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Childhood adversities and subsequent risk of one or multiple abortions

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Abstract

Although many studies have found an association between childhood adversities and mental health disorders, few have examined whether childhood adversities are linked to having abortions. This research investigates the association between a range of childhood adversities and risk of abortion in part to identify which adversities should be considered when examining the association between abortion and subsequent mental health. Using the U.S. National Comorbidity Survey-Replication (NCS-R), we tested the association between 10 childhood adversities and risk of 0,1, or multiple abortions among 1511 women ages 18–41. We employed multinomial logistic regression to examine the independent association between each childhood adversity and number of subsequent abortions, controlling for sociodemographic factors, total number of pregnancies, and each adversity. Women who had experienced two or more personal safety threats, one parental mental illness, or two or more parental mental illnesses while growing up were more likely subsequently to have multiple versus no abortions [Relative Risk Ratio (RRR) = 9.87, 95% CI: 2.45–39.72; OR = 2.81, 95% CI: 1.27–6.21; RRR = 5.28, 95% CI: 1.60–17.38, respectively], and multiple versus one abortion [RRR = 13.33, 95% CI: 2.48–71.68; RRR = 2.17, 95% CI: 1.03–4.56; RRR = 3.67, 95% CI: 1.15–11.76, respectively]. Women who had experienced childhood physical abuse were more likely to have one compared to no abortions [RRR = 2.00; 1.19–3.34]. These results suggest that some childhood adversities may partially explain the association between abortion and mental health. Accordingly, they should be considered in future research examining the link between abortion and mental health.

Keywords

U.S.A.; Childhood adversities; Abortion; Mental health

Introduction

Forty-nine percent of all pregnancies in the United States are unintended and 43% of unintended pregnancies (excluding miscarriages) end in abortion (Finer & Zolna, 2011). At current rates, 30% of women are expected to have an abortion by the time they are 45, highlighting the commonness of this experience (Jones & Kavanaugh, 2011). Nevertheless, women living below the federal poverty line, self-identifying as African American or Hispanic, or between 18 and 29 years of age are disproportionately represented among women having abortions (Jones & Kavanaugh, 2011). For instance, in 2008, 15.9% of all women were living below the federal poverty line, yet 42% of women having abortions were living below the federal poverty line.

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In addition to sociodemographic factors, women with adverse experiences such as a history of violence, are more likely to have abortions than women without these histories (Bourassa & Berube, 2007; García-Moreno, Jansen, Ellsberg, Heise, & Watts, 2005, chap. 8; Gee, Nandita, Wan, Chavkin, & Long, 2009; Glander, Moore, Michielutte, & Parsons, 1998; Jones, Singh, Finer, & Frohwirth, 2006; Leung, Leung, & Chan, 2002; Russo & Denious, 2001;Steinberg, Becker, & Henderson, 2011; Steinberg & Finer, 2011;Steinberg & Russo, 2008; Taft & Watson, 2008; Wyatt, Guthrie, & Notgrass, 1992). In this study, we examined whether a wide range of childhood adversities are associated with having subsequent abortions. Such research is important for at least two reasons. First, if childhood adversities are associated with having subsequent abortions, then programs that address the consequences of childhood adversities should include components on unintended pregnancy. Second, an increasing number of published papers claim that abortion harms women's mental health (e.g., Coleman, 2011;Coleman, Coyle, Shuping, & Rue, 2009; Coyle, Coleman, & Rue, 2010). However, these papers usually do not take into account a wide range of early childhood adversities. When conducting studies that examine the correlation between abortion and subsequent mental health, it is important to control for pre-existing factors that are associated with both abortion and with mental health, because these factors may underlie an association between abortion and mental health. Given that a range of childhood adversities are consistently associated with later mental health (Green et al., 2010; Kessler, Davis, & Kendler, 1997; McLaughlin et al., 2010a, 2010b), examining whether these same adversities are associated with abortion will suggest which factors are important to consider when examining the association between abortion and mental health.

Some research has found childhood adversities to be associated with having abortions (Bleil et al., 2011; Boden, Fergusson, & Horwood, 2009; Russo & Denious, 2001; Wingood & DiClemente, 1997), with two studies focusing on childhood sexual or physical abuse (Russo & Denious, 2001; Wingood & DiClemente, 1997) and two studies considering additional childhood adversities (Bleil et al., 2011; Boden et al., 2009). All these studies reported that childhood sexual abuse was associated with having abortions when other childhood adversities were not considered in analyses. When also considering other childhood adversities, Boden et al. (2009) found that the relationship between childhood sexual abuse and having more abortions was only marginally significant, and that poorer parental adjustment was associated with having more abortions, but family socioeconomic adversity and family instability were not associated with having more abortions.

Another study examined childhood sexual abuse, childhood physical abuse, family disruption, and personal safety threats (Bleil et al., 2011). Women who had more total number of childhood adversities, more types of abuse, and more personal safety threats were more likely to have multiple abortions compared to no or one abortion. In addition, women who had more family disruptions were more likely to have one compared to no abortions. This study examined each childhood adversity separately, rather than together in one model. In addition, Bleil et al. (2011) and Boden et al. (2009) grouped some childhood adversities together that were examined separately in other research (e.g., Green et al., 2010; McLaughlin et al., 2010a, 2010b), possibly because their sample sizes were small. For instance, parental losses (e.g., death of a parent, separation or divorce of parent) may be distinguished from parental violent conflict or parental mental health (e.g., parents with depression or anxiety) (see Green et al., 2010; McLaughlin et al., 2010a, 2010b). However, Bleil et al. (2011) grouped parental losses and mental health together as family disruptions, and Boden et al. (2009) grouped parental losses with parental violent conflict to assess family instability. In the current study, we examined the effects of parental losses, parental mental illness, and parental violent conflict separately. Moreover, we included 10 different childhood adversities that were reported to occur at or before age 12: parental death, parental

divorce, other parental losses, parental mental illness, parental criminal activity, parental violence, physical abuse, sexual abuse, neglect, and personal safety threats.

Because childhood adversities frequently co-occur, we also investigated the cumulative effect of more adversities on risk of abortion. This allowed us to ascertain whether more adversities are related to a higher risk of abortion. Some research has found that more adversities are associated with more mental health problems (Clemmons, Di Lillo, Martinez, DeGue, & Jeffcott, 2003; Green et al., 2010). This approach assumes that the effect of each type of adversity is the same. However, certain adversities may be more strongly linked to having abortions, in which case each type of adversity rather than the number should be tested. Consequently, we examined both number of adversities and the relative effects of each type of adversity controlling for the effects of all other childhood adversities.

To summarize, the aim of this research is to use a U.S. nationally representative data set, the National Comorbidity Survey-Replication, to examine whether a range of childhood adverse experiences occurring at or before 12 years of age are associated with having more subsequent abortions. Because childhood adversities co-occur (Green et al., 2010; Kessler et al., 1997; Miller et al., 2011), we also examined the cumulative effect of experiencing more childhood adversities on number of subsequent abortions.

Method

Data

The data for this study are from the National Comorbidity Survey-Replication [NCS-R], which was an epidemiological investigation designed to study the prevalence and correlates of mental disorders in the U.S., as defined by the fourth edition of the Diagnostic and Statistical Manuals of Mental Disorders IV (American Psychiatric Association, 2000). The NCS-R was a face-to-face survey administered in two parts, Part I and Part II, with a subsample of respondents who answered Part 1 also answering Part II, usually on the same occasion. The subsample who answered Part II included those who screened positive for any disorder found in Part I, plus a probability subsample of other Part I respondents (Kessler et al., 2004). Ethics approval was not required for this study since we conducted a secondary analysis of existing deidentified data.

Sample

The NCS-R Part I was administered with computer-assisted personal interview methods by trained interviewers between February 2001 and April 2003 to a multistage clustered area probability sample of the US household-based population. For Part 1, 9282 female and male respondents ages 18 or older participated. Part II was administered to 5692 respondents, and included, among other things, reproductive history information and experiences of childhood adversities. Of those who were administered Part II, 3310 were women. Of these women, we included only those who were 13 or younger in January 1973 to ensure that the option to have an abortion was legal during women's entire reproductive years, leaving 1616 women. We also included only those who were not missing data on childhood adversity items or covariates (6 were missing) and abortion history items (99 were missing), leaving 1511 women for analysis.

Outcome measure: number of abortions

Number of abortions was coded as zero, one, or multiple (two or more). Women were asked if they ever had an abortion, and if so the number they had, and the age of their abortion or first abortion if more than one abortion. Of women included here, 1254 women had had no

abortions, 190 had had one abortion, and 67 had had more than one abortion, and the youngest age of women's first abortion was 13.

Childhood adversities

We classified 10 childhood adversities into four broad categories including parental loss, parental maladaptation, abuse and neglect, and personal safety threats. For some childhood adversities, respondents were simply asked whether the experience occurred when they were growing up. For other childhood adversities, respondents indicated their age when they first experienced the adversity. To be coded as occurring in childhood, the adversity had to have occurred when they were growing up or if age was indicated, at or before the respondent was 12 years of age. We included childhood adversities at or before the respondent was 12 to ensure women's abortions occurred after the experience of the childhood adversities. While ascertaining whether the adversity occurred during the years the respondent was growing up is less precise than giving the specific age at which the participant first remembers the event or experience, because they occurred during the years the participant was growing up, we coded them as childhood adversities.

Parental losses

Three types of parental loss were examined: parental death, parental divorce, and other loss of contact with parents. Respondents were first asked whether they lived with both biological parents until they were 16 or not. If they said no to this, they were offered a list of options as to why they did not live with their parents until 16 (e.g., mother/father died, parents separated or divorced, adopted, went to foster care). For each reason that respondents indicated they did not live with their parents until 16, respondents were asked their age at which these events occurred. Like Green and colleagues (Green et al., 2010; McLaughlin et al., 2010a, 2010b), we coded responses into three categories: parental death, parental divorce or separation, and other types of parental loss (being adopted or going away from home for six months or longer to live with other relatives, to foster care, to a hospital, to juvenile detention, or to an 'other' category). Those who responded that the event occurred at or before age 12 were coded as experiencing that event.

Parental maladaptation

Three parental maladaptive environments were examined: parental mental illness, parental criminal behavior, and parental violent conflict. All were assessed with the respondent answering questions about her parents or caregivers, who may or may not have been her biological parents.

Parental mental illness—Parental depression, anxiety, panic attacks, and substance abuse were measured using The Family History Research Diagnostic Criteria (Andreasen, Endicott, Spitzer, & Winokur, 1977), and another similar instrument (Kendler et al., 1991). Respondents answered a set of questions about each parent or caregiver, and then predefined criteria were used for determining whether a parent had any of these disorders (same criteria used in Green et al., 2010). The number of parents or caregivers with depression, anxiety, panic attacks, and substance abuse problems was added together to create a measure of the number of parental mental health problems in the respondent's household when she was growing up. Possible scores were from 0 to 8 (1 for each of the four disorders times 2 parents or caregivers). Because only 4.0% (unweighted $n = 61$) had scores greater than 2, everyone who grew up in a household in which two or more parental mental illnesses were present was coded as 2.

Parental criminal behavior—Parental criminal behavior was assessed with four items (two for each parent) about whether each parent or caregiver was involved in criminal activity, or arrested or sent to prison while she was growing up. If a respondent answered yes to any of these items, she was coded as having grown up in a family in which the parent exhibited criminal behavior.

Parental violent conflict—Parental violent conflict was assessed with two items. One was based on items from Straus' modified version of the Conflict Tactics Scale (Straus, 1979) and required participants to indicate how often (never, rarely, sometimes, often) their parents or caregivers engaged in certain violent behaviors with each other such as pushing, grabbing, shoving, throwing something, slapping or hitting the other while they were growing up. Respondents who reported that they sometimes or often witnessed any of the above between their parents or caregivers when they were growing up were coded as experiencing parental violent conflict. Respondents were also asked if they had ever seen serious physical fights at home such as their father beating up their mother, and the age they first witnessed this. Those who reported seeing a physical fight at or before age 12 were also coded as experiencing violent conflict.

Abuse and neglect

Two types of childhood abuse – sexual and physical abuse – and childhood neglect were examined.

Childhood physical abuse—Childhood physical abuse by parents was assessed with two items. One was based on items from Straus' modified version of the Conflict Tactics Scale (Straus, 1979) and required participants to indicate how often their parents or caregivers pushed, grabbed, shoved, threw something, slapped or hit the participant while she was growing up. In addition, participants were asked if they were ever badly beaten up by their parents and at what age this occurred. Those who said that they were badly beaten up by their parents at or before age 12 or those who said they experienced a specific violent act sometimes or often as a child were coded as experiencing physical abuse.

Childhood sexual abuse—Sexual abuse was assessed with questions about whether the participant was ever raped, and whether the respondent was sexually assaulted excluding being raped. Participants were asked the age this first occurred. Women who reported having been raped or sexually assaulted at or before age 12 were coded as experiencing childhood sexual abuse.

Childhood neglect—Neglect was assessed with seven items Five items came from child welfare studies (Courtney, Piliavin, Grogan-Kaylor, & Nesmith, 2001), and included the frequency with which respondents were (1) made to do chores too difficult or dangerous for their age, (2) left unsupervised or alone too early in childhood, (3), made to go without things they needed like clothes, shoes, or school supplies because their parents/caregivers spent the money on themselves, (4) left hungry or made to go without regular meals, and (5) left without medical treatment when they were sick or hurt. Responses were coded as 0 = never, 1 = rarely, 2 = sometimes, 3 = often. Two other items assessed how much each caregiver put into watching over them and how much each caregiver made sure they had a good upbringing. Responses were coded as 0 = not at all, 1 = a little, 2 = some, and 3 = not at all. Mean scores for each of the women were created from these 7 items, and ranged from 0 to 3. Those who had a mean at or above 1 were coded as neglected, while those who had a mean below 1 were coded as not neglected.

Personal safety threats

Women were asked about six personal safety threats including being kidnapped, having a life-threatening accident, being in a man-made disaster, being mugged, being badly beaten up, or witnessing someone being seriously injured or killed. They were also asked at what age the event first occurred. We summed the number of personal safety threats the person reported experiencing at or before age 12. Because only 0.3% (unweighted $n = 5$) of the sample experienced more than 2 personal safety threats, we created a category of two or more personal safety threats. Thus, values were coded as 0, 1 or 2 or more personal safety threats.

Number of adversities

We also summed the number of adversities each woman experienced. Because parental mental illness and personal safety threats were coded as 0, 1, or 2, possible values ranged from 0 to 12, and actual scores ranged from 0 to 9.

Control variables

In models in which we adjusted for control factors, we included the factors of age, race (white versus not white), total number of pregnancies (range from 0 to 11), and the economic situation (low income or not low income) during childhood. Low childhood economic background included those who grew up in a family which received government assistance for 6 months or more during childhood, those who grew up with only one parent and that parent had less than a high school education, or those who grew up with both parents and both had less than a high school education. We included age because older women are more likely to have more pregnancies including abortions; we included total number of pregnancies because the more pregnancies a woman has the more opportunities she has to have abortions; we included self-identified race because this was associated with number of abortions; and we included childhood economic situation because this may co-occur with the childhood adversities investigated here.

Analyses

We tested whether childhood adversities were related to subsequent 0, 1, or multiple abortions. First, we used chi-squares to test whether the prevalence of each of the 10 adversities differed by risk of abortion. In order to test whether more adversities put women at higher risk of having abortions, we also tested whether the total number of adversities differed by number of abortions using an independent samples t-test. In addition, we used a chi-square test to evaluate whether women with 0, 1, 2, or 3 or more adversities were more likely to have more abortions. Second, we evaluated a multinomial logistic regression model in which we entered each adversity (or number of adversities) and controlled for age, race, childhood economic situation, and total number of pregnancies. As described elsewhere (Kessler et al., 2004), because the data were collected with a complex sample design, it was necessary to apply weight, cluster, and stratification variables to estimate prevalence statistics, odds ratios, or 95% confidence intervals.

Results

Table 1 presents sociodemographic and reproductive characteristics of the sample by the number of abortions women reported. Women who had one abortion were on average 1.5 years older than women who had no abortions, $p < .05$. Women who had multiple abortions were less likely to self-identify as white and had less educational attainment than women who had one or no abortions, ps $< .05$. On measures of reproductive history, women who had multiple abortions had more births, miscarriages, and pregnancies than women who had

no abortions, *p*s < .05. Women who had multiple abortions also had more pregnancies and were on average 1.7 years younger at the time of their first abortion than women who had one abortion, *p*s < .05. Women who had one abortion had more miscarriages and pregnancies than women who had no abortions, *p*s < .05.

Table 2 shows the percentage of women who experienced each of the childhood adversities, any adversity, and total number of adversities by number of subsequent abortions at 13 years of age or older. Women who experienced 2 or more personal safety threats were more likely to have multiple abortions versus no or one abortion, *ps* < .05. In addition, women who had a parent who engaged in criminal behavior were marginally more likely to have one versus multiple abortions, $p < .06$; and women who grew up in a family with one parental mental illness were marginally more likely to have multiple versus no abortions, $p < .07$. Women who experienced childhood physical abuse were more likely to have one versus no abortion, $p < .005$, and women who had more adversities were more likely to have one versus no abortions, $p < .05$.

Table 3 shows the percent of women who had each childhood adversity who also had at least one or two other adversities. This allowed us to see the amount of co-occurrence of these adversities. Except for parental death, parental divorce, one parental mental illness, and one personal safety threat, over 75% who experienced each adversity also experienced at least one other type of adversity, showing the high overlap in these experiences. Except for the same aforementioned childhood adversities, over 50% who experienced each adversity also experienced two or more other adversities.

Table 4 presents the adjusted relative risk ratios from the multinomial logistic regression models for each childhood adversity. The adjusted model presents the association between each childhood adversity independent of all other childhood adversities, and age, self-identified race, childhood economic situation, and total number of pregnancies. Relative to women who grew up in a household in which no parental mental illness was present, women who grew up in a household with one parental mental illness, Relative Risk Ratio (RRR) = 2.81 (95% CI: 1.27–6.21), $p = .01$, or two or more parental mental illnesses, RRR = 5.28 (95% CI: 1.60 – 17.38), $p < .01$, were more likely to have multiple abortions compared to no abortions, and this was also the case for women who had multiple versus one abortion: one parental mental illness in household, RRR = 2.17 (95% CI: 1.03–4.56), $p < .05$, and two or more parental mental illnesses in household, RRR = 3.67 (95% CI: 1.15–11.76), $p < .05$. Relative to women who experienced no personal safety threats growing up, women who had two or more personal safety threats were more likely to have multiple abortions compared to no abortions, RRR = 9.87 (95% CI: 2.45–39.82), $p < .01$, or one abortion, RRR = 13.33 (95% CI: 2.48–71.68), $p < .01$. Women who experienced childhood physical abuse, RRR = 2.00 (95% CI: 1.19–3.36), $p = .01$ were more likely to have one versus no abortion.

With respect to models which included number of adversity and any adversity, we found that one relative to no adversities, RRR = 2.01, 95% CI: 1.03–3.94, $p < .05$, was associated with having multiple versus no abortions, and having any adversity was marginally related to having multiple versus no abortions, RRR = 1.92, 95% CI: 0.98–3.77, $p < .06$ (data not shown).

Discussion

The current research expanded on previous research in several ways. First, we used a U.S. nationally representative data set, and we examined 10 childhood adversities that occurred at or before the respondent was 12 years old. Second, we used the outcome of 0, 1, or multiple abortions because prior research has found adverse experiences to be more common among

women having multiple abortions compared to women having one or no abortions. Third, because childhood adversities co-occur, we tested the cumulative impact of having more types of adversities. Finally, we assessed the association between each of the childhood adversities controlling for all the other childhood adversities. This approach allowed us to test whether more adversities increased risk of abortion and whether particular adversities, independent of other ones, increased risk of abortion. While we found specific types of adversities (e.g., parental mental illness and personal safety threats) were associated with having multiple versus one or no abortions, we also found that experiencing at least one childhood adversity (regardless of the type of adversity) tended to be related to having multiple versus no abortions.

This research may inform the abortion and mental health literature. When testing the relationship between abortion and mental health, factors that are associated with both having abortions and having mental health problems need to be taken into account because these factors may be driving this relationship (Steinberg & Finer, 2011). Prior research has found these adverse childhood experiences to be associated with adult mental health (Clark, Caldwell, Power, & Stansfeld, 2010; Green et al., 2010;McLaughlin et al., 2010a, 2010b). Here we show that specific childhood adversities and experiencing any childhood adversities is associated with having subsequent multiple abortions. Our results suggest three childhood adversities to include as likely confounders of a relationship between abortion and mental health: parental mental health, childhood physical abuse, and childhood personal safety threats. Besides an individual's own history of mental health, a strong predictor of mental health is parental mental health (Green et al., 2010; Kessler et al., 1997). Although prior research has shown that women's prior mental health may account for the association between abortion and subsequent mental health (Steinberg & Finer, 2011; Steinberg et al., 2011), little previous research has considered how parental mental health or personal safety threats occurring in childhood may explain this association.

There are at least two plausible reasons childhood adversities increase women's risk of having abortions. First, childhood adversities have been shown to increase women's risk of unintended pregnancy (Dietz et al., 1999; Senn, Carey, & Vanable, 2008). While little is known about why this is, some research suggests it is because such adversities are associated with lower self-efficacy for contraceptive use (Brown, Kessel, Lourie, Ford, & Lipsitt, 1997; Brown, Lourie, Zlotnick, & Cohn, 2000; Noll, Trickett, & Putnam, 2003) and lower sexual assertiveness (Johnsen & Harlow, 1996). Given that at least 95% of abortions are the result of unintended pregnancies (Finer & Zolna, 2011), abortion may be a marker of unintended pregnancy. That is, childhood adversities may be related to abortion because they lead to unintended pregnancy.

An additional possibility is that once a woman has an unintended pregnancy, the decision to have an abortion may be influenced by having adverse experiences earlier in one's life. Women who experience adversities in childhood may experience greater stress from an unintended pregnancy, and more stress may lead to choosing to terminate an unintended pregnancy. A related possibility is that, since early adverse experiences are associated with adverse experiences in adolescence and young adulthood (e.g., sexual victimization or intimate partner violence; Miller et al., 2011; Senn et al., 2008), the circumstances surrounding an unintended pregnancy may be more adverse for women who have experienced childhood adversities than for women who have not experienced childhood adversities; and these adversities in adulthood may then be reasons for having an abortion rather than carrying an unintended pregnancy to term.

Some previous research has documented an association between childhood sexual abuse and risk of abortion (Bleil et al., 2011; Russo & Denious, 2001). Other research has found no

significant association between childhood sexual abuse and abortion when other childhood adverse experiences and total number of pregnancies were considered in analyses (Boden et al., 2009). We found no association between childhood sexual abuse and abortion in both unadjusted and adjusted analyses. This may have been due to the wording of the items, the type of sexual abuse assessed, or the way in which we coded the response. Only two items were included on sexual abuse. To be coded as having experienced sexual abuse, the experience had to have occurred at or before 12 years of age. Some of the previous research that found an association between childhood sexual abuse and risk of abortion used childhood sexual abuse occurring at 16 (e.g., Boden et al., 2009) or 17 or younger (Russo & Denious, 2001). We used 12 or younger because the earliest age of women when they had their abortion was 13, thus allowing for temporal ordering of the adversity and abortion. Future research could examine whether childhood sexual abuse before 13 or between 13 and 17 years of age are associated with risk of abortion at 18 or older.

Other research has found that number of childhood adversities relates to subsequent risk of multiple versus zero or one abortion (Bleil et al., 2011). While we did not find this, we found that having at least one adversity was marginally related to having multiple versus no abortions. It may be that specific types of childhood adversity put individuals more at risk rather than overall number.

Limitations

Even though we were able to ascertain whether the childhood adversities occurred at or before 12 years of age, and the age of the first abortion, a limitation of this work is that this self-report survey relied on memory and willingness to disclose. The fact that an interviewer was administering the survey may have made participants less likely to answer items honestly. Previous research has found that women underreport on questions about their abortion history on national surveys (Jagannathan, 2001; Jones & Forrest, 1992; Jones & Kost, 2007). If we assume those reporting multiple abortions (weighted $N = 53$) had only 2 abortions, we may calculate the number of abortions in this sample, which is 225. Among this same sample, the total number of births is 1647. In this sample, 12% of all births and abortions were abortions. The abortions must have occurred between 1973 and 2001, and during these years 27.1% of all births and abortions ended in abortion. This means that approximately 44% of all abortions in our sample were reported, similar to what has been found in other nationally representative data sets including the National Survey of Family Growth (NSFG) and first NCS (Jones & Kost, 2007; Steinberg et al., 2011). If some women who did not report their abortions also did not report experiencing childhood adversities, then these results are a conservative estimate of the association between childhood adversity and risk of abortion.

Conclusions

We found that women who had parents with more mental health problems while growing up and experienced more childhood personal safety threats were more likely to have multiple compared to no abortions and one abortion. In addition, women who experienced childhood physical abuse were more likely to have one compared to no abortions. Screening women in the abortion care setting for a variety of adverse experiences may help determine who may benefit most from pregnancy prevention programs and from mental health services. Moreover, programs which address the outcomes of childhood adversities should consider including a component which focuses on preventing unintended pregnancy. Because childhood adversities may be partially accounting for an association between abortion and mental health, research examining this link should consider them.

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Table 1

Sociodemographic and reproductive history variables by abortion number.

	No abortions	One abortion	Multiple abortions	Significant differences
Unweighted *N*	1254	190	67	
Weighted *N*	1057	119	53	
Sociodemographics factors				
Age	29.6	31.1	31.7	1 v 0 *
Self-identified race (%)				2 v 0 *, 2 v 1 *
White	63.4	59.4	36.2	
Non-white	36.6	40.6	63.8	
Childhood economic (%)				n.s.
Low income	24.0	26.8	28.6	
Not low income	76.0	73.2	71.4	
Current marital status (%)				n.s.
Married/cohabitating	53.5	52.9	49.4	
Div/sep/wid	12.2	17.4	16.7	
Never married/cohab	34.3	29.7	33.9	
Current economic				n.s.
≤100% of FPL	29.4	22.8	33.1	
<100% of FPL	70.6	77.2	66.9	
Current education				2 v 0 **, 2 v 1 *
Less than high school	13.6	13.4	32.7	
High school graduate	31.2	30.2	34.3	
Some college	32.0	33.4	26.8	
College graduate	23.2	23.1	6.2	
Reproductive history				
Number of births[a]	1.3	1.4	2.0	2 v 0 *
Number of miscarriages[b]	0.3	0.5	0.5	1 v 0 *, 2 v 0 *
Number of pregnancies[c]	1.6	2.9	4.5	1 v 0 ***, 2 v 0 ***, 2 v 1 ***
Age at first abortion	–	21.0	19.3	2 v 1 **

‡ $p \leq .10$

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$

[a] Range is 0–6.

[b] Range is 0–5.

[c] Range is 0–11 where 11 = 11 or more pregnancies

Table 2

Prevalence of childhood adversities by abortion history.

Childhood adversity	No abortions	One abortion	Multiple abortions	Significant differences
Unweighted *N*	1254	190	67	
Weighted *N*	1057	119	53	
Parental loss				
Parental death	4.4	4.3	6.2	n.s.
Parental divorce/separation	21.2	24.6	23.6	n.s.
Other parental loss	5.5	4.8	5.9	n.s.
Family maladaptation				
Parental mental illness				
1 parental mental illness	11.6	16.0	17.9	2 v 0‡
≥2 Parental mental illnesses	6.7	9.3	12.0	n.s.
Parental criminal behavior	7.9	9.5	3.4	2+ v 1‡
Parental violent conflict	20.0	23.4	14.9	n.s.
Abuse and neglect				
Childhood physical abuse	17.7	29.9	22.1	1 v 0**
Childhood sexual abuse	9.6	8.5	11.2	n.s.
Childhood neglect	6.9	9.7	8.3	n.s.
Personal safety threats				
1 personal safety threat	9.4	9.3	6.9	n.s.
≥2 Personal safety threats	1.5	1.4	10.9	2+ v 0*, 2 v 1*
Any type of adversity	61.2	70.4	74.4	1 v 0‡
Number (mean)	1.3	1.6	1.7	1 v 0*
Total number				n.s.
None	38.8	29.6	25.6	
One	28.3	28.6	31.7	
Two	14.1	17.0	15.6	
Three or more	18.9	24.7	27.1	

Notes. Childhood adversities occurred at or before the respondent was 12 years old.

‡ $p \leq .10$

* $p \leq 05$

** $p \leq .01$

*** $p \leq .001$.

Table 3

Co-occurrence of childhood adversities.

Adversity	Percent of respondents with the given adversity who had ≥1 other adversity	Percent of respondents with the given adversity who had ≥2 other adversities
1. Parental death	49.8%	41.2%
2. Parental divorce	61.3%	38.0%
3. Other parental loss	82.1%	64.7%
4. 1 Parental mental illness	69.8%	38.6%
5. ≥2 Parental mental illnesses	87.8%	58.3%
6. Parental criminality	81.3%	63.2%
7. Parental violent conflict	84.3%	60.4%
8. Childhood physical abuse	80.3%	59.0%
9. Childhood sexual abuse	78.1%	52.4%
10. Neglect	95.9%	82.2%
11. 1 Personal safety threat	74.2%	45.9%
12. ≥2 Personal safety threats	86.7%	66.0%

Table 4

Relative risk ratios (and 95% CI) of multinomial logistic regression models.

Childhood adversity	Comparisons by number of abortions		
	Number of abortions		
	One versus no abortions	Multiple versus no abortions	Multiple versus one abortion
Parental loss			
Parental death	1.08 (0.46–2.57)	1.48 (0.28–7.83)	1.37 (0.28–6.77)
Parental divorce/separation	1.18 (0.78–1.77)	1.22 (0.67–2.21)	1.04 (0.58–1.85)
Other parental loss	0.73 (0.34–1.58)	0.93 (0.14–6.38)	1.28 (0.17–9.71)
Family maladaptation			
One parental mental illness	1.29 (0.72–2.32)	**2.81 (1.27–6.21)**	**2.17 (1.03–4.56)**
Two or more parental mental illnesses	1.44 (0.76–2.72)	**5.28 (1.60–17.38)**	**3.67 (1.15–11.76)**
Parental criminal behavior	1.10 (0.64–1.91)	0.32 (0.06–1.73)	0.29 (0.58–1.49)
Parental violent conflict	0.83 (0.41–1.68)	0.55 (0.19–1.61)	0.66 (0.19–2.30)
Abuse and neglect			
Childhood physical abuse	**2.00 (1.19–3.34)**	1.14 (0.62–2.10)	0.57‡ (0.29–1.09)
Childhood sexual abuse	0.74 (0.36–1.54)	0.59 (0.19–1.79)	0.79 (0.27–2.51)
Childhood neglect	0.85 (0.51–1.41)	0.58 (0.16–2.07)	0.69 (0.20–2.37)
Personal safety threats			
One personal safety threats	1.01 (0.53–1.93)	0.88 (0.21–3.68)	0.87 (0.21–3.67)
Two or more personal safety threat	0.74 (0.25–2.10)	**9.87 (2.45–39.72)**	**13.33 (2.48–71.68)**

Notes. Adjusted for age, race, number of pregnancies, childhood socioeconomic situation, and each other childhood adversity. Bolded coefficients are statistically significant at $p < .05$;

‡ $p < .10$.