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The Impact of Antenatal Care in Maternal and Perinatal Health

Teketel Ermias Geltore and Dereje Laloto Anore

Abstract

Every moment, somewhere in our planet especially in low income country, women of reproductive age group die from problems linked to gestations. The major reason for this enormous magnitude of complication is failure to use antenatal care services particularly in developing countries. The World Health Organization recommends a minimum of four ANC visits. However, global estimates indicate that only about half of all pregnant women receive this recommended amount of care. Antenatal care is one of the evidence-based interventions to decrease the probability of bad health outcomes for mothers and their newborns. Effectiveness of antenatal care, however, relies on the quality of care provided during each antenatal care visits. Antenatal care is an umbrella term used to describe the medical procedures and care that carried out starting from preconception. It is a care a woman receives throughout her pregnancy and is important in helping to ensure a healthy pregnancy state and safe childbirth. Therefore, antenatal care is to assure that every wanted pregnancy results in the delivery of a healthy baby without impairing the mother's health. The aim of this chapter is to examine the impact of antenatal care in decreasing maternal and newborn death from preconception through postnatal period.

Keywords: ANC Care, impact of ANC, preconception

1. Introduction

The World Health Organization launched a safe motherhood initiative in 1987, which aimed to reduce the number of complications and deaths related with pregnancy and childbirth [1]. In the provision of prenatal care, service care providers have often under emphasized women's health and health interventions aimed at improving reproductive care [2].

Healthy lifestyles during pregnancy are known to be associated with improved pregnancy outcomes for both mothers and offspring. As such, much attention has been placed on designing effective prenatal care guidance, and considerable research has been done to identify appropriate interventions to improve maternal and child health during the prenatal period [3, 4].

Among women who become pregnant, health risks experienced in the pre-conception period often continue during pregnancy, such as the use of alcohol, tobacco and other substances. Furthermore, the increasing prevalence of obesity and chronic conditions demand attention in the context of preconception care [5]. If these factors are not managed properly during this period, they may result in preterm delivery, low birth weight, stillbirth, birth defects, abortion and maternal complication [6–11].

Antenatal care is a comprehensive health supervision of a pregnant woman before delivery or it is planned examination, observation and guidance given to the pregnant women from preconception until postnatal period. The antenatal period presents an important chance for detecting threats to the mother and unborn baby's health, as well as for counseling on nutrition, danger signs, and family planning options after the birth [12, 13].

To reduce maternal and neonatal morbidity and mortality, the World Health Organization recommended that pregnant women should receive ANC services at least 4 times starting from the first trimester of pregnancy [14–16].

Good ANC for pregnant women has become a vital component in the safe motherhood program whose aim is to improve the outcome of pregnancy for mother and newborn [17, 18].

According to the WHO report, 60 million deliveries take place globally each year in which the woman is cared for her by relatives only, or by no one at all. Being a long distance from health services, multiple demands for women's time, low coverage and poor quality of ANC have been identified as key factors [19, 20].

In addition to the risk of dying during pregnancy and childbirth, many more women suffer from short and long-term maternal disabilities and illness. According to WHO for every maternal death, an estimated 30 to 50 women suffer pregnancy related health problems such as vesico vaginal fistulae, infertility, and depression that can be permanently debilitating [21].

ANC provides possibility to provide pregnant women with information, treat existing social and medical conditions, as well as screen for risk factors. However, it is not enough to receive ANC, because majority of the fatal complications occur during or shortly after delivery. Therefore, availability of skilled obstetric attendance during delivery is mandatory. However, use of these services in most developing countries is inhibited due to various cultural and demographic factors. As the result, disproportions between high income and low-income countries regarding use ANC, labor and delivery as well as postpartum services showed many difference. In developed countries about 97% of the pregnant women receive ANC and 99% use trained personnel during delivery, whereas in developing countries, only 65% and 53% of women use ANC and skilled obstetric care services, respectively [22, 23]. The aim of this chapter is to provide information on the importance of antenatal care in decreasing maternal and newborn death from preconception through postnatal period. This chapter identified the risk factors are associated with negative health outcomes for the woman, her fetus.

2. The benefits of ANC in decreasing maternal and neonatal death

According to the studies conducted in different countries, the finding revealed that provision of 0.4 mg of folic acid three months prior to pregnancy, during pregnancy, and six weeks postpartum has been associated with more than 80% reduction in different types of specific congenital anomalies [24–31]. On the other hand, the finding of different studies showed that preconception folic acid administration is associated with increased fetal growth, and decreased risks of low birth weight [32–34]. Moreover, other study result depicted that the consumption of folic acid prior to conception can decrease the risk of developing anemia [35].

The provision of ANC services brings with it a positive impact and it can be achieved through screening for pregnancy problems, assessing risk factors, treating problems that may arise during the antenatal period, providing information to the pregnant woman, preparing physically and psychologically for parturition and parenthood [36–38].

Moreover, it also focuses on educating the pregnant woman on a range of topics, including well-being, birth preparedness, complication readiness, and breastfeeding [39, 40]. ANC also provides effective interventions for preventing and treating certain conditions, such as anemia, hypertensive disorders of pregnancy, sexually transmitted diseases including HIV/AIDS external cephalic version to detect a breeched position [39, 41, 42]. The overall aim of ANC is to produce a healthy mother and baby at the end of pregnancy by allocating necessary budgetary resource [43–45]. The recommended time for patients to receive ANCIS; first visit better before or at 16 weeks, with the next visit at 24 and 28 weeks, third visit at 30–32 weeks and fourth visit better from 36 to 40 weeks. During these visits, the healthcare professional measures uterine height, checks fetal heartbeat, tests urine, and measures the mother's blood pressure [40].

ANC indirectly saves the lives of mothers and babies by promoting and establishing good health before childbirth and the early postnatal period — the periods of highest risk. ANC often presents the first contact opportunity for a woman to connect with health services, thus offering an entry point for integrated care, promoting healthy home practices, influencing care seeking behaviors, and linking women with pregnancy complications to a referral system. Women are more likely to give with a skilled attendant if they have had at least one ANC visit [46].

ANC offers pregnant women chance to access protective care. In developing countries where access to emergency obstetric services is limited, ANC presents a viable option for pregnant women to be screened for potential risks during pregnancy or delivery. It also provides an opportunity for treatment and health education including nutritional advice. On one hand practice of ANC, including the number of visits, to be associated with reduced risk of neonatal mortality, On the other hand, others study findings showed that found adverse or no relations between ANC utilization and birth outcomes and insufficient evidence that ANC interventions reduced neonatal or infant mortality in vulnerable populations [47–51].

ANC is very important in detection of high-risk pregnancies through the analysis of socioeconomic, medical and obstetrical factors. Beside to this, it is used as a platform for additional interventions that have been shown to positively influence the maternal and child health status, such as immunization, nutrition programs, breastfeeding and family planning and birth spacing counseling. Furthermore, ANC programs are used to provide care and information that is not directly related to pregnancy but can reduce the possible maternal risk factors, such as promoting healthy lifestyles, tackle malnutrition or inform about gender-based violence [52–70].

Some studies finding showed that ANC from a skilled provider was associated with decreased risk of neonatal mortality by the provision of the most effective ANC interventions included TT injection, and weight and blood pressure measurements [71].

TT vaccination that provide during ANC, protects the mother and the baby against tetanus, a deadly infection caused by *Clostridium tetani* bacteria, which enter the body through skin cuts and wounds such as those during delivery or cutting of the umbilical cord [72, 73].

In high-income settings, provision of ANC, skillful midwife-led has been associated with positive outcomes, including fewer preterm births, fewer fetal losses at any gestation, and high rates of positive experiences reported by women [74].

To improve maternal, newborn, and child health, the World Health Organization and other organizations, over the past years, have been encouraging for continuum of care. It can provide as a key package of programs for MNCH, and can show a corridor to help reduce maternal and neonatal deaths [75–78].

Effective and timely maternal health care before conception, as well as during pregnancy and childbirth, could save nearly 3 million newborns in high burden countries. Most neonatal deaths could be prevented by direct interventions. Evidence suggests that two thirds of neonatal deaths could be prevented if all pregnant mothers and newborns had access to cost-effective and direct interventions as well as receiving care from skilled health care providers during pregnancy and childbirth [79–88].

High quality ANC can also influence women's health seeking behavior towards choosing skilled care at birth and helping them prepare to be able to access it. A positive experience during both pregnancy and childbirth are vital to person-centered care and the right of every childbearing woman, as highlighted in recent World Health Organization recommendations [89–94].

3. Risk factors are associated with negative health outcomes for the woman, her fetus

A literature review reported usage of ginger during pregnancy is not a safe. Higher doses of ginger can cause thinning of blood, stomach discomfort and heartburn [95–99].

In developing countries, child marriage is widespread, with almost one-third of girls being married before age 18. A practice that is driven by poverty, social norms, and discrimination against girls, child marriage has emerged as an important social issue in recent years, due in part to increased concerns among reproductive health advocates about the harmful consequences for young women marrying too early. As a result: dropping out of school; health risks that result from early sexual activity and pregnancy, including sexually transmitted diseases and maternal mortality; being prevented from taking advantage of economic opportunities; and if they have children, child malnutrition and mortality. Moreover, at child marriage deprives girls of their basic human rights and puts them at risk for harmful practices including exploitation, intimate partner violence, and abuse [100–103].

A study conducted in Italy, and the result exposures of women to chemical agents, pesticides, physical agents, ergonomic factors and stress, it appears that at present the evidence is sufficient to warrant the maximum protection of pregnant women to several well-documented occupational risk factors. These include exposures to anaesthetic gases, antineoplastic drugs, heavy metals, solvents, heavy physical work and irregular work schedules. For other work risks, such as exposure to nonionizing radiation and psychosocial work stress, the evidence is often suggestive but not conclusive [104].

Substance use during pregnancy can be risky to the woman's health and that of her children in both the short and long term. Most drugs, including opioids and stimulants, could potentially harm an unborn baby. Use of some substances can increase the risk of miscarriage and can cause migraines, seizures, or high blood pressure in the mother, which may affect her fetus. In addition, the risk of stillbirth is 2 to 3 times greater in women who smoke tobacco or marijuana, take prescription pain relievers, or use illegal drugs during pregnancy [105]. Smoking tobacco during pregnancy is estimated to have caused 1,015 infant deaths per year from 2005 through 2009 [106].

Anemia during pregnancy is an important factor for negative health outcome for mother and her new born. The causes of anemia during pregnancy in developing countries are multifactorial; these include micronutrient deficiencies of iron, folate, and vitamins A and B12 and anemia due to parasitic infections such as malaria and hookworm or chronic infections like TB and HIV [107–111].

4. Conclusion

Antenatal care is an important determinant of high maternal mortality rate and one of the basic components of maternal care on which the life of mothers and babies depend. Thus, Antenatal care is a key strategy to improve maternal and infant health.

Early initiation of antenatal care facilitates the timely management and treatment of pregnancy complications to reduce maternal and newborns deaths.

Studies examining the effectiveness of antenatal care on maternal and newborn health outcomes have provided conflicting results.

Good ANC links the woman and her family with the formal health system, increases the chance of using a skilled attendant at birth and contributes to good health through the life cycle. Inadequate care during this time breaks a critical link in the continuum of care, and affects both women and babies.

Indirect causes of maternal morbidity and mortality, such as HIV and malaria infections, contribute to approximately 25% of maternal deaths and near misses, so that by utilization of appropriate ANC services STIs and other diseases can be prevented and managed concurrently through integrated service delivery.

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