The family composition and its association with the occurrence of pregnancy in adolescence: case-control study

A composição familiar e sua associação com a ocorrência da gravidez na adolescência: estudo caso-controle

La composición familiar y su asociación con la ocurrencia del embarazo adolescente: estudio caso-control

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ABSTRACT

Objective: to analyze the influence of family compositions in the occurrence of pregnancy in adolescence. Method: this is a case-control study performed with 74 pregnant adolescents, group of cases, and 74 young adults without background history of pregnancy during adolescence, group control, paired by family income. Data were collected through structured interviews conducted in the period from August to October 2016 in Cuiabá, Mato Grosso, and then analyzed by descriptive and inferential statistical methods. Results: we identified an association between the occurrence of the outcome and the belonging to non-nuclear families, as well as the non-belonging to the same family during childhood and adolescence, besides the constitution of an own family in the period of adolescence. Conclusion: checked that adolescents inserted in non-nuclear families are more exposed to risk factors for the occurrence of pregnancy in adolescence when compared to young people coming from families with both parents.

Descriptors: Family Characteristics; Pregnancy in Adolescence; Adolescent Health; Risk Factors.

RESUMO

Objetivo: analisar a influência das composições familiares na ocorrência da gravidez na adolescência. Método: estudo caso-controle, realizado com 74 gestantes adolescentes, grupo de casos, e 74 adultas jovens sem história pregressa de gravidez na adolescência, grupo controle, paresados pela variável renda familiar. Os dados foram coletados por meio de entrevistas estruturadas realizadas no período de agosto a outubro de 2016 em Cuiabá, Mato Grosso, e em seguida analisados pelos métodos estatísticos descritivo e inferencial. Resultados: identificou-se associação entre a ocorrência do desfecho com pertencer a famílias não nucleares, não permanecer a mesma família durante a infância e adolescência, e a constituição de uma família própria no período da adolescência. Conclusão: verificou-se que adolescentes inseridas em famílias não nucleares estão mais expostas a fatores de risco para ocorrência da gravidez na adolescência, quando comparadas às jovens provenientes de famílias com ambos os pais.

Descritores: Características da Família; Gravidez na Adolescência; Saúde do Adolescente; Fatores de Risco.

RESUMEN

Objetivo: analizar la influencia de las composiciones familiares en la ocurrencia del embarazo adolescente. Método: estudio caso-control efectuado con 74 adolescentes embarazadas, grupo de casos, y 74 jóvenes adultas sin historia anterior de embarazo en la adolescencia, grupo de control, agrupadas por sus ingresos familiares. Los datos se recopilaron mediante entrevistas estructuradas conducidas en el periodo de agosto a octubre de 2016 en Cuiabá, Mato Grosso, y posteriormente analizados por los métodos estadísticos descritivo e inferencial. Resultados: se identificó una asociación entre la ocurrencia del desenlace y la pertenencia a las familias no nucleares, no permanecer en la misma familia durante niños y adolescencia, y la constitución de una familia propia en el periodo de la adolescencia. Conclusion: comprobado eso que las adolescentes insertadas en familias no nucleares están más expuestas a los factores de riesgo para la ocurrencia del embarazo adolescente en comparación con las jóvenes provenientes de familias con ambos padres biológicos.

Descritores: Composición Familiar; Embarazo en Adolescencia; Salud del Adolescente; Factores de Riesgo.

INTRODUCTION

Family is popularly represented as a group of related people who usually live in the same household and are bound by relationships of kinship, lineage, ancestry, blood, or adoption¹. It is an essential element for the living process of all human beings, who belong to a society and evolve with it². Among its several functions, it is worth noting its crucial role in the construction of the individual's personality, since it is the first socialization agent of its members. Thus, the family environment represents a privileged space for the development and learning of significant dimensions and is strongly related to family modeling, educational style, or affective climate³,⁴.

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The present study is focused on family modeling, because the great changes in family configurations resulted in the development of new compositions and, thus, it is increasing less frequent for children to be born and live all their lives in a nuclear family. Regarding these models eight types of family were identified, namely: nuclear, consisting of two adults of both genders and their respective children; single-parent, composed of one parent and their descendants; reconstructed, with new bonds that emerge after a divorce or separation; plural, constituted of biological uncles/aunts or grandparents, defined as intra-family adoption; adoptive; non-parental, which lacks the figure of an ancestor and is based on the coexistence between siblings or cousins; extended, which goes beyond the parent-children unit and includes close relatives; and own families.

Several studies acknowledge pregnancy in adolescence as a potential risk factor for maternal health and perinatal complications, such as low maternal weight gain, cephalopelvic disproportion, pre-eclampsia, premature birth, low birth weight, and low Apgar score at five minutes. Similarly, consequences in the social dimension should also be noted, leading to important social harms, mainly related to education, with reduced school performance or school dropout, which may decrease the chances of insertion in the labor market.

Based on the literature, family factors can function as either a risk or a protective factor for the occurrence of pregnancy in adolescence, as shown in a review study that found the following risk factors: difficulties in family relationships in situations of violence and drug abuse, lack or inadequacy of sexual orientations, lack of family support, and beliefs and values about parenting. Conversely, the protective factors are satisfactory family relationships, especially with the mother; a context of sound family organization, and presence of a social support network.

From this same perspective, other investigations found some other risk factors, such as low paternal educational, frequent use of illicit drugs by a resident family member, abusive parental educational practices, single-parent families, and family history of previous pregnancies in adolescence.

Thus, pregnancy in adolescence is considered to transcend the values from the close social context and to encompass also the factors and values from the family context, the latter being essential both to comprehend the influence of the family on the occurrence of pregnancy and to understand how this event will be experienced and represented by the young girl.

Considering the influence of the family, especially of family composition, on the growth and development of its members, this study aimed to analyze the influence of family composition on the occurrence of pregnancy in adolescence, since this event is understood as a possible consequence of adolescents’ engaging in risk behaviors.

**METHOD**

This is a case-control study conducted in Family Health Strategy (FHS) facilities in the city of Cuiabá, Brazil, from August to October 2016. The FHS program was selected based on a clipping of the matrix project entitled “Adolescent reproductive health: situation, discourses, behaviors, and care practices”, the units with the largest numbers of enrolled female population being selected, in order to obtain a significant sample using the parameter described below.

Sample size calculation considered an 80% statistical power, a 95% confidence level, maximum error of 2%, and a 1:1 ratio between cases and controls, with a predicted event frequency of 26.8% among the controls, since this type of study should estimate the proportion of individuals exposed to the risk factor among young women in the control group. It is worth noting that this calculation was based on the number of adolescent deliveries in the city, available in the Information System on Live Births during 2014, which corresponded to 1,606 childbirths. Thus, 148 participants were included, of whom 74 were cases and 74 were controls.

The case group was composed of pregnant adolescents aged from 15 to 19 years old enrolled in the SISPREGNATAL in the selected FHS units. The control group was composed of pregnant young adults aged from 20 to 24 years old with no history of adolescent pregnancy and enrolled in the SISPREGNATAL in the selected FHS units. Adolescents younger than 18 years of age not accompanied by their guardians were excluded from the study.

It is worth emphasizing that the selection of a control group including young adults over 20 years of age was justified by the need to include women who did not get pregnant during adolescence. This prevented the risk of pregnancy during the period of study; similarly, women over 24 years old were not included in order to avoid recall bias.

Sample matching was performed using the per capita income variable between the groups, in order to ensure similar socioeconomic contexts among the participants. Subsequently, family scenarios with no statistically significant differences were identified, making sure that the groups were properly matched based on the chosen social characteristics.

Data was collected through individual interviews conducted in a private room at the FHS unit and guided by a semi-structured questionnaire developed and assessed by a group of subject matter experts. The questionnaire included variables related to the family of origin, in which respondents answered about the type of family to which they belonged for most of their lives, in order to have a family history and to understand the influence of the family on the occurrence of pregnancy and to understand how this event will be experienced and represented by the young girl.

Considering the influence of the family, especially of family composition, on the growth and development of its members, this study aimed to analyze the influence of family composition on the occurrence of pregnancy in adolescence, since this event is understood as a possible consequence of adolescents’ engaging in risk behaviors.
their childhood and adolescence, not mandatorily corresponding to the complete period. Subsequently, data was entered into an electronic questionnaire developed on the Epi Info 7 software and then stored and organized in a database.

Descriptive, univariate and inferential bivariate analyses were performed using the Epi Info 7 software, where family composition was verified by differentiating the period of childhood, i.e., up to 12 years of age, and the period of adolescence, i.e., up to 19 years old.

With regard to the study variables, the independent variables defined were the following: individual variables: age, race/skin color, neighborhood, religion, marital status, work, schooling, income, sources of information on sexuality, menarche, sexarche, use of contraceptive methods, planning of pregnancy; and the variables for the family of origin: family composition, parents' marital status, presence of stepfather/stepmother, family income, family history of pregnancy in adolescence, risk situations in the family. The dependent variable was defined as occurrence of pregnancy in adolescence.

The descriptive analysis was performed using position measures, such as mean, median, and mode, as well as dispersion measures, such as Standard Deviation (SD) and variance. In the inferential analysis, the exposure and outcome variables were individually and jointly analyzed using association tests, the X² test, and Fisher’s exact test for the schooling, religion, and own family variables, considering a positive association when the p-value obtained was below or equal to 0.05, with a 95% confidence interval (95% CI). To determine the strength of the association, an Odds Ratio (OR) was calculated, together with its 95% confidence interval (95% CI).

The study was submitted to the Research Ethics Committee of the Júlio Muller University Hospital and approved under opinion No. 1,443,731, in compliance with the ethical precepts established by Resolution No. 466 of December 12th, 2012 of the Ministry of Health.

RESULTS AND DISCUSSION

The results from the present study are related to the families of 74 adolescent girls (cases) aged from 15 to 19 years old and of 74 young women (controls) aged from 20 to 24 years old. The mean age among the adolescents was 17.5 years old, ranging from 15 to 19 (SD=1.4), with the most frequent age being 19 years old. In the control group, the mean age was 22.3 years old, ranging from 20 to 24 (SD=1.6), with the most frequent age being 24 years old.

In the group of cases, most of the adolescents self-reported as black-skinned (86.5%), were in a stable relationship (70.3%), had a religion (82.4%), over 9 years of schooling (60.8%), and did not work at the time of the research. The profile of the control group was similar to that of the adolescents, since most self-reported as black-skinned (89.2%), were in a stable relationship (85.1%), had a religion and more than 9 years of schooling, only differing in the work variable, since most of the women in this group were working (51.4%).

With regard to the families of origin, eight compositions were identified, namely: nuclear, single-parent, reconstructed, plural, adoptive, non-parental, extended, and own families. By dichotomizing the periods of childhood and adolescence, it was verified that, in both groups, most of the young women reported belonging to a nuclear family during their childhood. Conversely, a reduction in the nuclear families, an increase in the single-parent and reconstructed families, and the emergence of own family and of the extended family were identified in adolescence. Figure 1 shows the family composition in the childhood period and the changes occurring in these families during the transition to adolescence, by calculating the absolute and relative frequencies in each group, considering a sample of 74 young women.

Understanding family as a system directly related to the processes of historical, cultural, and social transformation in a society, the families under study are acknowledged to share the same fluidity and fragmentation of contemporary society, thus resulting in changes in their composition and dynamics.

Therefore, it was observed that these changes in the family composition between the childhood and adolescence periods resulted mainly from parental separation. It this sense, it is acknowledged that separation or divorce constitutes a complex event that has always an underlying cause. According to a literature review that aimed to characterize the family structures in postmodern times, the main reasons for changes in family composition are the following: abandonment, chronic diseases, diagnosis of sexually transmitted infections, remarriage, widowhood, and incarceration.

However, regardless of the reason that led to the new family composition, families face stressful factors resulting from this change, since changes occur in family structure, organization, and dynamics, often including changes in the socioeconomic conditions and in the quality of family relationships.

It is worth highlighting that the implications of parental separation on the children do not follow a pattern, since each individual inserted in a family context may find countless ways to cope with this event. These include using mechanisms of adaptive and integrated responses or engaging in conflicts and risk behaviors, that choice depending especially on the relationship between the parents and on the way they distinguish marital from parental relationship.
In this way, the couple’s relationship in the family environment is the basis of the whole structure upon which the family is built, since children of couples who live in an aggressive and hostile environment are unable to solve conflicts in their relationships, experience the worst parenting styles, have lesser emotional regulation, have difficulties in properly dealing with conflicts, and present higher levels of anxiety and depression. 23

For the analysis of the association between pregnancy in adolescence and the family compositions of the young women under study, it is highlighted that the family variable was dichotomized into nuclear and non-nuclear families. Therefore, a strong association was verified between the type of family in the childhood period \( (p=0.03) \), in adolescence \( (p=0.01) \), staying in the same family during childhood and adolescence \( (p=0.03) \), and starting an own family in the adolescence period \( (p=0.04) \), as shown in Table 1.

According to the values obtained by means of the Odds Ratio, it was verified that, in the family composition in childhood variable, the young women who reported belonging to non-nuclear families were 2.04 times more likely to get pregnant in the adolescence period compared to those coming from nuclear families \( (95\% \text{ CI}=1.06-3.95) \).

The same was evidenced in the family composition related to the adolescence period, since the young women who stated belonging to non-nuclear families for most of their adolescence were 2.41 times more likely to get pregnant during adolescence compared to those coming from nuclear families \( (95\% \text{ CI}=1.18-4.92) \).

Considering the single family variable, it was verified that the young women who stated not belonging to the same family during childhood and adolescence were 2.03 times more like to get pregnant in their adolescence compared to those belonging to the same family in both periods \( (95\% \text{ CI}=1.05-3.91) \).

As for starting their own family, it was found that the young women who reported having started their own family in the adolescence period were 4.13 times more likely to get pregnant during this period compared to those who constituted a family later \( (95\% \text{ CI}=1.10-15.48) \).

According to the data from the study, it is stated that the adolescents inserted in a diversified family environment are more exposed to risk factors for the occurrence of pregnancy compared to those coming from nuclear families. In this sense, it is understood that constant changes in the family structure and dynamics, together with the young women's crises and demands inherent to this phase of life, can worsen these crises and cause harms in the evolutionary cycle of the family system. 24

A study that investigated the association of family and educational factors with the adolescents’ sexual behavior signaled that, in a single-parent family context, co-living with only one parent or the absence of the parents, as well as low parental supervision, increased the frequency of protected and unprotected sexual relationships. 17

Considering this context of single-parent families, a study that investigated differences in the behaviors and educational practices between single-parent and nuclear families showed that, in general, families headed by single mothers have greater difficulties with parental roles, greater levels of negative parental behavior, and use of ineffective...
Considering the protective factors against the occurrence of pregnancy in adolescence, a systematic literature review that aimed to understand the family context in situations of pregnancy and maternity in adolescence pointed out that, among the protective factors against this event, the presence of good levels of dialog between parents and children and of an affective family environment was highlighted, since adolescents inserted in this family context tend to postpone the beginning of their sexual life or to adopt preventive measures when engaging in sexual activities.

In line with these perspectives, it is understood that a stable family context, referred to in previous studies as that made up of a nuclear family, can favor growth sustained on the balance between parental roles and family support. Conversely, in contexts of non-nuclear families, it is stated that the adolescents can feel less support and understand pregnancy as a way to gain affection and understanding, limited in their family environment.

Since most of the young women in the study who reported that their biological parents are separated referred to the presence of their biological mother, which shows the predominance of single-parent families headed by the mother, it is highlighted that the paternal figure has a fundamental and complementary role in children’s and adolescents’ education. Although there is a focus on the maternal role as the basic and essential figure from conception and during the entire development and education process of the child, the father also has an equally important function that includes, beyond financial support, the representation of the social aspects for the child’s rearing, and conveys safety and protection.

### TABLE 1: Detailed distribution of the transition between family compositions in the childhood and adolescence periods according to case and control groups. Cuiabá, Brazil, 2016.

<table>
<thead>
<tr>
<th>Family Compositions</th>
<th>Childhood n</th>
<th>Adolescence n</th>
<th>Controls</th>
<th>Childhood n</th>
<th>Adolescence n</th>
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<tbody>
<tr>
<td></td>
<td>f(%)</td>
<td>f(%)</td>
<td></td>
<td>f(%)</td>
<td>f(%)</td>
</tr>
<tr>
<td>Nuclear</td>
<td>34 45.9</td>
<td>17 50.0</td>
<td>47 63.5</td>
<td>30 63.8</td>
<td></td>
</tr>
<tr>
<td>Single-parent</td>
<td>13 38.2</td>
<td>10 21.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reconstructed</td>
<td>2 5.9</td>
<td>6 12.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plural</td>
<td>0 0</td>
<td>1 2.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own family</td>
<td>2 5.9</td>
<td>0 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-parent</td>
<td>16 21.6</td>
<td>4 25.0</td>
<td>11 14.9</td>
<td>7 63.6</td>
<td></td>
</tr>
<tr>
<td>Own family</td>
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<td>0 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>4 25.0</td>
<td>4 36.7</td>
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</tr>
<tr>
<td>Extended</td>
<td>1 6.2</td>
<td>0 0</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Plural</td>
<td>1 6.2</td>
<td>0 0</td>
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<td></td>
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</tr>
<tr>
<td>Reconstructed</td>
<td>10 13.5</td>
<td>6 60.0</td>
<td>11 14.9</td>
<td>8 72.3</td>
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</tr>
<tr>
<td>Single-parent</td>
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<td>0 0</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Plural</td>
<td>1 10.0</td>
<td>1 9.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-parental</td>
<td>1 10.0</td>
<td>0 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own family</td>
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<td>2 18.2</td>
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<td></td>
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</tr>
<tr>
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<td>7 63.6</td>
<td>4 5.4</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Single-parent</td>
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<td>0 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuclear</td>
<td>0 0</td>
<td>1 25.0</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Reconstructed</td>
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<td>1 25.0</td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>2 100.0</td>
<td>1 1.3</td>
<td>0 0</td>
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<tr>
<td>Non-parental</td>
<td>1 14.1</td>
<td>1 100.0</td>
<td>0 0</td>
<td>0 0</td>
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</table>

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From this perspective, and based on the analysis of the data on the surrogate paternal figure of the present study, it is understood that the significance of stepfathers as paternal figures involves a construction process based on time and on the willingness of the young stepdaughters, which means that the legitimacy of this relationship is attained through co-living. Hence, it is stated that the young women in the control group who reported the presence of a stepfather for a longer time seem to internalize the substitution of their biological father with their stepfather, thus reestablishing the nuclear family.

With regard to the adolescents in the case group who remained less time with their surrogate father, it is understood that this new family may not be able to go back to the patriarchal hierarchical model present in the nuclear family, suggesting an approximation to the model of equal relationships between genders and generations; however, the boundaries between these two models seem undefined.

Considering the context of non-nuclear families, it was signaled that most of the young women who started their own family during adolescence belong to the case group and come from this type of family. It is thus highlighted that the journey of these adolescents in the transition from childhood to adolescence presented greater diversity among the types of family, indicating a more turbulent path.

In a scenario of family instability and scarcity of material and affective resources, it is suggested that the adolescents wish to leave the households of their family of origin as a negative and immediate result of such conditions, motivated by the expectation of freedom, even within a limited context in terms of educational and work opportunities.

From this perspective, the present study also signals that starting an own family during adolescence is strongly associated with the occurrence of pregnancy in this period, a result similar to that pointed out in another study that aimed to understand how adolescent girls with and without pregnancy experiences perceive motherhood and marriage or cohabitation. It was pointed out that cohabitation during adolescence increases the likelihood of young parenthood since, in these contexts, thoughts on family planning can lead motherhood to represent an important project for the young couple and for the construction of family identity.

CONCLUSION

Considering data analysis, it was signaled that, although nuclear families did not entirely represent the young women in the control group, since this type of family is also present in the case group, the association established between this type of family and occurrence of pregnancy in adolescence indicates the importance of the presence of both parental figures in the growth and development context of the adolescent girls.

In this way, it was stated that the complementarity of the maternal and paternal roles is fundamental for shaping the young girls’ identities, since it acts as a protective factor against risk behaviors and, consequently, against pregnancy in adolescence. Therefore, it is understood that lack of any of the parental figures leads to lower affective involvement, control and supervision of the children, due to the accumulation of parental functions in only one parent; thus, the adolescents tend to experience the extremes of both parental roles, many times causing harms to their behavioral development.

Although the present study has limitations in providing in-depth understandings because of its quantitative approach, the statistical analyses herein presented allowed explaining an aspect involved in the occurrence of pregnancy in adolescence, i.e., the family, and the available data enable making references to other similar realities.

It is highlighted that this study did not aim to determine a unique casuistry but rather to emphasize the family factors that contributed to different outcomes among young women coming from the same social context. Therefore, this is an analysis of the family factors associated with pregnancy in adolescence, considering that other factors, either isolated or aggregated, are involved in the occurrence of the event.

In this way, the importance is pointed out of formulating social policies that focus on the family, since it is based on the individuals, and the vulnerability of one of its members implies weakening of the entire group. Therefore, it is necessary to work together with the family, ask its members about their problems, needs, desires, and available resources, considering their world of own meanings.

REFERENCES
