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Original Article

Sociodemographic and gestational factors of adolescent mothers associated with prematurity*

Fatores sociodemográficos e gestacionais de mães adolescentes associados à prematuridade

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ABSTRACT

Objective: to analyze the sociodemographic and gestational factors of adolescent mothers associated with prematurity. **Methods:** quantitative, cross-sectional, retrospective, and analytical study, developed with 488 adolescent mothers and their respective 489 newborns. Data were collected by query and analyzed using the SPSS. To verify the association between variables, the Chi-square or Fisher's exact test was used. To control for confounding factors, the multivariate Poisson Regression model was used. **Results:** adolescent mothers were mostly single, with occupation and education inadequate for their age; 76.5% did not have prenatal care appropriate for gestational age. The prevalence of prematurity was 6.6% and was associated with the number of adequate prenatal visits, twin pregnancy, and vaginal delivery. **Conclusion:** prematurity was associated with the number of prenatal visits, type of delivery and pregnancy. **Contributions to practice:** the study allows health professionals and managers to have more knowledge about the repercussions of teenage pregnancy, as well as the clinical and social outcomes in maternal and child health, such as prematurity, enabling more precise targeting of actions and programs aimed at this problem.

Descriptors: Pregnancy in Adolescence; Risk Factors; Prenatal Care; Infant, Premature; Neonatal Nursing.

RESUMO

Objetivo: analisar os fatores sociodemográficos e gestacionais de mães adolescentes associados à prematuridade. **Métodos:** estudo quantitativo, transversal, retrospectivo e analítico, desenvolvido com 488 mães adolescentes e os respectivos 489 recém-nascidos. Dados coletados por *query* e analisados no SPSS. Para verificar a associação entre as variáveis, utilizou-se do teste Qui-quadrado ou exato de Fisher. Para controle de fatores confundidores, empregou-se o modelo multivariado de Regressão de Poisson. **Resultados:** as mães adolescentes eram, em maioria, solteiras, com ocupação e escolaridade inadequada para idade; 76,5% não realizaram pré-natal adequado à idade gestacional. A prevalência de prematuridade foi de 6,6% e esteve associada ao número de consultas pré-natal adequado, gravidez gemelar e parto vaginal. **Conclusão:** a prematuridade esteve associada ao número de consultas pré-natal, tipo de parto e de gravidez. **Contribuições para a prática:** o estudo possibilita que profissionais e gestores da saúde tenham maior conhecimento acerca das repercussões da gravidez na adolescência, bem como dos desfechos clínicos e sociais na saúde materno-infantil, a exemplo da prematuridade, possibilitando direcionamento mais preciso de ações e programas voltados a esta problemática.

Descritores: Gravidez na Adolescência; Fatores de Risco; Cuidado Pré-Natal; Recém-Nascido Prematuro; Enfermagem Neonatal.

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Introduction

Prematurity is the birth that occurs before 37 weeks of gestation[1], and the risk of neonatal complications is inversely proportional to the gestational age, that is, each additional week that the fetus remains in intrauterine life, there is an evolution in its development, reducing the occurrence of possible complications after birth[2].

Worldwide, it is estimated that one in every ten babies is born premature, adding up to about 15 million premature childbirths every year, and 60% of these childbirths are concentrated in Africa and Asia. When comparing low- and high-income countries, prematurity rates are 12% and 9%, respectively. Brazil occupies the tenth place in the world ranking with the highest rates of prematurity, with approximately 279,300 premature births[1].

Complications resulting from prematurity have been responsible for thousands of deaths of children under five years of age worldwide, most of which could be avoided[1-3]. It is also the leading cause of neonatal death and is closely related to higher rates of hospital admissions in this period[1,4]. Premature newborns are at greater risk for a series of morbidities and disabilities during childhood, the most common complications being respiratory distress, susceptibility to infections, bronchopulmonary dysplasia, necrotizing enterocolitis, seizures, cerebral palsy, hypoxic-ischemic encephalopathy, feeding problems, as well as visual and hearing impairments[3].

Among the factors contributing to prematurity, maternal age stands out, with an increased risk of occurrence in adolescence[5]. Teenage pregnancy is a social phenomenon that occurs in girls between 10 and 19 years of age and is configured as an important global public health problem, for restricting educational and professional development opportunities, being associated with the increase in poverty and in sexual and domestic violence among girls of this age[6-8].

From the biological point of view, adolescent girls are in the growth phase and may compete with the fetus for nutrients, impairing fetal development[9]. Additionally, these girls present immaturity of the uterus and/or insufficient blood supply to the cervix[5], which contributes to the increase in premature births[5,7-8]. It is a consensus in the literature that adolescent mothers have a higher risk of prematurity, associated with low childbirth weight[9-12], low Apgar score and postnatal mortality[12].

The impact of maternal age on obstetric and neonatal outcomes has been the object of study in various parts of the world and has presented variable results, and currently it does not seem clear in the available literature to what extent the differences in birth outcomes between adolescent and adult mothers are conceived only by age[9-10]. In this context, the mother's early age associated with unfavorable social and economic conditions, risk behaviors, and inadequate prenatal care are among the main reasons for adverse outcomes in this group[6,13-14].

In view of the above, this investigation is justified by the social, economic and health repercussions caused by teenage pregnancy, which is considered a major public health problem worldwide, especially in developing countries, such as Brazil. A comprehensive understanding of maternal factors associated with prematurity helps reduce the damage caused by this event, such as neonatal and infant morbidity and mortality, hospital admissions during this period and complications that may extend into adolescence and adulthood, in addition to advancing knowledge about the vulnerabilities to which adolescents are exposed and that have important implications for maternal and child health, and is essential to achieve the third Sustainable Development Goal: ensure quality health and provide well-being for all people, including reducing maternal, newborn and child morbidity and mortality.

The study was based on the following guiding question: which sociodemographic and gestational factors of adolescent mothers are associated with prematurity of newborns from a reference hospital in the Southern Region of Brazil? The aim was to analyze the sociodemographic and gestational factors of adolescent mothers associated with prematurity.

Methods

This is a quantitative, cross-sectional, retrospective, and analytical study, developed at *Hospital de Clínicas de Porto Alegre*, a highly complex university hospital, located in the South of Brazil, which provides care through the Unified Health System. It has a Gynecology and Obstetrics Service with care to different areas of women's health, besides helping gynecological and obstetric emergencies and monitoring labor and delivery with professionals specialized in high-risk pregnancy. In the Neonatology Service, the newborns are followed from childbirth to hospital discharge, and those of high risk are followed until they are two years old in the Neonatology Outpatient Unit. For very low childbirth weight premature childbirths, follow-up is carried out until the age of five.

Data were collected between July and August 2021. Inclusion criteria were being an adolescent mother, aged 10-19 years; and newborns born between January 1, 2019, and December 31, 2020, regardless of gestational age at childbirth. The mother-baby binomials that had no record of gestational age in the database and those newborns who were not born in the hospital under study and/or came transferred from other hospitals were excluded from the study. Thus, 29 mother-baby binomials were excluded due to the absence of gestational age records, totaling 488 adolescent mothers and the respective 489 newborns who met the selection criteria and were part of the study.

To calculate the sample size, a prevalence of 14% of prematurity in teenage mothers[15] was considered, so that it was possible to detect differences with a Relative Risk (RR) of at least 2 (RR ≥ 2), confidence level of 95% and power of 80%, totaling at least 292 binomials teenage mothers/newborns. Foreseeing possible losses, 10% was added, totaling 320 adolescent mother/newborn binomials.

The outcome variable was prematurity, following the World Health Organization classification of premature birth. The predictor variables refer to the other maternal characteristics, built based on the Basic Care Booklet on Low-Risk Prenatal Care[16].

Maternal variables were subdivided into: sociodemographic data: maternal age (in years), municipality of origin, education (adequate or inadequate for maternal age), marital status (with or without partner, regardless of civil registration), occupation (related to paid work or study); and gestational data: previous pregnancies (woman in the first-time pregnancy or multiple pregnancy case), parity (primiparous or multiparous), abortion history (yes or no), current delivery date, gestational age at the time of delivery (in weeks), number of prenatal visits (adequate or inadequate for gestational age), type of delivery (vaginal or cesarean), type of pregnancy (single or twin), risk factors (yes or no), intercurrent childbirth (yes or no).

The education variable was categorized according to the classification recommended by the Ministry of Education, in which primary education should be done between seven and 14 years of age, high school between 15 and 17 years, and college education should be done between 18 and 24 years[17].

The number of prenatal consultations was based on the minimum number of consultations for gestational age[16]. For this purpose, prenatal care was considered adequate for gestational age if the mother had: two consultations up to 26 weeks of gestation, three consultations up to 32 weeks, four consultations up to 37 weeks, five consultations at 38 weeks, and six consultations or more at 39 weeks of gestation or older. The categorization was based on the total number of prenatal visits, ignoring the gestational age when the mother started prenatal care because this information was not available. It is also noteworthy that the categorization and subsequent analysis of this variable consists of the number of consultations performed, not being possible to assess the quality of prenatal care offered.

The variable risk factors refers to cardiovascular, respiratory, endocrine problems, sexually transmitted infections, unhealthy lifestyle habits, and other conditions likely to cause adverse clinical outcomes in newborns. For this categorization, the presence of at least one adverse condition presented by the mother

or fetus was considered.

The neonatal variables were sex; birth weight (in grams); adequacy of weight for gestational age (small, adequate, or large for gestational age), prematurity (yes or no), first-minute Apgar score (<7 or ≥7); fifth-minute Apgar score (<7 or ≥7).

Data collection occurred by means of a query, provided by the Medical Archives and Health Information Service, through which it is possible to retrieve information contained in patients' medical records. The query was made available through a Microsoft Excel file (spreadsheet), containing all the variables pertinent to the study. It is noteworthy that it was an anonymous query, which did not include the names or numbers of medical records of the participants included in the study, in compliance with the General Law of Protection of Personal Data.

The research data were organized and analyzed using SPSS software, version 18. All variables were categorized and expressed by absolute and relative frequency. To verify the association between the outcome variables and the predictor variables, the Chi-square or Fisher's exact test was used. To control for possible confounding factors, the variables that presented a p-value <0.20 were inserted into the multivariate Poisson Regression model with robust variances. The significance level adopted was 5% ($p \leq 0.05$).

The research project was approved by the Research Ethics Committee of the *Hospital de Clínicas de Porto Alegre*, according to Certificate of Submission for Ethical Consideration no. 36972220,8,0000,5327 and Opinion number 4,812,039/2021. The ethical principles in health were respected, in accordance with Resolution No. 466/12, of the National Health Council. The authors signed a statement of knowledge and compliance with the General Law of Protection of Personal Data for research evaluated by the committee.

Results

During the study period, 488 adolescent mothers gave birth at the *Hospital de Clínicas de Porto Alegre*, resulting in 489 childbirths. Regarding maternal sociodemographic factors, 77.5% were between 17 and 19 years old, 78.4% lived in the city of Porto Alegre, 79.1% had inadequate education for their age, 93.9% lived without a partner, and 58.6% had an occupation, either related to studies or paid work.

Regarding gestational variables, 80.3% were women in the first-time pregnancy, 86.7% were primiparous, and 8.6% had a previous history of abortion. Regarding the current pregnancy, the number of prenatal consultations ranged from two to 16 consultations, and 76.5% of the mothers had inadequate prenatal care for their gestational age. Vaginal delivery was 77% prevalent and only one mother had twin newborns. Prematurity was present in 6.6% of the adolescent mothers. The sociodemographic and gestational factors of adolescent mothers are presented in Table 1.

As for the risk factors identified during pregnancy, 16.6% of mothers had some clinical condition likely to cause adverse outcomes in newborns. In total, 82 diagnoses or conditions attributed based on the specificity of each case were selected and distributed among the 80 mothers. It is worth noting that the same mother may have presented more than one risk factor.

The five main diagnoses/conditions selected presented an accumulated percentage of 78%, distributed as follows: 30 (37%) cases of premature rupture of membranes, 12 (15%) cases of unspecified risk pregnancy, 11 (13%) prolonged gestations, six (7%) suspected fetal growth restrictions, five (6%) risks related to altered blood pressure, such as preeclampsia and Specific Hypertensive Disease of Pregnancy. Among the less frequent diagnoses/conditions that occurred in 22% of the sample were: miscarriage, fetal bradycardia, labor prodromes, gestational diabetes mellitus, chorioamnionitis, mother with Human Immunodeficiency Virus (HIV), syphilis during pregnancy, twin pregnancy, fetal tachycardia, smoking, premature labor, small vaginal bleeding, large amount of fluid loss, and decelerations during contractions.

At the time of delivery, 54 complications were recorded, distributed among 51 (10.5%) adolescent

mothers, and the same mother may have presented more than one complication. Of these, 49 (90%) cases of perineum, anal sphincter, or vagina/colon laceration, three (6%) cases of shoulder dystocia, one (2%) case of retained placenta/postpartum uterine clamping and one (2%) case of episiotomy hematoma/abscess drainage were recorded.

Then, regarding the binary categorization of the outcome, expressed as: with prematurity or without prematurity, this was associated with the other variables studied, which are presented in Table 1.

In the bivariate analysis of socio-demographic factors, it was inferred that none of the variables analyzed was statistically significant (p>0.05) for prematurity. Regarding gestational factors, only the variables number of prenatal visits (p<0.001) and type of pregnancy (p=0.004) showed a statistically significant association with the occurrence of the outcome. Thus, prematurity was associated with the adequate number of prenatal visits and twin pregnancy (Table 1).

Table 1 – Distribution and association of maternal variables with the occurrence of prematurity (n=488). Porto Alegre, RS, Brazil, 2019 and 2020

Variables*	Total sample (n=488) n (%)	Prematurity		p-value
		Yes (n=32) n (%)	No (n=456) n (%)	
Maternal age (years)				0.370†
13 a 16	110 (22.5)	10 (9.1)	100 (90.9)	
17 a 19	378 (77.5)	22 (6.1)	356 (93.9)	
Origin				0.377†
Porto Alegre	365 (74.8)	22 (6.0)	343 (94.0)	
Other cities	123 (25.2)	10 (8.9)	113 (91.1)	
Education				0.133†
Appropriate for age	102 (20.9)	3 (2.9)	99 (97.1)	
Inadequate for age	386 (79.1)	29 (7.8)	357 (92.2)	
Marital status (partner)				0.148‡
With	30 (6.1)	3 (12.9)	27 (87.1)	
Without	458 (93.9)	29 (6.3)	429 (93.7)	
Occupation				0.242†
With	286 (58.6)	23 (8.0)	263 (92.0)	
Without	202 (41.4)	9 (4.9)	193 (95.1)	
Previous pregnancies				0.359†
Primigravida	392 (80.3)	23 (6.1)	369 (93.9)	
Multigravida	96 (19.7)	9 (9.4)	87 (90.6)	
Parity				0.064‡
Primipara	423 (86.7)	24 (5.9)	399 (94.1)	
Multipara	65 (13.3)	8 (12.3)	57 (87.7)	
Abortion history				0.189‡
Yes	42 (9.6)	5 (11.9)	37 (88.1)	
No	446 (91.4)	27 (6.3)	419 (93.7)	
Number of prenatal visits				<0.001†
Appropriate for gestational age	115 (23.5)	20 (17.4)	95 (82.6)	
Inadequate for gestational age	374 (76.5)	13 (3.5)	361 (96.5)	
Type of birth				0.082†
Vaginal birth	376 (77.0)	29 (8.0)	347 (92.0)	
Cesarean birth	112 (23.0)	3 (2.7)	109 (97.3)	
Type of pregnancy				0.004‡
Single	487 (99.8)	31 (6.4)	456 (93.6)	
Twin	1 (0.2)	1 (100.0)	0	
Risk Factors				0.987†
Yes	80 (16.6)	6 (7.4)	75 (92.6)	
No	408 (83.4)	27 (6.6)	381 (93.4)	
Intercurrence in childbirth				0.235‡
Yes	51 (10.5)	1 (2.0)	50 (98.0)	
No	437 (89.5)	32 (7.3)	406 (92.7)	

*Variables described by n (%); †Chi-square test; ‡Fisher's exact test

Regarding neonatal factors, the distribution of characteristics of the 489 newborns of adolescent mothers is shown in Table 2. Prematurity was observed in 33 (6.7%) newborns, two of which were twins. Of these, 28 (84.8%) had late prematurity, comprising childbirths with gestational age between 34 and 36 weeks and 6 days; two (6.1%) were characterized as moderately premature, with gestational age between 32 and 33 weeks and 6 days; and three (9.1%) were very premature, with gestational age between 28 and 31 weeks and 6 days.

Through bivariate analysis of neonatal factors associated with the occurrence of prematurity, only the variable birth weight showed statistical significance (p<0.001), that is, prematurity was associated with low birth weight (Table 2).

Table 2 – Distribution and association of newborn characteristics to the occurrence of prematurity (n=489). Porto Alegre, RS, Brazil, 2019 and 2020

Variables*	Total sample (n=489) n (%)	Prematurity		p-value
		Yes (n=33) n (%)	No (n=456) n (%)	
Gender of the newborn				0.990†
Male	244 (49.9)	17 (7.0)	227 (93.0)	
Female	245 (50.1)	16 (6.5)	229 (93.5)	
Birth weight (g)				<0.001‡
< 2.500	28 (5.7)	16 (57.1)	12 (42.9)	
≥ 2.500	461 (94.3)	17 (3.7)	444 (96.3)	
Gestational weight/age adequacy				0.133‡
Small	57 (11.7)	7 (12.3)	50 (87.7)	
Adequate	411 (84.0)	26 (6.3)	385 (93.7)	
Great	21 (4.3)	0	21 (100.0)	
Apgar 1st minute§				1.000‡
< 7	15 (3.1)	1 (6.7)	14 (93.3)	
≥ 7	470 (96.9)	32 (6.8)	438 (93.2)	
Apgar 5th minute§				1.000‡
< 7	2 (0.4)	0	2 (100.0)	
≥ 7	483 (99.6)	33 (6.8)	450 (93.2)	

*Variables described by n (%); †Chi-square test; ‡Fisher's exact test; §1st and 5th minute Apgar scores of four newborns were not recorded

To control for possible confounding factors, after the bivariate analysis, maternal variables with p<0.20 were inserted into the multivariate Poisson Regression model. After the adjusted analysis, the following variables were statistically associated with the occurrence of prematurity: number of prenatal visits (p<0.001), type of delivery (p=0.014) and type of pregnancy (p=0.029), with adolescent mothers with an adequate number of prenatal visits for gestational age (Prevalence Ratio (PR)=4.67; Confidence Interval (95% CI)=2.36-9.27) and twin pregnancy (PR=3.69; 95% CI=1.14-11.89) showing higher prevalence of prematurity. In the type of delivery, mothers with cesarean delivery in the current pregnancy were found to show a 70% reduction in the prevalence of prematurity (PR=0.30; 95% CI=0.11-0.78) compared to mothers who had vaginal delivery (Table 3).

Table 3 – Multivariate analysis of maternal factors independently associated with the occurrence of prematurity (n=488). Porto Alegre, RS, Brazil, 2019 and 2020

Variables	PR* (CI 95%)†	p-value
Education		
Inadequate for age	2.49 (0.73–8.51)	0.147
Marital status		
With partner	0.67 (0.23–1.93)	0.458
Parity		
Multipara	1.84 (0.95–3.55)	0.069
History of abortion		
Yes	1.56 (0.69–3.49)	0.285
Number of prenatal visits		
Appropriate for gestational age	4.67 (2.36–9.27)	<0.001
Type of parturition		
Cesarean section	0.30 (0.11–0.78)	0.014
Type of pregnancy		
Twin	3.69 (1.14–11.89)	0.029

*PR: Prevalence Ratio; †CI 95%: confidence interval

Discussion

Low education has been strongly related to teenage pregnancy, in which many adolescents do not attend or drop out of school because of pregnancy[7,9,18-20]. The concern around this lies in the future consequences that poor schooling and low educational level may generate in socioeconomic conditions, such as lower employment and income, as well as limited access to information and quality health care, impacting negatively on child growth and development.

The prenatal care performed by teenage mothers was another worrisome fact, since 76.5% of the participants had inadequate prenatal care. This fact may also be related to the low level of education among the adolescent mothers. The inadequacy of prenatal care was observed among less economically favored adolescents, with inadequate education for their age and who had been mothers previously[13]. Women who gave birth during adolescence, besides the greater social and economic vulnerability, have worse access to and use of prenatal care services than adult women[14,19,21].

Similarly, psychosocial barriers contribute to the inadequacy and late initiation of prenatal care by adolescents, which can be related to the lack of information about the benefits of prenatal care, the desire to hide the pregnancy, or even the fear of confirmation, not knowing what to do or where to seek care, besides the fear of judgment and feeling of shame that many face when seeking health services[22-23]. These factors can be connoted as possible causes for teenage pregnant women to enter prenatal care later and perform fewer consultations than adult women[21-22].

Adolescents have different emotional and social needs, making evident the importance of paying attention to the psychosocial peculiarities that permeate pregnancy at this stage. Therefore, integral attention favors that the available spaces respond to the specific demands of this population, being opportune in the conception of adolescent-friendly services, to break with the adult-centric paradigm that sometimes permeates the health services. The strengthening of the bond established between the adolescent and the multi-professional team is essential for positive experiences during the adolescent's pregnancy. The continuous contact between health professionals and prenatal service users is an element that corroborates the establishment of trust and better communication between professionals, adolescents, and their respective support networks[24].

In this context, the conditions of vulnerability to which adolescents are exposed denote the need for early admission to the health service for the initiation of prenatal care. The late initiation of prenatal care makes it difficult to adequately follow the established national protocols, jeopardizing the access to recommended care, besides increasing the chances of adverse outcomes in the mother and newborn[5,13,21].

On the other hand, in the present study, prematurity was associated with the adequate number of prenatal visits, that is, even mothers who had the adequate number of visits had more premature childbirths. This result may be related, in part, to the fact that mothers with high-risk pregnancies were more concerned about performing adequate monitoring and had more prenatal visits. Another possible justification is due to the high percentage of teenage pregnant women who did not have adequate prenatal care, in which the gestational age may not have been well estimated, which increases uncertainty regarding accuracy and may affect prematurity rates.

However, this finding also raises questions about the quality of prenatal care being offered to pregnant women, especially the approach to adolescents. Although an improvement in access and coverage of prenatal care has been observed in Brazil, this care needs to be reevaluated due to the low compliance with the official norms of the program. Pregnant women should not be limited only to the bureaucratic passage through the health service, but should excel in the quality of care offered, and conditions should be offered to enable the early capture and reception of pregnant women, aiming, above all, at adherence to prenatal care[25].

The prevalence of prematurity was present in 6.6% of all adolescent mothers, a percentage lower than that generally found in the literature[13-15]. Of the identified premature childbirths, 84.8% were classified as late prematurity. This result is consistent with the global rate, in which 84.7% of preterm births occurred in the late preterm period, ranging from 81.2% in Latin America and the Caribbean to 85.9% in Asia[3].

Although morbidity and mortality risks are higher in very preterm and moderately preterm newborns (gestational age <34 weeks), late preterm occurs more frequently[3] and late preterm infants have significantly higher risks of adverse outcomes compared to term newborns[2-3] due to physiological and metabolic immaturity[2].

The concern about late preterm prematurity occurs because these premature infants are commonly mistreated like full-term newborns because many are at an appropriate weight and size, just like full--term newborns. In the short term, complications of late prematurity include respiratory distress, hypoglycemia, hypothermia, jaundice, risk of infections, increased bilirubin, immature nervous system, and feeding problems. Over time, late preterm childbirths are more vulnerable to present changes in neurological development, resulting in learning disabilities[2].

Prematurity is often associated with low birth weight[9-12], as evidenced in this study, which can further worsen the conditions of the newborn. A population-based cohort study conducted in Brazil found that the risks of neonatal and infant mortality were substantially higher among live childbirths combining preterm childbirth and low birth weight, presenting a 62 times higher risk of neonatal mortality when prematurity, low birth weight and small for gestational age were combined[12].

Among adolescents, vaginal delivery was more prevalent than cesarean delivery and presented a statistical association with prematurity, in which adolescent mothers with vaginal delivery had more premature childbirths. This result can be justified by the fact that adolescents are more likely to have spontaneous premature childbirths[13]. Twin pregnancy is another factor that may be associated with the occurrence of prematurity, and in this study, it was statistically significant. Therefore, only one mother had a twin pregnancy, and we cannot conclude on this association or generalize this finding.

Of the risk factors identified during pregnancy, there was no statistical association with the occurrence of prematurity. However, it is relevant to consider that premature rupture of membranes was the main clinical condition presented by the adolescents, besides prolonged gestation, fetal growth restriction, preeclampsia, pregnancy-specific hypertensive disease, among others. It is evident that teenage pregnant women are more exposed to obstetric complications, such as premature rupture of membranes[11], preeclampsia and fetal growth restriction[20], and these complications may also be associated with premature delivery[2]. It is noteworthy that 15% of the sample was classified as "pregnancy of unspecified risk", which leaves a gap and makes it difficult to understand the real reasons why this pregnancy was considered of risk.

It is noteworthy that premature childbirth is a preventable cause through adequate prenatal care and greater accessibility to quality health services. Although the results of this study have shown an association between prematurity and the number of adequate prenatal visits, considering the possible justifications presented, qualified prenatal care is strongly recommended for the prevention and detection of risk conditions for the mother's and baby's health[16]. The effective prenatal follow-up favors the recognition of clinical conditions unfavorable to the gestation follow-up, enabling the diagnosis and treatment of pregnancy complications at a timely moment, besides helping to reduce the behavioral risk factors associated with prematurity[26-27].

Study limitations

The limitations of the study refer to the use of

secondary data, which may contain recording errors that prevent the control of certain variables. Furthermore, it is noteworthy that most adolescent mothers did not undergo adequate prenatal care, which may influence the accurate estimation of gestational age and confound the prevalence of premature birth rates.

Contributions to practice

Addressing the sociodemographic and gestational factors of teenage mothers related to prematurity allows health professionals and managers to have a better understanding of the repercussions of teenage pregnancy, as well as the clinical and social outcomes in maternal and child health, contributing to a more precise direction of actions and programs focused on this issue. Implementing clinical guidelines and developing public and social policies directed to the health of women, children, and adolescents are alternatives to improve the results and efficiency of health care. Furthermore, the compilation of these factors may help in the planning of risk prediction models, with a view to identifying high-risk newborns, such as premature infants.

Conclusion

Prematurity showed a prevalence of 6.6% in teenage mothers and was associated with an adequate number of prenatal visits, twin pregnancy, and vaginal delivery. The low adherence to prenatal care by pregnant adolescents is also evident, which may be associated with the lower socio-demographic and economic conditions to which these adolescents are exposed and which often overlap with the mother's age, and may have a negative impact on maternal and child health.

Authors' contribution

Project design, data analysis and interpretation: Amthauer C.

Writing of the article, relevant critical review of the intellectual content, and final approval of the manuscript to be published: Amthauer C, Cunha MLC.

Agreement to be responsible that all aspects of the manuscript related to the accuracy or completeness of any part of the manuscript are investigated and resolved appropriately: Amthauer C, Cunha MLC.

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