Meta Analysis: Relationship of Husband's Knowledge and Support During Pregnancy with Antenatal Care (ANC) Visits by Pregnant Mothers

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Abstract

Antenatal Care (ANC) is a health service by trained health workers for mothers during their pregnancy, which must be carried out routinely, according to standards and in an integrated manner. ANC services are indispensable and recommended for pregnant women in order to maintain the health of the mother and fetus during pregnancy, detect and treat abnormalities early and prepare the mother for safe delivery. In fact, there are still many pregnant women who do not access ANC services according to standards, so this situation can contribute to morbidity and mortality rate (MMR).The research was conducted in November 2020 – March 2021 by searching for secondary data from two electronic databases, namely Google Scholer and Pubmed (2015 to 2020). Studies were selected through the PRISMA protocol and critically assessed using JBI's Critical Appraisal Tool. Test for heterogeneity, summary effect and publication bias using the JASP application version 0.14.1. Odd ratio with 95% confidence level (CI) was used to calculate the effect size. From the selected data, the husband's knowledge and support factors have quite a lot of differences in research results, so it is necessary to re-analyze the relationship of husband's knowledge and support during pregnancy with ANC visits by pregnant women to produce more accurate conclusions. Based on the inclusion criteria, there were 17 studies that could be included in the meta-analysis, with 3.956 respondents from Indonesia, Ethiopia and Vietnam. Homogeneous data with the combined OR value of knowledge of pregnant women with ANC visits is 2,48 (95% CI; 2,01-3,03) and the relationship of husband's support during pregnancy with ANC visits is 2,03 (95% CI; 1,65-2,51), and there are publications biased. This meta-analysis confirms that there is a significant positive relationship between husband's knowledge and support during pregnancy and ANC visits.

Keywords*:Antenatal Care Visits, Knowledge, Husband's Support, Meta Analysis.*

Introduction

Antenatal Care (ANC) is one of the government's efforts in accelerating the reduction of the Maternal Mortality Rate (MMR), but unfortunately not all pregnant women can make ANC visits so that in 2017 Indonesia was ranked third with the highest MMR at 177/100,000 KH.[1] Globally in 2018 pregnant women who accessed ANC services K1 were 86% and K4 were 65%[2]. National data in 2016 shows that K1 coverage is 100% and K4 coverage has met the target

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of the Indonesian Ministry of Health's Strategic Plan (74%) which is 85.35%, but there are still 9 provinces that have not reached the target [3]. These data indicate that not all pregnant women continue their prenatal care according to standards and have a risk of pregnancy. The behavior of pregnant women who do not perform antenatal care will reduce the coverage of ANC, especially K4, and can increase the risk of maternal mortality. Mothers who never or less than 4 times have their pregnancy checked, have a 3.5 times risk of maternal death than mothers who have more than 4 pregnancy checks [4].

The high maternal mortality rate reflects the low utilization of maternal health services [5,6]. According to the 2016 Ethiopian Demographic and Health Survey, the utilization of antenatal care services was 62% where only 20% of pregnant women underwent the first antenatal care (K1) and only 32% had repeat visits (K4)[7].Dahiru and Oche (2015) reported that around 54% of pregnant women experienced delays in antenatal care[8].Some areas in Indonesia also show that more than 50% of pregnant women do not regularly/obediently do antenatal care visits[9,10,11,12],the majority of ANC visits by pregnant women (52.6%) were not up to standard [13] and Tufa et al (2020) stated that in general timely initiation of ANC for pregnant women was not ideal[14].

Research by Boamah et al (2016) and Prasetyaningsih (2020) states that the use of antenatal care is influenced by individual factors and interpersonal factors[15,16]. Safitri (2020) and Wahyutri et al (2015) state that the knowledge factor is the most dominant variable that affects ANC visits and pregnant women who have good knowledge have a 13.7 times higher chance of making ANC visits according to standards [13,17]. In addition, according to Wolde et al (2019) the delay of pregnant women to start antenatal care (K1) is due to poor knowledge about the importance of early ANC initiation [17,18,19]. However, this is contrary to the results of research by Puspitasari et al. (2019) and Wahyutri et al. (2015) which state that there is no significant relationship between knowledge and ANC visits [16,20].

According to Laksono et al (2020) the ability of pregnant women to use ANC services cannot be separated from the influence of their families, especially their husbands. Husband has an important role in maternal health [21,22,23.However, gender inequality positions women as those who have to give in and follow their husband's decisions for themselves. The husband as the decision maker in the family causes pregnant women to not get the opportunity to make decisions even though it is related to their health [24]. This patriarchal culture still exists, especially in rural areas [25].

The husband's involvement in maintaining maternal health will have an impact on the good health status of the mother. These roles include providing material and emotional support in obtaining optimal health services[26].In addition, husband's support can be shown by providing nutritious food, healthy housing, and transportation to health services[27,28]. Pregnant women who get a lot of support from their families will be more regular in making ANC visits[29]. A husband who accompanies his wife during ANC can increase his husband's knowledge about pregnancy and childbirth and his readiness when complications occur [30].Husbands who have knowledge/knowledge or understanding of ANC are able to provide explanations and support for their wives to carry out healthy lifestyle behaviors during pregnancy[31]. Husband's support is a determining factor because it will provide support to partners, reinforcers in motivation to conduct ANC visits and influence decisions made[32,33]. When complications occur, quick decisions will save the mother from

death[34], so husband's support has a very important role in determining the success of ANC[9,11]and women are more likely to use ANC services when their husbands accompany them for ANC visits[35].

Several other research results also state that there is no significant relationship between husband's support and antenatal care visits[36,37,38,39].As stated by Bello et al (2019) that women who are more empowered are less likely to have husbands accompanying them during ANC visits[40], this is related to the difficulty of pregnant women in getting permission from their husbands [41]. Based on this description, a review is needed to get answers to the gaps in the results of previous studies by systematically and quantitatively summarizing and re-analyzing the relationship between knowledge and husband's support during pregnancy with Antenatal care visits so that new data are quantitative.

Method

The secondary data search was systematically carried out using the PubMed and Google Scholar databases published in the last 5 years (2015-2020) and stages based on the PRISMA protocol.The results of this analysis are presented based on the PRISMA diagram [42].The identified articles were assessed for quality using the Critical Appraisal Tool for cross-sectional studies[43]and inclusion criteria.

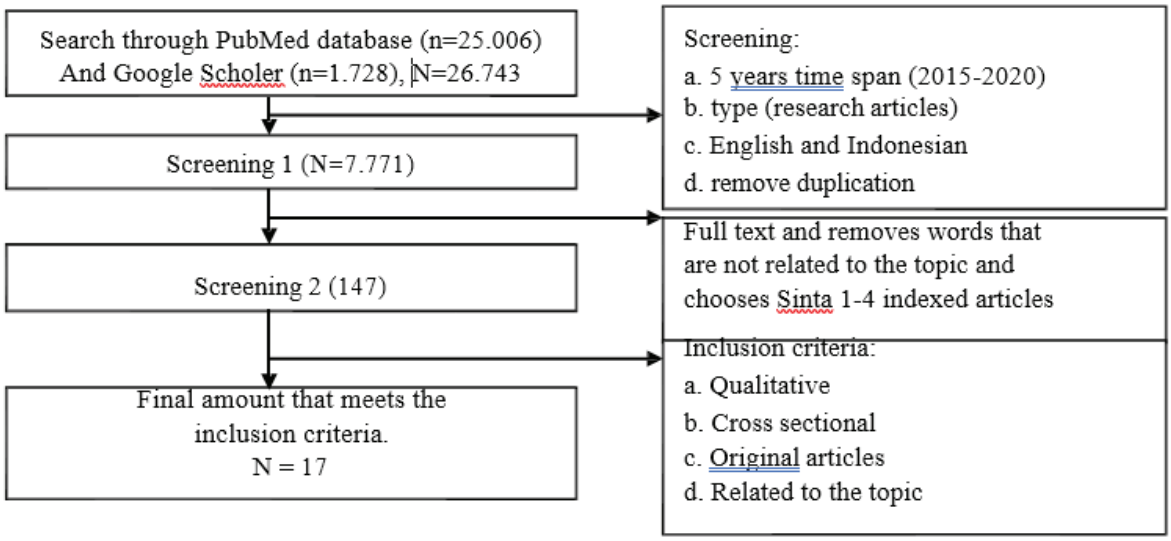


Figure1. PRISMA Diagram(45)

Data analysis using Microsoft Excel and JASP version 0.14.1. The value of Odds Ratio (OR), Prevalence Ratio (PR), Crude Odds Ratio (COR) and 95% confidence interval were used to calculate the effect size. Statistical meta-analysis of the random effects model was used to estimate heterogeneity with values Q,I^2 danT^2.The Q value is compared with the p value < 0.05, the level of heterogeneity of the study is seen from the valueI^2danT^2>25%.The forest plot is used as a graphical representation of the effect size of each study and the summary effect.Funnelplot, ranktestcorrelationand Egger's testused to identify publication bias. Trim and Fill tests are used to estimate missing studies and which when combined in meta-analyses can overcome publication bias [44].

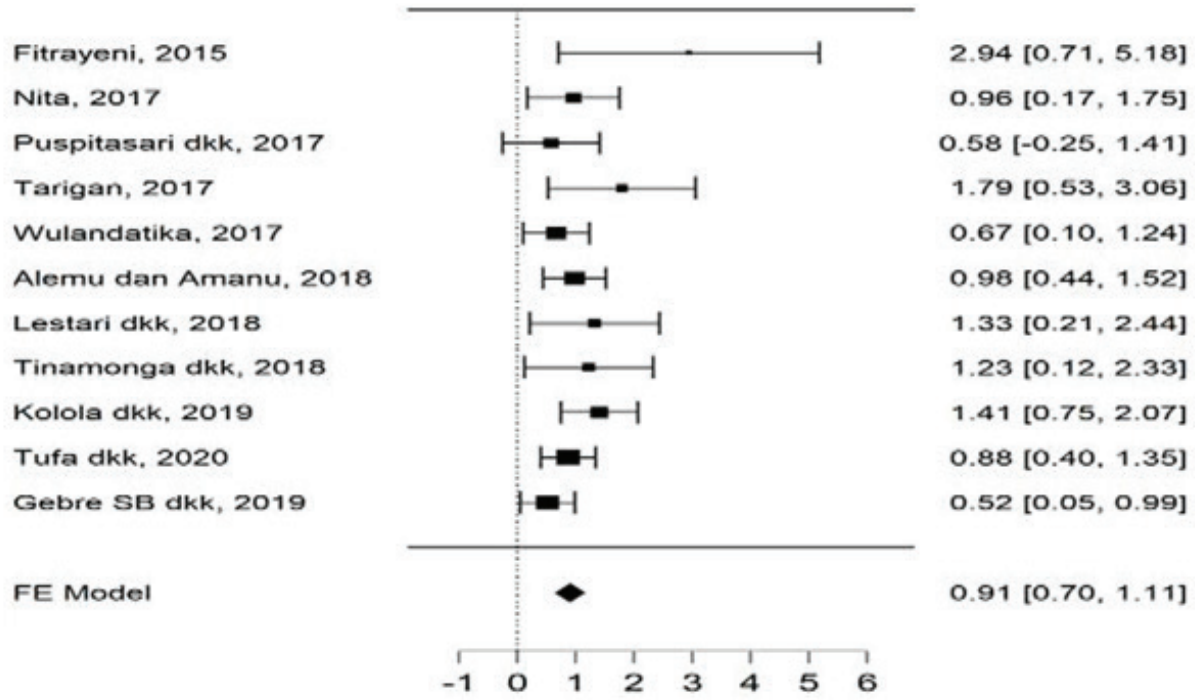
Result

A total of 26,743 articles were identified from 2

databases PubMed and Google Scholar. In accordance with the quality assessment and discussion, there are 17 articles that can be used as data in the meta-analysis (figure 1), the characteristics of the study are described in table 1). Among the included studies, 10 studies were conducted in Indonesia [10,12,21,30,32,37,45,46,47,48], 6 in Ethiopia [14,20,49,50,51,52]and 1 fromm Vietnam[22]. The sample is 3,956 respondents, the average age is between reproductive age (20-35 years), the majority of junior high and high school education, have been married and have a husband and have been pregnant before. Respondents are pregnant women and mothers who have given birth <12 months ago.

Knowledge of ANC

Of the 11 studies analyzed showed that the results of the heterogeneity test showed the value of Q (12.139) withp value(0.276),I^2 value (7.9%), T^2value (0.011) which statistically showed insignificant heterogeneity (homogeneous). So for the combined effect test using a fixed effect model with the acquisition of the OR nilai value 2.48; CI 95%;2.01-3.03, which means knowledge is significantly related to ANC visits. Pregnant women with good knowledge have 2.48 times more chances of making ANC visits than pregnant women with less knowledge about ANC.



Note:

OR=EXP (Log OR=estimate),OR=EXP (0.91),OR=2.48,lower limit EXP (0.70),lower limit =2.01

upper limit=EXP (1.11), upper limit =3.03

Figure 2. Forest Plot Knowledge with ANC visit

Husband's support during pregnancy

Of the 12 studies analyzed showed that the results of the heterogeneity test showed the value of Q (13,457) withp value(0.264),I^2 value (22.369%),T^2 value (0.045)which statistically showed insignificant heterogeneity (homogeneous). So for the combined effect test using a fixed effect model with the acquisition of the OR value 2.03; CI 95%;1.65-2.51, which means that pregnant women who have husband's support during pregnancy have 2.03 times more chance of making ANC visits compared to pregnant women who do not have husband's support.

Note:

OR=EXP (Log OR=estimate),OR=EXP (0.71),OR=2.03,Lower limit=EXP (0.50),Lower limit =1.65

Upper limit=EXP (top value),upper limir=EXP (0.92), Upper limit =2.51

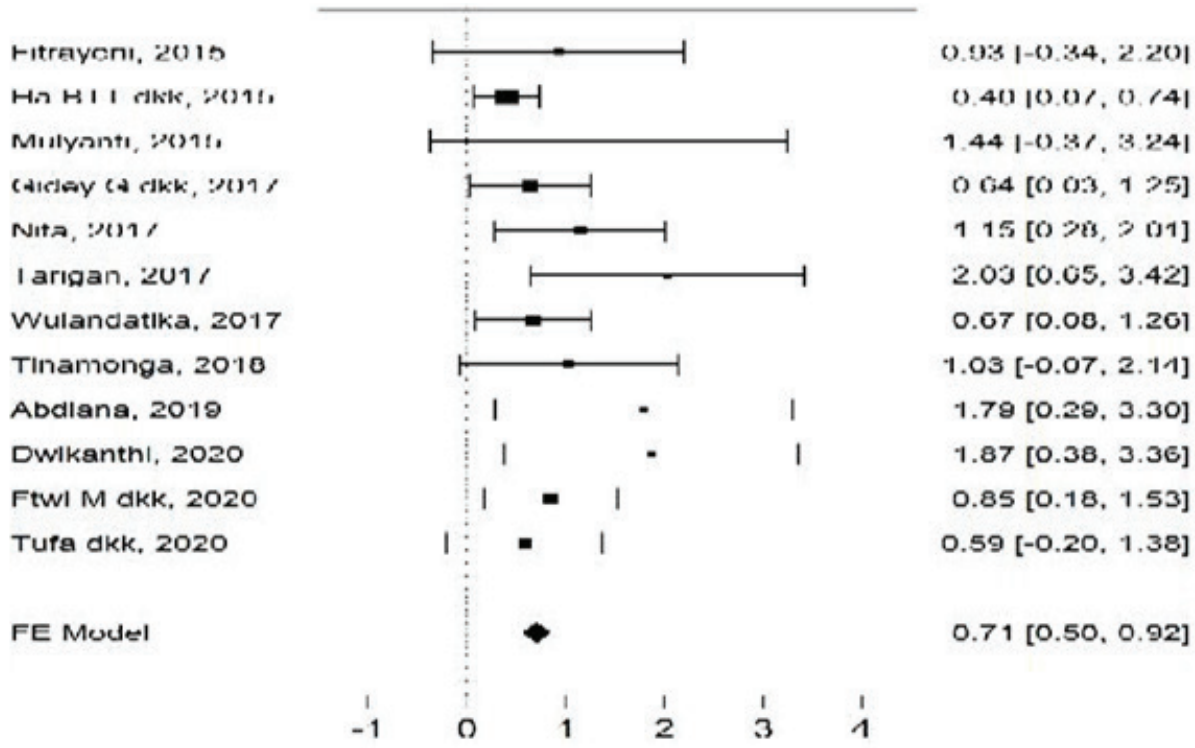


Figure 3. Forest Plot of Husband's Support with ANC Visit

Publication Bias on Knowledge Variable

The results of the publication bias statistical test on the knowledge independent variable show that the funnel plot shows that the black dot above forms an asymmetry pattern where there are no black dots in the middle and bottom left or indicates that research with a small sample size is not statistically significant, missing or not being published. The rank correlation statistic test and Egger's Test showed p values = 0.010 and 0.012 so that the p value < = 0.05, this means funnel plot asummetry or publication bias has been identified (Fig. 4).

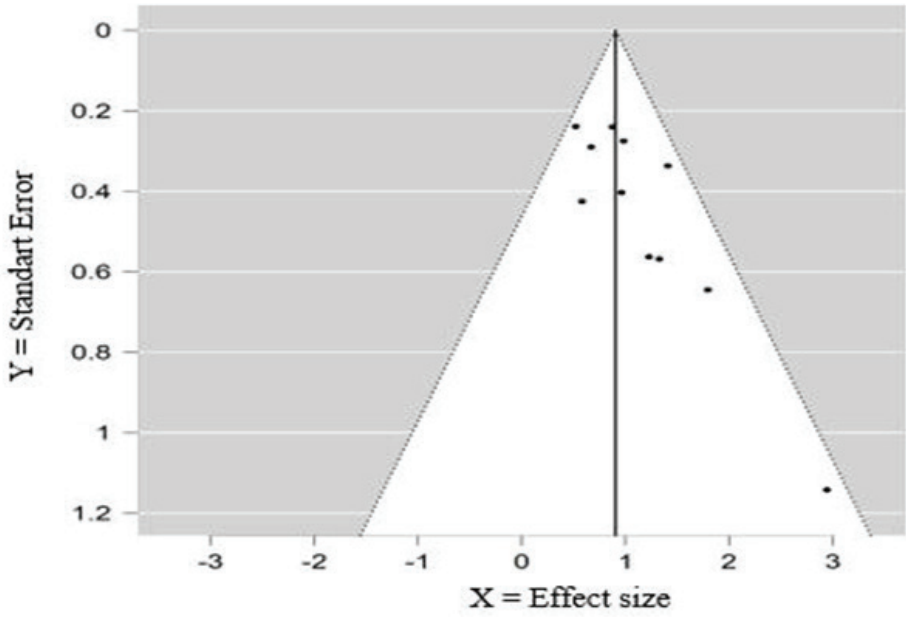


Figure 4. Funnel Plot on the relationship between knowledge and ANC visits

Publication bias on husband's support variable

The results of the statistical test of publication bias on the independent variable of husband's support during pregnancy showed that the funnel plot appeared black dots forming an asymmetry pattern where there were no black dots in the middle and lower left or indicated that studies with small sample sizes were not statistically significant missing or not published. The rank correlation statistic test and Egger's Test showed p values = 0.014 and 0.001 so that the p value < = 0.05, this means funnel plot asummetry or publication bias has been identified (Fig. 5)

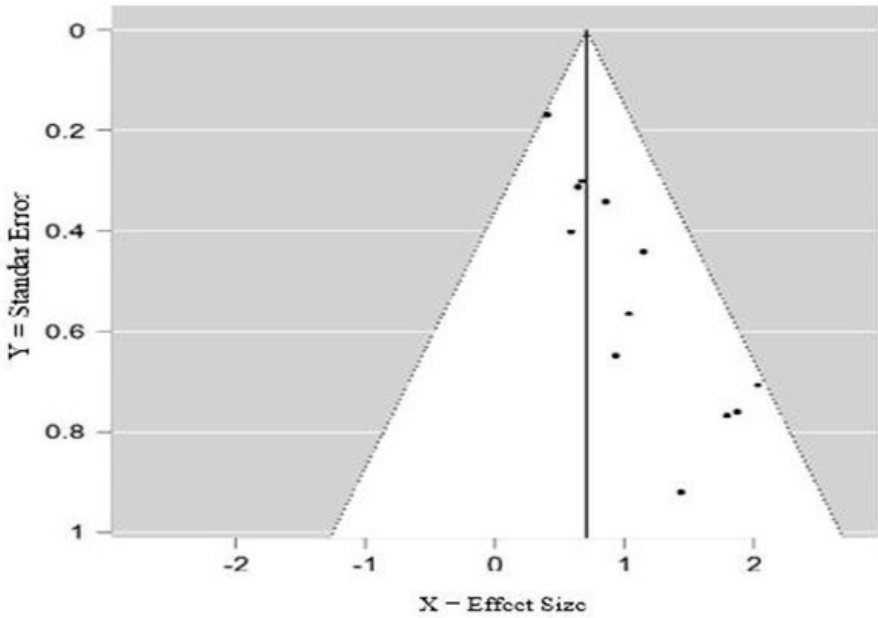


Figure 5. Funnel Plot on the relationship between husband support and ANC visits

Discussion

From this meta-analysis, it was found that husband's knowledge and support during pregnancy had a significant positive relationship with ANC visits by pregnant women. Good knowledge about ANC is 2.48 times more likely to make ANC visits compared to pregnant women with less knowledge. Likewise with husband's support, pregnant women who have husband's support during pregnancy are 2.03 times more likely to make ANC visits compared to those who do not have husband's support. Knowledge is a very important domain in shaping one's behavior[53] and positive behavior can be formed if someone understands the meaning and benefits of something[54], so that from the knowledge possessed, it will raise awareness of the importance of regular pregnancy check-ups [12].From the results of the analysis, it was found that good knowledge about ANC is related to the completeness of ANC [45],more frequency of ANC visits [30,47],compliance in ANC visits [10,12]and knowledge also has a relationship with the appropriate timing of the ANC examination [20,49,50].

Of the 11 studies on the relationship between knowledge and ANC visits analyzed, most of the respondents have good knowledge (average above 59.3%), but initiation of ANC is still relatively low and starting ANC late is in the second trimester[14]. In addition, there are still many pregnant women who are at risk factors for pregnancy, namely age < 20 years and > 35 years, so it is necessary to increase knowledge by adolescents about reproductive health to prevent unwanted pregnancies and the importance of delaying pregnancy at an early age as well as increasing knowledge in accessing family planning services. and avoiding risky pregnancies in the age group > 35 years. Another finding from this analysis is that there is a similarity in decision making in the household, which is with the husband [20,22,48], so it is important to increase husband's knowledge about ANC and gender equality so that pregnant women have husband's support during their pregnancy.

From this study, it can also be seen that the knowledge possessed by pregnant women comes from positive experiences from previous pregnancies. So it is expected that service providers, especially midwives, can provide quality ANC services by increasing effective communication functions. In addition, knowledge must also be possessed by husbands to support the achievement of quality ANC visits. The knowledge possessed by the husband will be able to produce various decisions that are more appropriate, such as the selection of places and birth attendants, so that the decisions made can or are able to improve the health status of the mother and baby.

Husband's support is also significantly associated with ANC visits. Pregnant women who have husband support will have complete ANC visits [22,45],on time [51,52],and more obedient [10].This is in accordance with the theory of Fisbean and IcekAjen (1980) which states that a person's intentions are influenced by social factors where the person who is considered the closest can influence it[53].Family environment is a factor that affects a person's health status[55] and support from husbands is needed by pregnant women during pregnancy [32].The support needed by pregnant women is physical and psychological support.

Husband's support can be started from the knowledge by the husband about the changes experienced by pregnant women, to raise an understanding of the needs of the mother during her pregnancy and can make the right decisions. Husband's support will not only affect the mother's pregnancy and ANC visits but will also have an impact on the utilization of other health services such as delivery in health facilities and birth attendants by professional health workers, the successful implementation of

exclusive breastfeeding and prevention of stunting and ompleteness of immunization for babies. This is because at the ANC visit this knowledge will be given during counseling so that the husband can know and provide support.

In this meta-analysis study identified publication bias, both on the knowledge variable and husband's support. This is because the sample used in the study only uses journal articles that have been published online. Trim and Fill analysis was used to estimate how many studies should be included in order to avoid publication bias. The results of this test indicate that in the study of the relationship between knowledge and ANC visits, 4 studies are needed and in the study of the relationship between husband's support during pregnancy and ANC visits, 6 studies are required to be included in the meta-analysis. If research that is relevant to the criteria that the researcher has determined is not included in the meta-analysis, it will result in less information, wider confidence intervals, and less powerful tests, although they do not have a systematic and too large impact on the effect size.

Conclusion and Acknowledgment

The results of the meta-analysis confirmed that husband's knowledge and support during pregnancy was associated with ANC visits by pregnant women. Early knowledge about reproductive health and pregnancy is important to be given early and at the latest to the group of married couples so that the pregnancy that occurs is a desired and well-planned pregnancy. In addition, the husband's support (physical and psychological) must be obtained by pregnant women during their pregnancy, so that pregnancy that occurs becomes a positive experience for pregnant women. We would to say thank you for Faculty of Medicine, LambungMangkurat University supported this research.

Declaration of Conflicting Interest

The authors declared no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

Ethical Clearance: There is no ethical test because it uses the journal analysis method

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