

Original Study

Maternal Adjustment and Maternal Attitudes in Adolescent and Adult Pregnant Women

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ABSTRACT

Study Objective: This study analyzes differences between adolescent and adult pregnant women and the contribution of maternal age to maternal adjustment and maternal attitudes during pregnancy.

Design, Setting, and Participants: A sample of 398 Portuguese pregnant women (111 younger than 19 years) was recruited in a Portuguese Maternity Hospital and completed the Maternal Adjustment and Maternal Attitudes Questionnaire between the 24th and 36th weeks of gestation.

Main Outcome Measures: Maternal Adjustment and Maternal Attitudes Questionnaire¹

Results: Adolescent pregnant women show lower maternal adjustment (poorer body image and worse marital relationship) and poorer maternal attitudes (more negative attitudes to sex) than adult pregnant women. When controlling for socio-demographics, age at pregnancy predicts poorer body image and more negative attitudes to sex, but not a worse marital relationship, more somatic symptoms or negative attitudes to pregnancy and the baby. A worse marital relationship was better predicted by living without the partner, and more somatic symptoms and negative attitudes to pregnancy and the baby was predicted by higher education.

Conclusion: Adolescent pregnant women show lower maternal adjustment and poorer maternal attitudes than adult pregnant women according to socio-demographics and unfavorable developmental circumstances.

Key Words: Adolescent mothers, Maternal adjustment, Maternal attitudes, Parenthood, Pregnancy, MAMA questionnaire

Introduction

Several difficulties have been associated with the transition to parenthood, particularly in adolescent mothers. An increase in both somatic symptoms (such as fatigue or sleep disruption) and psychological symptoms (such as anxiety or depression) has been documented.^{2,3} Teenage mothers seem to be particularly at risk of experiencing somatic and psychological symptoms during pregnancy and the postpartum period.^{4–12} A decrease in marital satisfaction and an increase in marital conflicts, in addition to a decrease in sexual desire, satisfaction, and activity, have been documented during pregnancy and the postpartum period; see Mitnick et al for a review.¹³ Furthermore, even more severe partner relationship difficulties have been noted in teenage mothers, such as higher rates of conflict and violence.^{14–19}

Psychological adjustment during the transition to parenthood seems to be more difficult for adolescent mothers. This finding can be explained from a developmental perspective. The transition to parenthood is associated with biological, psychological, and social changes, particularly in a woman's identity, responsibilities, concerns, and significant relationships (with her partner and her family of origin). Several developmental tasks are involved in this life-span transition, namely maternal identity formation and

acceptance of the baby as a separate person.²⁰ The performance of these developmental tasks may be more difficult for adolescent mothers because they are encountering the challenges of adolescence and are likely ill-prepared for motherhood, a traditional marker of adulthood. Moreover, the transition to parenthood implies some changes that conflict with the positive resolution of adolescent developmental tasks (for example, proximity with the family of origin vs autonomy). In fact, adolescent mothers have been reported to demonstrate greater difficulty integrating the parental role as a positive part of their individual identity^{21–23} and understanding the commitment that pregnancy requires.^{24–26} Additionally, adolescent pregnant women and mothers may have unrealistic expectations about infants^{27–29} and the support they will receive from others to take care of the child.³⁰ They also have difficulty separating the infant's perspective from their own.^{28,31,32}

Psychological adjustment during the transition to parenthood seems to be related to the mother's ability to adapt to multiple changes and to achieve the developmental tasks of the transition and neither adolescent mothers nor their proximal environment (the partner and family of origin) may be prepared to do so. Thus, not only for socio-demographic adversity (as explained in the next paragraph), but also due to developmental constraints, adolescent mothers may be at higher risk of psychological adjustment difficulties during the transition to parenthood. To develop efficient strategies to promote their psychological adjustment, adolescent mothers' developmental difficulties during the transition to parenthood must be better acknowledged, which is a goal of this study.

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Some developmental and socio-demographic circumstances have also been linked to difficulties in the transition to parenthood. Adolescent pregnancy and motherhood is highly associated with unfavorable developmental circumstances, for example a childhood history of physical abuse,⁴² as well as with unfavorable socio-demographic circumstances, such as unemployment, living without a partner, lower socioeconomic status, and lower educational level,^{43–45} also in Portugal.⁴⁶ These adverse socio-demographic circumstances could explain both poor maternal adjustment and negative maternal attitudes in adolescent pregnant women.

Maternal adjustment (body image, somatic symptoms, and marital relationship) and maternal attitudes (to sex, pregnancy, and the baby) are significant components of a woman's psychological adjustment while transitioning to parenthood. Somatic symptoms were related to the mother's psychological adjustment both before and after delivery.³³ In a previous study, somatic symptoms at pregnancy, such as nausea, vomiting, and fatigue, were associated to depression.³³ A negative body image was associated with more depressive symptoms^{34,35} and weight/shape concerns predicted postpartum depression, particularly in adolescent mothers.³⁶ The Maternal Adjustment and Maternal Attitudes (MAMA) questionnaire has been successfully used in several empirical studies, measuring maternal adjustment and maternal attitudes. The MAMA questionnaire has shown that pregnant women who report more somatic symptoms also report more obstetrical problems at delivery.³⁷ Pregnant women with poorer attitudes toward their partner, their pregnancy, and their baby display higher rates of postpartum depressive symptoms.^{38,39} Mothers with better attitudes to pregnancy and the baby are involved in healthier practices and adequate health care,⁴⁰ whereas mothers with poorer attitudes to pregnancy and the baby classify their infant as more difficult.¹ Moreover, mothers over 35 years old report fewer somatic symptoms and more positive perceptions of their bodies at late pregnancy than younger pregnant women, but they report more problems in their marital relationship and less positive attitudes to sex than their younger counterparts at 1 year postpartum.⁴¹ As such, the high reliability and external and predictive validity of the MAMA questionnaire results were shown in several studies.^{1,37–41}

Differences between adolescent and adult pregnant women have been reported in terms both of lower maternal adjustment (with a particular risk of psychopathological symptoms, as noted) and of poor maternal attitudes. Adolescent pregnant women usually have a negative body image,⁴⁷ as well as more negative attitudes to sex⁴⁸ and less positive attitudes to pregnancy and the infant.⁴⁹ However, socio-demographics have usually not been controlled when comparing adolescent with adult mothers. These are important aspects to consider in relation to maternal adjustment and maternal attitudes.

The literature has reported that variables other than age affect maternal adjustment and maternal attitudes during the transition to parenthood and these variables have been integrated in this study. For example, the lack of experience with children is significantly associated with

worse maternal attitudes during pregnancy and the postpartum period.^{50–52} Women with lower education show worse psychological adjustment to pregnancy and the postpartum period and have less positive health practices during pregnancy, whereas more educated women present more somatic symptoms during early gestation.^{53–57} Women living without a partner demonstrate less positive attitudes to the infant and worse marital relationship than women living with a partner.^{58–62} Unemployed women show a higher incidence of postpartum depression.^{63–65}

The present study aimed to analyze differences between adolescent and adult Portuguese pregnant women and the contribution of maternal age to maternal adjustment, as indicated by the mother's body image, somatic symptoms, and marital relationship, and to maternal attitudes to sex, pregnancy, and the baby. Pregnant women's parity, education, employment status, and household arrangement were considered possible confounders for the studied differences.

Methods

Participants

Participants consisted of 398 pregnant women with 24 to 36 weeks of gestation, age 13 to 44 years (mean = 24.8), 111 (28%) with less than 19 years. Nearly all participants were Portuguese nationals (94.5%) and Caucasian (98.5%). Most women were primiparous, lived with the partner, were employed with a manual occupation, and had less than grade 9 education. Almost one-fifth of the women reported to be smoking, but only 3.3% were having health problems. Adolescent pregnant women had lower education and higher unemployment, and were more likely than adult mothers to be living without the partner during pregnancy (see Table 1).

Measures

The Maternal Adjustment and Maternal Attitudes questionnaire (MAMA) was specifically designed by Kumar et al¹ to assess maternal adjustment and maternal attitudes during pregnancy and after delivery. This is a self-administered questionnaire composed by 60 items, measuring mother's body image, somatic symptoms, marital relationship, attitudes to sex and attitudes to the pregnancy and the baby, with higher scores indicating higher level of maternal adjustment and positive attitudes. Sample questions include "Have you felt attractive?" (body image), "Have you got out of breath easily?" (somatic symptoms), "Has there been tension between you and your partner?" (partner relationship), "Have you found your partner sexually desirable?" (attitudes to sex), "Have you been worrying that you might not be a good mother?" (attitudes to pregnancy and the baby). A principal component factor analysis revealed a similar factor structure to the original version in the Portuguese version: 5 subscales with 12 items each. The Portuguese version demonstrated also adequate reliability ($\alpha = 0.86$ and a split-half coefficient of 0.87).⁶⁶

Table 1
Socio-Demographics and Health Conditions

	Total n = 398%	Adolescent n = 111%	Adult n = 286%	χ^2	P Value
Parity					
Primiparous	63.8	93.7	52.1	59.85	<.001
Multiparous	36.2	6.3	47.9		
Education					
<Grade 9	74.1	84.7	69.9	9.06	<.001
\geq Grade 9	25.9	15.3	30.1		
Household arrangement					
Living with the partner	76.1	41.4	89.5	101.50	<.001
Living without the partner	23.9	58.6	10.5		
Employment Status					
Employed	57.7	26.1	69.9	62.86	<.001
Unemployed	42.3	73.9	30.1		
Occupation					
Manual	79.0	89.2	77.7	2.60	.075
Non-manual	21.0	10.8	22.3		
Health Problems					
No Problems	96.7	98.2	96.2	1.03	.251
Problems	3.3	1.8	3.8		
Tobacco					
No Smoking	81.3	73.5	82.2	1.49	.161
Smoking	18.8	26.5	17.8		

Procedures

This study received ethical approval from the Maternity Hospital Ethical Commission. Participants were contacted at the antenatal outpatient obstetric unit of a Public Maternity Hospital (Porto, Portugal) before their routine medical appointment at 24–36 weeks of gestation. Over 1 year, 1 day a week, on the specific weekday that pregnant adolescent women were scheduled, all the pregnant women attending to the antenatal outpatient obstetric unit were invited to participate in the study. Pregnant women with multiple gestations and with medical and/or obstetric complications were excluded. Those who agreed in participating were asked to sign an informed consent (80% percent of those approached). Women were interviewed to collect socio-demographic data after their medical appointment, and were then asked to complete the Portuguese version of the MAMA questionnaire, in an exam room at the Hospital. The questionnaires were filled in anonymously and confidentiality was guaranteed.

Statistical Analysis

Chi-square tests with Fisher exact test were used to assess group differences regarding parity, education, employment status and household arrangement, occupation, health problems, and tobacco consumption. Multivariate analysis of variance (MANOVAs) followed by univariate F tests were performed to examine adolescent and adult group differences across the MAMA subscales (dependent variables). Separate MANOVAs were also performed to explore differences in MAMA subscales results according to parity, education, employment, and household arrangement during pregnancy (socio-demographic variables). Independent sample *t* tests were used to examine differences between the groups in MAMA total scores. From these analyses, variables with multivariate effect on MAMA

subscales were selected. Potentially significant interactions between age group and previously listed variables (from now on designated by socio-demographic variables) that demonstrated multivariate effects on MAMA subscales were further examined in separate 2-factor MANOVAs.

To determine the contribution of maternal age to MAMA subscales and total scores separate hierarchical multiple regression analyses (blockwise forced entry) were conducted with the potential confounders in Block 1 (parity, education, marital, and employment status) and maternal age entered in Block 2.

Results

Differences in Maternal Adjustment and Maternal Attitudes between Pregnant Adolescent and Adult Women

Multivariate analysis of variance (MANOVA) revealed significant group differences between adolescent and adult pregnant women on MAMA subscales (Wilks $\Lambda = .89$, $F(5,385) = 9.40$, $P < .001$). Univariate tests indicated that adolescent pregnant women show less positive body image, worse marital relationship and more negative attitudes to sex than adult pregnant women. No differences were found between the groups in somatic symptoms and attitudes to pregnancy and the baby subscales. Significant mean differences were found in MAMA total score with adolescent pregnant women having lower score than adults (See Table 2).

Differences in Maternal Adjustment and Maternal Attitudes between Pregnant Adolescent and Adult Women according to Socio-Demographics: Parity, Education, Employment Status, and Household Arrangement

Significant group differences were also found on overall MAMA subscale results according to parity (Wilks $\Lambda = .97$, $F(5,386) = 2.62$, $P < .05$], education [Wilks $\Lambda = .97$, $F(5,385) = 2.69$, $P < .05$], employment (Wilks $\Lambda = .95$, $F(5,385) = 4.31$, $P = .001$) and household arrangement (Wilks $\Lambda = .92$, $F(5,385) = 6.59$, $P < .001$), as revealed by separate MANOVAs. Subsequent univariate analysis revealed that primiparous, unemployed, and women living

Table 2
Differences between Adolescent and Adult Pregnant Women on MAMA Subscales and Total Score

	Age		$F_{(389)}$
	Adolescent (n = 107)	Adult (n = 284)	
	M (SD)	M (SD)	
Body Image	33.22 (4.89)	35.08 (4.53)	12.53 [†]
Somatic Symptoms	32.83 (4.54)	32.57 (5.25)	5.17
Marital Relationship	38.69 (5.75)	40.65 (4.99)	11.00*
Attitudes to Sex	33.08 (5.27)	39.96 (5.27)	41.94 [†]
Attitudes to Pregnancy and Baby	32.93 (3.57)	33.38 (3.15)	15.20
Total	170.77 (15.91)	178.64 (15.60)	$t_{(389)}$ -4.43 [†]

MANOVA analyses were performed for MAMA subscales and t-tests for MAMA total score.

* $P < .01$.

[†] $P < .001$.

without the partner had more negative attitudes to sex than multiparous, employed, and women living with the partner. Unemployed and women living without the partner reported a worse body image and marital relationship, as well as lower MAMA total results than employed and women living with the partner. Women with higher education showed worse attitudes to pregnancy and the baby compared with women with lower education (see Table 3).

Examining the Contribution of Maternal Age to Maternal Adjustment and Maternal Attitudes, When Controlling for Socio-Demographics: Parity, Education, Employment Status, and Household Arrangement

When maternal age (< 19 vs ≥ 19 years old) was added to the model of body image subscale (Block 2), the model remained significant, and 5.0% of the variance was explained. In this model, being primiparous predicted more positive body image, whereas being adolescent predicted a less positive body image (see Table 4).

When maternal age (< 19 vs ≥ 19 years old) was added to the model of somatic symptoms subscale (Block 2), the model was not significant (P = .157). In this model, having a higher education level predicted more somatic symptoms (β = .118, P = .025).

When maternal age (< 19 vs ≥ 19 years old) was added to the model of marital relationship subscale (Block 2), the model remained significant, and 4.3% of the variance was explained. In this model, living without the partner predicted a worse marital relationship.

When maternal age (< 19 vs ≥ 19 years old) was added to the model of attitudes to sex subscale (Block 2), the model remained significant, and 12.2% of the variance was explained. In this model, maternal age was the only significant predictor, with adolescent pregnant women having less positive attitudes to sex than adult.

When maternal age (< 19 vs ≥ 19 years old) was added to the model of attitudes to pregnancy and the baby subscale (Block 2), the model was not significant. In this model, having a lower education predicted more positive attitudes to the pregnancy and the baby.

When maternal age (< 19 vs ≥ 19 years old) was added to the model of MAMA total score, the model remained significant, and 6.1% of the variance was explained. In this model, being an adolescent pregnant woman predicted less positive maternal adjustment and maternal attitudes.

Discussion

The overall results show that being a pregnant adolescent woman contributes significantly to explaining lower maternal adjustment and poorer maternal attitudes during pregnancy when other confounding variables are controlled, specifically unemployment and household arrangement. When controlling for socio-demographics, age at pregnancy still predicts poorer body image, more negative attitudes to sex, and overall lower total MAMA results. A worse marital relationship is predicted by living without a partner, and more somatic symptoms and

Table 3 Differences between Groups in MAMA Subscales and Total Scale According to Parity, Education, Employment, and Household Arrangement

MAMA Subscales	Parity		Education		Employment Status		Household Arrangement		F _(1,389)
	Primiparous (N = 249)	Multiparous (N = 143)	< grade 9 (N = 291)	≥ grade 9 (N = 100)	Unemployed (N = 164)	Employed (N = 227)	Without Partner (N = 91)	With Partner (N = 300)	
Body Image	34.73 (4.70)	34.31 (4.69)	34.45 (4.65)	34.93 (4.86)	33.73 (5.06)	35.19 (4.33)	33.56 (5.17)	34.88 (4.51)	5.59*
Somatic Symptoms	32.69 (4.61)	32.55 (5.76)	32.85 (5.07)	32.06 (5.00)	33.11 (4.99)	32.31 (5.09)	33.16 (4.76)	32.49 (5.14)	1.26
Marital Relationship	40.12 (5.25)	40.11 (5.32)	40.13 (5.17)	40.08 (5.58)	39.52 (5.32)	40.55 (5.21)	37.84 (6.96k)	40.81 (4.43)	23.43†
Attitudes to Sex	35.39 (5.55)	36.80 (5.41)	35.63 (5.37)	36.67 (5.97)	34.71 (6.05)	36.75 (4.99)	34.08 (5.93)	36.45 (5.31)	13.20‡
Attitudes to Pregnancy and Baby	33.27 (3.46)	33.26 (2.94)	33.46 (3.15)	32.65 (3.56)	32.95 (3.42)	33.48 (3.15)	32.60 (3.54)	33.45 (3.17)	4.74
Total Scale	176.21 (16.01)	177.04 (16.12)	176.52 (15.56)	176.39 (17.48)	174.02 (17.11)	178.27 (15.04)	171.24 (17.79)	178.08 (15.16)	-3.61‡

MANOVA analyses were performed for MAMA subscales and t-tests for MAMA total score.

* P < .01.
 † P < .10.
 ‡ P < .001.
 § P < .05.

Table 4
Predictors of MAMA Subscales and Total Score

Dependent Variables	Independent Variables	R2	Δ R2	F	β	t		
Body Image	Step 1	.035	–	3.498 [†]				
	Primiparous						.073	1.413
	<grade 9						–.060	–1.175
	Non-employed						–.123	–2.342 [†]
	Living without the partner					–.077	–1.452	
	Step 2	.050	.015 [†]	4.034 [‡]				
	Primiparous						.123	2.223 [†]
	<grade 9						–.031	–0.588
	Non-employed						–.088	–1.614
	Living without the partner						–.018	–0.304
Age < 19	–.161						–2.449 [†]	
Marital Relationship	Step 1	.039	–	3.898 [‡]				
	Primiparous						.014	0.276
	<grade 9						–.038	–0.746
	Non-employed						–.064	–1.204
	Living without the partner					–.162	–3.030 [‡]	
	Step 2	.043	.004	3.487 [†]				
	Primiparous						.041	0.739
	<grade 9						–.023	–0.433
	Living without the partner						–.043	–0.790
	Non-employed						–.130	–2.229 [†]
Age < 19	–.088						–1.345	
Attitudes to Sex	Step 1	.078	–	8.181 [§]				
	Primiparous						–.126	–2.491 [†]
	<grade 9						–.109	–2.193 [†]
	Non-employed						–.132	–2.565 [†]
	Living without the partner					–.110	–2.123 [†]	
	Step 2	.122	.044 [§]	10.731 [§]				
	Primiparous						–.041	–.764
	<grade 9						–.062	–1.240
	Non-employed						–.068	–1.302
	Living without the partner						–.008	–0.148
Age < 19	–.278						–4.402 [§]	
Attitudes to Pregnancy and the Baby	Step 1	.023	–	2.304*				
	Primiparous						.035	0.674
	<grade 9						.105	2.053 [†]
	Non-employed						–.059	–1.118
	Living without the partner					–.100	–1.880*	
	Step 2	.024	.001	1.864				
	Primiparous						.042	0.755
	<grade 9						.109	2.078 [†]
	Non-employed						–.054	–0.975
	Living without the partner						–.092	–1.568
Age < 19	–.023						–0.351	
MAMA total	Step 1	.041	–	4.133 [‡]				
	Primiparous						.014	0.268
	<grade 9						–.015	–0.289
	Non-employed						–.095	–1.797*
	Living without the partner					–.153	–2.872 [‡]	
	Step 2	.071	.003 [‡]	5.846 [‡]				
	Primiparous						.084	1.525
	<grade 9						.026	0.500
	Non-employed						–.044	–0.805
	Living without the partner						–.071	–1.224
Age < 19	–.228						–3.495 [‡]	

N = 393. Multiple hierarchical regression, Blockwise Entry, Enter method.

* $P < .10$.

† $P < .05$.

‡ $P < .01$.

§ $P < .00$.

negative attitudes to pregnancy and the baby are predicted by higher education.

Pregnant women younger than 19 years old, unemployed pregnant women, and pregnant women living without a partner report worse body image than pregnant women older than 19, employed pregnant women, and pregnant women living with a partner. When controlling for socio-demographics, maternal age remains a significant predictor of body image, as does parity. Being a pregnant woman younger than 19 years old predicts a less positive body

image, whereas being primiparous predicts a more positive body image.

To our knowledge, there are no studies in the literature that address the differences between adolescent and adult pregnant women in terms of body image. However, the literature shows that adolescent pregnant women show dissatisfaction with their bodies during pregnancy⁴⁷ and that older mothers present more positive perception of their bodies at late pregnancy than younger pregnant women.⁴¹

Adolescence is characterized by normative challenges regarding body image, and most teenage girls are dissatisfied with their body image.^{67–69} Developmental issues may be involved in the adolescent mother's difficulty in developing a positive body image when pregnant. This topic may be a priority when working preventively with pregnant adolescent women to facilitate the transition to parenthood.^{70–72}

No significant differences were observed according to age at pregnancy in terms of somatic symptoms. Somatic symptoms were predicted by education, but the proposed socio-demographic model was not significant. Pregnant women with higher education presented more somatic symptoms. This finding is similar to previous findings that related higher maternal education to more vomiting⁵⁷ and nausea⁵⁶ during gestation. However, somatic symptoms have also been found to be relatively independent of socio-demographic conditions in several studies.^{33,73,74}

Pregnant women younger than 19 years old, unemployed pregnant women, and pregnant women living without a partner reported worse marital relationship than pregnant women 19 years or older, employed pregnant women, and pregnant women living with a partner. When controlling for socio-demographics, maternal age did not remain a significant predictor for marital relationship, and living without a partner predicted a worse marital relationship.

An extensive body of literature reports adolescent pregnant women/mothers' problems in close relationships, specifically with the partner/husband, congruent with the obtained results. A worse partner relationship has been found in adolescent pregnant women/mothers when compared with adult pregnant women/mothers, such as higher rates of conflicts and violence.^{14–19,62} However, when controlling for socio-demographics, the results show that a worse marital relationship is predicted by living without a partner. It is unsurprising that pregnant women living without a partner may have a worse marital relationship, which may be both a cause and a consequence.^{59,62}

The partner relationship has been identified as a preventive issue to improve pregnant adolescent women's adequate transition to parenthood as well as to promote the infant's health and development.^{11,70,75} First, a positive relationship with the partner may improve the adolescent mother's psychological adjustment.^{76–80} Second, a positive relationship with the partner may benefit the adolescent mother's parenting.^{81,82} Third, contact between the father and the infant has been associated with better child health and development outcomes.^{83,84} In fact paternity establishment rates for infants born from adolescent mothers are low, and even lower from infants born from younger adolescent mothers.⁸⁵

Pregnant women younger than 19 years old, primiparous pregnant women, unemployed pregnant women, and pregnant women living without a partner showed poorer attitudes to sex than pregnant women 19 years or older, multiparous pregnant women, employed pregnant women, and pregnant women living with a partner. When controlling for socio-demographics, maternal age remained significant and the only predictor of attitudes to sex. Being a pregnant woman younger than 19 years old predicted worse attitudes to sex.

This finding is congruent with previous findings showing that adolescent pregnant women demonstrate more negative attitudes to sex than do adult pregnant women.^{46,48,86} Usually, adolescents have more negative attitudes to sex than adult women⁸⁷ and problems regarding sexual intimacy have been largely reported in adolescents,⁸⁸ particularly in adolescent pregnant women.^{14,48,86} Literature shows the need to consider a balance between promotion of adolescent autonomy and parental involvement regarding to sexual behaviors.⁸⁹ As identified in this study, attitudes to sex may be another important focus of preventive work with pregnant adolescent women to facilitate an adequate transition to parenthood. These negative attitudes to sex may also be related to identified difficulties in implementing contraception strategies with adolescent mothers, which have been reported both before and after pregnancy.^{12,90–93} The priority of preventing another pregnancy during adolescence is the goal of most intervention programs with adolescent mothers.^{70,94,95}

Attitudes to pregnancy and the baby do not differ significantly between adolescent and adult pregnant women and are not predicted by maternal age. Pregnant women with higher education have more negative attitudes to pregnancy and the baby. Having a higher education is the only significant predictor of worse attitudes to pregnancy and the baby.

The obtained results are congruent with previous findings that show no differences between adolescent and adult pregnant women in terms of maternal attitudes to pregnancy and the infant.^{96–98} This result is somewhat surprising, but it may be associated with the fact that adolescent pregnant women usually present more positive reports regarding expectations of motherhood and the baby; it has been suggested that these women have unrealistic expectations about these issues.^{27–30} Alternately, adolescent pregnant women's difficulties may not involve maternal attitudes to pregnancy and the baby. For example, despite the fact that adolescent pregnant women show a lower maternal antenatal attachment in the first pregnancy trimester, in the second and third pregnancy trimester there are no differences between adolescent and adult pregnant women.⁹⁹ The results also corroborate other studies showing that more educated women show more negative attitudes to pregnancy and the infant.¹⁰⁰

We can conclude that adolescent women show poorer maternal adjustment and maternal attitudes than adult pregnant women. At least part of this finding can be explained by age at pregnancy and may depend on developmental difficulties related to the transition to parenthood in adolescence, particularly in the case of body image and attitudes to sex. Socio-demographic conditions generally associated with adolescent pregnancy and motherhood, particularly unemployment and living without the partner, may aggravate the negative impact of being an adolescent pregnant woman in terms of maternal adjustment and maternal attitudes. We can also conclude that maternal adjustment and maternal attitudes depend on several factors, and age at pregnancy is only one of these factors. The results show that parity, socio-economic status, education, and household arrangement also predict some dimensions

of maternal adjustment and maternal attitudes during pregnancy. Adolescent pregnant women show lower maternal adjustment (reporting poorer body image and worse marital relationship) and poorer maternal attitudes (reporting more negative attitudes to sex) than adult pregnant women, although these findings are only partially explained by age at pregnancy. When controlling for socio-demographics, age at pregnancy predicts poorer body image and more negative attitudes to sex. However, a worse marital relationship was better predicted by living without the partner, and more somatic symptoms and negative attitudes to pregnancy and the baby by higher education.

Controlling for socio-demographic conditions associated with adolescent pregnancy is one of the principal strengths of this study. Adolescent pregnant women experience specific risk conditions during the transition to parenthood. A strong point of this study is that it helps to clarify issues that should be considered when promoting adolescent pregnant women's transition to parenthood, such as improving body image, attitudes to sex, and the relationship with the partner. The consideration of these factors can contribute to adequate psychological preventive interventions regarding the specific needs of adolescent pregnant women/mothers. Assessing maternal adjustment (particularly the relationship with the partner) and maternal attitudes is a relevant issue in this process and may help to identify women with psychological difficulties, who may benefit from counseling and health promotion interventions during the transition to parenthood.

Although controlling for socio-demographics constitutes a novelty and strength of this study, few pregnant adolescent women were multiparous, employed, and living with a partner. Moreover, despite the large sample, the cross-sectional nature is a limitation of the presented findings. Additional studies should analyze the stability of the observed differences on maternal adjustment and maternal attitudes between adult and adolescent women during the postpartum period. Furthermore, specificities of the cultural context must be considered when generalizing these results to other countries. Future research should also focus on specific risk and protective factors associated with maternal attitudes and maternal adjustment for adolescent and adult pregnant women/mothers.

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