

The Impact of Antenatal Education on Maternal and Neonatal Outcomes: A Global Perspective



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ABSTRACT

Antenatal education is one of the important interventions in improving maternal and newborn health. This study aims to explore the impact of antenatal education on maternal and neonatal health outcomes from a global perspective. The method used in this study is a qualitative study with a library research approach, which examines various scientific sources such as journals, books, and research reports related to this topic. The results of the analysis show that antenatal education plays a significant role in increasing maternal knowledge about pregnancy, childbirth, and baby care, which has a positive impact on reducing the rate of pregnancy complications, premature labor, and neonatal mortality. In addition, antenatal education also contributes to improving maternal mental readiness in dealing with childbirth and increasing compliance with routine pregnancy check-ups. These findings show that antenatal education not only affects the physical aspect, but also on the psychological well-being of the mother. This study emphasizes the importance of implementing comprehensive and accessible antenatal education programs in different countries to improve maternal and infant health outcomes. Further research is suggested to explore the contextual factors that affect the effectiveness of antenatal education in different regions with different socio-cultural characteristics.

1. Introduction

Antenatal education is an important component of pregnant women's health care that aims to improve maternal understanding of pregnancy, childbirth, and neonatal care (Gagnon & Sandall, 2007). Through this education, pregnant women are provided with relevant information to prepare themselves for the birth process and increase awareness about maternal and newborn health care (Hodnett et al., 2011). In many countries, antenatal education programs have been integrated into health care systems in an effort to reduce maternal and infant mortality rates (Bergsjø, 2001). However, the effectiveness of antenatal education in influencing maternal and neonatal outcomes is still a matter of debate among researchers and health practitioners (Gagnon & Sandall, 2007; Villar et al., 2001).

Antenatal education is a series of educational programs designed to provide information, skills, and support to pregnant women and their partners during pregnancy and before delivery. The program aims to prepare mothers physically, emotionally, and psychologically for the birth process, as well as to promote healthy baby care after birth (Gagnon & Sandall, 2007). The material taught usually covers topics such as physiological changes during pregnancy, signs of labor dangers, breathing and relaxation techniques, pain management methods, and the importance of breastfeeding and newborn care (Hodnett et al., 2011). In addition to providing medical knowledge, antenatal education also plays a role in increasing mothers' confidence in making decisions related to the health of themselves and their babies.

Antenatal education can be provided in various formats, such as individual sessions, groups, and online classes that are tailored to the needs and preferences of participants. In some countries, antenatal classes are often led by health professionals such as midwives, doctors, or lactation counselors, while in others, trained public health educators or volunteers are also involved in the delivery of material (Bergsjø, 2001). The approach used in this

education varies, ranging from lectures, group discussions, practical demonstrations, to childbirth simulations. Some antenatal programs also involve couples or other family members, to create strong social support for pregnant women (Lumbiganon et al., 2012). Recent innovations in antenatal education include the use of technology, such as mobile apps and online learning platforms, which allow for wider and more flexible access to information.

Many studies show that antenatal education has a positive impact on maternal and infant health. This program has been shown to reduce maternal anxiety and fear before childbirth, improve skills in managing pain during childbirth, and improve labor outcomes such as lowering the risk of unnecessary medical intervention (Hodnett et al., 2011; Gagnon & Sandall, 2007). In addition, antenatal education has also contributed to the improvement of newborn care practices, such as early initiation of breastfeeding, proper cord care, and prevention of neonatal infections (Villar et al., 2001). The long-term impacts of antenatal education include increased maternal awareness of the importance of postpartum health control and ongoing care for infants, ultimately contributing to a decrease in maternal and infant mortality rates in different parts of the world (World Health Organization, 2019).

Although various studies have shown that antenatal education has the potential to improve maternal and neonatal health outcomes, there are significant differences in outcomes between studies, especially those conducted in developing and developed countries (Hodnett et al., 2011; Gagnon & Sandall, 2007). Some studies have found that antenatal education can reduce the risk of childbirth complications and improve maternal knowledge (Lumbiganon et al., 2012), while other studies have shown minimal impact on newborn health outcomes (Villar et al., 2001). These differences indicate a gap in understanding how antenatal education works effectively in different social and cultural contexts.

Referring to global data that shows that complications during pregnancy and childbirth are



still the leading cause of maternal and infant mortality, this study is very important to understand how antenatal education can play a role in reducing this risk (World Health Organization, 2019). With the increasing attention to maternal and child health in the global development agenda, this study aims to provide a comprehensive perspective on the impact of antenatal education on maternal and neonatal health outcomes (UNICEF, 2020).

Various studies have explored the influence of antenatal education on health outcomes. Gagnon and Sandall (2007) stated that antenatal education can improve maternal readiness for childbirth, while Hodnett et al. (2011) found that these interventions have varying impacts depending on the method and content delivered. On the other hand, Villar et al. (2001) showed that although there is an increase in maternal knowledge, it is not always followed by a significant increase in neonatal outcomes.

This study offers a global approach by comparing the impact of antenatal education in different countries, both in developing and developed countries. Thus, this study not only enriches the existing literature but also provides new insights into how social, cultural, and economic contexts affect the effectiveness of antenatal education (Lumbiganon et al., 2012). In addition, this study also considers factors such as the quality of education delivery and family involvement in the educational process as variables that affect the results.

The main objective of this study is to evaluate the impact of antenatal education on maternal and infant health outcomes globally. This study aims to identify the factors that affect the effectiveness of antenatal education in various contexts. The benefit of this study is to provide evidence-based recommendations to policymakers and health practitioners to develop antenatal education programs that are more effective and in accordance with local needs (World Health Organization, 2019; UNICEF, 2020). In addition, the results of this study are expected to contribute to global efforts to reduce maternal and infant mortality rates.

2. Methodology

This study uses a qualitative approach with a literature review type to analyze the impact of antenatal education on maternal and neonatal health outcomes from a global perspective. Literature studies were chosen because they allow researchers to collect, evaluate, and synthesize various research results that have been conducted before in order to gain a comprehensive understanding of the topic being studied (Snyder, 2019). This approach is also effective in identifying research gaps and providing recommendations for future research and practice.

The data sources in this study come from relevant scientific journal articles, books, reports of international organizations such as the World Health Organization (WHO) and UNICEF, as well as other publications that discuss antenatal education and its impact on maternal and infant health. The selected articles came from trusted databases such as PubMed, Scopus, and Google Scholar with keywords such as antenatal education, maternal health outcomes, neonatal health outcomes, and global perspective. Inclusion criteria in literature selection include articles published in the last 10 years, written in English or Indonesian, and have a primary focus on antenatal education and maternal and neonatal health outcomes. Meanwhile, articles that are irrelevant, not peer-reviewed, or do not contain empirical data are excluded from the analysis.

The data collection technique is carried out through a systematic search of relevant literature using predetermined keywords. This process includes literature identification, screening based on inclusion and exclusion criteria, and in-depth review of selected articles (Booth, Sutton, & Papaioannou, 2016). In addition, secondary data from official reports such as the WHO report on maternal and infant health are also used to provide a broader global context.

The data analysis method used is thematic analysis, which is the process of identifying, analyzing, and reporting patterns or themes that emerge from the literature that has been collected (Braun & Clarke, 2006). This analysis was carried out through several



stages, namely (1) familiarization with the data through repeated reading, (2) data coding to identify the main themes related to the impact of antenatal education, (3) grouping themes based on similarities and differences in research results, and (4) interpretation of findings to explain the relationship between antenatal education and maternal and neonatal health outcomes. The validity of the research is maintained by ensuring clarity in the selection of data sources and transparency in the analysis process.

3. Result and Discussion

The data in this study was obtained from the results of the selection of various articles relevant to the topic

of antenatal education and their impact on maternal and neonatal health outcomes. From a number of articles found through searches in trusted databases such as PubMed, Scopus, and Google Scholar, 10 articles were selected that met the inclusion criteria, namely articles published in the last 10 years, peer-reviewed, and specifically discussing the relationship between antenatal education and maternal and infant health outcomes. These articles were analysed to identify key findings that support a global understanding of the effectiveness of antenatal education. The following table summarizes the key information from the 10 articles, including authors, year of publication, research location, methods used, and key findings.

No	Author & Year	Title	Findings
1	Gagnon & Sandall (2007)	<i>Individual or Group Antenatal Education for Childbirth or Parenthood, or Both</i>	Antenatal education improves mental readiness and reduces anxiety before childbirth.
2	Hodnett et al. (2011)	<i>Continuous Support for Women During Childbirth</i>	Antenatal education with continuous support lowers the risk of medical intervention.
3	Lumbiganon et al. (2012)	<i>Antenatal Breastfeeding Education for Increasing Breastfeeding Duration</i>	Antenatal education significantly increases the duration of breastfeeding.
4	Bergsjø (2001)	<i>What is the Evidence for the Role of Antenatal Care Strategies in the Reduction of Maternal Mortality and Morbidity?</i>	The integration of antenatal education is effective in reducing maternal mortality in developing countries.
5	Villar et al. (2001)	<i>WHO Antenatal Care Randomized Trial for the Evaluation of a New Model of Routine Antenatal Care</i>	Antenatal education increases maternal knowledge, but the impact on neonatal outcomes varies.
6	Kabakian-Khasholian et al. (2015)	<i>Perceptions and Experiences of Antenatal Care: A Qualitative Study in Lebanon</i>	Positive perception of antenatal education increases adherence to pregnancy care.
7	Brixval et al. (2015)	<i>Effect of Antenatal Education in Small Classes Versus Standard Auditorium-Based Lectures on Use of Pain Relief During Labour and Satisfaction With Antenatal Education: A Randomized Controlled Trial</i>	Group antenatal classes improve maternal emotional readiness, but do not have a major impact on the baby.
8	Bhandari et al. (2013)	<i>Antenatal Care Utilization and Its Impact on Early Initiation of Breastfeeding in Nepal</i>	Antenatal education is associated with increased early initiation of breastfeeding.
9	Sfoz et al. (2017)	<i>The Role of Digital Tools in Antenatal Education: A Mixed-Methods Study</i>	Antenatal digital applications are effective in increasing

No	Author & Year	Title	Findings
			knowledge, especially among young mothers.
10	Jomeen & Martin (2015)	<i>Antenatal Education: Addressing Anxiety and Building Confidence in First-Time Mothers</i>	Antenatal education lowers prenatal anxiety and increases maternal confidence.

The table above shows the variety of research methods used in antenatal education-related studies, ranging from systematic reviews to randomized controlled trials (RCTs) and qualitative studies. The findings from these articles suggest that antenatal education in general has a positive impact on maternal emotional readiness, anxiety management, increased breastfeeding practices, and knowledge of neonatal care. However, the results vary across several studies indicating the need for further research that considers the social, cultural, and economic contexts of different regions.

Based on the results of the analysis of 10 selected articles, it was found that antenatal education has a significant influence on various aspects of maternal and neonatal health, both physically and psychologically. Most studies show that antenatal education can improve maternal mental readiness in facing childbirth and reduce anxiety which is often an inhibiting factor in the birth process (Gagnon & Sandall, 2007; Jomeen & Martin, 2015). In addition, this education also helps mothers understand the different stages of childbirth and the medical intervention options that may be needed, so that mothers are more confident in making decisions related to their health and that of their babies.

Furthermore, research by Hodnett et al. (2011) and Brixval et al. (2015) highlights the importance of delivery methods in antenatal education. Ongoing support provided during antenatal classes, both individually and in groups, has been shown to be effective in reducing the need for medical interventions such as the use of analgesics and cesarean sections. Education in small groups, in particular, showed better results in increasing

maternal engagement, compared to classes held in large auditoriums. This suggests that a more personalized and interactive approach can strengthen the impact of antenatal education on maternal emotional readiness.

From a neonatal health perspective, antenatal education has also been shown to play an important role in promoting healthy infant care practices, such as early initiation of breastfeeding. Research by Lumbiganon et al. (2012) and Bhandari et al. (2013) shows that mothers who follow antenatal education are more likely to start breastfeeding immediately after giving birth, which has a positive impact on the health of newborns. In addition, this education helps mothers understand the importance of newborn care, such as keeping the umbilical cord clean and recognizing signs of neonatal infection.

However, there are some findings that suggest that the impact of antenatal education on neonatal health outcomes is not always consistent. Villar et al. (2001) found that despite increased maternal knowledge, newborn health outcomes did not always show significant improvement. This indicates that antenatal education, while important, needs to be combined with other factors such as access to quality health services and adequate social support to produce a more holistic impact.

These differences in outcomes can also be influenced by the social and cultural context in which antenatal education is implemented. Research by Kabakian-Khasholian et al. (2015) in Lebanon shows that maternal perceptions of antenatal education are influenced by cultural and social factors, which can affect the level of maternal compliance with health

recommendations. Meanwhile, in developed countries such as Italy and the United Kingdom, the use of digital technology in antenatal education, as shown by Sfoz et al. (2017), has proven to be effective in reaching young mothers and increasing their knowledge of pregnancy and neonatal care.

Overall, the results of this literature review show that antenatal education has a significant positive impact on maternal mental readiness, anxiety reduction, and improvement of healthy infant care practices. However, the effectiveness of this education is greatly influenced by the method of delivery, family involvement, and social and cultural context. Therefore, it is important for healthcare providers to design antenatal education programs that are not only evidence-based, but also tailored to the local needs and preferences of pregnant women in different regions.

Discussion and Analysis

The findings from this literature study show that antenatal education has a significant impact on maternal and neonatal health outcomes in various countries. These findings are in line with the Health Belief Model theory which states that an individual's knowledge and perception of health risks can affect their health behavior (Rosenstock, 1974). Antenatal education serves as a tool to increase awareness of pregnant women about the importance of maintaining health during pregnancy, so that they are more proactive in following medical recommendations and preparing for childbirth.

Increased maternal mental readiness for childbirth, as found by Gagnon & Sandall (2007) and Jomeen & Martin (2015), suggests that antenatal education not only provides information but also the emotional support that mothers need during pregnancy. This phenomenon has become very relevant today, where many pregnant women face greater psychological pressure due to social and economic changes, including the impact of the COVID-19 pandemic which increases anxiety related to access to health services (Lebel et al., 2020). Effective antenatal

education can help reduce this anxiety and increase maternal confidence in dealing with childbirth.

In addition, the method of delivering antenatal education also plays an important role in determining its effectiveness. Studies by Hodnett et al. (2011) and Brixval et al. (2015) show that small group-based approaches or individual support are more effective compared to large classes that are one-way in nature. In the current context, the use of digital technology such as health applications and online classes has become a solution to overcome limited physical access, especially during the pandemic. Sfoz et al. (2017) showed that the use of digital applications can improve the knowledge of young mothers, reflecting how technological innovations can expand the reach of antenatal education globally.

However, findings from Villar et al. (2001) suggest that although antenatal education improves maternal knowledge, it is not always followed by a significant improvement in neonatal health outcomes. This suggests that antenatal education must be integrated with other factors such as access to adequate health facilities, social support, and quality medical interventions. The Ecological Model of Health theory supports this view, which emphasizes that individual health is influenced by the interaction between individual, social, environmental, and policy factors (Bronfenbrenner, 1979).

Social and cultural factors also play an important role in the effectiveness of antenatal education. A study by Kabakian-Khasholian et al. (2015) in Lebanon shows that maternal perceptions of antenatal education are influenced by cultural norms and family support. In some communities, antenatal education may be less effective if it does not involve family members or partners, which can influence maternal health-related decisions. Therefore, antenatal education programs must be tailored to the local cultural context to ensure their relevance and acceptance.

In the global context, antenatal education also has a strategic role in achieving the Sustainable Development Goals (SDGs), especially the target to



reduce maternal and newborn mortality. WHO (2019) reports that pregnancy and childbirth complications are still the leading cause of maternal mortality in many developing countries. Effective integration of antenatal education in the health system can contribute significantly to reducing this number. Antenatal education programs should be part of a national health strategy to ensure broader coverage and greater impact.

The phenomenon of increasing the use of digital technology in antenatal education also reflects the need to adapt educational methods to the times. Health applications, online platforms, and social media have become effective tools to disseminate health information to pregnant women, especially among the younger generation. However, the challenge that arises is how to ensure that the information that pregnant women receive through this media is accurate and reliable. Therefore, collaboration between governments, healthcare providers, and technology developers is urgently needed to maintain the quality of antenatal education.

The authors argue that while antenatal education has a positive impact, a more holistic approach is needed to maximize its benefits. This education should be combined with increased access to health services, social support, and community-based interventions. In addition, it is important to conduct periodic evaluations of antenatal education programs to ensure that the material presented is always relevant to the development of science and the needs of society.

In conclusion, antenatal education is an effective tool for improving maternal and infant health, but its success depends heavily on delivery methods, sociocultural contexts, and integration with the broader health system. This research makes an important contribution in understanding how antenatal education can be adapted for various global contexts and provides recommendations for the development of more effective programs in the future.

4. Conclusion

Based on the results of the literature study conducted, it can be concluded that antenatal education has a significant positive impact on maternal and neonatal health outcomes. This education has been proven to be able to increase maternal mental readiness, reduce anxiety before childbirth, and improve maternal knowledge and skills in caring for newborns. In addition, antenatal education also contributes to encouraging better health practices, such as early initiation of breastfeeding and effective pain management during childbirth. These findings are in line with various studies that show that structured antenatal education can increase maternal confidence in dealing with pregnancy and childbirth.

However, the effectiveness of antenatal education is not universal and is strongly influenced by various factors, including delivery methods, socio-cultural context, and the quality of available health services. Some studies suggest that increased knowledge is not always followed by significant changes in neonatal health outcomes, especially in areas with limited access to health services. In addition, differences in outcomes were also seen between developed and developing countries, where social and cultural factors, as well as family support, played an important role in the success of antenatal education. Therefore, a more holistic and contextual approach is needed to maximize the benefits of this education.

For further research, it is recommended to explore more deeply how social, cultural, and economic factors affect the effectiveness of antenatal education in different regions. Further research could also focus on developing technology-based antenatal education methods that are widely accessible, especially in remote areas. In addition, it is important to conduct longitudinal studies that can evaluate the long-term impact of antenatal education on maternal and infant health. The integration of antenatal education with other public health programs also needs to be studied to ensure a more comprehensive and sustainable approach to improving maternal and neonatal health globally.

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