



The invisible problem of early adolescent pregnancy in the Dominican Republic: a descriptive analysis

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ABSTRACT

Study objectives: The aim of this article is to describe the problem of pregnancy in girls under 15 years of age in the Dominican Republic in the period 2000–2021, to develop a specific indicator for this age group and describing the related factors.

Methods: This is an exploratory ecological study, based on secondary data sources, such as birth records from the National Statistics Office (NSO) and the Ministry of Public Health (MPH). We calculated the rates of fertility and pregnancy in early adolescence, as well as analyzed their main determining factors and consequences.

Results: Fertility Rate in Early Adolescence (FREA) decreases from 6.27 to 1.04 per thousand in the period 2001–2021. The average FREA for 2015–2021 was 1.78. The average Estimated Rate of Pregnancy in Early Adolescence (ERPEA) for the same period was 3.39. Disability-Adjusted Life Years (DALYs) were 11,620 years. Years of Life Lost (YLL) were 9,665.9 years. The prevalence of Low Birth Weight (LBW) in the under 15-year-old age group was 14.2 %.

Conclusions: Pregnancy in childhood implies risks for both the mother and the child, including low birth weight. The official fertility rate is substantially underreported (2.84 vs. 1.79).

The fertility rate indicator traditionally used does not accurately measure the number of pregnancies in women, particularly in specific age groups or populations where pregnancies may be interrupted by various factors. Therefore, the use of ERPEA is recommended.

We emphasize the need for implementing the proposed indicator for the target group, as well as monitoring Sustainable Development Goal indicator 3.7.2.

1. Introduction

Adolescence is the phase of life that spans from childhood to adulthood, typically encompassing the ages of 10 to 19 years. The World Health Organization (WHO) defines early adolescence as the stage from 10 to 14 years old. This period characterized by significant physical and emotional changes as children undergo a transformation process. It is also a vulnerable period in which risky behaviors or significant life

events can shape their future.

Globally, approximately 2 million girls under the age of 15 give birth each year, with Latin America and the Caribbean having the second-highest rate of teenage pregnancies ([Latin American Consortium Against Unsafe Abortion \(CLACAI\), 2019](#)). In 2020, the Dominican Republic ranked 88th out of 189 countries in the United Nations Development Program's (UNDP) Human Development Index (HDI) with a score of 0.756, indicating a high level of human development. ([The Next](#)

Abbreviations: CLACAI, Latin American and Caribbean Committee for the Defense of Women's Rights; DALY, Disability-Adjusted Life Years; ERPEA, Estimated Rate of Pregnancy in Early Adolescence; FREA, Fertility Rate in Early Adolescence; IHME, Institute for Health Metrics and Evaluation; LBW, Low Birth Weight; MPH, Ministry of Public Health; NGO, Non-Governmental Organization; NSO, National Statistics Office; SDGs, Sustainable Development Goals; UNFPA, United Nations Population Fund; UNICEF, United Nations Children's Fund; WHO, World Health Organization; YLL, Years of Life Lost.

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Frontier: Human Development and the Anthropocene, 2021). However, the adolescent pregnancy rate in the Dominican Republic, standing at 93.03 live births per 1,000 females aged 15–19 years (World Bank); does not correspond with countries in its surrounding region sharing similar economic and cultural traits. Rather, it bears more resemblance to nations in Sub-Saharan Africa and South Asia, characterized by less favorable development indicators. does not align with countries in its surrounding region with similar economic and cultural characteristics.

Teenage pregnancy in the Dominican Republic is a significant epidemiological and socioeconomic problem, particularly when it occurs during early adolescence. A study conducted at a hospital in Santo Domingo in 2017 found that 3 % of pregnant teenagers were between the ages of 13 and 14 (De la Rosa et al., 2018). Forced child pregnancy refers to the situation where a girl under the age of 15 becomes pregnant without seeking or desiring it, and is unable to terminate the pregnancy due to denial or hindrance. These pregnancies can result from sexual assault or consensual sexual relationships in which the girl was unaware of the consequences or unable to prevent them due to a lack of sexual education or limited access to pregnancy prevention methods and emergency contraception. While forced pregnancy was considered a war crime and crime against humanity during armed conflict, (Rome Statute, 1998), it is not classified as such during peacetime, despite the severe and long-lasting impacts it has on the lives of those affected (Latin American and Caribbean Committee for the Defense of Women's Rights – CLADEM, 2016).

The commonly used indicator to measure teenage pregnancies is the teenage fertility rate, which calculates the number of live births per thousand women aged 15 to 19. Consequently, pregnancies occurring before that age are not included in the statistics, leaving out early adolescent fertility (the age group of 10 to 14 years) (Díaz and Romero, 2018; United Nations, 2019). This omission leads to the invisibility of multiple underlying issues and the consequences for both the mother and the child.

The indicator commonly used to measure teenage pregnancy is the adolescent fertility rate, which calculates the number of live births per 1,000 women aged 15–19. Consequently, pregnancies occurring before that age are not included in the statistics, leaving out early adolescent fertility (the 10–14 age group). This age range was selected in this study because it represents a demographic quinquennium that is often excluded from standard indicators, even though it is the period when most girls reach sexual maturity and potentially enter a fertile stage. National studies indicate that the median age of menarche in the country is 12.6 years, with urban areas at 12.5 years and rural areas at 13.1 years (Barros et al., 2019; Mancebo, 1990).

Despite the World Health Organization's recommendations in its document "100 Core Health Indicators," (WHO/HIS/HSI/2015.3, 2015) which specify the inclusion of data on births among girls under 15 years old, this indicator is not reflected in the country's statistics. Therefore, following the guidelines of this document, a specific indicator for the early adolescence age group (10–14 years old) was proposed.

The United Nations, in its report "Fertility among very young adolescents," (United Nations, 2019) highlights the importance of monitoring fertility levels among girls aged 10 to 14 as part of Sustainable Development Goal indicator 3.7.2. (United Nations, 2018; Núñez, 2020).

Factors contributing to early adolescent pregnancies include early unions and sexual violence perpetrated by family members or acquaintances. However, direct indicators of these circumstances are limited, and reported cases may not necessarily correspond to the actual number of pregnancies. Until January 2021, Dominican legislation allowed child marriage for girls under the age of 15 with parental authorization. Despite recent legislative changes, deeply ingrained sexist stereotypes persist, leading families and girls to view early unions as opportunities for socioeconomic improvement and their sole life project. Many of these pregnancies result from lack of information, limited access to contraception or emergency contraception, and the

inaccessibility of legal abortion, even in cases of rape. There is constant exposure in the country to media content that reinforces stereotypes of sex and age, promotes hypersexualization, fetishizes the body, and objectifies girls and adolescents further exacerbates these issues (Brown and L'Engle, 2009 Feb).

The effects of early adolescent pregnancies on maternal health include complications such as preeclampsia, anemia and nutritional deficiencies due to late diagnosis, premature delivery, and an increased risk of maternal mortality. Cesarean sections account for 58,1% of births, adding to the risks associated with early pregnancy (Guerrero-Romero and Gallardo-Lizarazo, 2015; Department of Reproductive Health and Research, 2015). The illegality of abortion in any circumstance in the country, combined with stigma, discrimination, and a lack of knowledge about their rights, often leads girls to resort to unsafe abortion practices.

The abandonment of education leads to a lack of skills, decreased job opportunities, economic dependency, and perpetuation of poverty cycles for both young mothers and their children. Some studies point to a higher prevalence of low birth weight in newborns (Vandekerckhove et al., 2021; DeMarco et al., 2021). Particularly concerning are the psychological consequences related to sexual violence, forced pregnancies, bullying, and social exclusion (Estrada et al., 2018; Sanz-Martos et al., 2019 Aug).

1.1. Objectives

The main objective of this article is to describe the problem of pregnancy in girls under 15 years of age in the Dominican Republic in the period 2000–2021. This includes determining the rates of fertility and pregnancy in early adolescence and describing the main factors contributing to these outcomes, as well as their consequences.

2. Materials and methods

This study utilized an exploratory ecological design to investigate the determinants and consequences of pregnancy in girls under the age of 15 in the Dominican Republic. Data were collected from official sources within the country, as well as from various United Nations agencies (UNICEF, WHO, UNFPA) and different non-governmental organizations (NGOs).

Two specific indicators were developed to calculate the rates of fertility in early adolescence and estimated pregnancy rates based on data published by the Ministry of Public Health (MPH) and the National Statistics Office (NSO). The study population included residents of the Dominican Republic from 2000 to 2021, specifically focusing on women aged 10–14. (Barros et al., 2019; Mancebo, 1990).

The indicator "Fertility Rate in Early Adolescence" (FREA), was suggested to measure early adolescent fertility. This indicator represents the annual number of births to women aged 10 to 14 per 1000 women in that age group. Data from the National Statistics Office (NSO) were used for the numerator and denominator. It should be noted that the NSO defines "Occurring Births" as births that occurred in the reference year and were registered in the Civil Registry, excluding births from previous years. Delayed registration is assumed, even with several years of delay. A limitation of this indicator is that it only includes live births and does not capture data on miscarriages or induced abortions, thereby not reflecting the total number of pregnancies.

Another indicator developed in this study is the "Estimated Rate of Pregnancy in Early Adolescence" (ERPEA). This indicator reports the annual number of vaginal births, caesarean sections, stillbirths and abortions registered as spontaneous among women aged 10–14 years per 1,000 women in that age group. Data for the numerator and denominator were obtained from the Ministry of Public Health (MPH) for the period 2015–2021. Limitations of this indicator include the under-reporting of home births and births occurring outside health facilities, as well as the inability to quantify clandestine abortions due to their illegal

and socially stigmatised nature. However, one of the strengths of this indicator is its 100 % coverage of health facilities and the inclusion of registered miscarriages and stillbirths. This makes a significant difference because it provides a metric that closely matches the reality of pregnancy, making it applicable to other age groups. However, a strength of this indicator is its 100 % coverage of healthcare facilities and inclusion of recorded abortions and stillbirths. This represents a significant difference because it provides a metric that is closely aligned with the reality of pregnancy, making it applicable to other age groups (Brown and L'Engle, 2009).

Years of Life Adjusted for Disability (DALY) and Years of Life Lost (YLL) due to maternal causes and sexually transmitted infections have been calculated in the age group. The DALY is the primary metric used by the World Health Organization to assess the global burden of disease (Vos et al., 2020), representing a combined measure of years lost due to premature death (mortality) and years lived with disability (morbidity) (Murray et al., 2012).

We analyzed the prevalence of low birth weight (LBW) among different maternal age groups for the years 2015–2021, excluding 2018 due to the absence of data from the Ministry of MPH.

3. Results

3.1. Births in the 10–14-year-old mother group from 2001 to 2021

The number of registered births to mothers under the age of 15 has gradually decreased from 2001 to 2021. In 2001, there were nearly 3000 births, which decreased to 486 in 2021. There is a step-like pattern, with a clear decrease in the years 2012–2014, followed by stabilization, albeit with a downward trend in subsequent years.

3.2. Calculation of the fertility rate in early Adolescence (FREA), in the Dominican Republic. Period 2001–2021

Reveals the same step-like pattern, with a decrease in the birth rate starting from the years 2012–2014. The rate decreased from an initial rate of 6.27 live births per thousand women in 2001 to 1.04 per

Table 1
Fertility Rate in Early Adolescence (FREA), in the Dominican Republic. Period 2001–2021.

Year	Births in the 10–14-year-old mother	Population (women 10–14)	Fertility Rate in Early Adolescence (FREA)
2001	2961	471904	6.27
2002	2851	474723	6.01
2003	2624	477532	5.49
2004	2586	480327	5.38
2005	2581	483118	5.34
2006	2415	482933	5.00
2007	2341	482725	4.85
2008	2355	482481	4.88
2009	2323	482206	4.82
2010	2365	481900	4.91
2011	2315	482258	4.80
2012	1973	482599	4.09
2013	1514	482910	3.14
2014	1244	483193	2.57
2015	1106	483452	2.29
2016	1085	480455	2.26
2017	1000	477445	2.09
2018	871	474425	1.84
2019	869	471394	1.84
2020	532	468358	1.14
2021	486	468329	1.04
AVERAGE			3.81

Source: Prepared by the authors based on data from the National Statistics Office (NSO).

Source: Prepared by the authors based on data from the National Statistics Office (NSO)

thousand in 2021 (Table 1).

3.3. Calculation of the fertility rate in early Adolescence (FREA) in the Dominican Republic. Period 2015–2021

If the same rate is calculated using data from the Ministry of Public Health (MPH), it can be observed that the rates of fertility are higher. The following table shows the difference between the two rates. The found period average was: 2.84 vs 1.79 between both sources (Table 2).

3.4. Total number of pregnancies in early adolescence 2015–2021

The data collected by the Ministry of Public Health (MPH) provide more comprehensive information, detailing various obstetric events attended in healthcare facilities by age groups. These events have been used to calculate the Estimated Rate of Pregnancy in Early Adolescence (ERPEA), which captures live births, stillbirths, and attended abortions, providing a rate that is more adjusted to the reality than the fertility rate. The total number of pregnancies is significantly higher than the number of reported live births alone, averaging 18.59 % higher compared to the MPH data. The total number of pregnancies becomes a significant figure in real terms (Table 3).

3.5. Calculation of “Estimated rate of pregnancy in early adolescence” (ERPEA) 2015–2021

Although the trend is decreasing, as in the Fertility Rate, the ERPEA adjusts and significantly expands the number of pregnancies. The rate decreases gradually from 4.63 per thousand in 2015, with a slight increase of 0.04 in 2017, to 2.11 per thousand in 2021. The period average is 3.39 (Table 4).

The following graph shows the differences between the two sources of ERPEA and ERPEA (Graph 1).

3.6. Years of life adjusted for disability (DALYs)

Based on data published by the Institute for Health Metrics and Evaluation (IHME), considering sexually transmitted diseases, maternal causes, and sexual violence in the 10–14-year-old girls’ group from 2000 to 2019, an estimated total of 11,620 years of disability have been lost in this group.

This represents an increase of 69.1 % compared to the disability-adjusted life years (DALYs) for diabetes mellitus in the same group.

3.7. Years of Life Lost due to premature death (YLL)

Summing both maternal causes and sexually transmitted infections, including HIV, there were an estimated 9,665.9 years of life lost in the 10–14-year-old girls’ group from 2000 to 2019.

Table 2
Comparison of Fertility Rates in (FREA) between the two available sources. Period 2015–2021.

Year	FREA (MPH)	FREA (NSO)	Difference
2015	3.68	2.29	1.39
2016	3.38	2.26	1.12
2017	3.49	2.09	1.40
2018	2.73	1.84	0.89
2019	2.56	1.84	0.72
2020	2.18	1.14	1.04
2021	1.84	1.04	0.80
PERIOD AVERAGE	2.84	1.79	1.05

Source: Prepared by the authors based on data from the Ministry of Public Health/ National Statistics Office (NSO).

Source: Prepared by the authors based on data from the Ministry of Public Health (MPH)/National Statistics Office (NSO)

Table 3

Obstetric procedures in minors under 15 years of age. Ministry of Public Health (MPH) 2015–2021.

Year	Spontaneous abortions	Vaginal deliveries	Cesarean sections
2015	428	953	807
2016	319	842	790
2017	272	913	811
2018	259	516	586
2019	201	692	552
2020	145	608	433
2021	117	448	413

Source: Prepared by the authors based on data from the Ministry of Public Health (MPH)/National Statistics Office (NSO).

Table 4

“Estimated Rate of Pregnancy in Early Adolescence” (ERPEA) 2015–2021.

Año	Pregnancies	ERPEA
2015	2239	4.63
2016	1955	4.07
2017	1962	4.11
2018	1557	3.28
2019	1405	2.98
2020	1174	2.51
2021	987	2.11
AVERAGE		3.38

Source: Prepared by the authors based on data from the Ministry of Public Health (MPH)/National Statistics Office (NSO).

Source: Prepared by the authors based on data from the Ministry of Public Health (MPH)/National Statistics Office (NSO)/

3.8. Low Birth Weight (LBW)

Studying the years 2015–2017 and 2019–2021, the average percentage of newborns with low birth weight in the under 15-year-old age group is 14.2 %, surpassed only by a 19.6 % rate in the mothers over 45 years old (Table 5).

4. Discussion

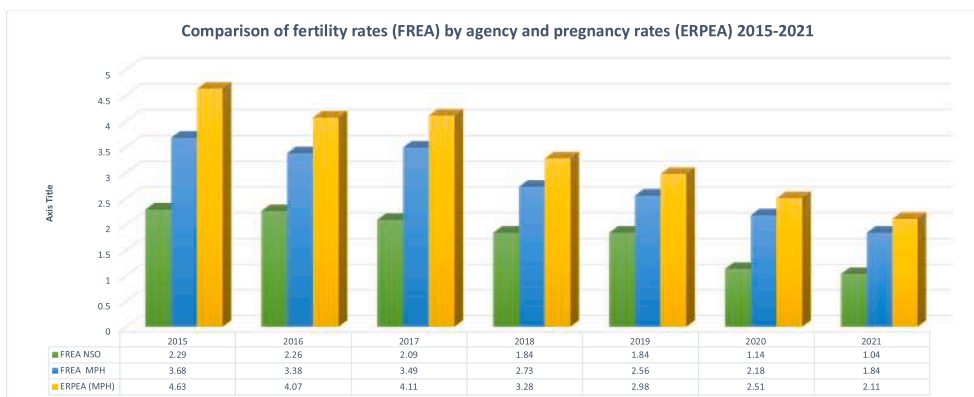
The results of this study reveal the hidden reality of early adolescence pregnancy. Traditionally, the fertile age range for women has been considered as 15–49 years, which has excluded minors from records and corresponding analyses.

The decrease in the number of births has been gradual since 2000, with a significant drop in 2011. However, the total figures in 2021 of 486 live births according to the National Office of Statistics (NSO) and 987 pregnancies in girls under 15 years old highlight the need to include these indicators and implement systematic measures by competent organizations and authorities.

The World Bank also points out this downward trend with a substantial decrease since 2011 (Guerrero-Romero and Gallardo-Lizarazo, 2015). That is one of the few publications with reports of registrations in girls under 14 years old, attributes the decline to increased social awareness resulting from the government’s implementation of several programs aimed at reducing the birth rate among minors.

The data obtained in our study aligns with the average fertility rate of 1.30 per thousand reported by Escobar et al in 2017 for the Dominican Republic (Escobar et al., 2019). This indicates consistency between our findings and the broader statistics available.

The NSO reports all births based on registrations in the Civil Registry, while the Ministry of Public Health (MPH) reports births occurring in healthcare facilities. The data from NSO should necessarily be equal to or greater than those from MPH since, in addition to births in healthcare



Graph 1. Comparison of fertility rates (FREA) by agency and pregnancy rates (ERPEA) 2015–2021).

Source: Prepared by the authors based on data from the National Statistics Office (NSO) and Ministry of Public Health (MPH)

Table 5

Percentage of live newborns with Low Birth Weight (LBW), according to mother’s age group.

Year/Age	<15 A.	15–19	20–24	25–29	30–34	35–39	40–44	45+
2015	16.39	8.95	7.96	7.98	10.43	11.29	12.35	20.16
2016	13.97	9.19	8.31	8.67	10.19	12.30	15.02	52.34
2017	11.78	8.00	7.42	7.49	8.38	9.52	13.12	12.62
2019	13.71	7.77	7.49	7.61	8.00	8.38	10.93	9.17
2020	13.41	7.83	7.66	7.99	8.66	9.78	13.52	9.84
2021	16.20	8.49	7.88	7.98	8.70	10.62	13.94	13.33
Average	14.24	8.37	7.79	7.95	9.06	10.32	13.15	19.58

Source: Prepared by the authors based on data from the Ministry of Public Health (MPH).

Source: Prepared by the authors based on data from the Ministry of Public Health (MPH)

facilities, they should include those occurring in public spaces, private homes, etc. However, paradoxically, the data consistently shows the opposite.

The NSO's own 2021 yearbook specifies that this reduction may be due to both real factors and bureaucratic issues such as the lack of personal identification documents, which hinders the mother's ability to complete the registration process, a common occurrence in early adolescence. In 2002, 13.2 % of the population did not have a birth certificate, including 22.3 % of children under 4 years old.

Social pressure and the concealment of crimes often lead to delays or non-registration of newborns. According to UNICEF, only 4 % of teenage mothers register their children before leaving the maternity ward. It is estimated that in the Dominican Republic, 116,800 children under 5 years old are not registered, despite the fact that most major public hospitals have civil registry offices, and the process is simple and free.

Efforts are being made by the National Health System and the Maternal-Child and Adolescent Area Directorate to ensure compliance with the Interinstitutional Cooperation Agreement for Timely and Late Birth Registration in the Dominican Republic, signed between UNICEF and various government agencies.

Regarding the Estimated Rate of Pregnancy (ERPEA), the value of 2 pregnancies per thousand girls aged 10–14 in 2021 does not correspond to the data provided to the national monitoring platform for the implementation of the agreements established in the Montevideo Consensus, (Indicator 3.7.2 of the SDGs), which states 1 per thousand. The rate provided only includes live newborns, which again shows the underreporting of pregnancies (CELADE-Population Division of ECLAC, 2024).

The graphic representation of annual percentages of low birth weight (LBW) newborns suggests the need to establish a correlation between this phenomenon and the mother's age groups. It can be observed that the under 15-year-old and over 45-year-old groups consistently have considerably higher rates compared to other age groups.

The total economic impact of teenage pregnancy and early motherhood in the country amounts to 73 million United States dollars, equivalent to 0.09 % of the Gross Domestic Product (GDP), according to a study conducted by the UNPF. The study analyzes various aspects including educational attainment, labor force participation, individual incomes, healthcare during pregnancy, childbirth, and the postpartum period, as well as tax revenues received by the government through taxes (UNPF, 2021).

Due to the nature of this study, the data sources are secondary. This creates inherent limitations related to the characteristics of the records, reliability of data collection, different criteria among various organizations, changes in methodologies over time, and even the absence of data in different periods.

The Transparency Portal of the Government of the Dominican Republic provides access to most of the statistics it handles on its website, and they have been working to expand them in recent years. However, the data remains limited and lacks detail.

5. Conclusions and recommendations

Early adolescence pregnancy in the Dominican Republic is a poorly studied issue as traditional indicators have excluded the under 15-year-old group from their records.

The traditionally used fertility rate indicator only accounts for live births and does not accurately measure the number of pregnancies, specifically in age groups or populations where pregnancies may be interrupted due to various factors.

Therefore, it is recommended to use the Estimated Rate of Pregnancy indicator in this group.

Various international organizations have focused on the Dominican Republic, calling for a comprehensive approach to this issue from legal, educational, socio-cultural perspectives, not just a health perspective (hOffice of Compliance, WHO, 2017; Baumgartner et al., 2009; Lerand

et al., 2006).

Early adolescence pregnancy entails specific considerations in terms of its origin and consequences, and it should be distinguished from late adolescence pregnancy (Brito et al., 2014).

Incorporating forced pregnancy as a crime into legislation would raise awareness among legislators and help denormalize abusive practices and the objectification of girls by their own families.

Early adolescence pregnancies are closely related to early unions and sexual violence. A specific program for detecting abuse and sexual violence in girls under 15 should be implemented (Barth et al., 2012).

Although current legislation defines sexual abuse, rape, and sexual relations with minors under 18 as crimes, the number of reports is insignificant, and impunity is very high (Rodríguez et al., 2015; UNPF, 2021).

Early adolescent pregnancy from a human rights perspective represents a tragedy for millions of unprotected girls and leads to preventable morbidity and mortality.

CRedit authorship contribution statement

Elena González-Rodríguez: Writing – original draft, Visualization, Resources, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Ángel Gil de Miguel:** Validation, Supervision, Conceptualization. **Raúl Bravo-Infantes:** Resources, Conceptualization. **Ignacio Garrido-González:** Validation, Supervision, Formal analysis. **Ruth Gil-Prieto:** Validation, Supervision, Methodology, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. None of the researchers have received any funding from any organization or private individual.

Data availability

Data will be made available on request.

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