

DETERMINANTS OF ADOLESCENT PREGNANCY IN PERU: A SECONDARY ANALYSIS OF THE FAMILY HEALTH DEMOGRAPHIC SURVEY (ENDES) 2022

DETERMINANTES DEL EMBARAZO ADOLESCENTE EN EL PERÚ: UN ANÁLISIS SECUNDARIO DE LA ENCUESTA DEMOGRÁFICA DE SALUD FAMILIAR (ENDES) 2022

Jose Montalvan-Santillan ¹, Daisy Flores-Cortez ²

Filiation:

¹ Universidad Nacional Mayor de San Marcos, Faculty of Medicine, Doctoral Program in Health Sciences, Lima, Peru

² Universidad Nacional Mayor de San Marcos, Faculty of Medicine, Pharmacology Section, Lima, Peru

How to cite the article: Montalvan-Santillan J, Flores-Cortez D. Determinantes del Embarazo Adolescente en el Perú: Un análisis secundario de la Encuesta demográfica de salud Familiar (ENDES) 2022. Revista Internacional de Salud Materno Fetal. 2024; 9(3): o1-o8. DOI: 10.47784/rismf.2024.9.3.347

Financing: Self-funded

Conflicts of interest: The authors declare no conflicts of interest

Correspondence:

José Montalván Santillan
Email: jose.montalvan2@unmsm.edu.pe

Received: 06-17-2024

Reviewed: 15-08-2024

Accepted: 28-08-2024

Anticipated: 03-09-2024

Published: 03-09-2024



ABSTRACT

Objective: To analyze the sociodemographic and obstetric determinants associated with adolescent pregnancy, through a secondary analysis of the Demographic and Family Health Survey (ENDES) 2022. **Material and methods:** Analytical cross-sectional study of the ENDES 2022. The proportion of adolescent pregnancy and its sociodemographic determinants and obstetric variables were calculated. Crude and adjusted prevalence ratios (PRa) of having quality prenatal care (PNC) were estimated. **Results:** Adolescents in the low wealth quintile had a significantly higher probability of becoming pregnant, with a PRa 3.60 (95% CI: 1.39-9.30, p=0.008). Those with a history of having had two or more sexual partners showed a higher risk of becoming pregnant with a PRa 3.49 (95% CI: 1.57-7.75, p=0.002). The non-use of contraceptive methods (CM) had a pregnancy risk of 6.49 (95% CI: 2.40-17.5, p<0.001). Pregnant adolescents with two or more children had a risk of 3.08 (95% CI: 1.60-5.93, p<0.001). Other variables studied did not reach statistical significance. **Conclusion:** The determining factors for adolescent pregnancy in Peruvian adolescents are the high poverty index, the number of sexual partners, the history of non-use of contraceptive methods, and previous adolescent pregnancy.

Key words: Adolescent pregnancy, Adolescent gestation, Associated factors (Fuente: MeSH, NLM)

RESUMEN

Objetivo: Analizar los determinantes sociodemográficos y obstétricos asociados al embarazo adolescente, a través de un análisis secundario de la Encuesta Demográfica y de Salud Familiar (ENDES) 2022. **Material y métodos:** Estudio transversal analítico de la ENDES 2022. Se calculó la proporción de embarazo en adolescentes y sus determinantes sociodemográficos y variables obstétricas. Se estimaron razones de prevalencia crudas y ajustadas (RPa) de presentar un CPN de calidad. **Resultados:** Las adolescentes con quintil de riqueza baja presentaron una probabilidad significativamente mayor de embarazarse RPa de 3.60 (IC95%: 1.39-9.30, p=0.008). Mientras que las que tenían como antecedente haber tenido dos o más parejas sexuales mostraron un mayor riesgo a embarazarse con un RPa de 3.49 (IC95%: 1.57-7.75, p=0.002). El no uso previo de MAC tenían un riesgo de embarazo de 6.49 (IC95%: 2.40-17.5, p<0.001). Las gestantes que tenían 2 ó más hijos tenían un riesgo de 3.08 (IC95%: 1.60-5.93, p<0.001). Las otras variables estudiadas no alcanzaron significancia estadística. **Conclusión:** Los factores determinantes para el embarazo en adolescentes peruanas son el alto índice de pobreza, el número de parejas sexuales, el antecedente de no uso de MAC y el embarazo adolescente previo.

Palabras clave: Embarazo en adolescencia, Gestación en adolescencia, Factores asociados (Fuente: DeCS, BIREME)

INTRODUCTION

Teenage pregnancy is a global phenomenon with well-documented causes and serious consequences for health, society and the economy. According to the World Health Organization (WHO), in 2019 there were approximately 21 million pregnancies per year among adolescents aged 15 to 19, especially in low- and middle-income countries. Of these pregnancies, about 50% were unintended, resulting in an estimated 12 million births (1,2).

Unfortunately, Peru is no stranger to this problem, considering that every 8 minutes, an adolescent between 15 and 19 years old gives birth in the country. Although the Specific Adolescent Fertility Rate has shown a sustained decline over the past two decades (from 75 to 53 births per 1,000 women between 1996 and 2017-18), it remains high, and its analysis reveals persistent inequities (3).

According to data from the National Institute of Statistics and Informatics (INEI), of the 461,691 live births in 2020, 1,158 (0.3%) were to women under 15 years of age and 47,388 (10.3%) to women between 15 and 19 years of age (4).

Pregnant or mothering adolescents face difficulties in staying in school and completing their education, which negatively affects their training, development of psychosocial skills and competencies, access to future educational and employment opportunities, and their autonomy and economic security. In addition, studies have shown that pregnant adolescents are at greater risk of complications during and after pregnancy, such as preeclampsia, premature delivery, small-for-gestational-age fetuses, anemia, miscarriages, fetus-pelvic disproportion, and breathing difficulties in the newborn (5,6).

Therefore, it is essential to identify the factors that influence the prevalence of adolescent pregnancy in order to address this problem and to design public policies that reduce these rates. The objective of this research is to analyze the sociodemographic and obstetric determinants associated with adolescent pregnancy, through a secondary analysis of the Demographic and Family Health Survey (ENDES) 2022.

MATERIAL AND METHODS

Studio Design

Population-based analytical cross-sectional study that included data from women who reported age under 19 years of age available in the ENDES 2022 database.

Sources of information

The ENDES is a survey developed annually by the National Institute of Statistics and Informatics of Peru (INEI) whose objective is to obtain information on the demographic and health status of children and women of childbearing age, as well as to provide information on the factors associated with non-communicable and communicable diseases, as well as access to diagnostic and treatment services. In ENDES 2022, three questionnaires were applied, one to the Home and its members, the other, to all eligible women, that is, from 12 to 49 years of age and the Health Questionnaire that is applied to a person 15 years of age and older. The sample was characterized by being two-stage, probabilistic of a balanced type, stratified and independent, at the departmental level, by urban and rural area. The annual sample size of the ENDES was 36,650 households, corresponding to: 14,820 dwellings in the headquarters area (departmental capitals and the 43 districts that make up Metropolitan Lima), 9,230 dwellings in the rest of the urban area, and 12,600 dwellings in the rural area. The database is freely accessible on the INEI portal (7).

Population

The target population was made up of adolescent women (12 – 19 years old), pregnant and non-pregnant women residing in Peru who were interviewed during the application of the ENDES 2022, who have the required and complete data to carry out the research. We excluded records for adolescent women who submitted incomplete or inconsistent data.

Study variables

Modules 1629, 1631, 1632, 1634, 1635, 1636 and 1637 were downloaded, followed by the selection of the individual questionnaire of the woman, in which both non-pregnant adolescents and those who were pregnant at the time of the interview were

considered. The codes appear in parentheses for each variable posed.

Adolescent pregnancy was considered as a dependent variable. For this purpose, the current age of the interviewee, a minor equal to 19 years (V012) and currently pregnant (V213), was leaked. The independent variables included in the study were: Sociodemographic variables: marital status (V501), highest educational level (S108N), wealth quintile (V190), geographic region (V024), area of residence (V025), health insurance coverage (V481), currently working (V714), victim of violence (S1012BN), currently smoking (V463A). Obstetric variables included: age at first sexual intercourse (V525), number of sexual partners (V766B), previous use of contraceptive method (MAC (V302), information about MAC (V395), dialogue about MAC with partner (S621A), approval of MAC by their partner (S621), history of abortion (V228), current number of children (V219), and desire to have more children (V605).

Statistical analysis

The modules used were downloaded in . SAV to be processed in the IBM SPSS Statistics v27.0 statistical software. Subsequently, the variables of interest in the study were recoded and dichotomized. For the analysis, the characteristics of the complex sample design of the survey were taken into account, considering the stratum (V022), the cluster (V001) and the weighting factor (V005). A descriptive analysis of complex samples was performed using frequencies and proportions for the categorical variables of sociodemographic characteristics. In the bivariate analysis, the association was evaluated by prevalence ratios (PR) with their respective 95% confidence intervals, performing a crude analysis for each of the variables included in the study. For the multivariate analysis, adjusted prevalence ratios (aPR) were estimated for all independent variables that presented a value of $p < 0.05$ in the crude analysis. These estimates were carried out using a generalized linear model with Poisson distribution for complex samples. A p -value < 0.05 was considered to determine significant differences in all statistical tests.

Ethical considerations

Because this is an analysis of publicly accessible and anonymized secondary data, this project did not require approval from an ethics committee.

RESULTS

Data from a total of 8191 adolescent women participating in ENDES 2022 were included. The prevalence of pregnancy in Peru was 1.2% (95% CI: 0.9%-1.6% CV: 0.13).

In the bivariate analysis, it was observed that the highest percentage of pregnant women (91.7%) was in the age range of 16-19 years, with a mean age of 17.3 ± 1.4 years. This age group had a significantly higher risk of pregnancy compared to those aged 12-15 years (PR=9.73, 95% CI: 5.89-16.10). In addition, married or cohabiting adolescents had a significantly higher risk of pregnancy than single or separated adolescents (PR=4.72, 95% CI: 3.86-5.78). On the other hand, adolescents from the low wealth quintile had a significantly higher risk of adolescent pregnancy (PR=2.18, 95% CI: 1.31-3.62) compared to those from the high quintile, while the risk in the middle quintile was also higher, although not significant (PR=1.48, 95% CI: 0.79-2.76). Regionally, it was observed that adolescents living in the Selva had a significantly higher risk of pregnancy (PR=3.18, 95% CI: 1.46-6.92) compared to residents of metropolitan Lima.

In addition, rural adolescents had a significantly higher risk of pregnancy than urban adolescents (PR=1.79, 95% CI: 1.31-2.46). Finally, no significant association was found between adolescent pregnancy and having health insurance, current employment status, or adolescents who were victims of violence, as well as adolescent smokers (**Table 1**).

Table 2 presents the analysis of obstetric factors associated with adolescent pregnancy according to ENDES 2022, finding several significant associations. The number of sexual partners was significantly associated with adolescent pregnancy. Adolescents with two or more sexual partners had a 3.41-fold increased risk compared to those with one partner or less (95% CI: 1.63-7.12).

Table 1. Sociodemographic factors in adolescent pregnant women in Peru, ENDES 2022

Characteristics	Teen Pregnancy*		RP**	95% CI
	If n (%)	No n (%)		
Age group (years)				
12-15	17 (8.3)	4524 (54.7)	Ref.	
16-19	133 (91.7)	3517 (45.3)	9.73	5.89-16.10
Marital status				
Married/cohabiting	93 (4.5)	698 (56.4)	4.72	3.86-5.78
Single/separated	57 (43.6)	7343 (95.5)	Ref.	
Educational level				
No education/ Primary	15 (6.1)	2017 (22.6)	0.37	0.16-0.86
High school	127 (86.5)	5635 (70.5)	1.09	0.54-2.22
Superior	8 (7.4)	389 (6.8)	Ref.	
Wealth Quintile				
Casualty	110 (66.3)	4871 (44.3)	2.18	1.31-3.62
Stocking	23 (17.2)	1511 (20.7)	1.48	0.79-2.76
Loud	17 (16.5)	1659 (35.0)	Ref.	
Geographic region				
Metropolitan Lima	7 (16.3)	852 (29.7)	Ref.	
Rest of the coast	37 (18.3)	2188 (27.1)	2.04	0.91-4.56
Saw	44 (35.1)	2671 (27)	1.98	0.89-4.39
Forest	62 (30.4)	2330 (16.3)	3.18	1.46-6.92
Area of residence				
Urban	5182 (78.3)	75 (56)	Ref.	
Rural	2859 (21.7)	75 (44)	1.79	1.31-2.46
Health Insurance				
Yes	140 (90.4)	7166 (84.9)	1.69	0.89-3.21
No	10 (9.6)	875 (15.1)	Ref.	
Current work				
Yes	35 (33)	1642 (21)	Ref.	
No	115 (67)	6399 (79)	0.85	0.58-1.23
Victim of violence				
Yes	3 (78.8)	26 (82.4)	1.034	0.12-8.85
No	1 (21.2)	9 (17.6)	Ref.	
Smoke				
Yes	2 (10.5)	75 (1.7)	1.42	0.36-5.64
No	148 (89.5)	7966 (98.3)		

PR: prevalence ratio.

*The weighting factor of the ENDES 2022 was included.

**Generalized linear model of the Poisson family with log function.

Similarly, information on CAM also showed a significant association, where adolescents who received information about CAM had a higher risk of adolescent pregnancy compared to those who did not receive information (PR=1.50, 95% CI: 1.28-1.76). Likewise, talking about MAC with the partner was associated with a higher risk of adolescent pregnancy compared to those who did not (PR=12.23, 95% CI: 7.9-18.93).

Adolescents who did not have the approval of MAC by their partner had a higher risk of pregnancy compared to those who did have the approval (PR=2.45, 95% CI: 1.30-4.58). The history of abortion was associated with a higher risk of adolescent pregnancy, with those who had had an abortion presenting a higher risk compared to those who had not had one (PR=1.47, 95% CI: 1.27-1.71).

The current number of children was also a relevant factor. Adolescents with two to four children had a significantly higher risk of adolescent pregnancy compared to those without children (PR=2.89, 95% CI: 2.49-3.35). Finally, adolescents who did not want to have more children did not know if they wanted to have a higher risk of adolescent pregnancy compared to those who did want to have more children (PR=3.057, 95% CI: 2.23-4.19).

As observed in the adjusted analysis in **Table 3**, adolescents belonging to the low-wealth quintile had a significantly higher probability of becoming pregnant compared to those from the high-wealth quintile, with an adjusted prevalence ratio (PR) of 3.60 (95% CI: 1.39-9.30, p=0.008).

Table 2. Obstetric factors in adolescent pregnant women in Peru, ENDES 2022

Characteristics	Teen Pregnancy*		RP**	95% CI
	If n (%)	No n (%)		
Age of first sexual intercourse				
<= 15 years	88 (63.1)	1142 (48.7)	0.97	0.71-1.33
>15 years	62 (36.9)	786 (51.3)	Ref.	
Number of sexual partners				
<= 1	143 (95.9)	7932 (98.1)	Ref.	
>=2	7 (4.1)	109 (1.9)	3.41	1.63-7.12
Knowledge of the fertile period				
If you know	26 (16.4)	1110 (19.7)	Ref.	
He does not know	124 (80.3)	6931 (82.6)	0.95	0.83-1.08
Previous MAC use				
Yes	122 (83)	1866 (18.8)	Ref.	
No	28 (17)	6175 (81.2)	4.03	2.28-7.14
Information about MAC				
Yes	45 (57)	750 (21.6)	Ref.	
No	32 (43)	1656 (78.4)	1.36	0.83-2.23
Talk about MAC with your partner				
Yes	19 (6.5)	77 (0.5)	12.23	7.9-18.93
No	131 (93.5)	7964 (99.5)	Ref.	
MAC approval by the couple				
Yes	82 (85.1)	671 (95.4)	Ref.	
No	8 (11.8)	22 (3.5)	2.45	1.30-4.58
He doesn't know	3 (3.1)	5 (1.1)	3.44	1.37-8.62
History of abortion				
Yes	13 (6.4)	109 (1.2)	1.47	1.27-1.71
No	137 (93.6)	7932 (98.8)	Ref.	
Current number of children				
None	116 (85.8)	7965 (99.6)	Ref.	
2-4	34 (14.2)	76 (0.4)	2.89	2.49-3.35
Desire to have more children				
Yes	82 (62.8)	6361 (80.8)	Ref.	
He doesn't know, he doesn't want to	68 (37.2)	1680 (19.2)	3.057	2.23-4.19

PR: prevalence ratio.

*The weighting factor of the ENDES 2022 was included.

**Generalized linear model of the Poisson family with log function.

Likewise, adolescents who had a history of having had two or more sexual partners showed a higher risk of becoming pregnant compared to those who had one or no sexual partners, with an adjusted PR of 3.49 (95% CI: 1.57-7.75, $p=0.002$).

Another significant finding was that adolescents who had not previously used MAC were significantly more likely to become pregnant, with an adjusted PR of 6.49 (95% CI: 2.40-17.5, $p<0.001$), compared to those who had previously used MAC.

Finally, it was found that pregnant women who had 2 or more children had a higher risk of pregnancy compared to those without children, with an adjusted PR of 3.08 (95% CI: 1.60-5.93, $p<0.001$).

DISCUSSION

The results of this study provide a comprehensive view of the determinants of pregnancy in Peruvian adolescents, based on the analysis of data from the Demographic and Family Health Survey (ENDES) 2022. The findings reveal several sociodemographic and behavioral factors that significantly influence the probability of pregnancy in adolescents, underscoring the complexity of this phenomenon in the Peruvian context.

Importantly, the relationship between wealth level and teen pregnancy risk is significant.

Table 3. Multivariate Analysis of Sociodemographic and Obstetric Factors Associated with Adolescent Pregnancy, ENDES 2022

Characteristics	Raw Model*		Fitted model**	
	PR (95%CI)	P value	PR (95%CI)	P value
Age group (years)				
12-15	Ref.		Ref.	
16-19	9.73 (5.89-16.10)	<0.001	0.96 (0.37-2.49)	0.93
Educational level				
No education/ Primary	0.37 (0.16-0.86)	0.021	0.49 (0.14-1.73)	0.27
Superior	Ref.		Ref.	
Wealth Quintile				
Casualty	2.18 (1.31-3.62)	0.003	3.60(1.39-9.30)	0.008
Loud	Ref.		Ref.	
Geographic region				
Metropolitan Lima	Ref.			
Forest	3.18 (1.46-6.92)	0.004	1.85 (0.38-9.07)	0.45
Area of residence				
Urban	Ref.			
Rural	1.79 (1.31-2.46)	<0.001	1.03 (0.54-1.98)	0.93
Number of sexual partners				
<= 1	Ref.			
>=2	3.41 (1.63-7.12)	0.001	3.49 (1.57-7.75)	0.002
Previous MAC use				
Yes	Ref.			
No	4.03 (2.28-7.14)	<0.001	6.49 (2.40-17.5)	<0.001
Talk about MAC with your partner				
Yes	12.23 (7.9-18.93)	<0.001	1.39 (0.65-2.99)	0.39
No	Ref.			
MAC approval by the couple				
Yes	Ref.			
No	2.45 (1.30-4.58)	0.005	1.03 (0.247-4.39)	0.42
He doesn't know	3.44 (1.37-8.62)	0.008	1.08 (0.43-7.48)	0.96
History of abortion				
Yes	1.47 (1.27-1.71)	<0.001	0.82 (0.38-1.75)	0.61
No	Ref.		Ref.	
Current number of children				
None	Ref.			
2-4	2.89 (2.49-3.35)	<0.001	3.08 (1.60-5.93)	<0.001
Desire to have more children				
Yes	Ref.			
He doesn't know, he doesn't want to	3.057 (2.23-4.19)	<0.001	1.64 (0.96-2.8)	0.06

PR: prevalence ratio. The weighting factor of the ENDES 2022 was included.

* Generalized linear model of the Poisson family with log function.

** Adjusted for all variables that obtained a p-value less than 0.05 in the crude analysis

In the multivariate analysis, adolescents belonging to the low-wealth quintile have a significantly higher probability of becoming pregnant compared to those from the high-wealth quintile, with an adjusted prevalence ratio (aPR) of 3.60 (95% CI: 1.39-9.30, $p = 0.008$). This finding is consistent with previous studies where it has been observed that being in a lower wealth quintile increases the risk of adolescent pregnancy by 1.34 times (8).

Overall, poverty is a key determinant of adolescent pregnancy, due to factors such as limited access to education, health services, and contraceptive methods.

Poverty can also influence decision-making and the lack of opportunities for adolescent girls, leading them to situations of greater vulnerability. A study establishes that adolescent pregnancy prevails in an environment with a low economic situation, generating an obstacle to the satisfaction of household needs and disadvantages around labor and productive insertion. Economic conditions are related to the fact that adolescents leave home and move to live with their partner (9,10).

The sexual behavior of adolescent girls also plays a crucial role. According to our results, those who had a history of having two or more sexual partners

showed a higher risk of pregnancy compared to those with one or no sexual partners, with an aPR of 3.49 (95% CI: 1.57-7.75, $p=0.002$). Several studies show that the number of sexual partners is an important determinant in adolescent pregnancy (11).

Comprehensive sex education and the need for programs that promote responsible and safe sexual behaviors are of utmost importance. The multiplicity of sexual partners may be associated with an increased risk of non-use or incorrect use of contraceptive methods, thus increasing the likelihood of unplanned pregnancies (12).

The use of contraceptive methods (MAC) is another critical determinant. Adolescents who had not previously used MAC were considerably more likely to become pregnant, with an aPR of 6.49 (95% CI: 2.40-17.5, $p<0.001$). This highlights the need to improve access to contraception and to strengthen education and family planning programmes for adolescents. The lack of use of CAM may be due to economic, cultural or access to health services barriers, and the lack of education on the subject is associated with adolescent pregnancy, as reported by other studies, where the risk is increased by up to 6.5 times (13,14).

Finally, the number of current children also significantly influences the probability of pregnancy in adolescents. Those who had two or more children had a higher risk of pregnancy compared to those who did not have children, with an aPR of 3.08 (95% CI: 1.60-5.93, $p < 0.001$). This outcome may be related to factors such as lack of access to postpartum contraception and social or family pressure to have more children. Other studies show that a history of pregnancy in adolescence increases the risk of subsequent pregnancies (15).

Although they were not significant, other factors that must be considered are the knowledge of the reproductive cycle and the information received by health personnel or the close environment regarding family planning. In this regard, there are studies that confirm that sexual and reproductive education is a protective factor and a good family environment and effective communication between its members contributes to the emotional stability of the adolescent; on the contrary, if inadequate family

relationships are maintained, the incidence of pregnancy increases (13,16).

The main limitation of our study is that as it is a collection of information based on a secondary base, it presents dependence on previously collected data and the possible lack of control over the quality and completeness of these data.

The findings of this study emphasize the importance of addressing multiple factors to reduce the prevalence of adolescent pregnancy in Peru. Strategies should include interventions that improve access to education and health services, promote contraceptive use, and address socioeconomic inequities affecting adolescent girls. Implementing effective public policies and comprehensive programs that consider these determinants is essential to address this problem and improve the health and well-being of Peruvian adolescent girls.

CONCLUSION

In conclusion, the determining factors for pregnancy in Peruvian adolescents are the high poverty rate, the number of sexual partners, the history of non-use of MAC, and previous adolescent pregnancy.

BIBLIOGRAPHIC REFERENCES

1. Sully EA, Biddlecom A, Daroch J, Riley T, Ashford L L-DN. Adding It Up: Investing in Sexual and Reproductive Health 2019. (Guttmacher, Institute). Nueva York; 2020.
2. Darroch J, Woog V, Bankole A AL. Adding It up: Costs and Benefits of Meeting the Contraceptive Needs of Adolescents. (Guttmacher Institute). Nueva York; 2016.
3. UNFPA_Perú. El Impacto Del Embarazo Adolescente Al Futuro Del Perú. n.d. Available from: <https://peru.unfpa.org/es/news/el-impacto-del-embarazo-adolescente-al-futuro-del-peru> [Last accessed: 7/9/2024].
4. INEI. PERÚ: Nacidos Vivos de Madres Adolescentes, 2019-2020. 2020.
5. Figueroa A, Negrin V, Garcell E. Riesgos y complicaciones asociados al embarazo en la adolescencia. *Rev Ciencias Médicas* 2021;25(5).
6. Cuzcano A. Características de Las Madres Adolescentes Con Parto Pretérmino En El Hospital Sergio Bernales Durante El Periodo Noviembre 2014 a Noviembre Del 2015. Universidad Ricardo Palma: Lima, Peru; 2016.
7. INEI. PERÚ Instituto Nacional de Estadística e Informática. n.d. Available from: <https://proyectos.inei.gob.pe/microdatos/> [Last

- accessed: 7/9/2024].
8. Sanca-Valeriano S, Espinola-Sanchez M, Racchumí-Vela A. Social and demographic factors associated with pregnancy and repeated pregnancy in adolescent women in Peru. *Rev Chil Obstet Ginecol* 2022;87(1):11–18; doi: 10.24875/RECHOG.21000010.
 9. Garcia A. Factores socioeconomicos y culturales asociados al embarazo en adolescentes. *J Sci Res* 2022;7(2):92–106.
 10. Ramírez-aranda JM, Gómez-gómez C, Villarreal- JZ, et al. Factores de protección y riesgo del embarazo en la adolescencia. *Med Univ* 2013;15(59):64–72.
 11. Mohammed S. Analysis of national and subnational prevalence of adolescent pregnancy and changes in the associated sexual behaviours and sociodemographic determinants across three decades in Ghana, 1988-2019. *BMJ Open* 2023;13(3); doi: 10.1136/BMJOPEN-2022-068117.
 12. Rodriguez N, Cala A, Napoles J, et al. Factores de riesgos asociados al embarazo adolescentes. *Rev Inf Cient* 2018;97(5):1028–9933.
 13. Caraguay S, Martínez J, Vivanco D. Factores de riesgo asociados al embarazo en adolescentes Centro de Salud N°1 Y N°3 de Loja. *Enfermería Investig* 2022;7(4):13–20.
 14. Fernandez Rojas M. Factores Asociados Al Embarazo En Adolescentes En El Perú , Análisis Secundario de La Encuesta Demográfica y de Salud Familiar (ENDES) 2020. Universidad Nacional Mayor de San Marcos: Lima, Peru; 2021.
 15. Meade CS, Ickovics JR. Systematic review of sexual risk among pregnant and mothering teens in the USA: pregnancy as an opportunity for integrated prevention of STD and repeat pregnancy. *Soc Sci Med* 2005;60(4):661–678; doi: 10.1016/J.SOCSCIMED.2004.06.015.
 16. Suárez-Cuba M, Rodríguez-Palacios L, Pérez-Matos A, et al. Factores familiares que predisponen el embarazo adolescente en América Latina y El Caribe 2009-2019: revisión sistemática. *Rev Salud Publica* 2019;21(3):234–245.

Contributions:

Jose Montalvan-Santillan: Conceptualization, Research, Methodology, Project Management, Resources, Writing–Original Draft, Writing–Revision and Editing. **Daisy Flores-Cortez:** Conceptualization, Methodology, Supervision, Writing–Original Draft, Writing–Revision and Editing.