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REVIEW ARTICLES

Unplanned teenage pregnancy and adolescent sexual behavior

Gravidez não planeada e comportamento sexual na adolescência

Ana Andrade[1*], Luís Ferreira de Castro[1*], Rosa Zulmira Macedo[1]

ABSTRACT

The teenage years are a pivotal period of physical and psychological change. These formative years play a critical role in shaping an individual's transition to adulthood. Early childbearing or pregnancy, especially if unplanned, can significantly disrupt a young woman's development, adversely affecting her health, education, and future income potential. Pregnant teenagers are often pressured to drop out of school, with implications in their educational opportunities and career prospects. Understanding the long-term consequences of teenage pregnancy is essential to developing effective interventions and addressing its underlying causes. This narrative review examines the incidence, risk factors, impact, and preventive measures associated with teenage pregnancy.

Worldwide, the incidence of pregnancy before the age of 18 is approximately 15%. Teenage pregnancy is closely related to adolescent sexual behavior. While condom use has slightly declined, awareness of the associated risks – such as sexually transmitted infections (STIs) and unplanned pregnancy – remains a major concern. Several interrelated risk factors contribute to this problem, including age, education level, economic status, mental health, and family environment. Moreover, teenage pregnancy is associated with adverse obstetric outcomes, including preterm birth and low birth weight, as well as higher rates of psychiatric disorders and socioeconomic challenges. The implementation of evidence-based prevention strategies, such as family and community involvement, is crucial. In Portugal, laws support sex education, access to contraception, and voluntary termination of pregnancy. Although the birth rate among Portuguese teenagers has declined significantly since the 1970s, it remains a major public health concern. Addressing the social, physical, and mental health risks associated with adolescent pregnancy requires a comprehensive approach that includes sexual education, accessible health services, mental health support, and promotion of contraceptive use among both girls and boys.

Keywords: adolescence; pregnancy; sexual behavior

RESUMO

A adolescência é um período complexo de mudanças físicas e psicológicas na vida dos jovens. Estes anos de formação terão inevitavelmente um impacto no curso da vida adulta. A maternidade precoce e a gravidez na adolescência podem perturbar o desenvolvimento das adolescentes através de um impacto negativo na saúde e no percurso educativo e diminuição dos rendimentos futuros. Muitas adolescentes grávidas são pressionadas a abandonar a escola, limitando as suas perspetivas e oportunidades educativas e profissionais. O reconhecimento das consequências negativas a longo prazo da gravidez e natalidade na adolescência é essencial para abordar o problema. Esta revisão da literatura analisa a incidência, fatores de risco, impacto e medidas de prevenção da gravidez na adolescência.

A incidência global de gravidez antes dos 18 anos de idade é cerca de 15%. A gravidez na adolescência está intimamente associada ao

1. Department of Obstetrics and Gynecology, Centro Materno-Infantil do Norte, Unidade Local de Saúde de Santo António. 4050-651 Porto, Portugal. ana.r.a.andrade@gmail.com; luis.fcastro9@gmail.com; rosazulmira@gmail.com
*. Ana Andrade and Luís Ferreira de Castro contributed equally to the literature review and drafting the article.

comportamento sexual dos adolescentes: o uso do preservativo diminuiu ligeiramente, enquanto a consciencialização sobre os riscos associados, como infeções sexualmente transmissíveis e gravidez não planeada, continua a ser uma preocupação. A idade, educação, estatuto socioeconómico, saúde mental e ambiente familiar são fatores de risco associados a este problema. Para além disso, a gravidez na adolescência está associada a resultados obstétricos adversos, como parto prematuro e baixo peso ao nascimento, e taxas mais elevadas de doenças psiquiátricas e problemas socioeconómicos. São essenciais estratégias de prevenção baseadas em evidência que incluam o envolvimento da família e da comunidade. Em Portugal, as leis promovem a educação sexual, o acesso à contraceção e a interrupção voluntária da gravidez, contribuindo para a mitigação deste problema. Embora a taxa de natalidade das adolescentes portuguesas tenha diminuído desde os anos 70, continua a ser um problema de saúde importante. A redução dos riscos sociais, físicos e de saúde mental associados à gravidez na adolescência requer uma abordagem abrangente que inclua educação sexual, cuidados de saúde acessíveis, apoio à saúde mental e fomento do aumento do uso de contracetivos entre raparigas e rapazes.

Palavras-chave: adolescência; comportamento sexual; gravidez

INTRODUCTION

The World Health Organization defines adolescence as the biological phase between childhood and adulthood, from 10 to 19 years of age. It is a transitional period of development characterized by rapid physical, cognitive, and psychosocial growth. In addition, the initiation of sexual activity often occurs during this stage of life, which can lead to unintended consequences such as unplanned pregnancy or sexually transmitted infections (STIs).[1]

Teenage pregnancy is associated with several adverse outcomes for both the pregnant adolescent and her infant. It also has a negative impact on the adolescent's development into adulthood, affecting physical and mental health as well as educational attainment.[2] Pregnancy prevention programs, including comprehensive sex education and promotion of consistent and accurate use of effective contraceptive methods, must be accessible to all adolescents, particularly those with predisposing factors for teenage pregnancy.[3]

Recognizing the negative and long-term consequences of teenage pregnancy and birth is critical to effectively addressing this issue. Although the teenage birth rate in Portugal has declined since the 1970s, it remains an important health problem that requires a consistent and multidisciplinary approach.

OBJECTIVES

The aim of this study was to analyze the incidence of teenage pregnancy in Portugal and globally, addressing risk factors, impact, and preventive measures.

DEVELOPMENT

According to the United Nations International Children's Emergency Fund (UNICEF), an estimated 15% of young women worldwide gave birth before the age of 18 in the period 2015–2020.[4] The incidence of teenage pregnancy varies widely by country, regions within countries, urban versus rural setting, and socioeconomic factors such as women's income level and educational attainment. The World Population Prospects from 2021, published by the United Nations Department of Economic and Social Affairs, highlights a global decline in adolescent birth rates since 2000-2005, with rates dropping by nearly 20% – from 53 to 44 births per 1,000 girls aged 15-19 years worldwide. Nonetheless, the highest incidence of pregnancy before the age of 18 was reported in Western and Central Africa, where 27.3% of women aged 20-24 years gave birth before age 18. Conversely, regions such as Western Europe/Eastern Europe and Central Asia/North America reported some of the lowest adolescent birth rates, with 8, 17, and 21 births per 1,000 girls aged 15-19 years, respectively.[4]

In terms of reducing adolescent pregnancy, South Asia, North America, and Western Europe were able to reduce their rates by more than 60% between 2000 and 2005. In contrast, the reduction rate in sub-Saharan Africa over the same period was about 15%.[4] More progress is needed in these regions to ensure that the burden of early childbearing is reduced.

In Portugal, data from the last 60 years show a significant decline in the fertility index among girls aged 15-19. In 1976, the fertility index peaked at 51.1 births per 1,000 young girls, the highest recorded in the last six decades. Following global trends, Portugal reached its lowest recorded fertility index in 2020, with a rate of 6.7‰.[5] This decline in pregnancies among adolescent girls is consistent with global trends observed over the last 30 years, which show a significant decrease in fertility indices and birth rates in the general population.[6] The downward trend may be partially attributed to improvements in education levels, older age at marriage, increased investment in and dissemination of sexual education, greater availability and awareness of contraceptive methods, improved knowledge of the

risks associated with sexually transmitted diseases, and easier access to abortion services.[7]

Teenage pregnancy is closely related to adolescent sexual behavior. In a study by Gaspar de Matos on the health of Portuguese adolescents with 6,997 adolescents with a median of 14 years, most adolescents surveyed had never had sexual intercourse. [8,9] The author found a decrease from 23.7% who had already started their sexual life in 2002 to 11.5% in 2018. The majority (63.2%) of adolescents who had already started their sexual life did so after the age of 14 years or more.[9] Of particular note is the fact that the percentage of adolescents who reported using a condom during their last sexual act decreased from 70.4% in 2014 to 66% in 2018, which was accompanied by a slight increase in the use of oral contraceptive methods (from 31% to 33.9%).[9,10] Girls were more likely than boys to report using a condom at their first sexual intercourse (79.4% vs. 65.9%). Older adolescents were also more likely to report condom use during their first sexual experience.[10] Alarmingly, 17.1% of adolescents who were already sexually active reported a link between sexual intercourse and alcohol or drug use.[9] Notably, the study also concluded that while the much feared "early" sexual intercourse during adolescence has stabilized, the associated risks – such as HIV infection, other STIs, and unplanned pregnancy – have increased.[9]

In 2010, a similar study concluded that while there were some positive trends in the sexual behavior of Portuguese adolescents, significant gaps remained in their knowledge of sexual and reproductive health. The study highlighted personal ineffectiveness in areas such as communicating and negotiating condom use, as well as embarrassment in obtaining and carrying condoms. In addition, respondents displayed increasingly liberal attitudes toward sexual activity and more frequently asserted their right to engage in sexual relations.[11]

Several factors appear to be associated with an increased risk of teenage pregnancy, and it is not uncommon to observe an interrelationship among them.[12] It has been shown that older adolescents are more likely to become pregnant than younger counterparts. However, younger teenagers tend to have more unintended pregnancies.[13] Education plays a crucial role in preventing teenage pregnancy. Low levels of education, extended periods of school absence, and poor educational results are positively correlated with adolescent pregnancy.[14] In addition, the relationship between economic factors and adolescent pregnancy cannot be ignored, as poor economic status is associated with a higher risk of teenage pregnancy. As noted above, most high-income countries have low rates of adolescent pregnancy.[2,15] Adolescents with mental health disorders, including depression and low self-esteem, have an increased risk of pregnancy compared with their healthy peers.[14,15] In some countries, the lack of accessible health centers or hospitals deprives adolescents of information about pregnancy risks and contraceptive methods, which may contribute to a higher likelihood of pregnancy.[12] Several reports have linked behavioral factors such as risky sexual behavior, use of alcohol, tobacco, or drugs, and sexual or physical abuse to teenage pregnancy.[16,17] The family environment plays a key role in the development of children and adolescents, and its association with teenage pregnancy has been studied extensively. Some authors suggest that adolescents who live without their parents or with a family member who experienced pregnancy before adulthood, such as their mother or sister, may be more susceptible to becoming pregnant during adolescence.[16-18]

Adolescent pregnancy is also often associated with adverse social, physical, and psychological outcomes for both the pregnant adolescent and her children. Worldwide, complications of pregnancy and childbirth are the leading cause of mortality among adolescent women.[2] Prevention of unintended pregnancy, as well as counseling and monitoring by an experienced multidisciplinary team, appears to have a positive impact on reducing the comorbidities associated with this problem.[19] The majority of adolescent pregnancies are unplanned, and once diagnosed, adolescents should be informed about the potential risks and consequences of pregnancy at this stage of life and made aware of the options available, including legal termination of pregnancy.[20]

The risk of adverse maternal and fetal outcomes, including preterm delivery, preeclampsia, anemia, intrauterine growth restriction, preterm premature rupture of membranes, low birth weight, and perinatal death appears to be increased in teenage pregnancy.[2,21-26] Sociodemographic factors such as low economic status, poor education, unmarried status, or biological immaturity have been suggested to contribute to these adverse outcomes.[2,22] However, the association between teenage pregnancy and adverse outcomes has yielded inconsistent results across studies, possibly due to varying definitions of adolescence, small sample sizes, and inadequate control for confounding variables.

In a retrospective study comparing maternal and fetal outcomes between pregnant adolescents and pregnant adults (20-34 years), Kirbas *et al.* reported that the adolescent group had a significantly higher risk of preterm delivery and preeclampsia. In addition, the neonates of adolescent mothers were found to have an increased likelihood of low birth weight and low Apgar scores.[25] A multicenter study in 29 countries involving 124,446 pregnant women aged ≤24 years evaluated the adverse effects of pregnancy in adolescents and young adults. [2] The study found a statistically significant increase in the risk of preterm delivery, eclampsia, puerperal endometritis, and systemic infections in pregnant adolescents. Poor perinatal outcomes, such as low birth weight and severe neonatal morbidity, were observed in the children of pregnant adolescents. In addition, a significantly higher proportion of severe anemia (hemoglobin <7 g/dL) was observed in the adolescent group. Notably, inadequate prenatal care among some participants may account for some of these findings, as previous research has shown that appropriate obstetric monitoring and maternal health behaviors reduce the risk of pregnancy complications among adolescents and their offspring. It is noteworthy that with optimal medical care, maternal mortality in adolescents is not significantly increased compared to pregnant

women aged 20-24 years.[19,27] Marvin-Dowle *et al*. also examined the relationship between maternal age and pregnancy outcomes, with a focus on adolescent pregnancies, and found that children of pregnant adolescents had an increased risk of prematurity and low birth weight. However, in this study, maternal outcomes in pregnant adolescents were favorable, with a lower risk of gestational diabetes, instrumental delivery, or cesarean section compared with adult mothers.[26]

The current literature review shows that complications associated with adolescent pregnancy are predominantly linked to the newborn, with preterm birth and low birth weight being major concerns. Factors such as nutritional deficiencies and smoking, which are more prevalent in this adolescent population, may significantly contribute to adverse outcomes.[28] Furthermore, gynecological immaturity, characterized by short cervical length, reduced uterine volume, and increased susceptibility to subclinical infections, may also contribute to complications. Another study showed that adequate obstetric surveillance significantly reduced the risk of adverse neonatal outcomes. Specifically, the likelihood of low birth weight and prematurity decreased when pregnant adolescents attended six or more prenatal visits during pregnancy.[29,30] However, pregnant adolescents tend to initiate obstetric surveillance later, exhibit poor prenatal health behaviors, and attend fewer medical appointments, which may explain the association between adolescent pregnancy and adverse birth outcomes.[31,32]

Several publications have investigated the psychosocial impact of teenage pregnancy. A systematic review concluded that the prevalence of psychiatric pathology in postpartum adolescents was approximately 32.5%, with a predominance of anxiety disorders. Moreover, rates of postpartum depression were higher in adolescents than in young adults. Given that depressive symptoms are an independent risk factor for subsequent adolescent pregnancy, prompt management and treatment of depression is critical.[33] Compared to their peers, adolescent mothers are at greater risk for lower academic achievement, lower income, poor family support, and relationship conflict. As a result, children of adolescent mothers are more likely to be born into poverty, suffer from health and cognitive disorders, have poor educational outcomes, and become adolescent parents themselves.[15,34] Living in the same environment as a sibling who gave birth during adolescence increases the likelihood of teen pregnancy.[16,18] Wall-Wieler *et al.* reported that the relationship between an older sister's teenage childbearing and a younger sister's adolescent pregnancy is stronger than the relationship between a mother's teenage childbearing and a younger daughter's adolescent pregnancy.[35] Family and social support may be the cornerstone to reducing the adverse socioeconomic outcomes associated with adolescent pregnancy and parenting.[36]

As discussed above, teenage pregnancy is a multifactorial condition that requires an evidence-based approach. It should be addressed not only by intervening with young people at risk, but also by recognizing that families and communities play a key role in prevention. There are two main types of prevention programs, depending on their primary goal. Primary prevention programs aim to reduce the incidence of teenage pregnancy, while secondary prevention programs aim to mitigate the effects that teenage pregnancy can have on the development of the teenager and the child once pregnancy has occurred.[37]

The United States (US), in particular, has focused on abstinence-only programs to address the problem of teenage pregnancy between 1996 and 2009. In 2005, a systematic review was conducted to compare abstinence-only secondary school-based pregnancy prevention programs with abstinence-plus programs in terms of their effects on teenage sexual behavior, contraceptive knowledge, contraceptive use, and pregnancy rates. This review, which included sixteen randomized controlled trials with a total of 29,599 participants, concluded that although the variability and small number of studies precluded a definitive conclusion about which type of program is most effective, the majority of abstinence-plus programs increased rates of contraceptive use, with one study showing effects that lasted at least 30 months.[3]

Since 2009, there has been a paradigm shift in U.S. teen pregnancy prevention policy toward an evidence-based approach, including several programs directed at educating teenagers about both abstinence and contraception to prevent teen pregnancy. In addition, several teen pregnancy prevention programs aim to prevent second or subsequent teen births. The most successful of these programs recognizes that preventing second births often requires a different approach than preventing first births.[13] This policy shift came after a growing consensus that success in teen pregnancy prevention does not necessarily have to be an "either/or" proposition that pits "abstinence-only education" programs (sometimes referred to as sexual risk avoidance programs) against "comprehensive sex education" programs (sometimes referred to as sexual risk reduction programs).[38]

One of the key factors in preventing teenage pregnancy is addressing risky sexual behaviors, which can be mitigated through age-appropriate sex education tailored to young people's developmental stages. In Portugal, Decree-Law 259/2000 reinforces the right to reproductive health and establishes conditions for the promotion of sex education and access to health services related to sexuality and family planning for young people. This law emphasizes the important role of schools in providing sexual education and recognizes school teachers as key promoters of sexual health and education. It also mandates the availability of health appointments in primary healthcare facilities, with free distribution of contraceptives to teenagers.[39] Since 2007, following the legalization of voluntary termination of pregnancy (VTP) within the first 10 weeks of gestation, adolescents have been able to choose this option, with the need for parental consent when requested by pregnant adolescents under 16 years of age. According to the 2018 report on VTP in Portugal, 9.58% of all voluntary abortions were performed on teenagers, distributed as follows: 0.3% among adolescents under 15 years of age and 9.28%

among adolescents between 15 and 19 years of age. In contrast, teenagers accounted for 2.52% of all live births in the same year. According to the latest report of the Division of Child and Adolescent Sexual Reproductive Health from 2023, the risk of VTP in Portugal is 50% for girls under 15 years of age and 40.3% for those aged 15-19 years.[40]

Teenage pregnancy is usually reported from the perspective of young women. However, it is important to remember that in a significant proportion of cases, the male progenitor is also a teenager and, if he acknowledges paternity, may share some of the psychological, social, and economic burden.[41,42] Prevention efforts should recognize the role that young men's views and attitudes play in preventing pregnancy. Healthcare providers can help mitigate the problem of teenage pregnancy, especially by routinely discussing contraception and STI prevention with young men.

All contraceptive methods are considered suitable for healthy adolescents. However, the use of long-acting reversible contraceptives (LARCs) should be particularly encouraged in this age group, as the CHOICE study demonstrated that LARCs not only significantly reduce the incidence of unplanned teenage pregnancies, but also have a high continuation rate at 12 months – 82% in nulliparous women and 86% in parous women under the age of 20. These rates are higher than those for combined hormonal contraceptives and comparable to those observed in adult women.[43-45] Otherwise, emergency contraception (EC) methods allow for the prevention of pregnancy after unprotected or inadequately protected sexual intercourse (UPSI). All women are eligible to use EC, including adolescents.[43] In Portugal, no medical prescription is required to purchase oral EC at pharmacies. Oral EC options include ulipristal acetate, a selective progesterone receptor modulator taken as a single 30 mg dose that remains effective for up to 120 hours after UPSI, and levonorgestrel, a progestin-based option taken as a single 1.5 mg dose that remains effective for up to 72 hours after UPSI. In addition, EC includes the option of inserting a copper intrauterine device (IUD), which must be placed by a trained healthcare provider. The copper IUD not only serves as an EC, but also provides effective contraception for up to 10 years. It is important to note that all EC methods are more effective the sooner they are used after UPSI.[43] Following the use of EC, healthcare providers should have a discussion with the teenager about available contraceptive methods and their efficacy and correct use.

CONCLUSIONS

Adolescent pregnancy is often associated with adverse social, physical, and psychological outcomes for both the pregnant adolescent and her children. Although the number of live births from adolescent mothers has decreased in Portugal in recent decades, it is important to recognize that pregnancies that end in voluntary abortion also have a significant impact on the lives of adolescent girls, although they are often not included in statistics. Promoting good sexual education, maintaining a stable economic status, ensuring easy access to health centers and specialized gynecological and obstetric care, avoiding sexual risk behaviors, and refraining from alcohol, tobacco, and drug use are crucial protective measures against teenage pregnancy. Mental health care is also of paramount importance and should be improved and promoted. In addition, condom use needs to be increased in this age group and sexual attitudes should be discussed in sexuality education programs, with a focus on effective communication and negotiation of sexual relationships using condoms. Adolescents should be informed about other contraceptive methods available and, where clinically appropriate, encouraged to use long-acting reversible contraceptives. Emphasis should also be placed on sexual education for young men, as they may also suffer the long-term consequences of unintended pregnancy and the impact on this subgroup has been much less studied.

Ultimately, adolescent pregnancy is a public health issue, and efforts should be made to engage all stakeholders, including adolescent boys and girls, their families, and the communities to which they belong.

AUTHORSHIP

Ana Andrade – Literature Review; Writing – original draft
Luís Ferreira de Castro - Literature Review; Writing – original draft
Rosa Zulmira Macedo - Literature Review; Interpretation; Critical review of the article

REFERENCES

1. World Health Organization. Adolescent pregnancy. January, 2020. (Assessed May, 8 2023). Available at: https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy.
2. Ganchimeg T, Ota E, Morisaki N, Laopaiboon M, Lumbiganon P, Zhang J, *et al*. Pregnancy and childbirth outcomes among adolescent mothers: a World Health Organization multicountry study. BJOG : an international journal of obstetrics and gynaecology 2014; 121 Suppl 1, 40–48. https://doi.org/10.1111/1471-0528.12630.
3. Bennett SE, Assefi NP. School-based teenage pregnancy prevention programs: a systematic review of randomized controlled trials. The Journal of adolescent health: official publication of the Society for Adolescent Medicine 2005; 36(1), 72–81. https://doi.org/10.1016/j.jadohealth.2003.11.097.
4. United Nations Children's Fund (UNICEF). Early childbearing. May, 2021. (Assessed May, 8 2023). Available at: https://data.unicef.org/topic/child-health/adolescent-health/.
5. Pordata. Taxa de fecundidade por grupo etário. June, 15, 2021. (Assessed June, 1 2023) Available at: https://www.pordata.pt/

pt/estatisticas/populacao/nascimentos-e-fecundidade/taxa-de-fecundidade-por-grupo-etario-0.

6. Bearak J, Popinchalk A, Ganatra B, Moller AB, Tunçalp Ö, Beavin C, *et al*. Unintended pregnancy and abortion by income, region, and the legal status of abortion: estimates from a comprehensive model for 1990-2019. The Lancet. Global health 2020; 8(9), e1152–e1161. https://doi.org/10.1016/S2214-109X(20)30315-6.
7. Canavarro MC, Pedrosa A. Gravidez e parentalidade na adolescência: perspetivas teóricas. Saúde Reprodutiva - Sexualidade e Sociedade 2012, 2, 34–55.
8. Matos MG, Equipa do Projecto Aventura Social e Saúde. A saúde dos adolescentes portugueses (Quatro anos depois). Lisboa: Edições Faculdade de Motricidade Humana/Universidade Técnica de Lisboa; PEPT & Instituto de Higiene e Medicina Tropical/Universidade Nova de Lisboa 2003.
9. Matos MG, Equipa Aventura Social. A Saúde dos Adolescentes após a Recessão – Dados nacionais 2018. Lisboa: Projeto Aventura Social & Faculdade de Motricidade Humana/ Universidade de Lisboa 2018.
10. Matos MG, Simões C, Camacho I, Reis M, Equipa Aventura Social. A Saúde dos Adolescentes em Tempo de Recessão – Dados nacionais do estudo HBSC de 2014 – Relatório do estudo HBSC 2014. Lisboa: Centro de Malária e Outras Doenças Tropicais/ Instituto de Higiene e Medicina Tropical/Universidade Nova de Lisboa & Faculdade de Motricidade Humana/Universidade de Lisboa 2015.
11. Matos MG, Simões C, Tomé G, Camacho I, Ferreira M, Ramiro L, *et al*. Aventura Social & Saúde, A Saúde dos adolescentes portugueses – Relatório Final do Estudo HBSC 2010. Lisboa: Centro Malária e Outras Doenças Tropicais/IHMT/UNL; FMH/ Universidade Técnica de Lisboa 2012.
12. Chung HW, Kim EM, Lee, J-E. Comprehensive understanding of risk and protective factors related to adolescent pregnancy in low- and middle-income countries: A systematic review. Journal of Adolescence 2018; 69: 180–188. https://doi.org/10.1016/j.adolescence.2018.10.007.
13. Amoran, OE. A comparative analysis of predictors of teenage pregnancy and its prevention in a rural town in Western Nigeria. International Journal for Equity in Health 2012; 11, 37. https://doi.org/10.1186/1475-9276-11-37.
14. Maravilla JC, Betts KS, Couto E Cruz C, Alati, R. Factors influencing repeated teenage pregnancy: A review and meta-analysis. American Journal of Obstetrics and Gynecology 2017; 217(5): 527-545.e31. https://doi.org/10.1016/j.ajog.2017.04.021.
15. Cook SMC, Cameron ST. Social issues of teenage pregnancy. Obstetrics, Gynaecology and Reproductive Medicine 2017, 27(11): 327–332. https://doi.org/10.1016/j.ogrm.2017.08.005.
16. Faler CS, Câmara SG, Aerts DRG de C, Alves GG, Béria JU. Family psychosocial characteristics, tobacco, alcohol, and other drug use, and teenage pregnancy. Cadernos De Saúde Publica 2013; 29(8): 1654–1663. https://doi.org/10.1590/0102-311x00107812.
17. Fasula AM, Chia V, Murray CC, Brittain A, Tevendale H, Koumans EH. Socioecological risk factors associated with teen pregnancy or birth for young men: A scoping review. Journal of Adolescence 2019; 74: 130–145. https://doi.org/10.1016/j.adolescence.2019.06.005.
18. East PL, Slonim A, Horn EJ, Trinh C, Reyes BT. How an adolescent's childbearing affects siblings' pregnancy risk: A qualitative study of Mexican American youths. Perspectives on Sexual and Reproductive Health 2009; 41(4): 210–217. https://doi.org/10.1363/4121009.
19. Raatikainen K, Heiskanen N, Verkasalo PK, Heinonen S. Good outcome of teenage pregnancies in high-quality maternity care. European Journal of Public Health 2006; 16(2): 157–161. https://doi.org/10.1093/eurpub/cki158.
20. Diedrich JT, Klein DA, Peipert JF. Long-acting reversible contraception in adolescents: A systematic review and meta-analysis. American Journal of Obstetrics and Gynecology 2017; 216(4): 364.e1-364.e12. https://doi.org/10.1016/j.ajog.2016.12.024.
21. Brosens I, Muter J, Gargett CE, Puttemans P, Benagiano G, Brosens JJ. The impact of uterine immaturity on obstetrical syndromes during adolescence. American Journal of Obstetrics and Gynecology 2017, 217(5): 546–555. https://doi.org/10.1016/j.ajog.2017.05.059.
22. Chen X-K., Wen SW, Fleming N, Demissie K, Rhoads GG, Walker M. Teenage pregnancy and adverse birth outcomes: A large population based retrospective cohort study. International Journal of Epidemiology 2007; 36(2): 368–373. https://doi.org/10.1093/ije/dyl284.
23. Malabarey OT, Balayla J, Klam SL, Shrim A, Abenhaim HA. Pregnancies in young adolescent mothers: A population-based study on 37 million births. Journal of Pediatric and Adolescent Gynecology 2012; 25(2): 98–102. https://doi.org/10.1016/j.jpag.2011.09.004.
24. Kawakita T, Wilson K, Grantz KL, Landy HJ, Huang C-C, Gomez-Lobo V. Adverse Maternal and Neonatal Outcomes in Adolescent Pregnancy. Journal of Pediatric and Adolescent Gynecology 2016; 29(2): 130–136. https://doi.org/10.1016/j.jpag.2015.08.006.
25. Kirbas A, Gulerman HC, Daglar K. Pregnancy in Adolescence: Is It an Obstetrical Risk? Journal of Pediatric and Adolescent Gynecology 2016; 29(4): 367–371. https://doi.org/10.1016/j.jpag.2015.12.010.
26. Marvin-Dowle K., Kilner K., Burley VJ, Soltani H. Impact of adolescent age on maternal and neonatal outcomes in the Born in Bradford cohort. BMJ Open 2018; 8(3): e016258. https://doi.org/10.1136/bmjopen-2017-016258.
27. Loto OM, Ezechi OC, Kalu BKE, Loto A, Ezechi L, Ogunniyi SO. Poor obstetric performance of teenagers: Is it age- or quality

of care-related? Journal of Obstetrics and Gynaecology: The Journal of the Institute of Obstetrics and Gynaecology 2004; 24(4): 395–398. https://doi.org/10.1080/01443610410001685529.

28. Haldre K, Rahu K, Karro H, Rahu M. Is a poor pregnancy outcome related to young maternal age? A study of teenagers in Estonia during the period of major socio-economic changes (from 1992 to 2002). European Journal of Obstetrics, Gynecology, and Reproductive Biology 2007; 131(1): 45–51. https://doi.org/10.1016/j.ejogrb.2006.05.002.
29. Stevens-Simon C, Beach RK, McGregor JA. Does incomplete growth and development predispose teenagers to preterm delivery? A template for research. Journal of Perinatology: Official Journal of the California Perinatal Association 2002; 22(4): 315–323. https://doi.org/10.1038/sj.jp.7210694.
30. Santos MMA de S, Baião MR, de Barros DC, Pinto A de A, Pedrosa PLM, Saunders C. Pre-pregnancy nutritional status, maternal weight gain, prenatal care, and adverse perinatal outcomes among adolescent mothers. Brazilian Journal of Epidemiology 2012; 15(1): 143–154. https://doi.org/10.1590/s1415-790x2012000100013.
31. Kingston D, Heaman M, Fell D, Chalmers B, Maternity Experiences Study Group of the Canadian Perinatal Surveillance System, Public Health Agency of Canada. Comparison of adolescent, young adult, and adult women's maternity experiences and practices. Pediatrics 2012; 129(5): e1228-1237. https://doi.org/10.1542/peds.2011-1447.
32. Santos GHND, Martins M da G, Sousa M da S, Batalha S de JC. Impact of maternal age on perinatal outcomes and mode of delivery. Revista Brasileira De Ginecologia E Obstetrícia: Revista Da Federação Brasileira Das Sociedades De Ginecologia E Obstetrícia 2009; 31(7): 326–334.
33. Barnet B, Liu J, Devoe M. Double jeopardy: Depressive symptoms and rapid subsequent pregnancy in adolescent mothers. Archives of Pediatrics & Adolescent Medicine 2008; 162(3): 246–252. https://doi.org/10.1001/archpediatrics.2007.60.
34. Moffitt TE, E-Risk Study Team. Teen-aged mothers in contemporary Britain. Journal of Child Psychology and Psychiatry, and Allied Disciplines 2002; 43(6): 727–742. https://doi.org/10.1111/1469-7610.00082.
35. Wall-Wieler E, Roos LL, Nickel NC Teenage pregnancy: The impact of maternal adolescent childbearing and older sister's teenage pregnancy on a younger sister. BMC Pregnancy and Childbirth 2016; 16(1): 120. https://doi.org/10.1186/s12884-016-0911-2.
36. Hornberger LL, COMMITTEE ON ADOLESCENCE. Diagnosis of Pregnancy and Providing Options Counseling for the Adolescent Patient. Pediatrics 2017; 140(3): e20172273. https://doi.org/10.1542/peds.2017-2273.
37. Figueiredo B. Maternidade na adolescência: Do risco à prevenção. Revista Portuguesa de Psicossomática 2001 (Assessed June, 1 2023). Available at: https://www.redalyc.org/articulo.oa?id=28730211.
38. Solomon-Fears C. Teenage Pregnancy Prevention: Statistics and Programs. 2015. (Assessed June, 15 2023). Available at: https://www.everycrsreport.com/files/20150226_RS20301_f18f59d89e39e7e9b41d90e82c49a3b39ca8c12c.pdf.
39. Decreto Lei nº259/2000 de 17 de Outubro do Ministério da Educação, Diário da República n.º 240/2000, Série I-A de 2000-10-17, páginas 5784 – 5786, 2000. (Assessed June, 15 2023). Available at: https://data.dre.pt/eli/dec-lei/259/2000/10/17/p/dre/pt/html.
40. Divisão de Saúde Sexual Reprodutiva Infantil e Juvenil. Relatório dos Registos das Interrupções da Gravidez |2018. 2018. (Assessed June, 15 2023). Available at: https://www.spdc.pt/images/RelatrioIVG2018_Imprensa.pdf.
41. Vargas G, Borus J, Charlton BM. Teenage pregnancy prevention: the role of young men. Current opinion in pediatrics 2017; *29*(4), 393–398. https://doi.org/10.1097/MOP.0000000000000510
42. Connor S, Edvardsson K, Spelten E. Male adolescents' role in pregnancy prevention and unintended pregnancy in rural Victoria: health care Professional's and educators' perspectives. BMC pregnancy and childbirth 2018; *18*(1), 245. https://doi.org/10.1186/s12884-018-1886-y.
43. Sociedade Portuguesa da Contraceção, Sociedade Portuguesa de Ginecologia, Sociedade Portuguesa de Medicina da Reprodução. Consenso sobre Contraceção 2020. 2020 (Assessed June, 15 2023). Available at: https://www.spdc.pt/images/CONSENSOS_FINAL.pdf.
44. American College of Obstetricians and Gynecologists' Committee on Gynecologic Practice. Long-acting reversible contraception: implants and intrauterine devices. Obstetrics & Gynecology 2011; 118, 184–96. (Assessed June 15, 2023). Available at: https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2017/11/long-acting-reversible-contraception-implants-and-intrauterine-devices.
45. Peipert JF, Zhao Q, Allsworth JE, Petrosky E, Madden T, Eisenberg D, *et al*. Continuation and satisfaction of reversible contraception. Obstetrics and gynecology 2011; 117(5), 1105–1113. https://doi: 10.1097/AOG.0b013e31821188ad.

CORRESPONDENCE TO

Luís Ferreira de Castro
Department of Obstetrics and Gynecology
Centro Materno-Infantil do Norte
Unidade Local de Saúde de Santo António
Largo da Maternidade de Júlio Dinis 45
4050-651 Porto
Email: luis.fcastro9@gmail.com

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