



## ARTÍCULO REVISIÓN

Relevance of prenatal supervision in pregnant adolescents to mitigate morbidity and mortality in Ecuador

### Relevancia de la supervisión prenatal en adolescentes embarazadas para mitigar la morbilidad y mortalidad en Ecuador

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## ABSTRACT

**Introduction:** adolescent pregnant women without adequate care face a higher risk of morbidity and mortality. Prenatal check-ups are vital to prevent obstetric and perinatal risks.

**Objective:** to argue the importance of prenatal check-ups during the pregnancy process for the prevention of morbidity and mortality in adolescent pregnant women in Ecuador.

**Methods:** narrative bibliographic review carried out by means of a search through Google Scholar in databases such as Scopus, Medline, Scielo. Relevant governmental resources from the Ministry of Public Health and the National Institute of Statistics, which provide data and studies related to health and well-being, were also consulted.

**Development:** in Ecuador, teenage pregnancies are very common, increasing the risk of maternal mortality and becoming a social and public health problem, with high demands on the country's economy. Lack of adherence to prenatal care due to factors such as early age, beliefs, customs, lack of geographical accessibility and gender inequality leads to the appearance of complications that can leave sequelae in the mother. Prenatal check-ups during the pregnancy process generate high survival and health standards for the mother and her child.

**Conclusions:** There is an urgent need to address maternal morbimortality in the context of adolescent pregnancies and the solution lies in an effective combination of social, educational and health care measures that protect and promote the health and well-being of young women in Ecuador.

**Keywords:** Prevention; Teenagers; Maternity; Prenatal Control; Obstetrics.

## RESUMEN

**Introducción:** las gestantes adolescentes sin atención adecuada enfrentan un mayor riesgo de morbilidad y mortalidad. Los controles prenatales son vitales para prevenir riesgos obstétricos y perinatales.

**Objetivo:** argumentar la importancia de los controles prenatales durante el proceso de embarazo para la prevención de morbimortalidad en gestantes adolescentes de Ecuador.

**Métodos:** revisión bibliográfica narrativa realizada mediante la búsqueda a través de *Google Scholar* en bases de datos como *Scopus*, *Medline*, *Scielo*. Se consultaron además, recursos gubernamentales relevantes provenientes del Ministerio de Salud Pública y el Instituto Nacional de Estadísticas, que proporcionan datos y estudios relacionados con la salud y el bienestar.

**Desarrollo:** en Ecuador los embarazos en adolescentes son muy comunes, por lo que, aumentan los riesgos de mortalidad materna, pasando a ser una problemática social y de salud pública, con altas demandas en la economía del país. La falta de adherencia al control prenatal por factores como la edad temprana, creencias, costumbres, falta de accesibilidad geográfica y desigualdad de género suscita el apareamiento de complicaciones que pueden dejar secuelas en la madre. Los controles prenatales durante el proceso de embarazo generan en la madre y su hijo altos estándares de supervivencia y salud.

**Conclusiones:** existe una urgente necesidad de abordar la morbimortalidad materna en el contexto de los embarazos adolescentes y la solución radica en una combinación eficaz de medidas sociales, educativas y de atención médica que protejan y promuevan la salud y el bienestar de las mujeres jóvenes en Ecuador.

**Palabras clave:** Prevención; Adolescentes; Maternidad; Control Prenatal; Obstetricia.

## INTRODUCTION

According to the World Health Organization (WHO),<sup>(1)</sup> adolescent pregnancy is defined as when it occurs in women whose age range is between 10 and 19 years, being a stage with more risks associated with maternal health, in addition, of perinatal complications. For this reason, pregnancy in adolescents is considered a high-risk pregnancy where prenatal controls must be narrowed to identify clinical and sociodemographic situations that could affect the obstetric and perinatal outcome.<sup>(2)</sup>

Lack of attendance at prenatal checkups is a worldwide problem among pregnant adolescents. One of the limitations they encounter is the difficulty in accessing health services due to sociodemographic factors, including education.

According to the WHO,<sup>(1)</sup> approximately 830 young women die from complications in pregnancy or childbirth; and the highest risk of maternal mortality is recorded in adolescents under 15 years of age, because complications increase due to lack of prenatal controls and it is one of the main causes of death in most developing countries.

Furthermore, it must be considered that a pregnant woman faces various health risks and for this reason it is essential to carry out a set of medical actions and prenatal controls in order to have knowledge of the evolution of the pregnancy and thus be able to obtain an adequate delivery and reduce the risks that it entails.

In Ecuador, a notable increase in pregnancies can be observed in adolescents aged 10 to 14 years from 2005 to 2019, while in adolescents aged 15 to 19 a percentage between 70 % and 80 % continues to be maintained. It is probably the effect of the lack of knowledge about family planning and the difficulty in accessing the main contraceptive methods. As mentioned above, teenage pregnancy is a health problem, due to the risks that commonly occur in this age group.<sup>(3)</sup>

Within teenage pregnancies there are also other public health problems such as sexual and gender violence; maternal mortality; neonatal mortality; but also social factors such as poverty; reduction in family income; fewer possibilities to continue with studies, among others.

98 % of the adolescents did not have any knowledge about the priority of medical care, reaching a high number, which goes hand in hand with the increased vulnerability of adolescent pregnant women; on the contrary, it was possible to analyze that such Only 2 % of pregnant adolescents are aware of the priority of constantly having medical check-ups during their pregnancy.<sup>(3)</sup>

In 2017, teenage mothers were the ones who had the fewest prenatal checkups. In that year, the annual average of prenatal checkups for minor mothers for 15 years it was 5,29; while for mothers between 15 and 19 years old it was 5,99, according to data from the National Institute of Statistics and Censuses INEC. This average is lower than that of women who were mothers in adult life, who they exceed 6 annual controls and even the national average, which is 6,6".<sup>(3)</sup>

The objective of the research work is to argue the importance of prenatal controls during the pregnancy process for the prevention of morbidity and mortality in pregnant adolescents in Ecuador.

## METHODS

Narrative bibliographic review carried out by searching through Google Scholar in databases such as Scopus, Medline, Scielo. Relevant government resources from the Ministry of Public Health and the National Institute of Statistics were also consulted, which provide data and studies related to health and well-being. The search for information also included the examination of scientific articles published in specialized medical journals, which allowed access to recent research and findings in the field of health. The Pan American Health Organization (PAHO) was another valuable source of information.

In addition to the aforementioned sources, health-related books were consulted, which provided a solid base of knowledge and historical background on the topics discussed in the article. Altogether, this extensive bibliographic review guarantees the rigor and quality of the information presented in the article, supporting the conclusions and recommendations derived from the research.

## DEVELOPMENT

The most important parameters during childbirth and postpartum are to allow the mother to accompany a person before, during and after childbirth, as well as to facilitate the conditions so that the pregnant woman can remain in free movement and ingest plenty of fluids in excess of the medications necessary to achieve success.

Prenatal care allows us to reduce the discomforts and symptoms of pregnancy, monitor fetal growth and vitality; Furthermore, identifying risk factors makes it possible to establish timely preventive and therapeutic actions during pregnancy. It is even an optimal time for the mother's physical and mental preparation for the birth of her child, and in the end, everything contributes to the reduction of maternal and perinatal morbidity and mortality.

Pregnancy in adolescents is a public health problem, due to the lack of knowledge and regular attendance at prenatal check-ups; Second, teenage pregnancy increases annually with its health, financial and social consequences for adolescents.<sup>(4)</sup>

Irregular prenatal controls increase obstetric and perinatal complications, with maternal death, eclampsia, preeclampsia, anemia, spontaneous abortions, premature births, being very common. risks in cesarean section, postpartum hemorrhages and gestational hypertension.<sup>(5)</sup>

Likewise, the mother and the newborn can have several complications before and after childbirth, such as: infant or fetal death, poor nutrition or malnutrition, low birth weight, congenital heart malformations, bacterial sepsis and respiratory difficulty, and childhood disability. Several of these complications are due to the fact that the teenage pregnant woman has not yet completed the stage of maturity in her reproductive system, which is important for good fetal development, avoiding all obstetric and perinatal complications.<sup>(6)</sup>

The figures recorded in 2017 show that teenage mothers performed the least prenatal check-ups. In that year, the annual average of prenatal check-ups for mothers under 15 years of age was 5,29, while for mothers between 15 and 19 years of age it was 5,99, according to data from the National Institute of Statistics and Censuses INEC (National Institute of Statistics and Census, 2020) This average is lower than that of women who are mothers in adult life, who exceed 6 annual check-ups and even the national average, which is 6.76".<sup>(7)</sup>

### **Prenatal check-ups**

It is the set of systematic and periodic actions and procedures aimed at the prevention, diagnosis and treatment of factors that may condition maternal and perinatal morbidity and mortality.<sup>(8)</sup>

Prenatal care is important even in stable, low-risk pregnancies. Regular check-ups help identify patients at higher obstetric and perinatal risk, add interventions linked to the prevention of these risks and also contribute to promoting healthy behaviors during pregnancy. Several studies have shown that children born to mothers without pregnancy controls are three times more likely to be born with low birth weight and five times more likely to die, compared to children born to mothers who receive prenatal care. In addition to medical care, prenatal care should include education, emotional support, and preparation for childbirth.<sup>(9)</sup>

### **Objectives of prenatal control**

- Identify risk factors
- Determine gestational age
- Diagnose fetal condition
- Diagnose maternal condition
- Educate the mother

### **First check**

A complete medical history should be taken, some laboratory tests ordered, and education about a healthy pregnancy should be provided. Additionally, a physical examination, weighing, measurement, and body mass index (BMI) should be calculated, which can be used to determine Determine recommended weight gain.

### Periodicity of controls

Every four weeks until 28 weeks.

Every three weeks between 28 and 36 weeks.

Every seven days between 36 and 41 weeks.

### Control of maternal condition

At each prenatal check-up, the maternal health condition will be monitored through anamnesis and physical examination. The objective is to collect remote and close information on normal and morbid elements, both personal and family, to know the reason for consultation and the appearance of symptoms, normal and pathological. In the first control, a complete history and physical examination will be done, while in the other prenatal controls, a history and physical examination aimed at specific elements will be done.

### Physical examination

Abdominal obstetric examination appropriate to gestational age.

Maternal weight is measured at each prenatal check-up. The BMI is calculated and graphed on the prenatal control card. It should be monitored that the weight gain is normal, approximately 1 kg per month, to complete no more than 7-12 kg throughout the pregnancy.

Blood pressure is measured at each control.

### Laboratory Exams

Upon admission to prenatal care, the following routine examinations are requested:

Blood group classification and RH and ABO blood group.

Indirect Coombs independent of maternal blood group.

Test for sexually transmitted diseases including human immunodeficiency virus (HIV), requires written consent. Repeat HIV testing is recommended between 32 and 34 weeks of gestation for women at higher risk of acquiring HIV. In some places, this second HIV is requested of all women, regardless of their risk factors.

Test for non-treponemal syphilis such as VDRL or RPR. If the test is positive, a treponemal test will be ordered.

Urine sediment and urine culture: 10 % of women will present with asymptomatic bacteriuria. Asymptomatic bacteriuria is a risk factor for preterm birth.

Fasting blood glucose.

Hemogram or hematocrit-hemoglobin, for the diagnosis of anemia. Remember the normal hematocrit levels in pregnancy: 1st and 3rd trimester > 33 %, 2nd trimester > 30 %.

Hormonal profile such as TSH: it is not yet a national standard, but this test has been requested more frequently in prenatal care. Its use is justified by: high frequency of subclinical hypothyroidism, availability and safety of the test, perinatal consequences of hypothyroidism, availability and safety of treatment, acceptability of the test and treatment by the population. The aspect to be debated to transform this test into a test for universal use is the lack of demonstration of the benefit of the treatment of subclinical hypothyroidism.

Test for hepatitis B such as HBsAg: There is a new trend to screen for Hepatitis B at the beginning of prenatal care despite its low prevalence. This is because early detection of the virus makes it possible to reduce fetal consequences in more than 95 % of cases. If the patient is not positive for Hepatitis B virus, they suggest vaccination.

Pap smear: must be performed at the first prenatal check-up if there is no examination according to the current standard. Prenatal control is an important instance to screen for premalignant and malignant lesions of the cervix; it is often the first gynecological control of women of childbearing age.<sup>(8)</sup>

### **Routine ultrasounds<sup>(10)</sup>**

Early ultrasound (7-10 weeks): allows diagnosing or confirming the gestational age, the number of fetuses and their viability.

Ultrasound 11-14 weeks: allows measuring nuchal translucency, useful in evaluating the risk of aneuploidy (e.g. trisomy 21 and others) or congenital heart disease, it is recommended in this ultrasound to perform a Doppler of the uterine arteries to screen for the risk of preeclampsia and restriction of intrauterine growth.

Morphological ultrasound (22-24 weeks): studies fetal anatomy. In this ultrasound it is possible to perform a cervicometry (prediction of the risk of premature birth) and Doppler of the uterine arteries (prediction of the risk of preeclampsia).

Third trimester ultrasound (34-36 weeks): allows evaluation of fetal growth, placental location and amniotic fluid volume.

### **Mother education**

Recommended educational content  
Importance of prenatal control.

### **Maternal nutrition.**

Exercise: Women at low obstetric risk are recommended not to restrict physical activities, except for risky contact sports (skiing, horse riding, etc.). Performing moderate exercise 3-5 times a week reduces the risk of GDM (Gestational Diabetes Mellitus) and unwanted weight gain during pregnancy.

Preparation for childbirth: identifying labor symptoms, knowing how to breathe and how to push during the expulsion period.

Sexuality: a woman can have sexual activity during pregnancy if there are no risk factors such as a history of premature birth, symptoms of abortion, twin pregnancy, placenta previa or cerclage, among others.

Legal benefits.

Symptoms and warning signs.

Breastfeeding: teach before childbirth.

Newborn care: teach how the newborn sheds or puts on the breast. Family planning.

### **Warning symptoms that should prompt an emergency consultation for the pregnant woman**

Decrease in the habitual movements of the fetus (in pregnancies greater than 28 weeks).

Presence of uterine contractions.

Genital bleeding.

Loss of fluid from the genitals.

Intense headache that does not subside with paracetamol.

Severe edema of the ankles, face or hands.

Blurred vision or photopsias.

Tinnitus.  
Epigastric pain.  
Burning or painful urination.  
Fever.  
Vaginal discharge that causes itching or bad odor

Education is defined as the best way to prevent morbidity and mortality in pregnant adolescents in Ecuador since studies have shown that an educated country has high probabilities of improvement in all areas. Successful sexual and reproductive education allows adolescents and those around them to have emotional security.

According to research carried out by INEC and the Ministry of Public Health, it is established that sexual education in adolescents has a great impact on the health of the mother and the newborn, improving maternal-fetal health and avoiding complications.<sup>(3,7)</sup>

In Ecuador, teenage pregnancy impacts the lives of girls, adolescents and women <sup>(3)</sup>making it difficult for them to access better opportunities, but when this already occurs, appropriate decisions must be made so that motherhood is bearable. Ensuring the lives of pregnant women and their children must be a priority in every public or private health center.

For this to happen, the most important parameters in prenatal control must be identified, educating the pregnant woman, her family and her partner, if possible, about the gestational process. Likewise, at least five prenatal checkups must be ensured, the first being as early as possible to eliminate 100 % of vertical transmission of diseases.

It is crucial to emphasize that, despite the efforts and programs implemented with the intention of addressing maternal morbidity and mortality, the figures continue to be worrying when it comes to teenage pregnancies. This persistent problem shows that, although there is a general level of knowledge about the situation, sexual and reproductive education in Ecuador still shows notable deficiencies, particularly in relation to the adolescent population.

## CONCLUSIONS

The relevance of prenatal check-ups should not be underestimated, as they play an essential role in identifying risk factors and situations that may increase the chances of adverse perinatal outcomes. Therefore, it is imperative that concrete measures be implemented to address the sociodemographic gaps that affect pregnant adolescent women. In addition, it is necessary to promote their active participation in education and family planning programs that provide them with the necessary tools to make informed and healthy decisions in relation to their reproductive health.

## Conflicts of interest

The authors declare that there are no conflicts of interest.

## Authorship contribution

**SXPQ:** original idea, conceptualization, drafting of the article, final review and approval of the final report.

**MBBO:** original idea, conceptualization, drafting of the article, final review and approval of the final report.

**MGCA:** conceptualization, drafting of the article and approval of the final report.

**YLRT:** conceptualization, drafting of the article and approval of the final report.



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