

The Antenatal Care Visit On Early Detection Of Labor Complications: A Scoping Review

Desi Rofita^{1*}, Dwi Ernawati², Mufdlilah³

¹ Student of Magister Midwifery, 'Aisyiyah University Yogyakarta

² Lecturer of Midwifery, 'Aisyiyah University Yogyakarta

³ Lecturer of Midwifery, 'Aisyiyah University Yogyakarta

*corresponding author: desirofita21@gmail.com

Abstract

Approximately 303,000 women died and 2.6 million babies were born dead. It mostly occurs in several developing countries that have low and middle income some. This maternal death can be prevented by quality pregnancy checks. The aim of this study was to conduct scoping review to outline the influence of Antenatal Care visits on Early Detection of Labor Complications. Method: The study employed five stages for scoping review including: identifying research questions, identifying relevant literature, selecting literature, mapping data, compiling, summarizing and reporting results. The relevant literature were found from three data bases: Pubmed, Sciendirect, and Proquest selected by used quantitative research methodologies. Results: Total of 13 publications were included according to the inclusion criteria. Thematic analysis used to identify key concepts. The researcher grouped these main concepts into three themes, namely the standard antenatal care visit, the role of health workers in implementing antenatal care service, and the impact of antenatal care visits on labor complications. Conclusion: Pregnant women who conducted antenatal care visits <4 times experienced labor complications, such as preterm birth, Low Birth Weight, anemia and other complications. Providers had an important role in improving the quality of ANC services, especially related to the counseling (IEC).

Keyword: Complications Labor, Antenatal Care, Pregnancy

1. INTRODUCTION

Approximately 37% of maternal deaths occur globally, this is closely related to labor. Thus the World Health Organization (WHO) estimates that 901,000 maternal deaths occurred. Some complications of childbirth are the direct cause of maternal death, including bleeding during labor (3%), bleeding after birth placenta (53%), sepsis or infection (29%), prolonged labor (8%) and other labor complications (8%). These labor complications occur mostly in several developing countries [1].

Some of these complications can be prevented by identifying the beginning of the mother who is at risk of labor complications through antenatal care screening, teaching pregnant women to recognize signs of pregnancy complications, timely access to emergency care, monitoring labor to reduce several categories of deaths (eg et al., 2012). In addition, antenatal care visits can also reduce neonatal mortality by implementing interventions that focus on antenatal care, effective referral systems and retraining health workers to manage labor complications [2].

During pregnancy care, women have the right to get counseling related to things that can endanger the mother and fetus during pregnancy. To get extensive knowledge about pregnancy, women must be taught early to recognize the danger signs of pregnancy so they can prepare themselves when the time of delivery arrives when an emergency occurs. IEC given to pregnant women must be on target, which is related to the danger signs of pregnancy in accordance with care guidelines that focus on pregnancy (FANC). Some danger signs during pregnancy include

bleeding during pregnancy, excessive headaches, visual disturbances, severe abdominal pain, swollen limbs, increased body temperature, reduced infant movements, and shortness of breath [3].

Health education is very important in the care of pregnancy, childbirth, and postpartum. The form of health education that can be provided by health workers is Counseling. Appropriate counseling can be beneficial and prevent drug abuse during pregnancy [4][5][6]. Therefore, counseling can be an effective intervention in preventing complications during pregnancy, childbirth and childbirth. With the existence of counseling can increase the knowledge of pregnant women and have a positive impact on the attitudes and behavior of pregnant women so counseling can be considered a suitable method to encourage safe treatment during pregnancy[7].

In 2016 WHO recommended antenatal care (ANC) visits to improve the use and quality of routine antenatal care (ANC) in the context of individual-centered health and well-being as part of a broader rights-based approach. WHO recommended the number of antenatal care (ANC) visits to a minimum of eight contacts: five contacts in the third trimester, one contact in the first trimester, and two contacts in the second trimester [8].

2. MATERIALS AND METHODS

This review uses a methodology for grouping reviews as suggested by Arksey and O'Malley (Arkseyetal,2005) and further developed by Levac etal (2005). There are four reasons for conducting a scope review: (1) to examine the range and nature of research activities,(2) to determine the value of conducting a full systematic review, (3) to summarize and disseminate research findings, and (4) to identify research gaps in existing literature. The step taken in this scoping review consist of:(1) identifying research questions, (2) identifying relevant studies, (3) selecting studies, (4) mapping data,(5) compiling,summarizing and reporting the results.

Step1: Identify Research Questions

This review is specifically related to knowing the effect of Mental Care visits on early detection of labor complications, related to what are the standards for antenatal care visits? What is the role of health workers in antenatal care services? and what is the importance of antenatal care visits for labor complications?

Step 2: Identify Relevant Studies

Three steps in the search strategy are used. The first step is to search for a limited scope in Pubmed, ProQuest and Sciendirect, which allows to analyze the words contained in the title and abstract. The initial search terms included are 'antenatal care', and 'labor complications'. The second step is to use all identified keywords. The keywords used in pubmed are ("prenatal care" OR "antenatal care") AND ("complications of labor and delivery") with 10-year filters, English and humans. In ProQuest search the keywords used are prevention of labor complications AND ("antenatal care") with 10-year filters, English and scholarly journals and the keywords used in Sciendirect are ("antenatal care") AND ("complications of labor and delivery "). The third step is a reference list of all identified reports and articles traced for additional studies.

The target eligibility criteria in this study were pregnant women who made antenatal care visits. And the focus of this study is labor complications. Antenatal care visits are a way to detect labor complications so that each article related to antenatal care and labor complications is included. there are restrictions imposed on the date of publication, the last 10 years. Reviews include international literature and are limited to publications in English. Qualitative studies are issued in this review.

Step3: Study Selection

In search of 3 databases using pubmed, proquest, and sciendirect, there were 998 articles, 59 filtered for relevance. Then screening further articles according to inclusion and exclusion criteria. Specified inclusion criteria are journals indexed scopus with the quality of journals Q1 and Q2 as well as occurring in developing countries so that 21 articles for critical appraisal are obtained leaving 13 to be used for Scope Review (Figure 1. Flowchart of the literature search process).

Step4: Charting the Data

Data from 13 articles were extracted to include key criteria such as research location, research population, research objectives, methodology, data collection ,and significant findings or recommendations (Table 1). The author independently records information and then compares the extracted data. The author also consulted with supervisors until the contents were analyzed and became themes.

Step 5 : Collating, Summarizing and Reporting the Results

Similar to what Levac et al. The author takes a three-phase approach to compile, summarize, and report results. First, descriptive numerical analysis is provided which includes the number of articles, year of publication, and type of study. Second, the strengths and weaknesses in the literature identified through thematic analysis of the studies included in the report. The final phase of this phase is a review of the implications of the findings related to future research, practice and policy

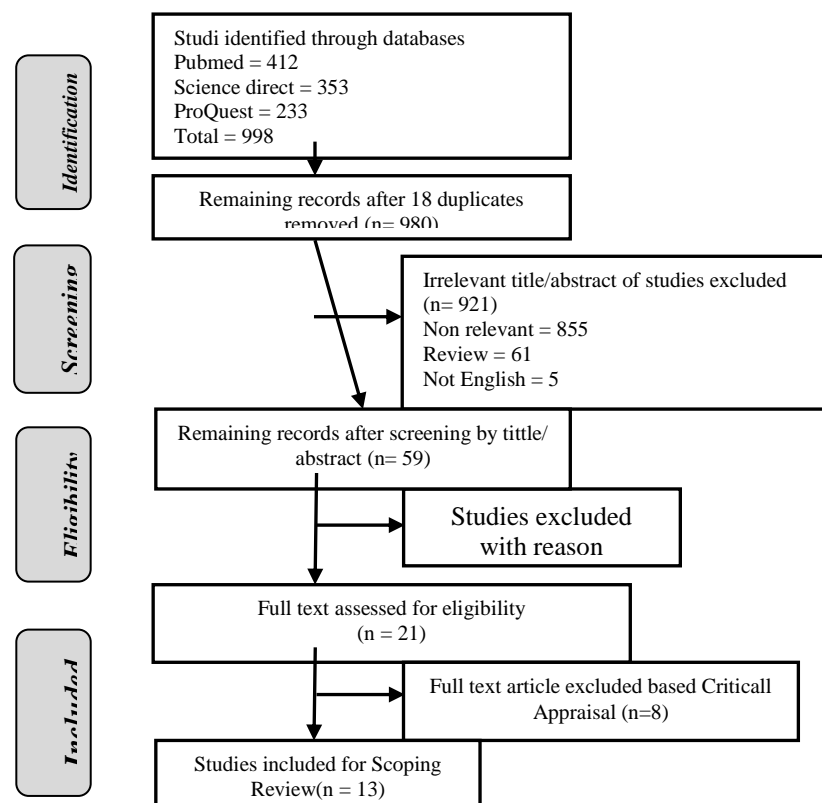


Figure 1. Flowchart of the literature search process

| Title / author / year / article quality | Country | Aim | Method | Data collection | Results |
|--|--------------------|--|--------------------|--|---|
| (Carson & Turpin 2014) Q1 Antenatal Care Attendance, a Surrogate for Pregnancy Outcome? | Ghana (Afrika) | To determine the effect of Antenatal Care visits on outcomes of pregnancy (childbirth) | Cross-sectional | Questionnaire | ANC visits performed <4 times and high parity can give a negative impact on pregnancy |
| (Gumede et al. 2017) Q1 Attendance at antenatal clinics in inner-city Johannesburg, South Africa and its associations with birth outcomes: analysis of data from birth registers at three facilities | Afrika Selatan | Identify variations in ANC visits by the level of care and across vulnerable groups | Cross-sectional | Extract register data (secondary data) | Pregnant women who do not make antenatal care visits during pregnancy experience an increase in worse HIV testing, and can allow cesarean section at birth. |
| (Gumede et al. 2017) Q1 Cross-sectional survey of knowledge of obstetric danger signs among women in rural Madagascar | Madagascar | The aim of this study was to assess women's knowledge of obstetric danger signs and factors related to knowledge. | Cross-sectional | Interview and Questionnaire | Women who have low knowledge about the dangers of signs during labor, postpartum and newborns are more likely to delay doing obstetric services to health facilities and therefore risk greater health complications. |
| (Debelew et al. 2014) Q1 Determinants and Causes of Neonatal Mortality in Jimma Zone, Southwest Ethiopia: A Multilevel Analysis of Prospective Follow Up Study | Southwest Ethiopia | Identifying the determinants and causes of neonatal death in the Jimma Zone, Southwest Ethiopia | Cohort prospective | Interview and Questionnaire | Treatment during pregnancy, labor complications, and neonatal care are identified as determining factors for infant mortality so that improving care for pregnancy, childbirth and newborns can be recommended to reduce mortality. |
| (Assarag et al. 2015) Q1 Determinants of Maternal Near-Miss in Morocco: Too Late, Too Far, Too Sloppy? | Morocco | This study aims to determine the incidence, characteristics, and determinants of maternal close proximity in Morocco | Case control | Questionnaire and Interview | Women and newborns who experience emergency obstetric complications have a greater chance of surviving if they are immediately referred to |

| | | | | | |
|--|----------|--|-----------------|-----------------------------|--|
| | | | | | adequate health services. |
| (Nisar & Dibley 2014) Q1 Determinants of neonatal mortality in Pakistan : secondary analysis of Pakistan Demographic and Health Survey 2006–07. | Pakistan | The aim of this study was to identify the determinants of neonatal death in Pakistan. | Cross-sectional | Interview and Questionnaire | By implementing interventions that focus on antenatal care, effective referral systems and retraining health care providers to manage labor complications and and babies with low birth weight can reduce infant mortality. |
| (Barroso 2015) Q2 Antenatal care as a risk factor for early onset neonatal infections in Rio de Janeiro, Brazil | Brazil | The aim of this study was to assess the effect of antenatal care on the risk of early neonatal births related to infection | Cohort study | Questionnaire | The risk that occurs in newborns associated with infection is significantly associated with insufficient number of antenatal visit (ANC) visits. |
| (Adetola et al. 2011) Q2 Neonatal Mortality in an Urban Population in Ibadan, Nigeria | Nigeria | This study was conducted to determine neonatal mortality (NMR), causes of death, and related risk factors among live births | Cohort study | Questionnaire | Infant mortality remains high due to a lack of prenatal care, complications of labor, asphyxia, less months of labor, LBW, infection, failure to recognize signs of danger, and the late referral of sick newborns to adequate health facilities. |
| (Ijadunola et al. 2010) Q1 New paradigm old thinking: the case for emergency obstetric care in the prevention of maternal mortality in Nigeria | Nigeria | The aim of this study was to assess knowledge of maternity unit operations at the primary and secondary care level about the concept of emergency obstetric care (EmOC) and investigate the content of counseling on antenatal care (ANC) that they provide to clients and | Cross-sectional | Questionnaire dan Observasi | Delivery unit operations at the primary and secondary care levels in Southwest Nigeria lack knowledge of the concepts of emergency obstetric care services and they still prioritize strengthening routine care (ANC) services based on a risk approach to other interventions to promote maternal safety and reduce maternal mortality. |

| | | | | | |
|---|-------------------------|--|-----------------|---|--|
| | | describe safe strategies and practices and prevent maternal deaths | | | |
| (Amoakoh-coleman et al. 2016) Q1 Provider adherence to first antenatal care guidelines and risk of pregnancy complications in public sector facilities. | Ghanaian (Afrika Barat) | The aim of this study was to determine the effect of health personnel adherence to the first antenatal care guidelines on the risk of maternal and infant complications in low resource settings | Cohort study | Checklist | Compliance with health personnel in carrying out antenatal care at the first antenatal visit can affect labor and the condition of the newborn . |
| (Williams & Mpembeni 2015) Q1 Quality of antenatal and childbirth care in selected rural health facilities in Burkina Faso, Ghana and Tanzania: similar findin | Afrika | To measure the quality of pre-intervention from routine antenatal care for labor complications | Cohort study | Questionnaire, Interview and Observasi, | The quality of care can be improved byincreasing the available human resources and without providing large investments. So that this increase can reduce mortality and morbidity in mothers and infants |
| (Pembe et al. 2010) Q1 Quality of antenatal care in rural Tanzania: counselling on pregnancy danger signs | Afrika | The aim of this study was to assess the quality of antenatal care in relation to counseling provided by health workers related to the danger signs of pregnancy | Cross-sectional | Questionnaire, Interview, and Observasi | The quality of counseling that is less than optimal during antenatal care is associated with providers of antenatal care, therefore supportive supervision for all cadres providing antenatal care must be done to improve counseling for pregnancy hazards. |
| (Yadav & Kesarwani 2016) Q2 Effect Of Individual And Community Factors On Maternal Health Care Service Use In India: A Multilevel | India | To assess empirically the influence of individuals and communities related to the use of maternal health care services in India through three outcomes: utilization of | Cohort study | Interview | There are significant differences in the use of maternal health services at the individual level. Socio-economic status and maternal education are the most prominent factors associated with the use of antenatal care services for |

Approach

complete pregnancy care
services (ANC), safe delivery
and utilization of postnatal
care services

maternal health.

3. RESULT AND DISCUSSION

Findings

Descriptive summary and thematic analysis

Of the 13 articles selected, 6 articles used the cross sectional research method, 1 article used the Case Control method and 6 articles using the Cohort method. Articles obtained came from developing countries, 5 articles from Africa, 1 Madagascar, 1 Southwest Ethiopia, 1 Maroco, 1 Pakistan, 1 Brazil, 2 Nigeria, 1 India. Scopus indexed articles with Q1 standard have 10 articles and Q2 standard there are 3 articles. 10 Q1 articles were conducted in Ghana, South Africa, Madagascar, Eutophia, Morocco, Pakistan, Nigeria, Ghanaian, Africa, while 3 Q2 articles were conducted in Brazil, Nigeria and India. Three discussing articles related to antenatal care visits. Two articles discuss the quality of antenatal care services and eight articles discussing the factors that cause maternal and infant mortality.

Themes from data

Data extracted from articles within the scope of this review are organized into several themes. The themes included in this literature review include: standard antenatal care visits, the role of health workers in implementing antenatal care servants, and the impact of antenatal care visits on labor complications to reduce maternal and infant mortality.

Antenatal Care Visit Standards

In this review there are several journals that examine the relationship between the number of antenatal care visits (ANC) and the incidence of labor complications. Some findings in the journal say that the number of antenatal care visits (ANC) affects the condition of pregnancy and childbirth. In a study conducted in Ghana, Africa said that women who experience premature birth occur in pregnant women who make antenatal care visits (ANC) as much as ≤ 4 times. Because pregnant women who visit ≤ 4 times give poor results to pregnancy so that it can cause labor complications, such as preterm labor and LBW [9].

Another study conducted in Brazil said that neonates whose mothers had antenatal visits for less than six visits were under a significantly higher risk of infection associated with early neonatal care so that antenatal care (ANC) was one of the important means of reducing pain and neonatal deaths, because proper and routine antenatal care (ANC) can reduce the risk of infection in the mother, hypertension, drug use and other factors that lead to premature birth, neonatal complications, and infections related to early health care[10].

Role of Providers in Antenatal Care Services

Providers have an important role in antenatal care services in the early detection of risks during pregnancy and childbirth, this has been explained in a study conducted at Ghanaian (West Africa) which states that provider adherence to the first antenatal care guidelines is quite low, so most women do first antenatal visits in the second trimester therefore adherence to the first antenatal guidelines can reduce the risk of neonatal labor and complications [11].

Another factor associated with providers is the quality of counseling provided. The quality of counseling that is less than optimal during antenatal care (ANC) can result in a lack of knowledge in pregnant women associated with danger signs during pregnancy so that supportive supervision for all antenatal care providers should be done to improve pregnancy danger counseling [3].

The amount of time spent on health education, advice and counseling during an ANC consultation is the key to ANC's effectiveness in improving health and care behaviors during pregnancy, childbirth and the postpartum period. Information provided during ANC visits has a positive impact on women and families in recognizing and following up on danger signs or complications. The amount of effective time for counseling is about 40 minutes [12].

Impact of Pregnant Women Who Did Not Make Antenatal Care Visits.

In several studies it has been described related to the impact of a lack of antenatal care (ANC) visits. The lack of antenatal visits carried out by pregnant women can cause the possibility of complications in labor that can contribute to maternal and infant mortality. This is supported by one of the studies conducted in Nigeria which said that infant mortality remained high due to a lack of antenatal care (ANC), complications during labor, asphyxia, under-month birth, low birth weight (LBW), infection. Failure to recognize the danger signs of pregnancy from the beginning, and the late referral to sick newborns to health care facilities is one of the factors that can increase maternal and infant mortality [13].

In another study, it was explained that giving continuous servants, starting from ANC services, labor, to the postnatal period can overcome infant mortality and labor complications. Care during pregnancy, labor complications, and neonatal care identified as a determinant of infant mortality is therefore recommended to improve care for pregnancy, labor and newborns to reduce maternal and infant mortality [14].

Discussion

Labor is a natural process in which cervical dilatation, birth of the baby and placenta from the mother's uterus occur. To create a safe delivery, pregnant women must be handled by skilled health workers who are supported by adequate facilities, as well as routine antenatal visits. Antenatal care visits are closely related to early detection of risk factors during pregnancy, labor, and the puerperium. Antenatal care (ANC) has the potential to identify and manage obstetric complications, educate women about risks during pregnancy and promote safe labor [15].

Antenatal care (ANC) is a prenatal check-up by health workers who is routinely performed and has been identified as a determining factor in the outcome of pregnancy. Regular and continuous ANC visits provide opportunities for health workers to reach pregnant women with services and interventions that are important for the welfare of mothers and newborns. The presence of ANC can identify women who may have a high risk of labor[9].

Routine antenatal visits have a positive impact on the mother and fetus, as evidenced in one of the studies conducted in Africa, which shows that the quality of services can be improved with available human resources. This increase can reduce mortality and pain in mothers and babies. Therefore antenatal care (ANC) visits in the first trimester of pregnancy are a benchmark for subsequent antenatal care (ANC) visits. In several studies it has been explained that the first contact of pregnant women with health workers is an important indicator in determining the next antenatal care (ANC) visit. In addition, family support has a positive impact on the regularity of pregnant women in conducting antenatal care visits (ANC) [16].

Some of the inhibiting factors for pregnant women not making antenatal care visits (ANC) are lack of knowledge, knowledge status and maternal education status. This was proven in several studies, including research conducted in India which said that there were significant

differences in the use of maternal health care services at the individual level, and socioeconomic status and maternal education became the most prominent factors associated with the use of maternal health care services. The use of maternal health care services is influenced by communities, urban dwellings and poverty. The results show that improving community-focused services can lead to increased utilization of maternal health services [17].

Another study that supports maternal knowledge is a study conducted in Madagascar which said that women who did not have knowledge related to midwifery hazards might be more likely to delay doing a health check so that there was a greater risk of maternal health complications. Receiving information is a major predictor in determining knowledge about danger signs during labor and in newborns [15].

Another factor that influences antenatal care (ANC) visits is the role of the provider. Health workers as providers have an important role in preventing complications in mothers and babies. This is closely related to service quality. Providing IEC needed by pregnant women during antenatal care (ANC) is part of the quality of service, this is evidenced in a study conducted in Africa which said that deficiencies in counseling for danger signs of pregnancy affect maternal compliance and attitudes toward antenatal care visits (ANC). Most pregnant women are not told about the danger signs of pregnancy, and the time of interaction between pregnant women and health workers is too short [18].

Therefore antenatal care visits have a positive influence on the well-being of mothers and infants because by conducting antenatal visits on a regular basis it can detect early the possibility of complications, both during pregnancy, childbirth and the puerperium. An antenatal care visit is an effort to prevent complications in the mother and infant death. This is evidenced in a study conducted in South Africa, namely interventions to increase the presence of antenatal care (ANC), especially among adolescents, can help increase the birth and early detection of HIV and disease related to reproductive health so that it can bring the country to the target maternal and child health [19].

4. CONCLUSION

The findings described here provide some information about the effect of antenatal care visits on early detection of labor complications. Some of the pregnant women who make antenatal care visits <4 times experience complications of labor, such as preterm birth, babies born have low body weight, anemia and other complications. Providers have an important role in improving the quality of ANC services, especially related to IEC so that routine antenatal visits have a positive impact on pregnancy and are able to detect early the possibility of labor complications. Therefore WHO recommends that antenatal care visits be carried out at least 8 times. Improving the quality of ANC services to the maximum by in-depth counseling, empowering cadres and providing support to families for assistance with ANC visits are a number of alternatives to improve the quality of ANC so as to reduce maternal and infant mortality.

5. ACKNOWLEDGMENTS

The author thank to Dwi Ernawati., M.Keb and Dr.Mufdlilah., S.SiT.,M.Sc in Universitas Aisyiyah Yogyakarta for advice in writing of this manuscript

REFERENCES

- [1] Buchmann EJ, Stones W, Thomas N. Preventing deaths from complications of labour and delivery. *Best Pract Res Clin Obstet Gynaecol*. Oktober 2016;36:103–15.
- [2] Nisar YB, Dibley MJ. Determinants of neonatal mortality in Pakistan: secondary analysis of Pakistan Demographic and Health Survey 2006–07. *BMC Public Health* [Internet]. Desember 2014 [dikutip 10 Juli 2019];14(1). Tersedia pada: <http://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-14-663>
- [3] Pembe AB, Carlstedt A, Urassa DP, Lindmark G, Nyström L, Darj E. RQesueaarchliatrtycleof antenatal care in rural Tanzania: counselling on pregnancy danger signs. 2010;7.
- [4] You WB, Grobman W, Davis T, Curtis LM, Bailey SC, Wolf M. Improving pregnancy drug warnings to promote patient comprehension. *Am J Obstet Gynecol*. April 2011;204(4):318.e1-318.e5.
- [5] Willhoite MB, Bennert HW, Palomaki GE, Zaremba MM, Herman WH, Williams JR, dkk. The Impact of Preconception Counseling on Pregnancy Outcomes: The experience of the Maine Diabetes in Pregnancy Program. *Diabetes Care*. 1 Februari 1993;16(2):450–5.
- [6] Schwarz EB, Santucci A, Borrero S, Akers AY, Nikolajski C, Gold MA. Perspectives of primary care clinicians on teratogenic risk counseling. *Birt Defects Res A Clin Mol Teratol*. Oktober 2009;85(10):858–63.
- [7] Devkota R, Khan GM, Alam K, Sapkota B, Devkota D. Impacts of counseling on knowledge, attitude and practice of medication use during pregnancy. *BMC Pregnancy Childbirth* [Internet]. Desember 2017 [dikutip 10 Juli 2019];17(1). Tersedia pada: <http://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-017-1316-6>
- [8] 26.WHO Recommendations on Antenatal Care for a Positive.pdf.
- [9] Asundep NN, Jolly PE, Carson A, Turpin CA, Zhang K, Tameru B. Antenatal Care Attendance, a Surrogate for Pregnancy Outcome? The Case of Kumasi, Ghana. *Matern Child Health J*. Juli 2014;18(5):1085–94.
- [10] Mizumoto BR, Moreira BM, Santoro-Lopes G, Cunha AJ, dos Santos RMR, Pessoa-Silva CL, dkk. Quality of antenatal care as a risk factor for early onset neonatal infections in Rio de Janeiro, Brazil. *Braz J Infect Dis*. Mei 2015;19(3):272–7.
- [11] Amoakoh-Coleman M, Klipstein-Grobusch K, Agyepong IA, Kayode GA, Grobbee DE, Ansah EK. Provider adherence to first antenatal care guidelines and risk of pregnancy complications in public sector facilities: a Ghanaian cohort study. *BMC Pregnancy Childbirth* [Internet]. Desember 2016 [dikutip 10 Juli 2019];16(1). Tersedia pada: <http://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-016-1167-6>
- [12] Magoma M, Requejo J, Meriadi M, Campbell OM, Cousens S, Filippi V. How much time is available for antenatal care consultations? Assessment of the quality of care in rural Tanzania. *BMC Pregnancy Childbirth* [Internet]. Desember 2011 [dikutip 10 Juli 2019];11(1). Tersedia pada: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-11-64>
- [13] Adetola AO, Tongo OO, Orimadegun AE, Osinusi K. Neonatal Mortality in an Urban Population in Ibadan, Nigeria. *Pediatr Neonatol*. Oktober 2011;52(5):243–50.

14. Debelew GT, Afework MF, Yalew AW. Determinants and Causes of Neonatal Mortality in Jimma Zone, Southwest Ethiopia: A Multilevel Analysis of Prospective Follow Up Study. Weitkamp J-H, editor. PLoS ONE. 18 September 2014;9(9):e107184.
- [15] Salem A, Lacour O, Scaringella S, Herinianasolo J, Benski AC, Stancanelli G, dkk. Cross-sectional survey of knowledge of obstetric danger signs among women in rural Madagascar. BMC Pregnancy Childbirth [Internet]. Desember 2018 [dikutip 10 Juli 2019];18(1). Tersedia pada: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-018-1664-x>
- [16] Duysburgh E, Zhang W-H, Ye M, Williams A, Massawe S, Sié A, dkk. Quality of antenatal and childbirth care in selected rural health facilities in Burkina Faso, Ghana and Tanzania: similar finding. Trop Med Int Health. Mei 2013;18(5):534–47.
- [17] Yadav A, Kesarwani R. EFFECT OF INDIVIDUAL AND COMMUNITY FACTORS ON MATERNAL HEALTH CARE SERVICE USE IN INDIA: A MULTILEVEL APPROACH. J Biosoc Sci. Januari 2016;48(1):1–19.
- [18] Pembe AB, Paulo C, D'mello BS, van Roosmalen J. Maternal mortality at muhimbili national hospital in Dar-es-Salaam, Tanzania in the year 2011. BMC Pregnancy Childbirth [Internet]. Desember 2014 [dikutip 10 Juli 2019];14(1). Tersedia pada: <http://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-14-320>
- [19] Gumede S, Black V, Naidoo N, Chersich MF. Attendance at antenatal clinics in inner-city Johannesburg, South Africa and its associations with birth outcomes: analysis of data from birth registers at three facilities. BMC Public Health [Internet]. Juli 2017 [dikutip 10 Juli 2019];17(S3). Tersedia pada: <http://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-017-4347-z>