Brazil:

Adolescent Longitudinal Study

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This summary highlights findings from a larger scientific report and includes recommendations from in-country researchers.

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I. Introduction

This three-year subproject, conducted in Fortaleza, Ceará, Brazil, examines the social and behavioral consequences of pregnancy for two groups of adolescent girls, ages 12 to 18, who sought medical attention at the Maternidade Escola Assis Chateaubriand (MEAC). The first group included teens who sought prenatal care, and the second included teens seeking emergency treatment for complications from incomplete abortion.

II. Background

Fertility rates, including age-specific fertility rates for women ages 15 to 19, have declined dramatically in Brazil during the past 20 years. However, adolescent fertility in the northeast state of Ceará appears to have increased during this period.[1] According to the most recent Demographic and Health Survey, 24 percent of 15- to 19-year-olds in Ceará had at least one child or were pregnant.[2]

The health and socioeconomic consequences of adolescent pregnancy are well-known: an increased risk of maternal and infant mortality and morbidity among very young mothers, higher overall lifetime fertility, truncated schooling, decreased earning capacity and unstable relationships with partners.

Literature on the consequences of abortion has focused on the biological and psychological effects for women. There is a consensus that, usually, there is little physical risk when abortions are performed by skilled providers and under hygienic conditions. In fact, teenagers may be at less risk of mortality and morbidity than older women.[3] However, under less hygienic conditions, consequences may be different. In the city of São Paulo in 1994, one-third of the deaths caused by complications related to abortion were among women ages 15 to 19.[4] There is also consensus that, in the United States at least, abortion plays a negligible role in women's well-being over time.[5] However, in an environment where abortion is illegal, the consequences may be more negative.

[1] *Pesquisa Nacional sobre Demografia e Saúde 1996 Tabulações Especiais, Ceará* . Sociedade Civil Bem-estar Familiar no Brasil (BEMFAM), 1997.
[2] *Pesquisa Nacional sobre Demografia e Saúde, 1996*. Final Report. Sociedade Civil Bem-estar Familiar no Brasil (BEMFAM) and Macro International. Calverton, MD, 1997.
[3] Cates, W, K Schulz and D Grimes. 1983. The risks associated with teenage abortion. *The New England Journal of Medicine*, 309: 11, 621-624.
[4] Peres, A. 1997. Aborto na Adolescência. *Claudia*, Abril: 6-12.
[5] Russo, N and A Dabul. 1997. The relationship of abortion to well-being: do race and religion make a difference? *Professional Psychology: Research and Practice*, 28:1.

III. Objectives

The overall research question of the study is: How does pregnancy outcome affect different aspects of adolescents' lives at 45 days postpartum/postabortion or at one year? Do baseline differences explain subsequent differences?

The outcomes of interest are: the adolescent's psychosocial well-being; her schooling and employment; her relationships with her family and partner; and her perception of the impact of the pregnancy**.**

Two additional objectives are to:

- determine if a young woman's intention to become pregnant ("intendedness") has any effect on infant development measured at one year among the cohort that carried their pregnancies to term; and,
- describe when and how an adolescent's pregnancy intendedness changes over time.

IV. Research Methods

A. Data Collection

During this study, the prenatal teens were interviewed four times: at their first prenatal visit, at about 35 weeks gestation, at 45 days postpartum and at one year postpartum. The abortion patients were interviewed for the first time after treatment, but prior to discharge for an incomplete abortion, at 45 days postabortion and at one year postabortion. Interviewing took place at MEAC and at home when the teens failed to return to the hospital.

To be included in the study, the young women had to be age 18 or younger, be nulliparous (no children) but not necessarily primigravida (first pregnancy), live within easy travel distance of the hospital, and give either their verbal or written informed consent to participate in the study. Prenatal teens had to be in their twenty-eighth week of pregnancy or less, while abortion patients had to be within 21 weeks gestation.

The initial interviews of the prenatal teens took place from September 1995 through August 1996. A total of 367 prenatal girls were surveyed. The abortion cohort, which included 196 young women, was recruited from September 1995 to March 1997. Data collection terminated in May 1998.

The study recruited any adolescent admitted to the hospital for complications due to abortion, regardless of whether the abortion was spontaneous or induced. However, researchers expected that girls who purposefully terminated their pregnancies would differ from those who experienced a spontaneous abortion, and thus, investigators attempted to distinguish the two groups of abortion patients. To make this classification, they used three sources of information: the girl's self-report at her baseline interview, her subsequent report at 45 days postabortion, and any medical charts in which the attending physician indicated that the abortion was induced (either

from physical evidence or self-report). Based on current data (through 45 days postabortion), researchers estimated that 59 percent (or 115) of the abortion patients induced their abortions. Investigators suspect that there are additional cases of induced abortion among the remaining 81 patients (who may identify their abortions as induced during the final interview). However, until they do or until a more creative reclassification algorithm has been devised, these women will be classified as having experienced spontaneous abortions.

The girls seeking prenatal care were also divided into two groups based on the assumption that the two groups would possess different characteristics. If they answered that they wanted the pregnancy at the time it occurred and they would *not* have preferred waiting, they were classified as having "planned" births. If they answered that they would have preferred waiting until later, or didn't know, they were classified as having "unplanned or mistimed" births.

Self-esteem, a person's perceptions of self-worth, was measured using the Rosenberg scale designed specifically for adolescents.[6] The major adaptation that researchers made, besides the translation into Portuguese, was limiting the possible answers to three, instead of the original gradation of four responses. Pretesting the instrument convinced investigators that the subtleties of four degrees of agreement or disagreement rendered the original scale impractical for this population.

At each interview, the teens were asked if they thought the pregnancy would improve, not affect, or worsen the following domains of their lives: pursuit of an education, ability to earn money, family relations, friendships with peers, relationship with partner, health, and social life. Researchers aggregated the six factors to create an index of perceived pregnancy impact.

The McNemar test was used to compare the same outcome at two points in time (baseline and 45 day follow-up). Pearson chi-squares were used to test for significance across the four groups.

The overall follow-up rate at 45 - days was 83.5 percent, ranging from 81 percent among the teens who terminated their pregnancies to 85.2 percent among those who miscarried. The adolescents lost to follow-up were disproportionately those who at baseline no longer attended school, girls with low self-esteem, and girls whose relationship with their partners were reported to be just "okay."

B. Limitations of Study

One of the eligibility criteria was that the adolescent have no prior birth. By excluding adolescents who already had a child, the sample was biased toward younger women. By selecting prenatal clients who were 28 weeks or less gestation, the study population was further biased by not including the "latecomers" to prenatal care. Thus, the study population is not representative of the hospital's adolescent clinic population. Furthermore, investigators should not draw conclusions about the consequences of adolescent pregnancy for Brazilian teenagers as a whole without

[6] Rosenberg, M. 1965. *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

comparing adolescent mothers or ever pregnant teens with teens who have *not* experienced pregnancy.

Loss to follow-up is a chronic concern whenever data are collected prospectively. At this writing, researchers do not have the one-year follow-up rates. If loss is such that the findings are weakened, statistical methods may have to be used to compensate.

V. Results

A. Differences Among Groups at First Interview

In analyzing study results, researchers found similarities in schooling, age at first intercourse, and number of lifetime sexual partners. However, researchers also found that prenatal teens perceived more support from family and friends than did girls seeking treatment for induced abortion. Among the findings:

- Spontaneous abortion patients strongly resembled the prenatal group; the proportions in union, in school, and working, for example, were similar.

- The induced abortion patients were older than the other teens, very few were in union, and they were more likely to be enrolled in school or working. On average, both groups of girls (abortion patients and prenatal teens) had completed less than six years of schooling.

- The two groups initiated sex at age 15, on average, and when age was controlled, they had the same number of lifetime sexual partners.

- Approximately 17 percent in both prenatal and abortion groups could correctly identify the fertile period in a woman's menstrual cycle. Contraceptive use at the time of conception was low in both groups, but lower in the prenatal group (12 percent for prenatal teens versus 23 percent for aborting teens).

- The prenatal teens reported more support from parents and partners than did the induced abortion patients. Approximately 25 percent of the aborting teens said that their mothers did not know about the pregnancy, and another 25 percent said their mothers were unhappy about the pregnancy. Teens seeking prenatal care were more likely than the abortion patients to report that their mothers knew about the pregnancy, but approximately one-fourth of the mothers expressed displeasure at the news. Sixteen percent of the fathers of the prenatal group and more than half of the aborting group did not know about their daughters' pregnancies.

- When asked if they wanted this pregnancy, 46 percent of the prenatal teens and 13 percent of the aborting teens said yes, but when asked if they would have liked to delay this pregnancy, 61 percent and 91 percent said yes, respectively.

- The prenatal teens exhibited significantly higher levels of self-esteem than the induced abortion patients, but abortion patients had higher levels of locus of control.

- Abortion, although legal only in certain cases such as rape, seems to be an option of which most pregnant teens are aware. More than half of the prenatal group reported that someone had suggested that they terminate their pregnancy and half of these actually attempted abortion.

- When asked about specific conditions in which an abortion might be justifiable, the prenatal teens were consistently more negative or critical than the induced abortion group.

B. Comparisons and Changes at 45 Days Postpartum or Postabortion

Briefly, researchers found that prenatal teens continued to have higher levels of self-esteem than did abortion patients. School enrollment declined for both groups, although abortion patients were more likely to remain in school. Prenatal teens perceived that their relationships with their mothers improved; however, teens in both groups reported their relationships with partners had deteriorated following birth or abortion.

Self-esteem

- For all study participants, there was an increase in the proportion with high self-esteem (29 percent to 48 percent). At baseline, the induced abortion patients had significantly lower self-esteem than the prenatal or spontaneous abortion groups. However, at 45 days postabortion or postpartum, self-esteem had increased significantly among the patients who had induced abortions, and especially among teen mothers, where the proportion doubled or nearly doubled. Girls whose abortion was spontaneous did not experience a change in self-esteem.

- Age had no independent effect on self-esteem, but education was positively associated with self-esteem. As the number of years completed in school increased, so did self-esteem. High self-esteem at the baseline interview also predicted high self-esteem at 45 days postpartum/postabortion. Teens who had a sister who also had a pregnancy during adolescence were 77 percent more likely to have high self-esteem, compared with girls without siblings who became pregnant during adolescence.

School Enrollment

- There was a decline in school enrollment for both prenatal and aborting teens, from 50 percent at baseline to only 30 percent at 45 days postpartum/postabortion. At both points in time, the highest percentage of school attendees was in the induced abortion group (approximately two-thirds were in school.) Among new mothers, the proportion enrolled in school dropped by more than half, to 20 percent. Compared with adolescents whose pregnancies were planned, the probability that girls with induced abortions would stay in school was nearly 10 times greater, while girls with spontaneous abortions were more than three times as likely to be enrolled.

- Age was inversely associated with school enrollment, in that the odds of being in school increased as age decreased. Having been enrolled in school at the time of the baseline interview was a major predictor of enrollment at 45 days and increased its likelihood by a factor of 23. Compared with adolescents who expected their pregnancies to affect them negatively, adolescents who expected a positive impact or no effect were twice as likely to be in school. Finally, compared with adolescents who reported that their relationships with their partners were just "okay," teens who reported that their relationships were *not* good or nonexistent were three times as likely to be in school.

Relationships

- Adolescent girls reported better relationships with their mothers than with their fathers, a pattern exhibited at baseline and 45 days postpartum/postabortion. Teens who gave birth reported improved relationships with their mothers while teens who lost or terminated their pregnancies reported no change. Father-daughter relationships improved only among girls whose pregnancies were planned.

- Having a "good" mother-daughter relationship at the time of the first interview more than tripled the probability of a "good" mother-daughter relationship at 45 days postpartum/postabortion. A "good" father-daughter relationship at 45 days postpartum/postabortion was also predictive of a "good" mother-daughter relationship.

- Controlling for other variables, neither pregnancy group affiliation nor age had any independent effect on the father-daughter relationship. Having a positive perception of the pregnancy's impact increased the odds of a "good" father-daughter relationship (compared to adolescents who believed their pregnancies would have a negative effect on them). Also associated with a "good" father-daughter relationship was a "good" mother-daughter relationship at the time of the first interview and having a "good" relationship at 45 days.

- Among the new mothers, many initially expected the pregnancy to improve their relationships with their partners. However, at 45 days and regardless of planning status of the pregnancy, partner relationships had deteriorated. Adolescents who terminated their pregnancies had lower expectations of how the pregnancy would affect their relationships with partners and in fact, at 45 days postabortion, these relationships were also perceived as less positive.

Teens' Perceptions of Impact of Pregnancy on their Lives

- Overall, the perceived impact of pregnancy did not significantly change from baseline to 45 days postpartum/postabortion, but specific groups did demonstrate a change. Adolescents who experienced miscarriage became more negative about the pregnancy's impact, as did the teens with unplanned births, initially the group with the highest expectations.

- When modeling the impact of pregnancy, both abortion groups (induced and spontaneous) were significantly less likely to report a positive impact, compared with the teens whose pregnancies were planned.

- Having a "good" mother-daughter or father-daughter relationship increased the probability of having a positive view of the pregnancy, compared with teens reporting just "okay" or relationships which were "not good."

- Enrollment in school increased the odds of positive pregnancy expectations by 79 percent.

VI. Conclusions

The experience of adolescent pregnancy does not appear to have unequivocally negative consequences for many young women. In the six weeks postabortion or postpartum, those adolescents who chose to continue their pregnancies and gave birth were more likely to demonstrate an increase in self-esteem and an improved relationship with their mothers, compared with the adolescents who miscarried or terminated their pregnancies. The teens who delivered babies were more likely to perceive the impact of the pregnancy on their lives to be positive, both at baseline and at 45 days after delivery.

On the other hand, becoming a new mother disrupted the education of many girls. Teen mothers were much less likely to be enrolled in school after delivery than those who miscarried or terminated their pregnancies – even when controlling for the fact that they were less likely to be in school when they became pregnant. Yet, 45 days is a short time and being out of school may not be a permanent situation. Researchers will compare prenatal and abortion patients at one year and determine how many of the young mothers who dropped out of school have returned to school. The extent to which this lack of formal schooling affects their long-term future economic well-being, compared with girls who terminated their pregnancies and with girls who never become pregnant during adolescence, is beyond the scope of this study.

In Brazil, if a student becomes pregnant she is not required to drop out of school, but in practice, many girls do. It is important to point out, however, that a large number of the adolescents in this study had dropped out of school prior to their pregnancy. A strong desire to get an education and the perception that having a child is incompatible with school may have been motivating factors for the adolescents who terminated their pregnancies.

The teens who aborted did not perceive the pregnancy as a positive experience. In fact, the teens who miscarried seemed to harbor more negative feelings than those who terminated their pregnancies, despite the fact that very few of the pregnancies had been "planned." Young mothers with unplanned pregnancies, initially the most enthusiastic, saw their expectations drop significantly – only those with planned pregnancies did not modify their expectations. Having a positive perception of pregnancy was associated with good parental relationships; however, the relationship with the partner was never significant. Variables related to the girl's relationship – her marital status, living arrangement (with partner, with parents or in-laws or with others), the

quality of the relationship with her partner at 45 days – were included in all of the study models, these factors rarely played an explanatory role, and when they did, it was negative. Researchers concluded that parents tend to be more important than partners for girls in this age group in mediating the effects of pregnancy.

VII. Recommendations

The results of this study can help service providers and program managers to understand why adolescents have babies. First, it is important to realize that adolescent pregnancy cannot be equated with unwanted pregnancy – 40 percent of the prenatal group said that they wanted to have a baby when they became pregnant. Having a baby for many teens appears to boost their sense of self-worth, while the experience of an abortion of any kind does not increase self-esteem. To decrease an adolescent's desire to have a baby requires a different set of interventions than those to prevent unwanted pregnancies. For young adolescents who actively seek pregnancy, girls must be educated that their future can include options in addition to motherhood, and efforts to encourage young women to stay in school need to be implemented.

The majority of the adolescents in this study did not intend to become pregnant when they did and would have preferred to delay pregnancy. This illustrates the serious need for more and better sexuality education and contraceptive services for teens in this region of Brazil; information from this study about adolescents' desire to delay pregnancy could be incorporated into education programs. Contraceptive use among study participants was low and a correct understanding of when a woman can conceive was equally low. Contraceptive use patterns and attitudes pre- and post-pregnancy have not yet been analyzed and should provide insight for reproductive health providers and program managers.

Finally, it is important to remember the context in which these two groups were interviewed and the different times at which interviews were conducted. Certain outcomes were likely influenced by the emotionally difficult time that the abortion patients were experiencing at their baseline interview, in contrast to the baseline interview of the teen mothers attending their first prenatal visit. By 45 days, changes in the teens' lives were evident. Researchers expect the one-year postpartum and postabortion data may point to additional changes in how pregnancy outcomes affect young women's lives.

VIII. Study Details

This study was conducted by the Maternidade Escola Assis Chateaubriand and supported by the Women's Studies Project at Family Health International. The WSP was funded through a cooperative agreement from the U.S. Agency for International Development. This particular study was funded through field support from the U.S.AID Mission in Brasília. Dr. Zenilda Vieira Bruno was the principal investigator and Dr. Patricia Bailey served as technical monitor.