

Utilization of Telemedicine in Antenatal Care Services in the Era of the COVID-19 Pandemic

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Abstract: *The COVID-19 pandemic that has been going on since 2020 has resulted in restrictions on activities outside the home and restrictions on meeting and consulting with doctors at health service centers. This is due to prevent the increasingly widespread spread of COVID-19 and reduce the death rate from COVID-19. However, there is a negative effect of this restriction, namely on routine examinations of pregnant women. If pregnant women do not understand and get good supervision during their pregnancy, there will be adverse effects such as complications in pregnancy which result in an increased risk of death for pregnant women. Therefore, it is necessary to consider other ways in assisting the supervision of pregnant women or educating pregnant women to find out what complications can occur during pregnancy so that mothers become more aware and immediately check their pregnancy. The use of telemedicine in assisting routine examinations of pregnant women is one way that can help in overcoming the problem of limiting the meeting of pregnant women and also helps in reducing the mortality rate of pregnant women.*

Keywords: Telemedicine, COVID-19, antenatal care

1. Introduction

Based on The Sustainable Development Goals agenda which was inaugurated in 2015, 17 interrelated global targets were set to create a more prosperous life in all regions of the world. One of the targets mentioned is to improve health status for various ages with an important indicator of reducing the global maternal mortality ratio to 70 per 100,000 live births.¹

Important causes of maternal death are delays in recognizing danger signs in pregnancy, resulting in delays in seeking help, and delays in reaching health facilities. Limited access to services due to remote and inaccessible locations, lack of resources and health facilities, as well as poverty, can cause delays in early detection of danger signs of pregnancy. This is further complicated by the current conditions during the pandemic.

Due to the emergence of the COVID-19 pandemic that occurred in all parts of the world, social restrictions were implemented to prevent transmission of the virus among health workers and the public, including pregnant women.² The reduced or limited routine examination activity (antenatal care) for pregnant women has the potential to result in a lack of knowledge of mothers about problems in pregnancy. Clinics or primary health services may face staff shortages and a lack of personal protective equipment. Finally, changes in prenatal care itself can be a barrier to ANC (antenatal care).

Social restrictions in this new era have resulted in the need for another approach in conducting routine checks on pregnant women in order to detect problems in pregnant women and reduce mortality rates in pregnant women. The rapid development of information and communication technology makes telemedicine or telehealth as an alternative to deal with these conditions.³ The use of telemedicine is one solution to overcome the problem of shortage of health workers and difficulties in accessing health facilities, overcoming geographical constraints, time

spent, and costs incurred by health workers, patients.⁴ In the COVID-19 pandemic situation, telemonitoring is very useful to maintain continuous contact with pregnant women by health workers, but by minimizing exposure to each other.⁵ This article aims to discuss telemedicine in conducting routine examinations of pregnant women (ANC).

Integrated ANC with Telemedicine

Utilization of information and communication technology in antenatal care (ANC) services has developed in various countries in the world and is considered quite promising. The use of telemedicine can provide information or monitor the mother's condition as well as a means for mothers to consult their pregnancy complaints. The contents of the information provided to increase mother's knowledge can be in the form of interactive voice messages, videos, and SMS (short message services). The message conveyed was knowledge about dangerous signs of pregnancy such as vaginal bleeding, fever, seizures, swelling, smelly amniotic fluid discharge from the vagina and loss of consciousness.¹ In addition to signs for the mother, telemedicine should also include care after the baby is born. Mothers also need to know the baby's danger signs so that they can be examined further. Danger signs for a newborn include a blue baby, the baby has difficulty breathing, the baby can't drink, the baby is very small, the baby's skin comes out with a rash, and the baby's temperature is too cold or too hot. Educational messages related to practice include breastfeeding and immunization for mothers and babies.¹

Several studies have been conducted to assess the effectiveness of this telemedicine activity in pregnant women. A study in the city of Dodoma, Tanzania, showed a significant increase in mothers' knowledge of danger signs in pregnancy and newborns. The same effect was shown on the readiness of the mother in facing childbirth. The intervention was in the form of text messages that were sent regarding the danger signs of pregnancy, danger signs for newborns, and preparation for childbirth.⁶ This study was conducted in urban areas where the level of maternal welfare

and education is higher than in rural areas, where ownership of cell phones is almost every mother must have.

Murthy et al. (2020) conducted research in Mumbai, India, in a slum area with a very dense population and a large area. This study uses an intervention in the form of voice messages containing health education for pregnant women and babies, which are given from 6 weeks of gestation until the baby is 1 year old. The expected result is an increase in knowledge and practice in the health sector. This is indicated by the mother's willingness to receive the tetanus toxoid vaccine, and a very important result is that the mother immediately consults a doctor if there is vaginal bleeding.⁷ This method can prevent the "3 late" namely delays in recognizing danger signs in pregnancy, decision making, and delays in getting services at health facilities.⁸

Voicemail interventions were also carried out in Bangladesh, with settings in rural (Matlab), slum areas (Bhasantek), and urban areas (Brahmanbaria). The intervention, named 'Aponjon', is a voice message containing knowledge and behavior related to maternal and newborn health that is given for 3 months. Aponjon not only has an impact on increasing knowledge and behavior related to maternal and newborn health but also increasing maternal adherence to treatment at postnatal health facilities.⁹

2. Discussion

The COVID-19 pandemic has had a considerable impact on antenatal visits where there has been a reduction in direct interaction due to social restrictions, so another approach to antenatal care must be developed, namely by utilizing technology-based health services in the form of telemedicine.¹⁰ Evidence in many areas of medicine shows that treatment delivered via telemedicine produces outcomes similar to traditional face-to-face consultations, so the option of having an examination via telemedicine is highly recommended.¹¹ The use of telemedicine in pregnancy is to maintain patient access when ANC visits to health facilities are hampered and not fulfilled. Health services with telemedicine are more efficient, easier and more affordable.¹² However, the use of telemedicine also has limitations, namely the inability to perform physical examinations. Other steps are needed to overcome these limitations, among others, such as teaching how to check blood pressure independently to detect the presence or absence of hypertension in pregnancy, routinely weighing body weight, and checking uterine fundal height periodically to assess whether there is a delay in fetal growth in pregnancy.¹¹

3. Conclusion

Telemedicine has the potential to be used in situations where access to health facilities is difficult, such as limited health facilities, long distances to health facilities, and limited face-to-face opportunities due to pandemic conditions. In addition, the use of telemedicine has been shown to increase the knowledge of pregnant women in recognizing danger signs in pregnancy, helping mothers plan delivery, and increasing maternal compliance with postpartum examinations.

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