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REVISIONES

Risk factors related to premature labor in pregnant adolescents: an integrative literature review

Fatores de risco relacionados ao Trabalho de Parto Prematuro em adolescentes grávidas: revisão integrativa da literatura

Factores de riesgo relacionados con el Trabajo de Parto Prematuro en adolescentes embarazadas: revisión integradora de la literatura

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Palabras clave: Trabajo de Parto Prematuro; Embarazo en Adolescencia; Prematuro

ABSTRACT

Introduction: Premature labor is one of the main complications in pregnancy and an important cause of neonatal morbidity and mortality. It is difficult to diagnose and there may be a variety of causes. The literature indicates that teenage pregnancy is a risk factor and may be considered on its own or in combination with others. **Objective:** Study the evidence in the literature on the subject: premature labor, relationship with teenage pregnancy and risk factors.

Material and method: Integrative literature review based on the databases LILACS; MEDLINE, SciELO and PubMed. The search was performed in August 2015 with the following inclusion criteria: articles published in Portuguese, English and Spanish, from 2009 to 2014, which meet the review objective. Only studies with primary data were used and review studies were excluded. The search yielded 511 articles, of which the following were excluded: 339 studies because they were published outside the stipulated time period; 155 because they did not comply with the objectives; and 6 after they were fully read. The final sample consisted of 11 articles.

Results: Analysis of the selected publications resulted in the identification of four thematic categories: access to and frequency of prenatal care; birth control and family planning education for adolescents; social, demographic and economic aspects vs. biological immaturity and social network support.

Conclusion: The present study found that there is a relationship between teenage pregnancy and premature labor, although multiple risk factors are involved. Therefore, it is suggested that more studies be carried out on this topic.

RESUMEN

Introducción: El parto prematuro (TPP) es una de las principales complicaciones del embarazo y causa importante de morbilidad y mortalidad neonatal. El diagnóstico es complejo y las causas pueden ser varias. La literatura sugiere que el embarazo adolescente es un factor de riesgo y puede considerarse de manera aislada o en asociación con otros.

Objetivo: Analizar la evidencia disponible en la literatura sobre TPP relacionado con factores de riesgo de embarazo y adolescentes.

Material y Método: Revisión Integradora con consulta en bases de datos: LILACS; MEDLINE, SciELO y PUBMED. Búsqueda en agosto de 2015, con los criterios de inclusión: artículos publicados en Portugués, Inglés y Español, de 2009 a 2014 y estudios con datos primarios. Encontrados 511 artículos de los cuales fueron excluidos: 339 estudios por haber sido publicados fuera del periodo; 155 por no cumplir con los objetivos y 6, después de leer el texto en su totalidad. De esta forma, la muestra final estuvo formada por 11 artículos.

Resultados: El análisis de las publicaciones seleccionadas permitió la identificación de cuatro temas: el acceso y la asistencia a los servicios de atención prenatal; educación para la salud sobre la anticoncepción para adolescentes; aspectos socio-demográficos y económicos frente a la inmadurez biológica y el apoyo de la red social.

Conclusión: A través del estudio, podemos identificar que existe una relación entre el embarazo adolescente y TPP, pero hay varios factores de riesgo implicados en esta ocurrencia. Por lo tanto, sugerimos que se deben hacer más estudios sobre el tema.

RESUMO

Introdução: O trabalho de parto prematuro (TPP) é uma das principais complicações gestacionais e importante causa de morbimortalidade neonatal. Seu diagnóstico é complexo e as causas podem ser diversas. A literatura aponta que a gravidez na adolescência é fator de risco, podendo ser considerada isoladamente ou associado a outros.

Objetivo: Analisar evidências disponíveis na literatura acerca da temática: trabalho de parto prematuro, relação com gestação na adolescência e fatores de risco.

Material e método: Revisão integrativa a partir de consulta nas bases de dados: LILACS; MEDLINE, SciELO e PUBMED. Busca realizada em agosto de 2015 com os critérios de inclusão: artigos publicados em português, inglês e espanhol, entre 2009 a 2014 de forma a atender o objetivo da revisão. Foram utilizados apenas estudos com dados primários e estudos de revisão foram excluídos. Encontrados 511 artigos, dos quais foram excluídos: 339 estudos por terem sido publicados fora do período; 155 por não atenderem aos objetivos e 6, após a leitura do texto na íntegra. Desta forma, a amostra final constituiu-se da análise de 11 artigos.

Resultados: A análise das publicações selecionadas permitiu a identificação de quatro categorias temáticas: acesso e frequência aos serviços de pré-natal; educação em saúde em anticoncepção / planejamento familiar para adolescentes; aspectos sócio-demográficos-econômicos versus imaturidade biológica e apoio da rede social.

Conclusão: Através deste estudo, podemos identificar que existe relação entre a gestação na adolescência e TPP, porém são múltiplos os fatores de risco envolvidos nesta ocorrência. Assim, sugerimos que sejam realizados mais estudos sobre a temática

INTRODUCTION

Premature labor is one of the main complications in pregnancy and an important cause of neonatal morbidity and mortality. It is characterized by the spontaneous onset of labor before 37 full weeks of gestation[1-2] and evidenced by persistent uterine contractions, cervical effacement greater than or equal to 80% and cervical dilation greater than or equal to one centimeter[3-4]. However, diagnosis is often complex due to many related factors[3-4].

One risk factor of premature labor identified in the literature is teenage pregnancy, although there are also controversial results[4-6]. It is known that certain aspects related to lifestyle and health care, as well as others related to social, demographic and health profiles, can influence these findings, although the evidence is scant regarding which of these aspects related to teenage pregnancies may lead to premature labor. This raises questions about the lack of scientific information in this area.

According to the Brazilian Institute of Geography and Statistics (IBGE), in 2006, 21.5% of pregnancies reported in Brazil occurred in adolescents[7], that is, individuals from 12 to 18 years old[5]. Examining the causes of infant deaths shows that among 38,966 infant deaths (under one year of age) that occurred in 2013, 20,712 were the result of secondary complications arising from preterm birth (53%) and, of these, 23% involved cases of teenage pregnancy[8]. Considering sensitive and preventable conditions in basic care, it is important to explore this topic, since it raises challenges to be overcome by the Brazilian public health system.

The present study sought to analyze the scientific evidence found in the literature on the risk factors related to premature labor in pregnant adolescents.

MATERIAL AND METHOD

An integrative literature review was used for grouping the data and summarizing the knowledge on the proposed theme, in order to answer the following guiding question: What is the scientific evidence on risk factors related to premature labor in teenage pregnancies?

The selection of articles in the databases was based on the keywords: "preterm infant," "teenage pregnancy" and "premature labor." The search for articles used the following databases: LILACS; MEDLINE, SciELO and PubMed, which were consulted in August 2015. The inclusion criteria for the review were: studies with primary data and articles published in Portuguese, English and Spanish from 2009 to 2014, excluding dissertations, theses, editorial notes and review studies.

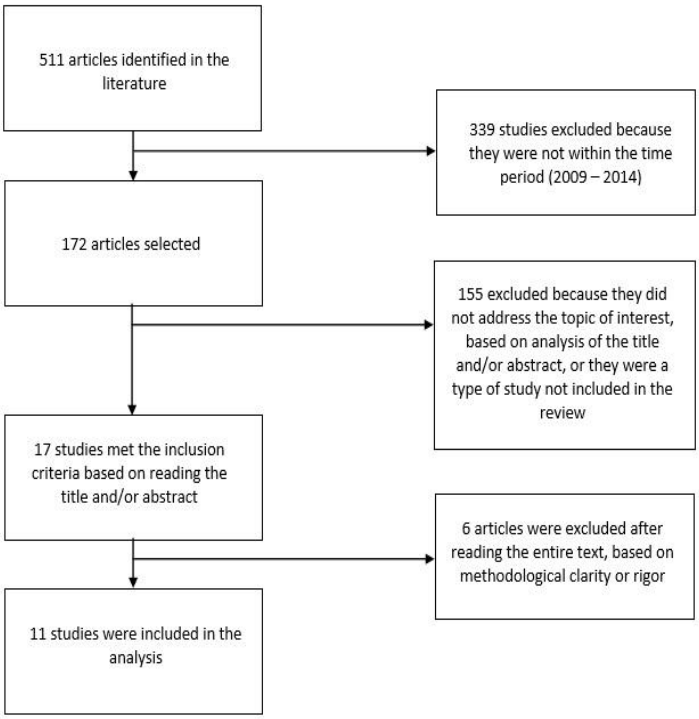
For selection of the specific articles, after they were gathered from the databases, all the titles and abstracts were read by two independent reviewers and those that complied with the guiding question of the study were selected for full analysis. The selected articles were read thoroughly and a synoptic summary was completed. The results are presented descriptively.

RESULTS

The database search yielded 511 articles, of which the following were excluded: 339 studies because they were published outside the stipulated period; 155 because they

did not comply with the objectives based on a reading of the title and abstract, and 6 after reading them in their entirety. The final sample consisted of 11 articles (Figure 1).

Figure 1. Flow chart of articles selected for review.



In the analysis of the 11 selected articles, the following characteristics were noted: the number of authors varied from 2 to 8, with a mean of 3.8±1.2 authors; the academic degrees of the authors were not stated in 50% of the articles, 30% had Master's degrees, 10% had PhDs, and 10% were specialists in the area.

As for year of publication, five articles were produced in 2010, three in 2012, two in 2014 and one in 2009. In terms of country of origin of the study: five were from Brazil, two from the United States, one from England, one from Colombia, one from Chile and one was multi-center.

During the data collection period, no articles of a qualitative nature on the basic issue were found in the literature. Consequently, only quantitative studies were included: five cohort studies, four cross-sectional studies, one case control study and one survey. As for the collection method or sources: they were not cited in four studies; two used secondary data collected from medical records; one used secondary data from a general national cohort study; two used secondary data from an information system; and two conducted interviews. Table 1 presents the data related to the articles included in the review.

Table 1. Articles included in the study according to title, authors, country of origin, year of publication and type of study.

Title	Authors	Country	Year	Type of study
Predictors of birth weight and gestational age among adolescents	Harville EW; Madkour AS; Xie Y	United States	2012	Cohort
Preterm birth and reduced birth weight in first and second teenage pregnancies: a register-based cohort study	Khashan AS; Baker PN, Lenny LC	England	2010	Cohort
Teenage pregnancy and other risk factors for fetal and infant mortality in the city of Rio de Janeiro, Brazil	Oliveira EFV; Gama SGN; Silva CMFP	Brazil	2010	Cohort
Perinatal outcomes in the extremes of reproductive age and factors associated with low weight at birth	Sass A; Gravena AAF; Pelloso SM; Marcon SS	Brazil	2010	Cross-sectional
Perinatal characteristics among early (10-14 years old) and late (15-19 years old) pregnant adolescents	Alves JB; Cisneiros RMR; Dutra LPF; Pinto RA	Brazil	2012	Cross-sectional
Inadequate prenatal care and risk of preterm delivery among adolescents: a retrospective study over 10 years	Debiec KE; Paul KJ; Mitchell CM; Hitti JE	United States	2010	Cohort
Sons of teenage mothers: risks, neonatal morbidity and mortality	Mendoza LAT; Arias MG; Mendoza LIT	Colombia	2012	Cohort
Premature childbirth in adolescents: influences of sociodemographic and reproductive factors, Espírito Santo, 2007	Nader PRA; Cosme LA	Brazil	2010	Cross-sectional
Psychosocial stressors associated with hypertensive disorders and/or symptoms of premature labor in teen pregnancy	Muñoz MP; Oliva PM	Chile	2009	Case control
Teenage pregnancy: analysis of risk factors for low birth weight, prematurity and cesarean delivery	Santos NLAC, Costa COM; Amaral MTR; Vieira GO; Bacelar EB, Almeida AHV	Brazil	2014	Cross-sectional

Risk factors for spontaneous and provider-initiated preterm delivery in high and low Human Development Index countries: a secondary analysis of the World Health Organization Multicountry Survey on Maternal and Newborn Health	Morisaki N; Togoobaatar G; Vogel JP; Souza JP; Rowland Hogue CJ; Jayaratne K; Ota E; Mori R, on behalf of the WHO Multicountry Survey on Maternal and Newborn Health Research Network	Multi-center	2014	Survey

Analysis of the selected publications resulted in the identification of four thematic categories: "access to and frequency of prenatal care," "birth control/family planning education for adolescents," "social, demographic and economic aspects vs. biological immaturity" and "social network support."

Access to and frequency of prenatal care

According to the studies reviewed, teenage pregnancies "on their own" (biological immaturity) do not represent a risk of premature labor, but it is important to note that there is greater risk among women who do not receive prenatal care or where it is insufficient (less than six prenatal visits and/or low adherence to instructions) [5,9-10].

One of the selected studies indicated that many teenage girls fail to recognize the importance of prenatal care, and perhaps for this reason, forget or do not give due heed to scheduled visits[11]. Furthermore, the authors pointed out that prenatal care, as well as courses and training for pregnant teenage girls, should be customized, focusing on the particularities of this stage of life (taking into account adolescent biopsychosocial development) [5,11]. Also worth noting is the need to actively search for and recognize the reasons for absenteeism and noncompliance with prenatal care of this population[11], as well as the importance of following up on these mothers and their newborns after discharge from the hospital, and the need to maintain a support network and assistance for this binomial[12].

Birth control/family planning education for adolescents

Among the 11 studies examined, three suggested improvements in health education on birth control/family planning for adolescents [5,12-13].

In terms of health education focused on birth control, if the goal is to reach teenagers, schools seem to be the best places for disseminating such information[5,12]. Moreover, birth control education should expand its focus to include sex education and measures to avoid repeat pregnancies in adolescence[12].

One study detected a greater risk of preterm birth when another pregnancy has occurred during adolescence[13], in addition to finding an association between second pregnancies in less than one year during adolescence and neonatal deaths resulting

from preterm births[14]. In this regard, it is important to underscore the need to prioritize birth control education for pregnant teenagers who have already been pregnant during adolescence, in order to avoid recurrence and possible negative outcomes [13].

Social, demographic and economic aspects vs. biological immaturity

Evidence regarding social, demographic and economic aspects yielded the following factors that were found to be associated with pregnancy in the earlier stages of adolescence (10-14 years old): being single and non-white, and having less than eight years of education. There was a close connection between gestation in this age group and preterm birth, but the authors did not rule out the possibility of investigating biological immaturity as a risk factor, despite knowing that social aspects can strongly contribute to and influence this occurrence[15].

Similarly, another study also found an association between teenage pregnancy and being single, less educated and not covered by health social security during pregnancy. The authors also noted a high frequency of preterm births as a result of teenage pregnancy and highlighted social vulnerability as a risk factor for its occurrence[12].

Socioeconomic factors can be decisive for the outcome of preterm birth in teenage pregnancies. Socioeconomic problems associated with teenage pregnancy may contribute to fetal and infant deaths resulting from preterm births, and not biological immaturity "in itself" affecting teenage pregnancy, as cited in some studies[14].

A Brazilian study based on data from the Brazilian Live Birth Information System (SINASC, in Portuguese) for the period 2006 to 2012 in Feira de Santana (BA) revealed that 13.5% of preterm births occurred in pregnancies where the mothers were younger than 16 years old, and a statistically significant association was found between adolescence and premature labor[16]. In contrast to these findings, a multicenter study by WHO that analyzed the outcome of 299,878 pregnancies identified an association between maternal age under 20 and premature labor and, when examining regional differences, it was found that the prevalence of premature labor in pregnant adolescents was higher in developed countries (40%) than in developing countries (19%) [17].

Only one study found uterine immaturity and/or inadequate blood supply to the cervix to be risk factors, suggesting the importance of biological immaturity as a cause of preterm births in teenage pregnancies[12].

Therefore, given the complexity and multiple factors involved in preterm births, and since the findings on risk factors for premature labor and teenage pregnancy are still controversial, it seems that the issue needs to be more fully studied and explored[18].

Social network support

The following were characterized as risk factors and associated with cases of preterm birth in teenage pregnancies: financial problems; psychological abuse in the family environment; stressful events or depression during pregnancy; having a sick or hospitalized family member during pregnancy; and domestic violence [18]. However, the same authors found that family support was a strong protective factor against premature labor[18]. Thus, the authors found that family support, care and a warm

family environment were important for the pregnancy of the adolescent to unfold safely and calmly[18].

DISCUSSION

Data from WHO shows that every year around 16 million teenage girls become mothers, and approximately 3 million have unsafe abortions (19%), this being more common in developing countries. According to the same information, in countries with high levels of poverty, the ratio of pregnancies in adolescents is 1:3[19]. This situation becomes even more complex, given evidence that maternal factors are among the leading causes of mortality in girls from 15 to 19 years old, and the risk of infant mortality increases by 50% when the births are from teenage pregnancies[19].

Every year 15 million babies are born prematurely in the world; 1 million newborns die as a result of preterm birth, and this is one of the main causes of mortality from pneumonia in children under 5 years old[20], with the prematurity rate varying from 5% to 18% among regions.

Brazil occupies tenth place in the ranking of countries with the highest number of preterm births (279,000); the United States is sixth (517,000)[20]. This data demonstrates the need for these countries to conduct studies on the subject, which corroborates the findings of the present study (five Brazilian studies and two American).

The findings in relation to the thematic category "access to and frequency of prenatal care" indicate that such care is often a normative and prescriptive act, focused on the biomedical model. For women, technical procedures such as medical visits, tests and participating in pregnant women's groups focus only on the health of their children. The information is not always assimilated or sufficient[21], and whether participation in prenatal care occurs is linked to maternal insecurity with respect to the health of the woman and the baby[21]. Apart from this, the pregnant mother is often not able to understand the real importance of prenatal care, as shown in the report “They only know how to look at and measure the tummy” [22:7].

When it comes to pregnant adolescents, prenatal care can often generate a feeling of surveillance, and “being a teenage mother” is always permeated with the idea of fragility and/or lack of wisdom. Prenatal care is an obligation generally imposed by family members. Consequently, adolescents see prenatal care as a restriction, where they no longer own their body, but rather are a body to have a child[23]. This is often reflected in whether they comply, or comply inappropriately, with this care.

Therefore, professionals who provide prenatal care should "recognize that behind the tummy there are two people with different needs," and this recognition could be the way to increase participation in prenatal care[24: 365].

In relation to the topic “birth control/family planning education for adolescents,” when studying the reproductive and sexual profiles of adolescents receiving gynecology outpatient care, it was found that the average age was 16 years; 70% had already engaged in sexual relations, initiating sexual activity at age 14 without using contraceptives in their first encounters; 40% had already been pregnant before; all knew about sexually transmitted diseases (STD), and despite having this information, half did not use condoms[25].

One study found that around 95% of adolescents had information on contraceptive methods, which they received in the school environment (in both public and private schools)[26], corroborating the findings of the studies analyzed here. However, it should be borne in mind that there are many deficiencies in this knowledge, which is reflected in non-use of contraceptive methods[27].

When considering birth control/family planning education for adolescents, thought must be given to the scenario, actors and best educational strategies. This educational process should be in accordance with Freire's pedagogy, adhering to the principle of leading the other to reflect and change their trajectory based on their reality, with educational actions not being an imperative process[28].

In relation to the problem of recurring pregnancies in adolescence, the following were identified as risk factors: menarche under 12 years of age; black or brown skin color; less than a fifth grade primary education; change of partners; household income lower than one minimum wage; and not being the main caregiver of the first child (family members as guardians)[30-31]. These findings suggest the need for special care for adolescents who are already mothers and indicate the need for educational interventions geared toward this group.

As far as social, demographic and economic aspects vs. biological immaturity, there was only one study in this review that addressed the topic. It found that low education and lack of a stable partner were factors associated with teenage pregnancy[29]. When investigating the relationship with preterm birth, risk factors such as low education, few checkups and delays in starting prenatal care were identified[29]. Thus, social and demographic aspects have a strong influence on teenage pregnancies and their negative outcomes [29]. However, due to the complexity of the issue and scarcity of studies on this subject, it is clear that more studies need to be conducted.

With respect to the social network support given to pregnant adolescents, the role of family members is crucial[32]. Although adolescents acknowledge that family members can help by teaching, assisting and answering their questions, it is up to the adolescents to provide care for newborns, a skill acquired through practice and experience[32]. It is also worth noting that teenage mothers find their main source of support in their mothers, underscoring the role played by maternal grandmothers in relation to teenage mothers and newborns[33]. An open relationship with family members can foster reflection about pregnancy and avoid another pregnancy at an early age[32-33], showing that support is a protective factor against teenage pregnancies.

It is essential, when addressing this issue, to bear in mind the importance and relevance of the work of nurses. Among their duties is the important role of educator, and health education can be carried out in different settings: schools; as part of the outreach of Basic Health Units or Family Health Units; welcoming adolescents who are seeking advice; prenatal care; and pregnant women's support groups. In the hospital setting, nurses can provide explanations and instruct this same audience at different times, such as during the admission of pregnant adolescents, before and after birth, and in preparation for discharge from the hospital. This should begin at the time of admission of the parturient and should include guidance for newborn care, self-care, contraceptives and other points. In addition, there is an important need to conduct studies on the topic, given the magnitude and range of possibilities of intervention of nurses in this area.

CONCLUSIONS

The present study revealed the magnitude and complexity of premature labor in pregnant adolescents. Through the literature, it was possible to identify a relationship between teenage pregnancies and premature labor, even though multiple factors are involved, apart from biological immaturity. The studies indicate the need to improve the use of prenatal services by pregnant adolescents; the importance of birth control and family planning education for adolescents; the relevance of support (social and family); and avoiding recurring pregnancies in this group (a combination of education and support). Also worth noting is that the studies contain controversial data regarding the subject of biological immaturity as a risk factor for premature labor among pregnant adolescents and the association of multiple factors (socioeconomic factors). The important role of nurses should be highlighted, and it is suggested that more studies be conducted on this particular theme.

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