results of the forest plot show that men with a positive attitude are 3.69 times more likely to use contraception than men with a negative attitude (aOR= 3.69; 95% CI= 2.23 to 6.09; p<0.001).

The results of this study are in line with Challa et al. (2022) which states that there is a relationship between alter attitudes that support family planning and the use of family planning methods (aOR = 1.31, 95% CI= 0.94 to 1.82). The results of the Demographic and Health Survey (DHS) in 12 countries (10 in Africa and 2 in Asia) stated that men and boys who have been exposed to gender equality programs have the view that men must be able to use their reproductive rights to use contraception. In Costa Rica, men who consider their partner as a partner in the decision to use contraception tend to report increased use of condoms and vasectomy contraception, which increased from 70% (2003) to 76% in 2006 (Hardee et al. 2017).

This is supported by research by Kassa et al. (2022) which showed that men who had a positive attitude towards family planning use 2.6 times (AOR = 2.6, 95% CI = 1.70 to 3.90) were more likely to increase men's involvement in services than men who had a negative attitude towards family planning services. Some of the views of men regarding the use of contraception are to manage spacing and limit births so as to produce happier, healthier families and create better relationships within the family. Some men mentioned that birth spacing gives parents more opportunities to focus on child development and better educational prospects (Koffi et al. 2018).

This is also in line with the research by White et al. (2020) which stated that men who used the vasectomy type of contraception had a positive attitude towards the procedure for using a vasectomy (OR= 1.83, 95% CI= 0.84 to 3.99) compared to men who did not undergo a vasectomy, and were more positive in responding to the impact of a vasectomy on life. their sex.

2. **The effect of partner support on the use of male contraception.**

There are 6 observational research articles as a source of meta-analysis of the influence of partner support on the use of male contraception, with the results of the forest plot showing that men with strong partner support are 2.48 times more likely to use contraception than men with weak partner support (aOR= 2.48; 95% CI = 2.04 to 3.02; p<0.001).

The results of this study are in line with Agyekum et al. (2022) who stated that support from a partner was 4.36 times (AOR= 4.36; 95% CI = 3.05 to 6.25) more likely to use any contraceptive method than those who reported not having support from their partner. Evidence shows that encouraging partners to support contraceptive use can improve their own reproductive health. Those who did not discuss family planning with their partners were significantly less likely (aOR=0.71; 95% CI= 0.55 to 0.91) to use modern contraceptive methods (Ali et al., 2022).

This is supported by research by Chekole et al. (2019) who reported that as many as 42.2% of women in Afar, Ethiopia supported their partners by advising, suggesting or accompanying them to use family planning, and as many as 81.8% of them always involved their partners in discussing family planning related to decision making using contraceptives. Furthermore, research by Kassim and Ndumbaro (2022) states that women whose partners support reproductive health solutions are more likely to have adequate family planning literacy than those who do not support their partners, on the other hand the poor involvement of partners in family planning issues is one of the main factors. which limits their knowledge of family planning.

3. The effect of education level on the use of male contraception.

There are 8 observational research articles as a source of meta-analysis of the effect of education level on the use of male contraception. The results of the forest plot show that men with higher levels of education are 2.07 times more likely to use contraception than men with lower levels of education (aOR= 2.07; 95% CI= 1.45 to 2.96; p<0.001).

The results of this study are in line with Parija et al. (2022) who reported that the good involvement of men in family planning programs was found in as many as 10.9% of men with a bachelor's degree and above than men with high school education or even those who were illiterate. Someone with higher education will find it easier to access a lot of knowledge about family planning.

This is also supported by research by White et al. (2022) which states that as many as 53% of men with higher education or a bachelor's degree have accurate knowledge about vasectomy and are willing to use a vasectomy compared to men with low education or lower secondary school. One way to involve men in women's reproductive health is by participating directly in the use of contraceptives. Men who have high school education and above have good interpersonal relationships with their partners and are willing to use contraception (aOR= 1.03; 95% CI= 0.23 to 3.24) compared to men who only have basic education or are illiterate (Walia et al., 2021).

The conclusion of this study is positive attitudes and strong partner support can increase men's participation in the use of contraceptives. The limitations of this study are publication bias in the three variables and language bias caused by selecting only English-language primary study articles, thus ignoring articles in other languages.

AUTHOR CONTRIBUTION

Yuliana Yuvrista is the main researcher in this study, who selects topics, searches for and collects data. Argyo Demartoto and Bhisma Murti conducted data analysis and reviewed research documents.

FUNDING AND SPONSORSHIP

This study is self-funded.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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