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Psychosocial factors and pre-abortion psychological health: The significance of stigma

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Abstract

Rationale—Most research in mental health and abortion has examined factors associated with post-abortion psychological health. However, research that follows women from before to after their abortion consistently finds that depressive, anxiety, and stress symptoms are highest just before an abortion compared to any time afterwards.

Objective—This finding suggests that studies investigating psychosocial factors related to pre-abortion mental health are warranted.

Methods—The current study uses data from 353 women seeking abortions at three community reproductive health clinics to examine predictors of pre-abortion psychological health. Drawing from three perspectives in the abortion and mental health literature, common risks, stress and coping, and sociocultural context, we conducted multivariable analyses to examine the contribution of important factors on depressive, anxiety, and stress symptoms just before an abortion, including sociodemographics, abortion characteristics, childhood adversities, recent adversities with an intimate partner, relationship context, future pregnancy desires, and perceived abortion stigma.

Results—Childhood and partner adversities, including reproductive coercion, were associated with negative mental health symptoms, as was perceived abortion stigma. Before perceived abortion stigma was entered into the model, 18.6 %, 20.7 %, and 16.8% of the variance in depressive, anxiety, and stress symptoms respectively, was explained. Perceived abortion stigma

explained an additional 13.2 %, 9.7 %, and 10.7 % of the variance in depressive, anxiety, and stress symptoms pre-abortion.

Conclusion—This study, one of the first to focus on pre-abortion mental health as an outcome, suggests that addressing stigma among women seeking abortions may significantly lower their psychological distress.

Keywords

Introduction

Thirty percent of U.S. women will have an abortion before the age of 45 (Jones & Kavanaugh, 2011). Most research in the area of abortion and mental health has focused on the mental health of women *after* an abortion, partly because of policies in many U.S. states requiring women be warned of the negative psychological effects of having an abortion. However, research consistently finds that depressive, anxiety, and stress symptoms are higher just before an abortion compared to anytime afterwards (Bradshaw & Slade, 2003; Major et al., 2000; Lowenstein et al., 2006), so understanding what contributes to pre-abortion psychological health is warranted. Pre-abortion mental health influences coping with the abortion experience (Cozzarelli, 1993), and it is the strongest predictor of post-abortion mental health (Major et al., 2009; Major et al., 2000). Consequently, understanding what influences pre-abortion mental health may help women cope effectively, and such an understanding may help promote mental health before and after an abortion.

We draw from conceptual frameworks and findings in mental health and abortion research to examine predictors of pre-abortion psychological health. Most studies on abortion and subsequent mental health use at least one of four perspectives (Major et al., 2009; Steinberg & Finer, 2011): 1) a common-risk factors approach, 2) a stress and coping perspective, 3) a sociocultural framework, and 4) a trauma framework. This study draws from the first three perspectives to examine factors contributing to pre-abortion psychological health. The first framework, the common-risk factors approach, is mutually exclusive with abortion as a trauma perspective, and they both are used to answer the question of whether or not abortion causes mental health problems. Abortion as trauma contends that abortion is a trauma that causes mental health problems; studies that rely on this approach have serious methodological flaws and have been discredited (Major et al., 2009; National Collaborating Centre for Mental Health [NCMH], 2011; Schmiege & Russo, 2005; Steinberg & Finer, 2012; Steinberg & Russo, 2008; Steinberg et al., 2012; 2014). The common risk factors approach argues that the correlation between abortion and subsequent mental health is spurious, and driven by factors that are common—e.g., pre-existing mental health problems, violence, social disadvantage—among women having abortions and women having mental health problems. Studies using this approach find that abortion is not associated with worse subsequent mental health problems when these confounding factors are considered in analyses (Foster et al., 2015; Major et al., 2009; NCMH, 2011; Steinberg & Finer, 2011; Steinberg et al., 2014). Furthermore, these studies find that confounding factors such as childhood adversities, intimate partner violence (IPV), and pre-existing mental health

problems are associated with poorer post-pregnancy (including post-abortion) psychological health. Drawing from these studies, we investigate intimate partner violence and childhood adversities as predictors of pre-abortion psychological health. Although reproductive coercion has not yet been examined in post-abortion psychological adjustment, it has been found to be common among women having unintended pregnancies (Miller et al. 2010; 2014; Moore et al., 2010) and thus include it in our study. We hypothesized that more frequent IPV, reproductive coercion and more childhood adversities would be associated with poorer post-abortion psychological health.

The stress and coping perspective has been used to understand a range of potentially stressful life events and experiences (Han et al., 2015; Lazarus & Folkman, 1984; Lin & Wu, 2014; Noh & Kaspar, 2003; Richman et al., 2014; Taft et al., 2007a). This perspective argues that if an individual perceives a situation as stressful, then coping mechanisms are enacted and these coping mechanisms lead to better or worse psychological health (Billings & Moos, 1981; Carver et al., 1989; Han et al., 2015; Noh & Kaspar, 2003; Taft et al., 2007b). Different individuals will perceive a given situation as more or less stressful, and those who perceive it as more stressful will cope in a different manner, partly based on various personal and contextual factors (Lin & Wu, 2014). Major and colleagues have applied this approach to having an abortion as a result of an unwanted pregnancy; they have shown that women's personal characteristics (level of self-esteem or personal control), relationship context (partner support and conflict or partner attributions for the pregnancy), and other contextual factors, (pregnancy intention or encountering picketers in front of the abortion clinic) influence coping strategies, which in turn influence post-abortion psychological health (Cozzarelli, Sumer, & Major, 1998; Cozzarelli et al., 2000; Major et al, Cooper, Zubek, Cozzarelli, & Richards, 1997; Major et al., 1990; Major, Mueller, & Hildebrandt, 1985; Major, Richards, Cozzarelli, Cooper, & Zubek, 1998). Drawing from these research findings, the current study examines when women desire a future pregnancy, and seriousness and intimacy with partner as possible contributors to pre-abortion psychological health. While these specific factors have not been examined within the research on abortion and mental health, they provide context for women's pregnancies and abortions. We expected that the sooner a woman desired a future pregnancy (which signals something must be amiss to be having an abortion) the poorer her pre-abortion psychological health. Furthermore, because other research has found that perceived partner support at the time of having an abortion predicts better post-abortion psychological adjustment (Cozzarelli, Karrasch, Sumer, & Major, 1994; Cozzarelli et al., 1998; Major et al., 1997), we expected that the less serious and intimate a woman is with her partner (which may be telling of how supportive her partner is) the poorer her pre-abortion psychological health.

Related to the stress and coping perspective, the sociocultural framework contends that the sociocultural context such as societal stigma influences post-abortion psychological adjustment by influencing how stressful women perceive an abortion and how they cope with this experience (Major & Gramzow, 1999). In the U.S., women who have abortions are stigmatized (Cockrill et al., 2013; Kumar et al., 2009; Norris et al., 2011; Shellenberg et al., 2011; Weidner & Griffit, 1984) and perceive and experience stigma (Cockrill et al., 2013; Major & Gramzow, 1999; Shellenberg et al., 2011; Shellenberg & Tsui, 2012). Therefore,

we also included perceived abortion stigma as a possible contributor to pre-abortion psychological health, hypothesizing that the more a woman expected abortion stigma the poorer her pre-abortion psychological health. While studies have assessed perceived abortion stigma, few studies have examined whether perceived abortion stigma influences psychological health around the time of an abortion.

Thus, the main aim of the current research was to examine which, of a variety of psychosocial factors—childhood adversities, adverse experience with an intimate partner, relationship context, pregnancy desires, and perceived abortion stigma—were independently associated with pre-abortion mental health. We purposively examined both distal and proximal factors, and entered the more distal factors in our analyses in earlier steps in order to examine whether these factors were associated with pre-abortion psychological health when the more proximal factors were included in the model.

Methods

Participants

Women 18 years or older who were presenting for surgical or medication abortions due to an unintended pregnancy at three community reproductive health clinics between July 2012 and February 2013 were recruited. Participants received a $15 gift certificate for their participation.

Procedure

Upon checking-in for their abortion care visit, women were asked by the front desk staff if they were willing to participate in a study on contraceptive behavior. If women responded affirmatively, they were given a survey booklet, which they filled out at two time points during their visit. Part 1 was completed in the waiting room before receiving contraceptive counseling, and Part 2 was completed after receiving contraceptive counseling and before women left the clinic. At two clinics Part 2 was completed before women's abortions, while at one clinic, Part 2 was completed after their surgical abortions. This was because the clinic-flow for women having a surgical abortion differed at the clinics. Two clinics did the ultrasound and contraceptive counseling on one day and then had women return another day, usually at least a week later, for their surgical abortion. The third clinic did the ultrasound, contraceptive counseling, and surgical abortion all on one day. Items relevant for this study included future pregnancy desires, relationship context, recent adverse experiences with an intimate partner, childhood adversities, perceived abortion stigma, depressive, anxiety, and stress symptoms, sociodemographic factors, type of abortion procedure, and trimester of abortion. All items but the stigma items were assessed in Part 1 of the booklet. The stigma item was included in Part 2. Ninety-eight women at one clinic completed Part 2, including the perceived abortion stigma item, post-abortion. Responses to the stigma item did not differ by whether women completed this pre-abortion (Mean [M] = 2.92) or just after their abortion (M = 2.89) (p = .85).

Measures

Outcomes: Depressive, Anxiety, and Stress symptoms—Before having an abortion, we assessed depressive symptoms with the Center for Epidemiological Study Depression Scale [CES-D] (Radloff, 1977), and anxiety and stress symptoms with the anxiety and stress subscales of the short-form of the Depression, Anxiety, and Stress Scale [DASS-21] (Henry & Crawford, 2005; Lovibond & Lovibond, 1995). Women who did not respond to more than five of the 20 CES-D items, or more than two of the seven items from the anxiety and stress measures were considered missing on these measures and excluded from analyses.

Psychosocial predictors

Childhood adversities: We assessed frequency of childhood psychological, physical, and sexual abuse with items from the Adverse Childhood Experiences study (Felliti et al., 1998). Following Felliti et al. (1998), we used two items to assess psychological abuse (e.g., how often did a parent or caregiver in the household swear at, insult, or put you down?), two items to assess physical abuse (e.g., how often did a parent or caregiver in the household push, grab, shove, or slap you?) and four items to assess sexual abuse (e.g., how often did an adult or person at least 5 years older than you ever touch or fondle you in a sexual way?). Items were assessed on a 5-point scale (0= never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often).

We also assessed household circumstances while growing up (before 18 years of age) using items from the Adverse Childhood Experiences study and the National Comorbidity Survey-Replication [NCS-R] (Felliti et al., 1998; Kessler, 2001). We measured whether the respondent grew up with a person who abused substances with three items (e.g., did you live with anyone who was a problem drinker or alcoholic?), whether the respondent grew up with someone who was anxious or depressed with four items (e.g., did a parent or caregiver ever have periods of a month or more when he or she was constantly nervous, edgy, or anxious?), and whether a family member went to prison with one item (did a household member ever go to prison?). The aforementioned three measures were assessed as present or not while growing up. We further assessed the frequency that the respondent's mother was treated violently by a father-figure with four items (e.g., how often was your mother or female caregiver pushed, slapped, or had something thrown at her; response options were 0 = never, 1 = rarely, 2= sometimes, 3= often, 4 = very often), and the frequency of disadvantaged economic circumstances while growing up with two items (e.g., how often did your family not have enough money to buy enough food for everyone in your household? Response options were 0 = never, 1 = rarely, 2= sometimes, 3= often, 4 = very often).

For analyses purposes, we created a composite of the total number of adversities, following the ACE study (Felliti et al., 1998). To do this we dichotomized childhood psychological, physical, and sexual abuse, maltreatment of mother, and low childhood economic situation into any (rarely or above) versus none (never). Thus, number of childhood adversities could range from 0 to 8.

Recent adverse experiences with an intimate partner: We assessed the frequency women experienced intimate partner violence and reproductive coercion in the past six months. Frequency of intimate partner violence was assessed on a 5-point scale (0 = never, 1 = once or twice, 2 = once a month, 3 = once a week, 4 = more than once a week); items were drawn from other studies (Krug et al., 2002; McFarlane et al., 1992; Raiford et al., 2009; Straus, 1979). Three assessed verbal (e.g., how often has any sexual partner called you names), two physical (e.g., how often has any sexual partner physically hurt you in some way), and two sexual violence (e.g., how often has any sexual partner forced you to have sex). Frequency of reproductive coercion was assessed on a 5-point scale (0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often) with an existing measure, and included pregnancy coercion (e.g., how often has a sexual partner told you he would have a baby with someone else if you did not get pregnant) and birth control sabotage (e.g., how often has a sexual partner taken off the condom while you were having sex so you would get pregnant) (Miller et al., 2010). For analysis purposes, we created a composite of intimate partner violence, by averaging the means of verbal, physical and sexual violence, and we created a composite of reproductive coercion by averaging the means of pregnancy coercion and birth control sabotage. These measures assessed mean frequency of intimate partner violence and reproductive coercion, respectively. Higher values indicate more frequent intimate partner violence and reproductive coercion.

Relationship context: Because women may have had more than one sexual partner around the time of becoming pregnant they may not have known which partner got them pregnant. Thus, we asked women to report on various aspects of their relationship with the sexual partner with whom they had the closest relationship at the time of filling out the survey at the abortion clinic. Three items assessed 1) the length of time of this relationship (0 = less than one month, 1 = 1–6 months, 2 = 7–12 months, 3 = 1–2 years, 4 = 2–5 years, 5 = 5 or more years), 2) the seriousness of this relationship (0 = not at all serious, 1= a little serious, 2 = somewhat serious, 3 = very serious), and 3) how much the respondent talked with this person about things that really mattered (0 = not at all, 1 = a little, 2 = somewhat, 3 = very much). These relationship context items were analyzed as continuous variables, with higher scores indicating a longer time in the relationship, the relationship was more serious, and talking more with the partner about things that really mattered.

Future pregnancy desires: We assessed pregnancy desires with two items, one on the importance of avoiding pregnancy in the next year (It is very important to me to avoid becoming pregnant in the next year; 0 = strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, 4 = strongly agree), and one on when each women would like to be pregnant, if ever, in the future (In about how many years do you want to become pregnant? If you do not want to become pregnant in the future, please mark never. Response options were: 0 = less than one year, 1 = 1–2 years, 2 = 2–3 years, 3 = 3 or more years, 4 = Never). Both of these items were analyzed as continuous variables with higher scores indicating more agreement that it is very important to avoid pregnancy in the next year and that the woman desires a subsequent pregnancy further in the future.

Perceived abortion stigma: We assessed perceived abortion stigma with the one-item stigma measure used by Major and Gramzow (1999): I feel that I will be looked down on by others if they knew I had an abortion (0 = strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, 4 = strongly agree). This was analyzed as a continuous variable with higher scores indicating more agreement that the woman felt she would be looked down on by others for having an abortion.

Covariates: We included as covariates the sociodemographic factors of age, race/ethnicity, education level, and marital status, as well as type of abortion procedure (surgical vs. medication) and trimester at time of abortion.

Statistical Analyses

First, we examined correlations between each of the psychosocial factors and depressive, anxiety, and stress symptoms. Then we used multiple linear regression analysis, and included only those sociodemographics, abortion characteristics, and psychosocial factors that were significantly ($p < .05$) correlated to at least one of the psychological health outcomes. We entered six sets of predictors hierarchically: 1) age, education (high school or less versus more than high school), and type of abortion (surgical versus medication), 2) number of childhood adversities, 3) recent adverse experiences with a sexual partner— frequency of intimate partner violence and frequency of reproductive coercion in the past six months, 4) relationship context factors, 5) future pregnancy desires, and 6) perceived abortion stigma. We entered the factors that were more distal in nature earlier and those that were more proximal to the abortion in later steps. While the regression coefficients (β) of the final model do not change depending on how factors were entered, the proportion of variance accounted for in the dependent measure does. Thus, we tested the increase in the R-squared (R^2) value when adding each of the six sets of predictors to determine which predictors contributed a significant amount of variance to the psychological health outcomes. In final models, we examined which regression coefficients, βs, were significant predictors of depressive, anxiety, and stress symptoms.

Results

Four-hundred and eighty-seven women who were 18 or older and presenting for an abortion due to an unintended pregnancy were willing to fill out the survey and began Part 1. We excluded 47 women because it was not clear whether they followed through with having an abortion ($n = 10$), their responses were questionable ($n = 1$), they were missing on most of the items used in Part 1 ($n = 16$), or they were missing on at least one mental health measure ($n = 20$). Another 36 women were excluded because they did not complete Part 2 of the booklet, where the stigma item was included. Finally, we excluded 51 women who were missing on measures used in this analysis, leaving 353 women. This final sample of 353 women did not differ from the excluded women ($n = 134$) on any of the factors examined in this study ($ps > .08$).

Table 1 presents descriptive information for this sample on sociodemographic factors, abortion characteristics, childhood adversities, recent adverse experiences with an intimate partner, relationship context, future pregnancy desires, perceived abortion stigma, and pre-

abortion psychological health. The majority of the sample (60%) was between the ages of 20 and 29, was non-white (74.4%), had not graduated college (76.8%), had yearly household incomes less than $10,000 (64.3%), and had never been married (77.1%). Most women were having a surgical abortion (68.8%) and a first trimester abortion (93.4%). Fifty percent reported childhood psychological abuse, 31.7% childhood physical abuse, and 13% childhood sexual abuse. In the sample, 38.8 % grew up with someone who had a substance abuse problem, 17.8 % with someone who went to prison, and 34.8 % with someone who was depressed or anxious in the household. One-quarter grew up with a father figure who treated their mother violently. The majority of women grew up in low economic status (55.8%). The majority of women (62.3%) had experienced two or more of the 8 childhood adversities. Over one-third of the sample (34.6 %) had experienced recent verbal violence, 7.4% recent physical violence, and 4.8% recent sexual violence from an intimate partner. Almost twelve percent of the sample reported experiencing pregnancy coercion and 7.4 % birth control sabotage from a partner recently.

In terms of psychological health, the sample M was 23.4 on the CES-D, 7.9 on the anxiety subscale of the DASS-21, and 12.4 on the stress subscale of the DASS-21, all of which were comparable to previous research assessing psychological health among women just before having an abortion (Cozzarelli, 1993; Steinberg et al., 2013). Age and education were the only sociodemographic characteristics, and the type of abortion (medication vs. surgical) was the only abortion characteristic, that related to any of the psychological health measures. Those who were younger had more depressive ($r = -.13$) and anxiety symptoms ($r = -.14$) ($ps < .05$), and those with some college or more ($M = 13.4$, standard deviation [SD] = 10.7) had more stress symptoms than those with a high school education or less ($M = 10.6$, $SD = 9.2$) ($p < .05$). Those having a medication abortion ($M = 9.4$, $SD = 10.0$) had more pre-abortion anxiety symptoms than those having a surgical abortion ($M = 7.2$, $SD = 7.9$) ($p < .05$).

Table 2 presents the bivariate correlations between each of the psychosocial factors and the psychological health measures. The more childhood adversities the more pre-abortion depressive ($r = .31$), anxiety ($r = .32$), and stress symptoms women experienced ($r = .27$), respectively ($ps < .0005$). In addition, the more often women experienced intimate partner violence or reproductive coercion the more pre-abortion depressive, anxiety, and stress symptoms women reported (rs ranging from .19 to .26, $ps < .0005$). The only relationship context variable that related to pre-abortion psychological health was the amount a woman talked to her partner about things that really mattered. The less she talked to her partner about things that really mattered the more her pre-abortion depressive and stress symptoms ($rs = -.15$ and $-.11, ps < .05$). The less amount of time in which a woman desired a future pregnancy, the more depressive and stress symptoms ($rs = -.12$ and $-.12$) ($ps < .05$). Perceiving more abortion stigma was strongly associated with more pre-abortion depressive ($r = .43$), anxiety ($r = .39$), and stress symptoms ($r = .40$), respectively ($ps < .0005$).

In hierarchical linear regression models, we regressed psychological health measures on sociodemographics, abortion characteristics, number of childhood adversities, adverse experiences with an intimate partner, relationship context factors, future pregnancy desires, and perceived abortion stigma in six steps. Tables 3, 4, and 5 show the results of these

analyses for depressive, anxiety, and stress symptoms, respectively. The total amount of variance explained by all the predictors was 32.0 % of depressive symptoms, 30.1 % of anxiety symptoms, and 27.7 % of stress symptoms. Perceived abortion stigma, which was entered last, explained the most total additional variance for both depressive and stress symptoms, an additional 13.2% and 10.7% of the total variance respectively; and expected abortion stigma explained the second most additional total variance in anxiety symptoms, an additional 9.6%. In order to further examine whether perceived abortion stigma seemed to explain the most additional variance when entered last in the regression analysis, we also ran models in which we entered each of the other four types of psychosocial factors—number of childhood adversities, adverse experiences with intimate partner, relationship context, and pregnancy desires—last. When entered last, total number of childhood adversities seemed to account for the next highest amount of total variance and it accounted for 4.5%, 5.7%, and 3.6% of the variance in depressive, anxiety, and stress symptoms.

The other factor that explained a large proportion of total variance was number of childhood adversities, which explained 10.4%, 10.8%, and 8.3% of the total variance in depressive, anxiety, and stress symptoms, respectively. A greater proportion of the total variance in all three psychological health outcomes was explained when we entered sociodemographics and abortion characteristics in Step 1 ($ps < .05$) and adverse experiences with a sexual partner in the past six months in Step 3 ($ps < .0005$).

In the final model, significant predictors of depressive symptoms were: age, education (high school or less versus at least some college), total number of childhood adversities, intimate partner violence, and perceived abortion stigma. Women who were younger ($\beta = -0.24$, standard error [SE] = 0.09, $p < .01$), had at least some college ($\beta = -2.48$, $SE = 1.18$, $p < .05$), had more childhood adversities ($\beta = 1.25$, $SE = 0.27$, $p < .0005$), had more frequent intimate partner violence ($\beta = 3.26$, $SE = 1.49$, $p < .05$), and perceived more abortion stigma ($\beta = 3.30$, $SE = 0.41$, $p < .0005$) had more pre-abortion depressive symptoms. Pre-abortion anxiety and stress symptoms had the same predictors in the same direction with the exception of the predictor of intimate partner violence, which was not associated with either of these in final models. Instead, reproductive coercion was associated with both such that the more often reproductive coercion was experienced in the past six months ($\beta = 8.01$, $SE = 2.20$, $p < .0005$ and $\beta = 6.73$, $SE = 2.66$, $p < .05$ for anxiety and stress symptoms, respectively) the more pre-abortion anxiety and stress symptoms women experienced.

Discussion

This study is one of the first to focus on pre-abortion mental health as an outcome, despite consistent findings that women have more depressive, anxiety, and stress symptoms pre-abortion than post-abortion. Drawing from research and approaches on abortion and subsequent mental health, a range of psychosocial factors were examined as predictors of pre-abortion depressive, anxiety, and stress symptoms. While various factors independently predicted pre-abortion psychological health, perceived abortion stigma appeared to explain the most amount of additional variance in depressive, anxiety, and stress symptoms after all other predictors were entered. The association between abortion stigma and pre-abortion depressive, anxiety and stress symptoms was strong and highly significant. Therefore, these

results show that helping women feel less stigmatized about having an abortion may be important for lowering pre-abortion depressive, anxiety, and stress symptoms. Because pre-abortion psychological health was the strongest predictor of post-abortion psychological health, they also suggest that abortion stigma is a large contributor to post-abortion psychological health. Consequently, reducing abortion stigma may also promote post-abortion mental health.

Other consistent contributors to pre-abortion psychological health were number of childhood adversities, age and education, with more adversities, younger age and higher education predicting more pre-abortion depressive, anxiety, and stress symptoms. In addition, experiencing more frequent reproductive coercion predicted more pre-abortion anxiety and stress symptoms, while experiencing more frequent intimate partner violence predicted more pre-abortion depressive symptoms. The findings here support other research that has found that more childhood adversities and intimate partner violence relate to worse subsequent mental health (Green et al., 2010; Kessler et al., 1997). Although not surprising, this is the first study to show reproductive coercion relates to mental health.

While the levels of depressive, anxiety and stress symptoms found here are similar to other samples of women just about to receive an abortion (Cozzarelli, 1993; Steinberg et al., 2013), they are elevated relative to other samples. The mean on the depressive measure ($M = 23.4$), the CES-D, was higher than those among women of similar demographics not just about to have an abortion ($M = 16.95$ from Lee, Casanueva, & Martin, 2005; $M = 14.28$ from Thomas, Jones, Scarinci, Mehan, & Brantley, 2001). And the means on the anxiety ($M = 7.9$) and stress ($M = 12.4$) measures are higher than a U.S. adult-representative sample ($M = 3.99$ and 8.12 for the anxiety and stress measures from Sinclair et al. 2012), a community non-clinical group sample ($M = 1.22$ and 3.51 for the anxiety and stress measures from Antony, Bieling, Cox, Enns, & Swinson, 1998), and a sample of women in the postpartum period ($M = 3.33$ and 10.00 for anxiety and stress measures from Miller, Pallant, & Negri, 2006). The elevated levels of depressive, anxiety, and stress symptoms pre-abortion compared to other (similar) samples suggests that understanding what contributes to pre-abortion psychological health is warranted.

As discussed above, many of the factors examined here have been shown or would likely be related to mental health in other populations or at other times in women's lives. We focused on pre-abortion psychological health for two main reasons. First, psychological distress before an abortion is higher compared to any time afterwards (Bradshaw & Slade, 2003; Major et al., 2000; Lowenstein et al., 2006) and compared to other samples as described just above (Antony et al., 1998; Lee et al., 2005; Miller et al., 2006; Thomas et al., 2001); and second, pre-abortion psychological health has consistently been shown to be a strong predictor of post-abortion psychological health (Major et al., 2000; Steinberg et al., 2014). Therefore, helping women reduce pre-abortion psychological distress is warranted and to do that, we need to understand what predicts pre-abortion psychological health. Because this is one of the first studies to examine what predicts pre-abortion psychological health, future research should look at other potential predictors such as attitudes and feelings towards abortion, partner support, and the abortion decision-making process among women.

Limitations

Despite the strengths of the present study, it is not without limitations. One limitation may be that only one item assessed perceived abortion stigma; however it accounted for a large amount of variance in pre-abortion mental health. More items assessing perceived abortion stigma may have higher reliability or more predictive validity. Future research could compare how this single item, also used in previous research on abortion and mental health (Major & Gramzow, 1999), fares in terms of its reliability and predictive validity compared to other measures of perceived abortion stigma (Cockrill et al., 2013; Diamantopoulos et al., 2012). If it is at least as predictive of mental health as a longer measure, having women seeking abortions answer this single item may help identify who would benefit most from an intervention that reduces abortion stigma.

Another limitation was that the current study was cross-sectional and so the causal nature of the relationships examined here cannot be determined. While we hypothesized that more perceived abortion stigma was a cause of pre-abortion psychological health, we asked women to report on pre-abortion psychological health and perceived abortion stigma around the same time and so it may be that having more mental health symptoms caused the perception of more stigma (Major & O'Brien, 2005; Sechrist, Swim, & Mark, 2003). Relatedly, we assessed perceived abortion stigma after contraceptive counseling and this may have influenced women's perceptions of stigma. Furthermore assessing experiences, such as childhood adversities, in women's lives that may have occurred in the distant past, is not ideal since it relies on retrospective reporting. Future research could collect data longitudinally to tease out the nature of the relationship between the psychosocial factors examined here, including abortion stigma, and mental health around and after an unintended pregnancy. Such research could include a control for the individual's level of stigma consciousness, and could assess mental health and perceived abortion stigma before, shortly after, and a few weeks after the abortion.

Because this was a convenience sample, we cannot be sure that these results will generalize to all women having abortions. This is one of the first studies to examine predictors of pre-abortion psychological health; results were in the expected direction and they were consistent with other research that has examined some of these factors as predictors of post-abortion psychological health in a nationally representative sample of women (Steinberg & Finer, 2011; Steinberg et al., 2014). Future research could verify these findings in other samples of women having abortions.

Finally, it is important to note that this sample of women included only those who sought and received an abortion. Given that perceived abortion stigma was such a strong predictor of pre-abortion mental health in this group, it may be that such stigma may prevent some women from having an abortion when they have an unintended pregnancy. Consequently, future research should examine the relationship between perceived abortion stigma and unintended pregnancy decision-making, and mental health before delivery among women who have unintended or unwanted pregnancies.

Conclusion

While a growing body of research has centered on abortion stigma (Cockrill et al., 2013; Harris et al., 2011; Kumar et al., 2009; Norris et al., 2011; Shellenberg et al., 2011; Weidner & Griffit, 1984), much less has empirically examined the mental health effects of abortion stigma. These results suggest more research adopting the sociocultural perspective, which considers the sociopolitical climate of the abortion, to examine the relationship between abortion and subsequent mental health would be fruitful. Furthermore, reducing abortion stigma may promote mental health before an abortion.

Acknowledgments

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Highlights

1. We examined psychosocial predictors of pre-abortion psychological health.

2. Perceived abortion stigma was strongly related to pre-abortion psychological health.

3. Childhood adversities and reproductive coercion predicted pre-abortion mental health.

Table 1

Descriptive statistics of the study sample: Women seeking abortions (N = 353).

Characteristics [b]	Mean ± SD or % (n)
Sociodemographic factors	
Age, years (range 18–48 years)	26.1 ± 6.2
Race/ethnicity (n = 348)	
White	25.6 % (89)
Black	20.7 % (72)
Hispanic	27.9 % (97)
Other	25.9 % (90)
Education	
High school graduate or less	34.8 % (123)
Some college	41.9 % (148)
College graduate or more	23.2 % (82)
Household income (n = 333)	
Under $10,000	64.3 % (214)
$10,000–$49,999	29.7 % (99)
$50,000 or more	5.7 % (20)
Marital status (n = 349)	
Married	10.3 % (36)
Separated/widowed/divorced	12.6 % (44)
Never married	77.1 % (269)
Pregnancy characteristics	
Type of abortion	
Surgical	68.8 % (243)
Medication	31.2 % (110)
Trimester (n = 347)	
First	93.4 % (324)
Second	6.6 % (23)
Childhood adversities	
Any psychological abuse	50.1 % (177)
Any physical abuse	31.7 % (112)
Any sexual abuse	13.0 % (46)
Someone in household was a substance abuser	38.8 % (137)
Someone in household went to prison	17.8 % (63)
Someone in household was anxious or depressed	34.8 % (123)
Mother was treated violently	24.9 % (88)
Low economic status	55.8 % (197)
Number of childhood adversities	
None	17.0 % (60)
One	20.7 % (73)
Two	14.7 % (52)

Characteristics [b]	Mean ± SD or % (n)
Three	12.5 % (44)
Four	14.2 % (50)
Five	9.9 % (35)
Six or more	11.0 % (39)
Recent adverse experiences with an intimate partner	
Any verbal IPV	34.6% (122)
Any physical IPV	7.4 % (26)
Any sexual IPV	4.8 % (17)
Any pregnancy coercion	11.9 % (42)
Any birth control sabotage	7.4 % (26)
Relationship context	
Relationship with partner for more than a year	66.0 % (233)
Relationship with partner is very serious	56.1 % (198)
Talk with partner very much about things that matter	62.9 % (228)
Future pregnancy desires	
Very important to avoid pregnancy in next year [b]	75.1 % (265)
Pregnant in more than 3 years or Never	64.6 % (228)
Perceived abortion stigma	
Believe will be looked down on by others for having abortion [c]	37.4 % (132)
Pre-abortion psychological adjustment	
Depressive symptoms	23.4 ±12.0
Anxiety symptoms	7.9 ±8.7
Stress symptoms	12.4 ±10.3

Note.

[a]If the sample size (*n*) differs from the total sample (*N* = 353) for a particular characteristic it is provided in parentheses).

[b]strongly agree,

[c]Agree or strongly agree.

IPV=Intimate partner violence. SD=Standard deviation.

Table 2

Correlations between psychosocial factors and pre-abortion depressive, anxiety, and stress symptoms ($N = 353$).

	Depressive symptoms	Anxiety symptoms	Stress symptoms
Number of childhood adversities	.32***	.32***	.28***
Frequency of recent adverse experiences with an intimate partner			
Intimate Partner Violence	.25***	.17**	.20***
Reproductive Coercion	.20***	.26***	.22***
Relationship context			
Length of time with partner	−.05	−.10	−.08
Seriousness of relationship with partner	−.09	−.03	−.05
Amount talk to partner about things that matter	−.14**	−.05	−.10*
Future pregnancy desires			
Importance of avoiding pregnancy in next year	−.08	−.10	−.04
Desired length of time until another pregnancy	−.12*	−.10	−.11*
Perceived abortion stigma			
Looked down on by others	.43***	.39***	.40***

*
$p < .05$,

**
$p < .01$,

***
$p < .0005$

Table 3

Regression coefficients (and standard errors) for pre-abortion *depressive symptoms* regressed on sociodemographics, abortion characteristics, and psychosocial factors (N = 353).

Predictors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	R^2 increase	R^2 total
Step1. Sociodemographics & abortion characteristics							.026*	.026*
Age	−0.29** (0.11)	−0.31** (0.10)	−0.31** (0.10)	−0.32** (0.10)	−0.30** (0.10)	−0.24** (0.09)		
Education [a]	−2.44 (1.37)	−3.14* (1.29)	−3.22* (1.27)	−3.33* (1.27)	−3.15* (1.27)	−2.60* (1.17)		
Medical *vs.* surgical abortion	−0.34 (1.38)	−0.11 (1.30)	−0.12 (1.28)	−0.29 (1.28)	−0.28 (1.28)	−0.10 (1.17)		
Step 2. Childhood adversities							.109***	.135***
Total number [b]		1.89*** (0.29)	1.66*** (0.28)	1.62*** (0.28)	1.58*** (0.29)	1.27*** (0.26)		
Step 3. Adverse experiences with sexual partner [c]							.044***	.179***
Intimate partner violence			3.64* (1.51)	3.40* (1.51)	3.20* (1.52)	3.18* (1.39)		
Reproductive coercion			6.78* (3.20)	6.16 (3.22)	6.45* (3.22)	5.15 (2.96)		
Step 4. Relationship context							.006	.185***
Amount talk to partner [d]				−1.12 (0.70)	−1.25 (0.71)	−1.11 (0.65)		
Step 5. Pregnancy desires							.004	.189***
When next pregnancy [e]					−0.84 (0.65)	−0.88 (0.60)		
Step 6. Stigma							.132***	.320***
Perceived abortion stigma [f]						3.29*** (0.40)		

Notes.

[a] High school or less versus at least some college.

[b] Sum of childhood adversities (0 to 8).

[c] Frequency of adverse experiences in past 6 months (0 = never to 3 = very often).

[d] How much respondent talked to partner about things that really mattered (0 = not at all to 3 = very much).

[e] Number of years that the respondent wants to become pregnant again (0 = less than one, 1 = one to two years, 2 = two to three years, 3 = more than 3 years, 4 = never).

[f] Level of agreement with statement "I will be looked down on by others for having an abortion" (0 = strong disagree to 4 = strongly agree).

*
$p < .05$,

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** $p < .01,$

*** $p < .0005$

Table 4

Regression coefficients (and standard errors) for pre-abortion *anxiety symptoms* regressed on sociodemographics, abortion characteristics, and psychosocial factors ($N = 353$).

Predictors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	R^2 increase	R^2 total
Step 1. Sociodemographics & abortion characteristics							.043**	.043**
Age	-0.22** (.07)	-0.24** (0.07)	-0.25*** (0.07)	-0.25*** (0.07)	-0.24** (0.07)	-0.20** (0.07)		
Education [a]	-2.05* (0.97)	-2.55** (0.92)	-2.74** (0.91)	-2.74** (0.90)	-2.66** (0.91)	-2.32** (0.85)		
Medical *vs.* surgical abortion	-1.90 (0.98)	-1.73 (0.93)	-1.52 (0.91)	-1.51 (0.91)	-1.51 (0.91)	-1.28 (0.86)		
Step 2. Childhood adversities							.108***	.152***
Total number [b]		1.35*** (0.20)	1.23*** (0.20)	1.23*** (0.20)	1.22*** (0.20)	1.02*** (0.19)		
Step 3. Adverse experiences with sexual partner [c]							.051***	.203***
Intimate partner violence			0.32 (1.07)	0.32 (1.08)	0.24 (1.08)	0.23 (1.02)		
Reproductive coercion			9.29*** (2.27)	9.31*** (2.29)	9.43*** (2.30)	8.62*** (2.16)		
Step 4. Relationship context							.000	.203***
Amount talk to partner [d]				0.03 (0.50)	-0.02 (0.50)	0.07 (0.47)		
Step 5. Pregnancy desires							.001	.204***
When next pregnancy [e]					-0.35 (0.46)	-0.37 (0.43)		
Step 6. Stigma							.096***	.301***
Perceived abortion stigma [f]						2.03*** (0.29)		

Notes.

[a] High school or less versus at least some college.

[b] Sum of childhood adversities (0 to 8).

[c] Frequency of adverse experiences in past 6 months (0 = never to 3 = very often).

[d] How much respondent talked to partner about things that really mattered (0 = not at all to 3 = very much).

[e] Number of years that the respondent wants to become pregnant again (0 = less than one, 1 = one to two years, 2 = two to three years, 3 = more than 3 years, 4 = never).

[f] Level of agreement with statement "I will be looked down on by others for having an abortion" (0 = strong disagree to 4 = strongly agree).

*
$p < .05$,

**
$p < .01,$

***
$p < .0005$

Table 5

Regression coefficients (and standard errors) for pre-abortion *stress symptoms* regressed on sociodemographics, abortion characteristics, and psychosocial factors (*N* = 353).

Predictors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	R^2 increase	R^2 total
Step 1. Sociodemographics & abortion characteristics							0.35**	0.035**
Age	-0.21*(0.09)	-0.23**(0.09)	-0.24**(0.08)	-0.24**(0.08)	-0.22**(0.08)	-0.17*(0.08)		
Education [a]	-3.28**(1.16)	-3.81**(1.11)	-3.96***(1.09)	-4.01***(1.09)	-3.86**(1.10)	-3.44**(1.03)		
Medical *vs.* surgical abortion	-0.89(1.17)	-0.71(1.12)	-0.60(1.10)	-0.69(1.10)	-0.68(1.10)	-0.39(1.03)		
Step 2. Childhood adversities							.086***	0.121***
Total number [b]		1.43***(025)	1.26**(0.25)	1.24***(0.25)	1.21**(0.25)	0.97***(0.23)		
Step 3. Adverse experiences with sexual partner [c]							.043***	0.163***
Intimate partner violence			1.88(1.30)	1.75(1.31)	1.58(1.31)	1.57(1.23)		
Reproductive coercion			8.02**(2.76)	7.69**(2.78)	7.92**(2.79)	6.92*(2.61)		
Step 4. Relationship context							.002	0.166***
Amount talk to partner [d]				-0.60(0.61)	-0.70(0.61)	-0.60(0.57)		
Step 5. Pregnancy desires							.004	0.169***
When next pregnancy [e]					-0.70(0.56)	-0.73(0.52)		
Step 6. Stigma							.107***	0.277***
Perceived abortion stigma [f]						2.54***(0.36)		

Notes.

[a] High school or less versus at least some college.

[b] Sum of childhood adversities (0 to 8).

[c] Frequency of adverse experiences in past 6 months (0 = never to 3 = very often).

[d] How much respondent talked to partner about things that really mattered (0 = not at all to 3 = very much).

[e] Number of years that the respondent wants to become pregnant again (0 = less than one, 1 = one to two years, 2 = two to three years, 3 = more than 3 years, 4 = never).

[f] Level of agreement with statement "I will be looked down on by others for having an abortion" (0 = strong disagree to 4 = strongly agree).

*
$p < .05$,

** $p < .01$,

*** $p < .0005$