

Factors Associated with Pregnancy among Low-Income Brazilian Adolescents¹

Eva Diniz²

Silvia Helena Koller

Universidade Federal do Rio Grande do Sul, Porto Alegre-RS, Brazil

Abstract: This study aimed to assess factors associated with teen pregnancy among low-income Brazilian adolescents ($N = 452$) with pregnancy experience ($n = 226$) and without this experience ($n = 226$). The mean of age of the sample was 16.86 years old ($SD = 1.35$) and 64% were girls. A multivariate analysis demonstrated that teen pregnancy was associated with: living with the partner; use of oral contraception; lower age of the first sexual intercourse; use of alcoholic drink; and less home chores division. It was observed that teen pregnancy tends to appear when a conjugation of developmental risk variables exists. These results could be helpful to those who work with adolescents as well as to teen pregnancy prevention campaigns.

Keywords: adolescent pregnancy, sexual intercourse, family relations

Fatores Associados à Gravidez em Adolescentes Brasileiros de Baixa Renda

Resumo: Este estudo teve por objetivo investigar as características associadas à gravidez durante a adolescência em uma população de adolescentes brasileiros de baixa renda ($N = 452$) com experiência de gravidez ($n = 226$) e sem esta experiência ($n = 226$). A média de idade dos participantes foi de 16,86 anos ($DP = 1,35$) e 64% eram do sexo feminino. Os resultados da análise multivariada revelaram que a gravidez durante a adolescência se associou a: morar com o companheiro, utilização da pílula, menor idade para iniciação sexual, consumo de bebida alcoólica, e menor divisão das tarefas domésticas na família. A gravidez durante a adolescência tende a surgir perante um conjunto de variáveis que expressam a vulnerabilidade do contexto desenvolvimental do(a) adolescente. Essa poderá ser uma importante informação para intervenções dirigidas para esta população, assim como para trabalhos de prevenção de gravidez durante a adolescência.

Palavras-chave: gravidez na adolescência, relação sexual, relações familiares

Factores Asociados al Embarazo en Adolescentes Brasileños de Baja Renta

Resumen: El presente artículo tiene como propósito investigar las características asociadas al embarazo durante la adolescencia en una población de adolescentes brasileños de baja renta ($N = 452$) con experiencia de embarazo ($n = 226$) y sin esta experiencia ($n = 226$). El promedio de edad de los participantes fue de 16,86 años ($DE = 1,35$) y el 64% era del sexo femenino. Resultados del análisis multivariado revelaron que el embarazo a lo largo de la adolescencia se asoció a: vivir con la pareja; utilización de la píldora anticonceptiva; inicio sexual precoz; consumo de bebidas alcohólicas; y menor división de tareas domésticas en la familia. El embarazo durante la adolescencia tiene tendencia a surgir ante un conjunto de variables que expresan la vulnerabilidad del contexto de desarrollo del adolescente. Esta podrá constituir una importante información para intervenciones dirigidas a la población afectada y un aporte a la prevención del embarazo durante la adolescencia.

Palabras clave: embarazo en adolescencia, relación sexual, relaciones familiares

The characteristics of teenage pregnancy have been studied in Brazil (Aquino et al., 2003; Heilborn et al., 2002; Ministério da Saúde, 2006) and internationally (East, Khoo, & Reyes, 2006; Imamura et al., 2007; Scaramella, Conger, Simons, & Whitbeck, 1998). These studies permitted the identification of some associated characteristics, namely: first sexual intercourse (East et al., 2006), school failure (Scaramella et al., 1998) and relationship difficulties (Aquino et al., 2003; Coleman & Cater, 2006; Meade, Kershaw, & Ickovics, 2008; Moore & Brooks-Gunn, 2002). Adolescent pregnancy is not caused by poverty though, but by characteristics associated with a low socioeconomic level, with a combination

of multiple factors, among which low education levels and a lack of professional specialization stand out (Diniz & Koller, 2011; Duncan, 2007).

Hence, teenage pregnancy tends to emerge in contexts marked by social vulnerability and lack of opportunities (Aquino et al., 2003; Duncan, 2007). In that sense, Daly and Wilson's concept (2005) of "devaluing future" was used as a possible explanation for adolescent pregnancy. According to the authors, missing future attractants and multiple threats in the present entail a trend not to postpone behaviors and not to be afraid of taking risks. In other words, future perspectives condition decision-making and the control of impulsive behaviors in the present (Nagin & Pogarsky, 2004). The expression "devaluing the future" translates an equation between the gains/losses some behavior brings in the present in relation to the gains/losses of inhibiting this behavior and expected results in the future. Hence, there is a trend to inhibit certain behaviors

¹ Support: Brazilian Scientific and Technological Development Council (CNPq).

² Correspondence address:

Eva Diniz. Rua Ramiro Barcelos, 2600, sala 104, Santa Cecilia. CEP 90.035-003. Porto Alegre-RS, Brazil. E-mail: eva.diniz@ufrgs.br

in view of the existence of future expectations (Nagin & Pogarsky, 2004). In that sense, teenage pregnancy would happen in adolescents who assess their future as hardly promising and, therefore, there would be no reasons to avoid exposure to the risk. This hypothesis is reinforced when considering that adolescents who get pregnant tend to come from worse socioeconomic levels, with more experiences of school failure and less professional specialization (Aquino et al., 2003; Duncan, 2007; Imamura et al., 2007; Moore & Brooks-Gunn, 2002; Scaramella et al., 1998), which would represent a less attractive future perspective.

Characteristics of Adolescent Pregnancy

Adolescent pregnancy is characterized as pregnancy that occurs between the maternal ages of 14 and 19 years (World Health Organization [WHO], 2006). According to WHO (2006), 10% of births worldwide correspond to adolescents. In line with the same source, this rate corresponds to 18% of births in Brazil (WHO, 2006). Data by the Brazilian Ministry of Health (Ministério da Saúde, 2010) revealed that the number of adolescent deliveries has dropped in recent years (444,056 deliveries in 2009 vs. 572,541 in 2005). However, this distribution is not homogeneous across the country. Higher prevalence rates are registered in rural areas (4.1%) when compared with urban ones (3.6%), and the lowest rates are in the South of the country (3.1%). In a study performed in the city of Campinas, São Paulo (Carniel, Zanolli, Almeida, & Morcillo, 2006), in which maternal age (< 20 years and ≥ 20 years) was used as the dependent variable, poverty was the variable that most explained adolescent pregnancy. The results revealed that, of all adolescents interviewed, 40% lived in neighborhoods with the lowest life indices, while mothers over 20 years of age lived in neighborhoods with higher life indices. The study by Chalem et al. (2007) also revealed that, out of 1000 pregnant adolescents interviewed, 88.2% belonged to class C and D. In that group, 64.9% indicated that the family group's monthly income was up to four minimum wages. These results suggest that adolescent pregnancy tends to occur in places with higher poverty rates, despite links with other variables.

The age of the first sexual intercourse is another factor associated with adolescent pregnancy. In general, adolescents who get pregnant started their sexual life at a younger age (Aquino et al., 2003; Ministério da Saúde, 2006). These findings can be questioned though. In Brazil, the study by Dias and Aquino (2006) in three Brazilian cities (Rio de Janeiro, Salvador and Porto Alegre) revealed that Porto Alegre is the city where sexual life starts earlier. Nevertheless, it is also the city where fewer pregnancies happen, as opposed to Salvador, where adolescents start their sexual life later, but pregnancy rates are higher. These data show that the age of sexual initiation is not necessarily a pregnancy risk indicator (Scaramella

et al., 1998). Some studies indicate that the sexual initiation age is associated with other psychosocial characteristics, like: quality of social relations (Belsky, Steinberg, & Draper, 1991; Simpson & Belsky, 2008), academic ambitions (Meade et al., 2008; Moore & Brooks-Gunn, 2002) and the presence of risk indicators, such as unprotected sexual behaviors and consumption of cigarettes, alcohol and other drugs (Boyce, Gallupe, & Fergus, 2008; Imamura et al., 2007).

The influence of social and affective relations on adolescent pregnancy, particularly family relations, has been certified in countless studies (Benson, 2004; East et al., 2006; Dias & Aquino, 2006; Meade et al., 2008). The presence of stressful events in the family and/or the absence of one of the parent figures emerge as the events that are most associated with the young age of sexual initiation and the appearance of adolescent pregnancy (Dias & Aquino, 2006; Moore & Brooks-Gunn, 2002), as well as lack of parental monitoring (East et al., 2006). A study undertaken in the United States which involved 457 families revealed that adolescent pregnancy tended to emerge in families identified with a worse quality of family relations (Scaramella et al., 1998). There exists no consensus on these data in the literature though. To give an example, in another study of 154 American adolescents (pregnant or with children), no differences were revealed in the assessment of the family support received (Cruse, Hockaday, & McCarville, 2007). In a study involving Brazilian adolescents, adolescents with pregnancy experiences tended to evaluate their family as less supportive and less secure (Diniz, Dias, Neiva-Silva, Nieto, & Koller, 2012). Nevertheless, Silva and Tonete (2006) discuss that the evaluation of the support received is related to the family's reaction to the adolescent pregnancy.

Another factor that needs to be taken into account during adolescence is substance consumption. The study by Chalem et al. (2007), which involved 1,000 pregnant adolescents in São Paulo showed that, on average, 17.3% of the sample smoked five cigarettes per day during pregnancy, and 26.6% declared that they had consumed alcohol at least once during that period. As for the use of other drugs, 1.7% revealed that they had consumed marijuana or cocaine during pregnancy and 0.6% declared the use of injectable drugs. Drugs consumption by the partner or other family member was also associated with adolescent pregnancy. Illegal drugs use at home has been identified as a factor associated with adolescent pregnancy (Caputo & Bordin, 2008). In the study by Woodward, Horwood and Fergusson (2001), out of 74 adolescents with pregnancy experiences, 25% informed on their partner's abuse of alcohol and/or illegal drugs, as well as problems with justice. In addition, a study developed in Canadá (Boyce et al., 2008) involving 2000 adolescents indicated that the use of any type of illegal drug was associated with a younger sexual initiation age.

Academic aspirations are another factor described in the literature (Meade et al., 2008; Moore & Brooks-Gunn, 2002; Scaramella et al., 1998) as associated with teenage pregnancy. The probability of sexual initiation at an older age and the more effective use of contraceptive means is higher among adolescents with good school performance and academic aspiration levels (Levandowski & Piccini, 2004; Woodward et al., 2001). GRAVAD research data (Ministério da Saúde, 2006) reveal greater contraception use and higher mean age for the start of sexual life among adolescents who study.

The presence of these characteristics (poverty, school failure, family conflicts) should not be considered as a causal factor for the appearance of pregnancy though. This is supposedly due to the combination of multiple variables (Duncan, 2007; Scaramella et al., 1998). In that sense, many authors have defended the idea that pregnancy would tend to occur in adolescents with less self-accomplishment opportunities (Cerqueira-Santos, Paludo, Dei Schiro, & Koller, 2010; Diniz & Koller, 2011; Duncan, 2007; Galambos & Martínez, 2007). This argument is considered valid, as not all sexually active adolescents get pregnant (Scaramella et al., 1998). Nevertheless, teenage pregnancy-associated characteristics tend to be studied in isolation in different samples, hampering the understanding of the context they tend to occur in (Aquino et al., 2003; Duncan, 2007). Therefore, the aim in this study was to investigate the characteristics associated with adolescent pregnancy in teenagers from a low-level socioeconomic group, coming from multiple cities in Brazil.

Method

This study is part of a larger study that was aimed at investigating the psychosocial characteristics of Brazilian adolescents. A case-control design was used to investigate differences between adolescents with and without pregnancy experiences.

Participants

Study participants were 452 adolescents, separated in two groups: with pregnancy experience ($n = 226$) and without pregnancy experience ($n = 226$). The participants were selected based on the database of the National Research on Risk and Protection Factors of Brazilian Youth (Koller, Cerqueira-Santos, Morais, & Ribeiro, 2005), including teenagers and young people from nine cities in the five regions of Brazil (Arcos-MG, Belo Horizonte-MG, Brasília-DF, Campo Grande-MS, Maués-AM, Porto Alegre-RS, Presidente Prudente-SP, Recife-PE, São Paulo-SP) (Table 1). The initial database consisted of 7,200 participants between 14 and 24 years of age. To participate in the study, all adolescents aged 19 or less were selected without missing answers on the question related to pregnancy (answer

option yes vs. no; $n = 2.617$). Next, all adolescents who affirmed pregnancy experiences were selected. This resulted in 226 male and female adolescents, corresponding to 8.63% of the total sample (cases). To compare the characteristics of adolescents with and without pregnancy experiences, a random comparison group was constituted, including adolescents in the same age range who affirmed no pregnancy experience whatsoever (controls). The groups were paired according to the variables city of origin, gender and age. The final sample consisted of 145 (64.2%) female and 81 (35.8%) male participants. The mean age was 16.86 years ($SD = 1.35$).

Instrument

The questionnaire developed for the National Research on Risk and Protection Factors of Brazilian Youth (Koller et al., 2005) was used as a research instrument. From the original 109-question instrument, those questions related to the study objective were selected: biosociodemographic data, family composition, school attendance, sexual and reproductive life data and alcohol and drugs consumption.

Procedure

Data collection. The main objective of the National Research on Risk and Protection Factors of Brazilian Youth was to characterize the low-income adolescent/young population in Brazil. Therefore, the definition of low socioeconomic level was used that is based on the five indicators of the Brazilian Institute of Geography and Statistics (IBGE, 2001): income and literacy level of family head, construction type of place of residence, existence of tap water and sewage network at the place of residence. In São Paulo, the Human Development Index (HDI) of each neighborhood was also used. After this characterization, a list was produced of neighborhoods ranked below the cut-off point on at least two indicators. Then, a cluster sample was developed, using the number of neighborhoods and schools as a criterion. One school was drafted per neighborhood, according to the list of municipal and state schools.

Data analysis. To investigate what variables are associated with the dependent variable (pregnancy experience vs. no pregnancy experience), the analyses were developed in three distinct phases: (1) the chi-square test was used to investigate existing differences between cases and controls regarding categorical biosociodemographic characteristics and Student's *t*-test for continuous variables. Results were considered significant when $p < 0.05$; (2) to test what variables are associated with the dependent variable, multivariate logistic regression was used to estimate the odds ratio (OR) and the respective confidence interval (CI) associated with the dependent variable; (3) to test the final logistic regression model, the variables

were used whose confidence interval had been considered significant in phase (2).

Ethical Considerations

The ethical aspects of the research were guaranteed in compliance with Resolution 196 on research involving human beings, issued in 1996 (Ministério da Saúde, 1996). Participants received guarantees that personal information would be kept secret and that the research group would offer assistance if any participant needed psychological support (Ministério da Saúde, 1996). The project received approval from the Ethics Committee at a higher education institution, under protocol 2006/533.

The research objectives were presented to obtain authorization for data collection. At each school drafted, classes from the three school periods were drafted to participate in the study. The research was presented to the students and they were invited to participate. Students who were interested in participating received the Informed Consent Form (ICF) and a copy was forwarded to their legal caregivers, given that they were under 18 years of age. A date was agreed upon to apply the instrument and return the signed ICFs. The research was undertaken with those students who accepted the invitation to participate and returned the two copies of the ICF properly signed. These students were grouped and the completion of the questionnaire was explained, which was applied in group but completed individually.

Results

In Table 1, pregnancy frequencies in the cities investigated are displayed. In Table 2, the biosociodemographic characteristics are shown for adolescents with and without pregnancy experiences, respectively.

Table 1
Participants' City of Origin and Pregnancy Frequency During Adolescence (n = 452)

City	Pregnancy experience	
	Yes	No
	n (%)	n (%)
Recife-PE	44 (12.6) +	306 (87.4) -
Porto Alegre-RS	38 (8.7)	397 (91.3)
São Paulo-SP	32 (9.7)	298 (90.3)
Campo Grande-MS	17 (5.0) -	322 (95.0) +
Manaus-AM	17 (16.2) +	88 (83.8) -
Brasilia-DF	2.9 (10.6)	245 (89.4)
Presidente Prudente-SP	24 (6.3)	557 (93.7)
Arcos-MG	7 (5.0)	133 (95.0)
Belo Horizonte-MG	18 (6.8)	245 (93.0)
Total	226 (8.6)	2391 (91.4)

Note. The symbols + and - indicate a significantly higher or lower percentage of cases than expected for the category (+: adjusted standardized residual > +1.96; - : adjusted standardized residual < -1.96).

Table 2
Sociodemographic and Sexual Behavior Characteristics in Adolescent with and without Pregnancy Experience (N = 452)

	Total n (%)	Cases n (%)	Controls n (%)	p
<i>Sociodemographic characteristics</i>	452 (100)	226 (50.0)	226 (50.0)	
Marital status ^{a, b}				
Single	391 (87.3)	175 (77.4)	216 (97.3)	
Married/Lives together	21 (4.7)	20 (8.8)	1 (0.5)	< 0.001
Divorced/Separated	4 (0.9)	3 (1.3)	1 (0.5)	
Others	2 (0.4)	2 (0.9)	0 (0.0)	
Who lives at home ^{a, d}	30 (6.7)	26 (11.5)	4 (1.8)	
Father				
Mother	222 (49.2)	95 (42.2)	127 (56.2)	0.02
Partner	375 (83.0)	180 (39.8)	195(43.1)	0.08
Main family provider ^{d, c}	46 (10.2)	45 (10.0)	1 (0.2)	< 0.001
Father				
Mother	229 (51.3)	99 (43.3)	130 (58.3)	0.04
Partner	248 (55.7)	126 (56.8)	122 (54.7)	0.3
Repetition of school year ^{c, h}	33 (7.4)	31 (13.9)	2 (0.9)	< 0.001
Expulsion from school ^{c, h}	253 (58.6)	140 (65.1)	113 (52.1)	0.04
Sexual Behavior	18 (4.2)	15 (6.9)	3 (1.4)	0.006
Age 1st sexual intercourse (M; SD) ^{f, g}				
Use contraceptive methods ^{a, d, i}	14.5 (1.7)	14.1 (1.6)	15.3 (1.6)	< 0.001
Condom				
Contraceptive pills	244 (82.4)	162 (54.7)	82 (27.7)	0.03
Pílula	131 (44.4)	97 (32.9)	34 (11.5)	0.05

Note. ^aPearson chi-squared. ^bMissing - four participants. ^cMissing- 23 participants. ^dMultiple answer. ^eMissing - seven participants. ^fMissing - 143 participants. ^gIn sexually active adolescents. ^hDichotomous variable - answer "yes". ⁱMissing - 77 participants.

A trend was verified towards differences between the two groups analyzed in terms of biosociodemographic characteristics. In the group with pregnancy experiences, lower percentages were found for single adolescents and higher percentages of marriage/living together. In addition, the groups revealed differences related to the people they live with: the group with pregnancy experiences lived less with the father and more with the husband/wife/partner. In addition, the father was less indicated as the main family provider in the group with pregnancy experiences, in which the husband/partner plays this role. Another distinction referred to the age of sexual initiation, which was lower in the group with pregnancy experiences. As for contraception use, a

higher percentage of condom and contraceptive pill use was identified in the group with pregnancy experiences.

With regard to the dependent variable, six categories were identified as associated: sociodemographic characteristics, sexual behavior, relation with school, use of alcohol and drugs, relation with the family and events of life. As shown in Tables 3 and 4, adolescent pregnancy is associated with: being married/living together, living less with the father, living with the partner, the partner as the main family provider, age of first sexual intercourse, use of contraceptive methods, more frequent repetition of school year and expulsion from school, alcohol and drugs consumption, worse family relations, and higher frequency of negative events of life.

Table 3

Logistic Regression Results for Demographic Characteristics between Adolescents with and without Pregnancy Experience (N = 452)

<i>Sociodemographic characteristics</i>	Cases <i>n</i> (%)	Controls <i>n</i> (%)	OR	95% CI
Marital status				
Single	175 (77.4)	216 (97.3)	1.00	–
Married/Lives together	20 (8.8)	1 (0.5)	0.04	0.01 - 0.31
Divorced/Separated	3 (1.3)	1 (0.5)	0.27	0.03 - 2.62
Widowed	2 (0.9)	0 (0.0)	0.00	0.00
Others	28 (12.4)	4 (1.8)	0.13	0.04 - 0.36
Who lives at home ^a				
Mother	180 (39.8)	195 (43.1)	1.00	–
Father	95 (42.2)	127 (28.2)	-1.76	1.21 - 2.55
Partner	45 (10.0)	1 (0.2)	0.018	0.00 - 0.13
Main family provider ^a				
Mother	126 (28.3)	122 (27.4)	1.00	–
Father	99 (43.3)	130 (58.3)	-0.70	1.47 - 1.04
Partner	31 (13.9)	2 (0.9)	0.06	0.01 - 0.24
Adolescent	29 (6.5)	20 (4.5)	0.63	0.34 - 1.16
Education level mother				
Illiterate	49 (24.1)	33 (16.2)	0.41	0.16 - 1.11
Primary Education	103 (50.7)	111 (54.4)	0.66	0.26 - 1.17
Secondary Education	43 (21.2)	47 (23.6)	0.68	0.25 - 1.78
Higher Education	8 (3.9)	13 (6.4)	1.00	–
Sexual Behavior ^{a, b}				
Age first sexual intercourse (mean, SD)	14.0 (1.6)	15.3 (1.6)	1.6	1.35 - 1.90
Use of contraception				
Condom	162 (54.7)	82 (27.7)	-2.13	1.02 - 4.45
Contraceptive pill	97 (32.9)	34 (11.5)	1.5	0.91-2.52

Note. ^aMultiple answer. ^bIn adolescents who revealed sexual activity.

Table 4

Logistic Regression Results for Relation with School, Drugs/Alcohol Consumption, Family Relations and Events of Life (N = 452)

Variables	Cases <i>n</i> (%)	Controls <i>n</i> (%)	OR	95% IC
Goes to school ^a	216 (48.5)	215 (48.3)	0.75	0.26 - 2.21
Repeated a year ^a	140 (65.1)	113 (52.1)	0.58	0.40 - 0.86
Expulsed ^a	15 (6.9)	3 (1.4)	0.19	0.55 - 0.67

Continue

Table 4
Continuation

Variables	Cases n (%)	Controls n (%)	OR	95% IC
Substance consumption (some time) ^b				
Wine or beer	126 (64.3)	95 (45.9)	0.47	0.32 - 0.70
Cigarettes	104 (51.0)	60 (29.3)	0.40	0.27 - 0.60
Marihuana	4 (24.6)	22 (36.3)	0.36	0.21 - 0.63
Glue	21 (10.9)	4 (1.9)	0.16	0.06 - 0.48
Crack	21 (10.9)	9 (4.4)	0.30	0.08 - 1.13
Relation with the family ^b				
I feel safe with family	140 (70.4)	173 (80.8)	-1.68	1.19 - 2.37
Home chores are divided	90 (47.9)	128 (62.4)	-1.56	1.22 - 1.99
Family gives the support I need	114 (59.4)	134 (66.3)	-1.38	1.05 - 1.82
Mutual respect among people	106 (56.4)	132 (64.1)	-1.39	1.05 - 1.85
Events of life (some time) ^b				
I have experienced violence at my home	14 (3.5)	6 (1.5)	0.37	0.14 - 0.99
My parents are divorced	89 (22.2)	74 (19.0)	0.65	0.44 - 0.97
I have lived at a shelter	28 (7.0)	7 (1.7)	0.21	0.09 - 0.49
I have run away from home	45 (11.1)	21 (5.2)	0.37	0.21 - 0.65
I have been a street child	10 (2.5)	1 (0.3)	0.09	0.01 - 0.69
I have slept on the street	29 (7.3)	9 (2.3)	0.25	0.11 - 0.54
Someone in my family has been arrested	60 (15.0)	46 (11.5)	0.63	0.40 - 0.98
I have starved	40 (10.0)	22(85.5)	0.44	0.25 - 0.77
I got involved in drugs traffic	30 (7.6)	9 (2.3)	0.24	0.11 - 0.52
I have lived with different people	53 (13.3)	34 (8.5)	0.5	0.31 - 0.81
I have had problems with justice	30 (7.5)	11 (82.8)	0.3	0.15 - 0.61

Note. ^aDichotomous variable - answer "yes". ^bMultiple answer.

According to Table 5, the following variables were associated with pregnancy experiences in the final regression analysis: living with the partner, younger age of sexual initiation, use of alcoholic beverage at some moment in life, and lesser division of home chores.

Table 5
Multivariate Analysis - Variables Independently Associated with Teen Pregnancy (N = 452)

Variable	Adjusted odds ratio	95% IC
Lives with partner	2.74	1.79 - 134.37*
Use of contraceptive pill	0.81	0.99 - 5.06*
Age first sexual intercourse	-0.55	0.41 - 0.79**
Consumption alcoholic beverage (some time)	0.99	1.11 - 5.98*
Division of home chores	-0.94	0.98 - 7.48*

Note. * $p < 0,05$; ** $p < 0,001$.

Discussion

The results obtained reveal existing differences between the two groups studied. Although both groups seem to be equivalent, distinct profiles were verified. The group with pregnancy experiences lived with their partner more and showed a lower mean age of sexual initiation. Also, a different profile was revealed in the use of contraceptive methods, as well as more frequent use of alcoholic beverages. In

addition, the family was described as less equalitarian, with less division of home chores.

As verified, poverty is not necessarily a variable associated with adolescent pregnancy (Breheny & Stephens, 2007; Duncan, 2007), as all adolescents who participated in the study belonged to low-income families. Thus, other variables emerged that further explain the appearance of pregnancy, namely the fact of living with one's partner. This data would indicate pregnancy as an event that brings about changes in the adolescents' lives. The formalization of adolescent parents as a couple, according to Steinberg and Morris (2001), can take place to reduce the association between adolescent pregnancy and negative representations that are common in society. Negative representations of adolescent pregnancy as an "accident", associated with impulsive behaviors, would be minimized by making the relation official, which would also reaffirm the adolescents' capacity to assume their child and the requirements inherent in care. Also, many pregnancies may not derive from occasional dating, but from relationships that are considered satisfactory with a view to the development of motherhood (Carvacho, Mello, Morais, & Silva, 2008; Diniz & Koller, 2011).

According to Duncan (2007), the changes in life pregnancy brings about are intimately associated with the socioeconomic level of origin. The author postulates that, at higher socioeconomic levels, pregnancy would cause less changes in the adolescents' marital status, without the need to interfere in their individual development plan. The same is not true

at lower socioeconomic levels though, when the adolescent is held responsible for the infant. Similar results were found in Brazilian studies that investigated teenage pregnancy at different socioeconomic levels (Aquino et al., 2003; Carniel et al., 2006; Esteves & Menandro, 2005). These studies indicated that adolescent pregnancy entails different repercussions, depending on the socioeconomic level of origin. Medium socioeconomic level adolescents who get pregnant tend not to drop out of school and to live in their families' home, while teenagers of lower socioeconomic level revealed greater absenteeism, as well as changes in marital status (Esteves & Menandro, 2005).

The use of contraceptive methods also distinguished both research groups. Against expectations, the use of the contraceptive pill was positively associated with the group with pregnancy experiences. This use may derive from the pregnancy. According to Seamark and Lings (2004), adolescents tend to make little use of the pill, due to the discontinued frequency of their sexual relationships and because its use unveils a sexuality that would not always be accepted in the family group. This was not verified in this study, in the group with pregnancy experiences. Hence, as the pill is the most used method in this group, these adolescents' sexual relationships are supposed to be more stable, and they seem to assume their sexuality. These facts are also reinforced by the fact that living with one's partner is more frequent.

As revealed in other studies (Aquino et al., 2003; East et al., 2006; Imamura et al., 2007; Ministério da Saúde, 2006), the young age of sexual initiation appeared as a variable that is strongly associated with adolescent pregnancy. The variable by itself would not explain the appearance of adolescent pregnancy though (Dias & Aquino, 2006; Scaramella et al., 1998). Pregnancy is supposedly caused by its combination with other factors, namely: school failure (Moore & Brooks-Gunn, 2002), bad quality of family relations (Benson, 2004; Meade et al., 2008) and substance consumption (Boyce et al., 2008). Although the group with pregnancy experiences reveals higher levels of school failure (i.e. more repetitions of school year and expulsions from school, this variable was not maintained in the final model, going against the results of other studies (Meade et al., 2008; Moore & Brooks-Gunn, 2002; Scaramella et al., 1998). This difference in results can be associated with the sample characteristics, as the adolescents were mostly low income and, therefore, more susceptible to school development constraints. Nevertheless, the group with pregnancy experiences revealed more behaviors of risk exposure, like the consumption of alcoholic beverages and a less positive perception of their family, as discussed in other studies (Chalem et al., 2007; Dias & Aquino, 2006; Meade et al., 2008). According to Boyce et al. (2008), the use of alcohol and drugs is strongly associated with young age of sexual initiation. The findings by Belsky et al. (1991) reveal that adolescents who consider themselves dissatisfied with their family relations tend to present higher levels of substance consumption and a younger sexual initiation age.

Hence, these variables tend to be mutually related, making it difficult to analyze them separately.

In the study by Chalem et al. (2007), alcohol stood out as the most used substance during pregnancy: out of 1,000 pregnant adolescents, 26.6% declared that they had consumed alcohol during pregnancy. Although the moment when this substance was used could not be identified in this research, its usage pattern distinguished the two groups and was independently associated with the pregnancy experience. This aspect reinforces the perspective that pregnancy tends to emerge in a context of psychosocial vulnerability, which includes substance consumption by the adolescent and his/her relatives.

One aspect that stood out in the results was the worse family assessment in the group with pregnancy experiences. The weakness of family relations was a characteristic associated with teenage pregnancy in other studies (Benson, 2004; Duncan, 2007; Scaramella et al., 1998). In the present study, the lesser division of home chores was the only family characteristic that continued in the final model. This finding may indicate both a characteristic that existed before the pregnancy and a consequence of its occurrence. According to Bigras and Paquette (2007), the lack of family support would precede the pregnancy situation. The fact of having a baby, however, may also be sufficient for adolescents to modify their perceived family support, feeling less supported; the infant's birth would enhance the perception of little help. In addition, after the infant's birth, many of the adolescents are responsible for home chores, which would reinforce this feeling.

According to Belsky et al. (1991), dissatisfaction with family relations could lead to a search for other sources of satisfaction, like alcohol consumption and/or sexual relations. The quality of the initial relations established with the family would affect not only development, but also sexual behaviors. The authors verified that adolescents with worse relations with their parents tended to start their sexual life earlier. These are the people the authors define with "short-term objectives", with behaviors oriented towards immediate opportunities. Therefore, adolescent pregnancy could be understood as a consequence of these behaviors.

According to Harden, Brunton, Fletcher and Oakley (2009), teenage pregnancy is associated with the following characteristics: distancing from school; lack of material resources during development and childhood described as unhappy; and lack of future aspirations. The authors describe that, in general, these adolescents tend to reveal the need to "grow up quickly" (p. 6) to be able to survive. Another interesting aspect the authors found was the opinion difference between adolescents who wanted to have a baby in the near future in comparison with those who intended to have one in a later phase. The former described their desire to drop out of school and get a job, while the latter described the desire to go to college and travel. The first group expressed its disbelief in the future, in which they saw no opportunities, while the second revealed the existence of long-term plans. In that sense, the concept of "devaluing the future" (Daly & Wilson, 2005)

can be understood as an explanatory factor for the appearance of teenage pregnancy. The group with pregnancy experiences revealed its development in a context of greater social vulnerability, namely due to the worse family evaluation and greater consumption of substances. Hence, the argument could be considered valid that adolescent pregnancy could emerge in those adolescents who evaluate their future worse and, therefore, see no reasons to postpone or inhibit certain behaviors, which would socially be considered maladjusted (Daly & Wilson, 2005; Harden et al., 2009). These study findings also reveal that teenage pregnancy should not be considered as an event associated with certain groups. On the opposite, it reveals particularities that should be attended to (Dias & Teixeira, 2010). This information could be extremely relevant for activities focused on adolescents, namely teenage pregnancy prevention campaigns.

Final Considerations

This study offered important contributions to understand teenage pregnancy, namely the importance of the development context. The investigation of pregnancy in a group of adolescents that is considered homogeneous revealed that pregnancy occurred in those adolescents who invariably described worse living conditions (Harden et al., 2009). Some limitations need to be considered though. In the first place, the fact that the questionnaire used investigates pregnancy retroactively, so that the responses given are influenced by the time passed. Another limitation would be the impossibility to distinguish between behaviors preceding or, on the opposite, consequent to the pregnancy. In addition, the participants were contacted in schools and community institutions in the cities, which may have impeded access to a significant number of adolescents with pregnancy experiences, considering that they usually do not attend school (WHO, 2006). The selection criterion can justify the lower prevalence of adolescent pregnancy in comparison with other studies, but also the absence of differences between participants with and without pregnancy experiences regarding their participation in school, going against other findings.

Nevertheless, the results found are relevant, particularly because pregnancy is investigated in a low-income population. In contrast with other studies (Aquino et al., 2003; Coleman & Cater, 2006; Meade et al., 2008; Moore & Brooks-Gunn, 2002), it was verified that poverty by itself is not an explanatory variable for the appearance of adolescent pregnancy, but results from a combination of multiple variables. This result indicates the importance of heeding the adolescent's global development. The results obtained highlight a contact of greater vulnerability to the appearance of adolescent pregnancy. In other words, teenage pregnancy should not be understood in a causal manner, but through the conjunction of multiple variables (like age of sexual initiation, alcohol use), which favor the appearance of pregnancy at an age that is considered unexpected. In that sense, the "devaluing the future" perspective

can be understood as a way to comprehend the occurrence of the pregnancy, in view of the lack of accomplishment opportunities. Therefore, during adolescent sexuality and teenage pregnancy consultations, central areas of development in this age range should be considered, namely the presence of risk behaviors and the quality of family relations.

References

- Aquino, E. M. L., Heilborn, M. L., Knauth, D., Bozon, M., Almeida, M. C., Araújo, J., & Menezes, G. (2003). Adolescência e reprodução no Brasil: A heterogeneidade dos perfis sociais. *Cadernos de Saúde Pública*, 19(Supl. 2), S377-S388. doi:10.1590/S0102-311X2003000800019
- Belsky, J., Steinberg, L., & Draper, P. (1991). Childhood experience, interpersonal development, and reproductive strategy: An evolutionary theory of socialization. *Child Development*, 62(4), 647-670. doi:10.1111/j.1467-8624.1991.tb01558.x
- Benson, M. J. (2004). After the adolescent pregnancy: Parents, teens, and families. *Child & Adolescent Social Work Journal*, 21(5), 435-455. doi:10.1023/B:CASW.0000043358.16174.c6
- Bigras, M., & Paquette, D. (2007). Estudo pessoa-processo-contexto da qualidade das interações entre mãe-adolescente e seu bebê. *Ciência & Saúde Coletiva*, 12(5), 1167-1174. doi:10.1590/S1413-81232007000500013
- Boyce, W. F., Gallupe, O., & Fergus, S. (2008). Characteristics of Canadian youth reporting a very early age first sexual intercourse. *Canadian Journal Human Sexuality*, 17(3), 97-108.
- Breheny, M., & Stephens, C. (2007). Individual responsibility and social constraint: The construction of adolescent motherhood in social scientific research. *Culture, Health and Sexuality*, 9(4), 333-346. doi:10.1080/13691050600975454
- Caputo, V. G., & Bordin, I. A. (2008). Gravidez na adolescência e uso frequente de álcool e drogas no contexto familiar. *Revista de Saúde Pública*, 42(3), 402-410. doi:10.1590/S0034-89102008000300003
- Carniel, E. F., Zanolli, M. L., Almeida, C. A. A., & Morcillo, A. M. (2006). Características das mães adolescentes e de seus recém-nascidos e fatores de risco para a gravidez na adolescência em Campinas, SP, Brasil. *Revista Brasileira de Saúde Materno-Infantil*, 6(4), 419-426. doi:10.1590/S1519-38292006000400009
- Carvacho, I. E., Mello, M. B., Morais, S. S., & Silva, J. L. P. (2008). Fatores associados ao acesso anterior à gestação a serviços de saúde por adolescentes gestantes. *Revista de Saúde Pública*, 42(5), 886-894. doi:10.1590/S0034-89102008000500014
- Cerqueira-Santos, E., Paludo, S. S., Dei Schiro, E. D. B., & Koller, S. H. (2010). Gravidez na adolescência: Análise contextual de risco e proteção. *Psicologia em Estudo*, 15(1), 72-85. doi:10.1590/S1413-73722010000100009

- Chalem, E., Mitsuhiro, S. S., Ferri, C. P., Barros, M. C. M., Guinsburg, R., Laranjeira, R. (2007). Gravidez na adolescência: Perfil sócio-demográfico e comportamento de uma população da periferia de São Paulo, Brasil. *Cadernos de Saúde Pública*, 23(1), 177-186. doi:10.1590/S0102-311X2007000100019
- Coleman, L., & Cater, S. (2006). 'Planned' teenage pregnancy: Perspectives of young women from disadvantaged backgrounds in England. *Journal of Youth Studies*, 9(5), 593-614. doi:10.1080/13676260600805721
- Cruse, S. J., Hockaday, C., & McCarville, P. M. (2007). Brief report: Perceptions of positive and negative support: Do they differ for pregnant/parenting adolescents and nonpregnant, nonparenting adolescents? *Journal of Adolescence*, 30(3), 505-512. doi:10.1016/j.adolescence.2006.11.007
- Daly, M., & Wilson, M. (2005). Carpe diem: Adaptation and devaluing the future. *The Quarterly Review of Biology*, 80(1), 55-60.
- Dias, A. B., & Aquino, E. M. (2006). Maternidade e paternidade na adolescência: Algumas constatações em três cidades do Brasil. *Cadernos de Saúde Pública*, 22(7), 1447-1458. doi:10.1590/S0102-311X2006000700009
- Dias, A. C. G., & Teixeira, M. A. P. (2010). Gravidez na adolescência: Um olhar sobre um fenômeno complexo. *Paidéia (Ribeirão Preto)*, 20(45), 123-131. doi:10.1590/S0103-863X2010000100015
- Diniz, E., & Koller, S. H. (2011). Ser adolescente e ser mãe: Investigação da gravidez adolescente em adolescentes brasileiras e portuguesas. *Análise Psicológica*, 29(4), 521-533.
- Diniz, E., Dias, A. C., Neiva-Silva, L., Nieto, C., & Koller, S. H. (2012). Características familiares y apoyo percibido entre adolescentes brasileños con y sin experiencia de embarazo. *Avances en Psicología*, 30, 65-80.
- Duncan, S. (2007). What's the problem with teenage parents? And what's the problem with policy? *Critical Social Policy*, 27(3), 307-334. doi:10.1177/0261018307078845
- East, P. L., Khoo, S. T., & Reyes, B. T. (2006). Risk and factors predictive of adolescent pregnancy: A longitudinal, prospective study. *Applied Developmental Science*, 10(4), 188-199. doi:10.1207/s1532480xads1004.
- Esteves, J. R., & Menandro, P. R. M. (2005). Trajetórias de vida: Repercussões da maternidade adolescente na biografia de mulheres que viveram tal experiência. *Estudos de Psicologia*, 10(3), 363-370. doi:10.1590/S1413-294X2005000300004.
- Galambos, N. L., & Martinez, M. L. (2007). Poised for emerging adulthood in Latin America: A pleasure for the privileged. *Child Development Perspectives*, 1(2), 109-114. doi:10.1111/j.1750-8606.2007.00024.x
- Harden, A., Brunton, G., Fletcher, A., & Oakley, A. (2009). Teenage pregnancy and social disadvantage: Systematic review integrating controlled trials and qualitative studies. *BMJ*, 339, b4254. doi:10.1136/bmj.b4254
- Heilborn, M. L., Salem, T., Rohden, F., Brandão, E., Knauth, D., Vitora, C., Aquino, E., McCallum, C., & Bozon, M. (2002). Aproximações socioantropológicas sobre a gravidez na adolescência. *Horizontes Antropológicos*, 8(17), 13-45. doi:10.1590/S0104-71832002000100002
- Imamura, M., Tucker, J., Hannaford, P., Silva, M. O., Astin, M., Wyness, L., Bloemenkamp, K. W. M., Jahn, A., Karro, H., Olsen, J., & Temmerman, M. (2007). Factors associated with teenage pregnancy in the European Union countries: A systematic review. *European Journal of Public Health*, 17(6), 630-636. doi:10.1093/eurpub/ckm014
- Instituto Brasileiro de Geografia e Estatística. (2001). *Censo 2000*. Rio de Janeiro, RJ: IBGE.
- Koller, S., Cerqueira-Santos, E., Morais, N. A., & Ribeiro, J. (2005). *Juventude Brasileira. Relatório Técnico*. Washington, DC: World Bank.
- Levandowski, D. C., & Piccinini, C. A. (2004). Paternidade na adolescência: Aspectos teóricos e empíricos. *Revista Brasileira de Desenvolvimento Humano*, 14(1), 51-67.
- Meade, C. S., Kershaw, T. S., & Ickovics, J. R. (2008). The intergenerational cycle of teenage motherhood: An ecological approach. *Health Psychology*, 25(4), 419-429. doi:10.1037/0278-6133.27.4.419
- Ministério da Saúde. (2010). *Brasil acelera redução de gravidez na adolescência*. Retrieved from http://portal.saude.gov.br/portal/aplicacoes/noticias/default.cfm?pg=dspDetalheNoticia&id_area=124&CO_NOTICIA=11137
- Ministério da Saúde. Conselho Nacional de Saúde (1996, 10 de outubro). *Resolução 196/96*. Aprova as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Recuperado de <http://conselho.saude.gov.br/resolucoes/1996/Reso196.doc>
- Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. (2006). *Marco teórico e referencial: Saúde sexual e saúde reprodutiva de adolescentes e jovens*. Brasília, DF: Editora do Ministério da Saúde. Recuperado de http://portal.saude.gov.br/portal/arquivos/pdf/marco_teorico_referencial.pdf
- Moore, M. R., & Brooks-Gunn, J. (2002). Adolescent parenthood. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 3. Being and becoming a parent* (pp. 173-213). Mahwah, NJ: Lawrence Erlbaum.
- Nagin, D. S., & Pogarsky, G. (2004). Time and punishment: Delayed consequences and criminal behavior. *Journal of Quantitative Criminology*, 20(4), 295-317. doi:10.1007/s10940-004-5866-1
- Scaramella, L. V., Conger, R. D., Simons, R. L., & Whitbeck, L. B. (1998). Predicting risk for pregnancy by late adolescence: A social contextual perspective. *Developmental Psychology*, 34(6), 1233-1245. doi:10.1037/0012-1649.34.6.1233
- Silva, L., & Tonete, V. L. (2006). A gravidez na adolescência sob a perspectiva dos familiares: Compartilhando projetos de vida e de cuidados. *Revista Latino-americana de Enfermagem*, 14, 199-206. doi:10.1590/S0104-11692006000200008.

- Seamark, C. J., & Lings, P. (2004). Positive experiences of teenage motherhood: A qualitative study. *British Journal of General Practice*, 54(508), 813-818.
- Simpson, J. A., & Belsky, J. (2008). Attachment theory within a modern evolutionary framework. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 131-157). New York: Guilford.
- Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology*, 52, 83-110. doi:10.1146/annurev.psych.52.1.83
- Woodward, L. J., Horwood, L. J., & Fergusson, D. M. (2001). Teenage pregnancy: Cause for concern. *New Zealand Medical Journal*, 114(1135), 301-303.
- World Health Organization. (2006). *Pregnant adolescents*. Recuperado de http://whqlibdoc.who.int/publications/2006/9241593784_eng.pdf

Eva Diniz is a Ph.D. candidate in the Graduate Program of Psychology at Universidade Federal do Rio Grande do Sul.

Silvia Helena Koller is an Adjunct Professor at the Department of Psychology of Universidade Federal do Rio Grande do Sul.

Received: Apr. 06th 2012
1st revision: Sept. 22nd 2012
Approved: Oct. 2nd 2012

How to cite this article:

Diniz, E., & Koller, S. H. (2012). Factors associated with pregnancy among low-income Brazilian adolescents. *Paidéia (Ribeirão Preto)*, 22(53), 305-314. doi:<http://dx.doi.org/10.1590/1982-43272253201302>