

Comparison of Health, Development, Maternal Bonding, and Poverty Among Children Born After Denial of Abortion vs After Pregnancies Subsequent to an Abortion

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 Supplemental content

IMPORTANCE Evidence indicates that there are potential health, development, and maternal bonding consequences for children born from unwanted pregnancies.

OBJECTIVE To examine the association of women receiving or being denied a wanted abortion with their children's health and well-being.

DESIGN, SETTING, AND PARTICIPANTS A 5-year longitudinal observational study with a quasi-experimental design conducted between January 18, 2008, and January 25, 2016, examined women who received abortions just under the gestational age limit of 30 abortion facilities across the United States and women who were denied abortion just beyond the gestational age limit in these facilities. Analyses compared the children of 146 women who were denied an abortion (index children) with children born to 182 women who received an abortion and had a subsequent child within 5 years (subsequent children). Interview-to-interview retention averaged 94.5% (6895 of 7293) across the 11 semi-annual interviews.

EXPOSURES Being born after denial of abortion vs after a new pregnancy subsequent to an abortion.

MAIN OUTCOMES AND MEASURES Perinatal outcomes and child health, child development, maternal bonding, socioeconomic, and household structure.

RESULTS This study included 328 women who had children during the study period (mean [SD] age at study recruitment, 23.7 [4.9] years). There were no differences by study group in consent to participate in the study, completion of first interview, or continuation in the study. Among the 328 children in the study (146 index children and 182 subsequent children), there were 163 girls and 165 boys. Perinatal and child health outcomes were not different between subsequent and index children, and there was no clear pattern of delayed child development. However, mixed-effects models adjusting for clustered recruitment and multiple observations per child revealed that poor maternal bonding was more common for index children compared with subsequent children (9% vs 3%; adjusted odds ratio, 5.14; 95% CI, 1.48-17.85). Index children lived in households with lower incomes relative to the federal poverty level than did subsequent children (101% vs 132% of federal poverty level; adjusted regression coefficient, -0.31; 95% CI, -0.52 to -0.10), and were more likely to live in households without enough money to pay for basic living expenses (72% vs 55%; adjusted odds ratio, 5.16; 95% CI, 2.34-11.40).

CONCLUSIONS AND RELEVANCE These findings suggest that access to abortion enables women to choose to have children at a time when they have more financial and emotional resources to devote to their children.

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Over the past 3 decades, debate about abortion has focused on the potential harm that abortion might cause women. Scientific evidence shows that most women's emotional and mental health are not negatively affected by having an abortion, while some research shows short-term harm to mental health from being denied a wanted abortion.¹⁻⁶ Largely absent from the debate are concerns about the effects of receipt and denial of abortion on children, including women's existing children at the time that they are seeking an abortion, children born as a result of abortion denial, and children that may be born in the future.

Children born as the result of an unintended pregnancy may be at increased risk for adverse health outcomes, including congenital anomalies, premature delivery, and low birth weight, compared with children born from intended pregnancies.⁷⁻¹² These effects may be explained by differences in maternal behaviors during pregnancy.^{8,13} Numerous studies have found delayed initiation of antenatal care and/or a decreased number of antenatal care visits among women with unintended pregnancies,^{14-17,51} although a few studies found inconsistent or no effects.¹⁸⁻²⁰ Children born from unintended pregnancies are also less likely to be breastfed, even when compared with siblings within the same family^{15,16,21,22,51}; however, in the United States, there is no evidence of the association of pregnancy intention with preventive care, such as well-baby care and child immunization, or curative care.^{8,17,23} Studies have also shown that parent-child attachment and bonding may differ by pregnancy planning status,^{24,25} with potential associations with children's long-term psychological and developmental outcomes^{26,27} and relationships with parents.²⁸ Limitations of this evidence are that pregnancy intentions are reported after the child's birth.^{11,29-32} Such a retrospective measurement may be flawed; women may change their designation of a pregnancy as intended or unintended based on the circumstances of raising the child.³³ Certain women might be less likely to report an unintended pregnancy than others. In addition, not all pregnancies that are unintended at conception are unwanted; some may be happy surprises.^{11,34}

In this study, we compare the outcomes of children born from pregnancies that were explicitly unwanted in that their mother sought but was denied abortion care (hereafter referred to as index children) with those of children born within the next 5 years to women who received a wanted abortion (hereafter referred to as subsequent children). By prospectively investigating differences in health and well-being between these groups of children, we address limitations of prior research by assessing the outcomes of being born from an unwanted pregnancy compared with being born from a potentially more wanted subsequent pregnancy.

Methods

Design and Participants

The Turnaway Study was a prospective, 5-year study conducted between January 18, 2008, and January 25, 2016, of women's physical health, mental health, and socioeconomic well-being after receiving vs being denied an abortion. The

Key Points

Question How do the health and well-being of children born after denial of abortion compare with those born subsequently to women who received an abortion?

Findings In this quasi-experimental study of 146 children born after denial of abortion and 182 children from subsequent pregnancies in women who received an abortion, higher proportions of children born after denial of abortion experienced poor maternal bonding and lived in subjective poverty. There were no significant differences in perinatal outcomes, child physical health, or child development.

Meaning Denying women desired abortions may be associated with poorer maternal bonding and greater poverty than enabling women to postpone childbearing.

study recruited women seeking abortion who were below 1 of 30 abortion facilities' gestational age limit and received abortions and women who were just over each facility's gestational age limit who were denied an abortion.^{35,36} Recruitment facilities throughout the United States were selected if they had the latest gestational limit of any other facility within 150 miles. Facilities were identified using the National Abortion Federation directory and contacts within the abortion research community. All but 2 facilities that were approached participated in the study; 1 was replaced with a facility with a similar gestational limit and catchment area. Gestational limits for participating facilities ranged from 10 weeks to the end of the second trimester. This study was approved by the University of California, San Francisco, Committee on Human Research, and participants provided written informed consent.

Turnaway Study participants were English- and Spanish-speaking females aged 15 years or older, with no known fetal anomalies, presenting for abortion care between January 18, 2008, and December 23, 2010. We recruited 3 groups of women in a 2:1:1 ratio: the near-limit group (women presenting for abortion up to 2 weeks under a facility's gestational age limit and receiving abortions), the turnaway group (women presenting for abortion up to 3 weeks past a facility's gestational age limit and denied abortion), and the first-trimester group (women who received a first trimester abortion). The first-trimester group was recruited to assess whether women in the near-limit group, most of whom presented in the second trimester, had a different experience of abortion than is typical, because 91% of abortions in the United States occur in the first trimester.³⁷ The participants were interviewed by telephone 8 days after seeking abortion and then again every 6 months for 5 years.

Comparison Groups of Children

In this analysis, we compared outcomes between index children and subsequent children. The index children were younger than 5 years at study completion; thus, we focused on early childhood outcomes. The subsequent child group included data from women in the near-limit group, the first-trimester group, and the turnaway group who received an abortion elsewhere. Twins ($n = 4$) and children of women recruited

from 1 site at which nearly all women in the turnaway group were able to obtain an abortion from another facility ($n = 21$) were excluded from the analysis. Data collection was completed January 25, 2016.

Measures

We asked all participants who gave birth to a child during the study period about the following 5 types of child outcomes: perinatal, child health, child development, maternal bonding, and socioeconomic and household structure. Perinatal outcomes were measured just once after the birth. All other outcomes were assessed every 6 months. Perinatal outcomes included maternal report of whether the child was low birth weight (<2464 g), premature (born >3 weeks before the due date), healthy at birth (yes or no, with an option to specify the health problem), whether the child spent any time in a neonatal intensive care unit, and months since a previous birth. Second- and higher-order births occurring within 1 year and 9 months after a previous birth were classified as short birth intervals.³⁸ First births were classified as not short birth intervals.

Child health included any diagnoses, recent attacks of asthma, physical disabilities that prevent common age-appropriate activities, and injuries that required medical attention in the past 6 months, as reported by the mother. We asked mothers to describe the cause of injury and categorized open-ended responses into 3 groups: accidents and falls, infections, and other (eg, seizures, congenital anomalies, and allergic reactions). Breastfeeding, both any and exclusive, was assessed at interviews at which the child was younger than 6 months.

To measure child development, we used Parents' Evaluation of Developmental Status:Developmental Milestones (PEDS:DM) for maternal-reported, age-specific measures of the following 6 child development dimensions: fine motor, receptive language, expressive language, gross motor, self-help, and social-emotional.³⁹ We report on each domain, as well as a mean developmental score across all items.

Maternal bonding was measured for children younger than 18 months using a modified version of factor 1 of the Postpartum Bonding Questionnaire in which scores of 12 or above are considered to indicate risk of poor bonding.⁴⁰ The original Postpartum Bonding Questionnaire recommends asking women how they currently feel and then how they feel at their worst. We asked women only about how they currently feel. We changed 1 item: "my baby winds me up" to "my baby stresses me out."

Socioeconomic and household structure outcomes included the child's household structure (whether the mother lived with a male partner, adult family members, or neither), mother's personal and household income, and use of public assistance (the Women, Infants, and Children program; Temporary Assistance for Needy Families; and the Supplemental Nutritional Assistance Program). Subjective poverty measured whether the woman reported that she did not always have enough money to meet basic living needs, such as food, housing, and transportation, in the previous month. We calculated household poverty based on each survey calendar

year's federal poverty threshold,⁴¹ the number of people sharing expenses in the household, and the reported total household income including public assistance.

We assessed maternal and child characteristics, including child sex, maternal age at recruitment, maternal age at childbirth, and maternal self-reported race/ethnicity. To examine whether the pregnancy was unwanted vs wanted, we asked women after they reported a birth from a pregnancy that began after study recruitment, "Did you consider having an abortion when you were pregnant with that baby?" where the possible answers were yes, no, don't know, and refused. We examined pregnancy intentions at the interview subsequent to the birth using the London Measure of Unplanned Pregnancy, a 6-question measure that retrospectively evaluates the extent to which a woman's most recent pregnancy was planned in advance.⁴² London Measure of Unplanned Pregnancy scores range from 0 to 12, with scores of 10 to 12 considered to indicate planned pregnancies.⁴³

Statistical Analysis

We assessed differences in baseline maternal and child characteristics using a series of bivariable linear and logistic mixed-effects regression models including site-level random intercepts to account for correlation owing to clustering of participants within recruitment sites. To compare frequencies of perinatal, child health, child development, maternal bonding, and socioeconomic and household structure outcomes between the 2 main analytic groups (index vs subsequent children) we fit unadjusted and adjusted linear and logistic mixed-effects models with random site and child effects; child effects were included to account for multiple observations for each child during the 5-year study. These models generated predicted percentages and means by group. The adjusted models included covariates that could confound the association between analytic group and outcomes, including mother's age at recruitment, mother's race/ethnicity, child's birth order (first vs second and higher), and sex. Child's age at the time of the interview was used as a time-varying covariate in models of health, development, and socioeconomic outcomes to adjust for the longer period of observation for index children, who were born before subsequent children and were therefore, on average, older. We tested the sensitivity of results to differences by analytic group in socioeconomic status at time of recruitment and, separately, to a reference group of subsequent children of only women in the near-limit group. We used Stata, version 14 (StataCorp) for all analyses. All P values were from 2-sided tests and results were deemed statistically significant at $P < .05$.

Results

Clinic staff approached 3045 women seeking abortion; 1132 women agreed to participate, and 956 completed a first interview. Interview-to-interview retention averaged 94.5% (6895 of 7293) and did not differ by study group.⁶ Among the 210

Table 1. Child and Maternal Characteristics for Children Born After Abortion Denial and Children Born From the Next Pregnancy Carried to Term After an Abortion^a

Characteristic	Total (N=328)	Index Children (n=146) ¹⁴	Subsequent Children (n=182)	P Value
First-born child	116 (35.4)	67 (45.9)	49 (26.9)	.003
Boy	165 (50.3)	75 (51.4)	90 (49.5)	.81
Planned pregnancy (LMUP score ≥ 10)	44 (13.4)	1 (0.7)	43 (23.6)	<.001
Considered abortion	184 (56.1)	146 (100)	38 (20.9)	
Maternal race/ethnicity				
White/non-Hispanic	87 (26.5)	36 (24.7)	51 (28.0)	.40
Black/non-Hispanic	106 (32.3)	51 (34.9)	55 (30.2)	.70
Hispanic	93 (28.4)	39 (26.7)	54 (29.7)	.79
Other	42 (12.8)	20 (13.7)	22 (12.1)	.24
Pregnancy intended, mean (SD), LMUP score	4.8 (3.3)	2.8 (1.6)	6.8 (3.3)	<.001
Maternal age at study recruitment, mean (SD), y	23.7 (4.9)	23.4 (5.6)	23.9 (4.4)	.38
Maternal age at birth, mean (SD), y	25.5 (5.2)	23.9 (5.6)	26.8 (4.5)	<.001

Abbreviation: LMUP, London Measure of Unplanned Pregnancy.

^a Data are presented as number (%) of children or mothers unless otherwise indicated. Index children were defined as children born after denial of abortion, and subsequent children were defined as children born from the next birth after an abortion.

women in the turnaway group who completed a baseline interview, 44 (21.0%) received an abortion elsewhere, 5 (2.4%) reported a miscarriage, and 15 (7.1%) did not complete a second interview. The remaining 146 women in the turnaway group reported a birth (all singleton) as a result of the pregnancy for which they were denied an abortion. Fifteen of these women placed the child for adoption, providing birth information but no subsequent data for these children. Among the women who received an abortion, 185 reported another pregnancy ending in birth during the subsequent 5 years. We excluded 6 subsequent children who were twins, a high-risk subgroup.⁴⁴ Therefore, the analytic sample consisted of 146 index children born as a consequence of abortion denial and 182 subsequent children born to women within 5 years after receiving an abortion (eFigure in the Supplement).

The analytic sample of 328 women with births in the study period was racially diverse: 106 black non-Hispanic (32.3%), 93 Hispanic (28.4%), 87 white non-Hispanic (26.5%), and 42 other (12.8%) (Table 1). The mean (SD) age of women at the time of abortion seeking was 23.7 (4.9) years. There were no analytic group differences by maternal race/ethnicity, maternal age at time of recruitment, or child sex. At the time of the first subsequent birth, mothers in the subsequent children group were on average 3 years older than mothers in the index children group at the time of the index birth (mean [SD], 26.8 [4.5] vs 23.9 [5.6] years). Index children were more likely than subsequent children to be the first-born child (67 of 146 [46%] vs 49 of 182 [26.9%]).

By study design, all mothers considered abortion during the index pregnancy; women who received an abortion again considered abortion for 38 of the 182 subsequent births (20.9%) (Table 1). Pregnancies with subsequent children were more intended according to the London Measure of Unplanned Pregnancy pregnancy intentions scale (mean [SD] score, 6.8 [3.3]) compared with pregnancies with index children (mean [SD] score, 2.8 [1.6]). One-fourth (43 of 182 [23.6%]) of subsequent children were from planned pregnancies (London Measure of

Unplanned Pregnancy scores ≥ 10) compared with 0.7% (1 of 146) of index children.

Most children (94%) were reported to be healthy at birth, 7.5% had low birth weight, 13% spent time in the neonatal intensive care unit, and 10% were premature, with no significant differences by analytic group in adjusted analyses (Table 2). Index children were more likely than subsequent children to be born within 1 year and 9 months after a previous birth (17% vs 3%; adjusted odds ratio [aOR], 5.87; 95% CI, 2.33-14.80). Table 2 and the Figure give estimated values and adjusted mixed-effects model results.

At each interview, less than 2% of children experienced a physical disability and 9% had experienced asthma in the previous 6 months, with no significant differences by analytic group in adjusted analyses (Table 2). Index children were significantly more likely to experience an injury (6% vs 3%; aOR, 1.91; 95% CI, 1.02-3.59), mostly accidents and falls (64%). More than one-third of infants younger than 6 months (37%) were breastfed (15% exclusively), with no analytic group differences.

There were no differences in achievements of 5 of 6 developmental milestones (Table 2). The odds of achieving gross motor milestones was lower for index children (aOR, 0.66; 95% CI, 0.49-0.88).

Index children scored significantly worse in maternal-child bonding than did subsequent children (mean [SE] score, 4.4 [0.3] vs 3.1 [0.3]; adjusted regression coefficient, 1.34; 95% CI, 0.48-2.19) and had 5 times higher odds of meeting this threshold of poor bonding (9% vs 3%; aOR, 5.14; 95% CI, 1.48-17.85) (Table 2).

Nearly all children lived with their mother (96%). Among children who lived with their mother, index children were less likely than subsequent children to live in a household with a mother's male partner (35% vs 49%; aOR, 0.22; 95% CI, 0.09-0.52) and more likely to live with other adult family members (33% vs 21%; aOR, 5.35; 95% CI, 2.16-13.28) (Table 2). There was no difference in living without adult family members or male partners. There were differences in poverty by analytic group:

Table 2. Outcomes of Children Born From a Denied Abortion Compared With Those of Children Born to Women Subsequent to Receiving an Abortion

Characteristic	Index Children ^{a,b}	Subsequent Children ^{a,b}	Effect Estimate, aOR (95% CI)
Children, No.	146	182	NA
Observations, No.	1037	852	NA
Years of observation per child, mean (SD)	3.4 (1.7)	2.2 (1.3)	NA
Perinatal outcomes, 1 observation per child			
Low birth weight	5	9	0.50 (0.20-1.27)
Premature	6	12	0.45 (0.19-1.07)
Healthy at birth	94	93	1.08 (0.33-3.56)
Short birth interval	17	3	5.87 (2.33-14.80)
Spent any time in NICU	12	13	0.96 (0.45-2.01)
Child health outcomes			
Physical disability in past 6 mo	3	1	2.64 (0.48-14.61)
Injury in past 6 mo	6	3	1.91 (1.02-3.59)
Asthma	9	9	1.23 (0.15-10.08)
Breastfeeding (<6 mo)			
Any breastfeeding	31	41	0.64 (0.37-1.09)
Exclusive breastfeeding	16	13	1.23 (0.61-2.49)
Child development, based on PEDS:DM			
Fine motor	88	91	0.72 (0.48-1.07)
Self-help	85	82	1.31 (0.97-1.75)
Receptive language	86	82	1.35 (0.99-1.82)
Gross motor	77	82	0.66 (0.49-0.88)
Social emotional	89	90	0.88 (0.61-1.28)
Expressive language	88	90	0.81 (0.51-1.27)
Overall percentage, mean (SE)	85 (0.7)	86 (0.7)	-0.01 (-0.03 to 0.01) ^c
Maternal bonding (<18 mo)			
Postpartum bonding questionnaire score, mean (SE)	4.4 (0.3)	3.1 (0.3)	1.34 (0.48-2.19) ^c
Poor maternal bonding ^d	9	3	5.14 (1.48-17.85)
Socioeconomics and household structure			
Lives with a male partner	35	49	0.22 (0.09-0.52)
Lives with adult family members	33	21	5.35 (2.16-13.28)
Lives without family or male partner	33	30	1.32 (0.60-2.88)
Receives public assistance			
WIC	32	30	1.12 (0.75-1.67)
TANF	11	9	1.57 (0.68-3.61)
SNAP	47	48	0.93 (0.53-1.61)
Household income below FPL	63	55	1.82 (0.94-3.55)
Not enough money to meet basic living needs	72	55	5.16 (2.34-11.40)
Percentage of FPL, mean (SE)	101 (0.8)	132 (0.7)	-0.31 (-0.52 to -0.10) ^c

Abbreviations: aOR, adjusted odds ratio; FPL, federal poverty level; NA, not applicable; NICU, neonatal intensive care unit; PEDS:DM: Parents' Evaluation of Developmental Status: Developmental Milestones; SNAP, Supplemental Nutritional Assistance Program; TANF, Temporary Assistance for Needy Families; WIC, Women, Infants, and Children program.

^a Data are presented as the percentage of mothers or children unless otherwise indicated. Models compare index children with children born subsequent to abortion (reference), using mixed-effects regression adjusting for covariates (maternal race/ethnicity, maternal age at time of recruitment, birth order [first vs second or greater], sex of child, and except for perinatal outcomes, child's age at interview) and for clustering by child and site. Perinatal birth outcomes are based on 1 observation per child and include children placed for adoption. All other analyses, with the exception of child lives with mother, are based on multiple observations per child but exclude 15 index children placed for adoption. Breastfeeding outcomes were limited to infants <6 months (317 observations) and maternal bonding to children <1.5 years (836 observations).

^b Estimated values from mixed-effects model. Index children were defined as children born after denial of abortion, and subsequent children were defined as children born from the next birth after an abortion.

^c Effect estimate given is the adjusted regression coefficient.

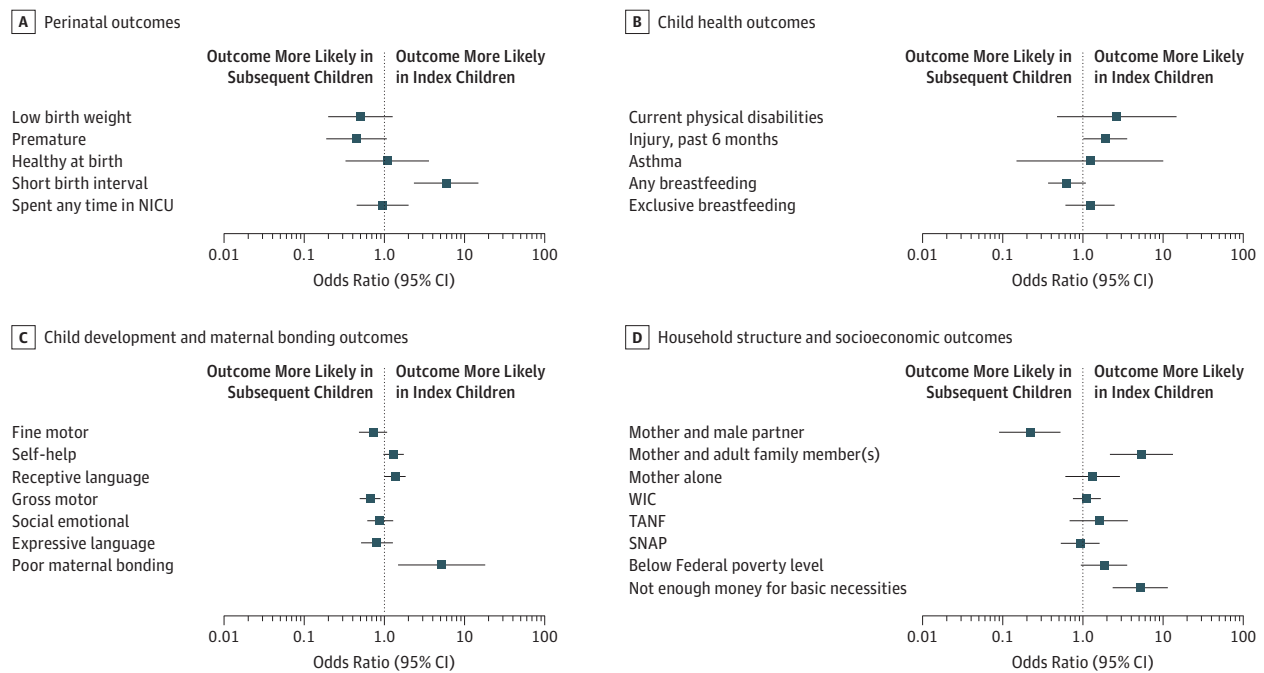
^d Poor maternal bonding indicated by Postpartum Bonding Questionnaire score of 12 or above.

index children lived in households with incomes 31 percentage points lower relative to the federal poverty level than subsequent children (mean [SE] federal poverty level, 101% [0.8%] vs 132% [0.7%]; regression coefficient, -0.31; 95% CI, -0.52 to -0.10). In terms of the household income being below the poverty threshold, findings did not achieve significance, with index children having nearly twice the odds of being raised in low-income households (63% vs 55%; aOR, 1.82; 95% CI, 0.94-3.55; *P* = .08). In adjusted models, mothers of index children were more likely to report that they had insufficient money to pay for basic living needs such as food, housing, and transportation (72% vs 55%; aOR, 5.16; 95% CI, 2.34-

11.40). We found no analytic group differences in receipt of any type of public assistance.

In sensitivity analyses that separated the subsequent children by whether their mother was in the near-limit or first-trimester study group, we found no substantive baseline differences in children's characteristics. The findings were similar, with the following 2 exceptions: the increased odds of an injury was no longer significant, and 2 additional child development domains became significant—1 domain in which index children scored significantly better than subsequent children (receptive language) and 1 domain in which they scored worse (fine motor). After testing for possible confounding be-

Figure. Comparison of Children Born After Denial of Pregnancy With Children Born Subsequently to Women Who Received an Abortion



All outcomes are reported as odds ratios (squares) with 95% CIs (whiskers) from a mixed-effects multivariate model adjusting for covariates (maternal race/ethnicity, maternal age at time of recruitment, birth order [first vs second or greater], sex of child, and except for perinatal outcomes, child's age at interview) and for clustering by child and site. Perinatal birth outcomes are based on 1 observation per child and include children placed for adoption. All other analyses, with the exception of child lives with mother, are based on multiple observations per child but exclude 15 index children placed for adoption; breastfeeding outcomes were limited to infants younger than 6

months (317 observations), and maternal bonding was limited to children younger than 1.5 years (836 observations). Poor Maternal Bonding determined by a Postpartum Bonding Questionnaire score of 12 or above. Index children were defined as children born after denial of abortion, and subsequent children were defined as children born from the next birth after an abortion. Dashed vertical lines indicate no difference between the index children and subsequent children. NICU indicates neonatal intensive care unit; SNAP, Supplemental Nutritional Assistance Program; TANF, Temporary Assistance for Needy Families; and WIC, Women, Infants, and Children program.

tween the groups by controlling for women's poverty status at time of seeking abortion, we found no substantive differences from the main adjusted models. eTable in the Supplement gives results of sensitivity analyses.

Discussion

To our knowledge, this is the first US study to prospectively assess the association of access to abortion with outcomes in children, observing both children born from pregnancies for which the woman was denied an abortion and children born from the subsequent pregnancies to women who received an abortion. We examined a range of health, development, and socioeconomic outcomes for children for up to 5 years. Our study indicated measurable associations of women's access to abortion with their children's well-being. We found significant economic differences between the households of index children and subsequent children, with mothers of index children more likely to report insufficient money to pay for basic needs than mothers of subsequent children, a finding consistent with results among all women in the study, not just mothers.⁴⁵

We also found that children of women denied an abortion experienced poorer maternal bonding than did subsequent children of women who received an abortion, a finding consistent with some studies of unwanted pregnancies carried to term in the United States and other countries.⁴⁶⁻⁴⁹ The finding that injuries were more likely among index children than subsequent children raises possible concerns about neglect or abuse. However, although reports of poor bonding in the past 6 months were lower for subsequent children than for index children (3% vs 9%), as were reports of injuries (3% vs 6%), these percentages are low. More reports of injury among index children may reflect difficulty in raising an unexpected child or raising children born in quick succession but do not necessarily indicate that children born from unwanted pregnancies carried to term are at higher risk of neglect or injury.

Limitations

The study may be limited by its participation rate, 37.2% (1132 of 3045 women), although this rate is within the range of other large-scale prospective studies with 5 years of follow-up.⁵⁰ Furthermore, we tested many outcomes within 5 domains, raising the possibility of a type I error. However, the consistency

of findings within the domains are reassuring. These results point to important areas for future study of the association of unwanted pregnancy with outcomes in children.

Although our study improved on the previous literature by observing women seeking abortion, we may not have captured the full benefits for children of the mother receiving a wanted abortion. Our study included data on index children for a mean of 3.4 years and subsequent children for a mean of 2.2 years; outcomes such as physical growth or school performance may not be apparent in that time frame. We were able to capture data only on subsequent children born within 5 years after the abortion. Children born beyond 5 years after the abortion may have outcomes that further diverge from those of index children, because the woman may have more time to establish the life circumstances in which she desires to parent, such as stable relationships, completed education, and/or secure financial footing. Being able to delay childbearing even for a few

years and thus have a child at a time that the woman feels is better may result in closer relationships between mother and child and children raised in better economic circumstances.

Conclusions

This 5-year, quasi-experimental study compared the health, development, maternal bonding, and poverty of 146 children born after denial of abortion with that of 182 children from subsequent pregnancies in women who received an abortion. Higher proportions of children born after denial of abortion experienced poor maternal bonding and lived in subjective poverty. This study's findings suggest that access to abortion enables women to choose to have children at a time when they have more financial and emotional resources to devote to their children.

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