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Generalized anxiety following unintended pregnancies resolved through childbirth and abortion: a cohort study of the 1995 National Survey of Family Growth

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Abstract

The psychological consequences of induced abortion are complex and subject to both considerable controversy and methodological criticisms. While many women report feelings of relief immediately after the procedure, others report feelings of anxiety, which they attribute to their abortions. The purpose of the present study was to examine risk of generalized anxiety following unintended pregnancies ending in abortion or childbirth using a large representative sample of American women. Among all women, those who aborted were found to have significantly higher rates of subsequent generalized anxiety when controlling for race and age at interview. Implications of the findings are discussed. In particular, findings highlight the clinical relevance of exploring reproductive history in therapeutic efforts to assist women seeking relief from anxiety.
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1. Introduction

The purpose of the present investigation was to determine if symptoms of anxiety reported by some women who have induced abortions (Coleman & Nelson, 1998; Kumar & Robson, 1984) are significant enough to be observed in a nationally representative sample. Furthermore, non-aborting women with unintended pregnancies ending in childbirth were used as the control group to more definitively determine whether anxiety is associated with an abortion experience in particular as opposed to unintended pregnancy more generally.

Generalized anxiety was selected as the outcome measure in this study for two primary reasons. First, generalized anxiety may be a logical way for post-abortion stress to manifest given what is known about the nature of post-abortion discomfort (Burke & Reardon, 2002). Second, if abortion history is associated with generalized anxiety, this information would be useful to clinicians or researchers working with anxiety disorder sufferers, as it would help to identify a history of abortion as a possible precipitating stressor, marker, or maintaining factor in certain clients' anxiety-related concerns.

2. Methods

2.1. Participants

The National Survey of Family Growth Cycle V was used for these analyses. A nationally representative sample of 10,847 women aged 15–44 was interviewed with an oversampling of Hispanic and Black women. The sample used for these analyses consisted of (1) all women having an unintended pregnancy ending in abortion for their first pregnancy event and (2) all women having an unintended pregnancy ending in live birth delivery for their first pregnancy event. Cases with first abortions after their first pregnancy event were excluded.

Women were asked whether they had experienced a period of prolonged anxiety. Women who reported a period of anxiety prior to their first pregnancy event were excluded from the primary analyses ($n = 306$). Women who reported having their first period of anxiety at the same age as their first pregnancy event were also excluded ($n = 20$; 9 delivering and 11 aborting). ANOVA tests indicated that this excluded sample was not significantly different from the sample used in the main analyses on levels of income, education, and age at first pregnancy outcome ($P > .05$). However, this sample ($M = 31.26$, S.D. = 7.4) was significantly younger than the main sample ($M = 32.14$, S.D. = 7.2) at the time of the interview ($F[1, 3152] = 4.24$, $P < .040$).

2.2. Measures and procedures

All respondents were interviewed in person by interviewers ($n = 260$) who had undergone extensive training in every section of the survey. The variables

Table 1
Demographic statistics for women in the final sample used for main analyses

	First pregnancy delivery	First pregnancy abort
Number	1813	1033
Income as percent of poverty level, *M* (S.D.)	234.02 (183.4)	375.95 (239.2)
Race, *N* (percent overall)		
White	846 (46.7)	633 (61.3)
Black	654 (36.1)	266 (25.8)
Hispanic	266 (14.7)	101 (9.8)
Other[a]	47 (2.6)	33 (3.2)
Age at first pregnancy, *M* (S.D.)	19.27 (3.5)	19.27 (3.8)
Age at interview, *M* (S.D.)	32.25 (7.4)	31.95 (6.6)
Education, *M* (S.D.)	12.15 (2.3)	13.91 (2.5)

[a] Other race includes non-White, non-Black, and non-Hispanic women.

extracted for this study included pregnancy outcome, pregnancy intendedness, various demographic items, and responses to close-ended questions concerning worry and anxiety. Only women with an unintended first pregnancy were used in this analysis (see Table 1).

Respondents were asked ‘‘Have you *ever*, in your lifetime, had a period lasting *six* months or longer when most of the time you felt worried and anxious?’’ If they answered ‘‘yes’’, then the interviewer would ask them the following screener questions: ‘‘Has that period ended or is it still going on?’’, ‘‘During that period, did you worry about things that were likely to happen or things that were not likely to happen?’’, ‘‘Did you worry a great deal about things that were *not* really serious, or did you worry about things that were serious?’’, ‘‘During that period, did you have different worries on your mind at the same time?’’. For respondents to pass the screener questions, they must have reported feeling worried or anxious (1) most of the time, (2) about more than one worry for six or more months, and (3) about things not likely to happen or about things that were likely to happen but were not serious.

If respondents passed the screener items, the following questions were used to indicate an individual’s risk for GAD: ‘‘When you were worried or anxious, were you also restless?’’, ‘‘When you were worried or anxious, were you also keyed up or on edge?’’, ‘‘Were you particularly irritable?’’, ‘‘Were you aware of your heart pounding or racing?’’, ‘‘Were you easily tired?’’, ‘‘Did you have trouble falling asleep or staying asleep?’’, ‘‘Did you feel faint or unreal?’’ If respondents reported at least three of these symptoms, we categorized them as having experienced generalized anxiety. This cut off point was made in accordance with the DSM-IV classification for GAD (American Psychiatric Association, 1994). However, missing from the survey were questions relating to controllability of worry and distress or impairment associated with worry. These criteria were not present in the DSM-III-R (American Psychiatric Association, 1987). Respondents reporting fewer than three symptoms were classified as having

experienced ‘‘no generalized anxiety’’. Among respondents who fit our selection criteria and passed the screener questions, but reported fewer than three symptoms, 37 were delivering and 31 were aborting.

Responses to questions as to frequency, duration, and time frame of the anxiety were used to indicate whether the period of anxiety occurred before or after the year and month of the first pregnancy event. If a woman reported having only one period of anxiety, we were able to calculate the month and year the period first began from the date it ended and the length of the period. For women who reported having more than one period of anxiety, the age of their earliest period of anxiety was taken to determine whether this period occurred before or after their first pregnancy event.

3. Results

Zero-order correlational analyses were carried out using all NSFG women in order to determine which variables would be appropriate for inclusion as covariates in logistic regression analyses given associations with the experience of generalized anxiety (see Table 2). Dummy variables for each racial category were created. Race and age at the 1995 interview were used as covariates in all main analyses. The dependent variable in all analyses was dichotomous (0 = no anxiety, 1 = anxiety). Logistic regression analyses were carried out to compare differences between aborting and delivering women in post-pregnancy anxiety.

Raw percentages of women experiencing anxiety after a delivery or an abortion are given in Table 3. Results of logistic regression analyses are also presented in the table with odds ratios and *P*-values. Analyses were stratified by marital status, race, and age groups. Among all women with unintended pregnancies, those who aborted had significantly higher rates of subsequent generalized anxiety than those who carried to term. Similar findings emerged for women who were unmarried at the time of the pregnancy and among women under 20.

Table 2
Correlations among the primary study variables

	2	3	4	5	6	7	8
1 Anxiety	.010	−.093**	.099**	−.021*	−.012	.082**	.014
2 Highest grade completed		−.064**	.197**	−.221**	.041**	.177**	.420**
3 Black			−.658**	−.221**	−.101**	−.014	−.205**
4 White				−.498**	−.227**	.050**	.275**
5 Hispanic					−.076**	−.048**	−.144**
6 Other races						−.011	.007
7 Age at interview							.170**
8 Income							–

* Correlation is significant at the .05 level (two-tailed).
** Correlation is significant at the .01 level (two-tailed).

Table 3
Percentile of women with an unintended first pregnancy experiencing a post-pregnancy period of anxiety by race and marital status

	First pregnancy delivery, *N* (%)	First pregnancy abort, *N* (%)	Odds ratios (95% CI)[a]	*P*-value
All women	183/1813 (10.1)	142/1033 (13.7)	1.42 (1.12–1.79)	<.005
			1.34 (1.05–1.70)	<.018
Unmarried at first pregnancy	77/1021 (7.5)	132/975 (13.5)	1.92 (1.43–2.58)	<.0001
			1.42 (1.03–1.95)	<.031
Married at first pregnancy	106/792 (13.4)	10/58 (17.2)	1.35 (0.66–2.75)	>.05
			1.29 (0.63–2.65)	>.05
Age <20 at first pregnancy	111/1130 (9.8)	90/626 (14.4)	1.54 (1.15–2.08)	<.005
			1.46 (1.07–1.99)	<.018
Age >19 at first pregnancy	72/683 (10.5)	52/407 (12.8)	1.24 (0.85–1.82)	>.05
			1.16 (0.79–1.70)	>.05
Black	39/654 (6.0)	16/266 (6.0)	1.01 (0.55–1.84)	>.05
			1.11 (0.60–2.04)	>.05
White	114/846 (13.5)	103/633 (16.3)	1.25 (0.94–1.67)	>.05
			1.27 (0.95–1.70)	>.05
Hispanic	25/266 (9.4)	15/101 (14.9)	1.68 (0.85–3.34)	>.05
			1.86 (0.93–3.74)	.082
Other races	5/47 (10.6)	8/33 (24.2)	2.69 (0.79–9.12)	>.05
			2.80 (0.81–9.73)	>.05

[a] Top value is the unadjusted odds ratio and bottom value is the adjusted odds ratio, with age at interview and race entered as covariates. Race was not used as a covariate in analyses stratified by race. The odds ratio is calculated by dividing the odds of experiencing post-pregnancy anxiety in the abortion group (cases with anxiety/cases with no anxiety) by the odds in the delivery group.

4. Conclusions

The present study revealed higher rates of subsequent generalized anxiety among aborting women, compared to women who carried an unintended pregnancy to term. Additional analyses revealed higher rates of generalized anxiety for aborting women compared to delivering women under the age of 20, but more comparable rates of generalized anxiety between the two groups among older women. This may be attributed to the higher rates of abortion concealment among older women (Fu, Darroch, Henshaw, & Kolb, 1998) or the experience of abortion being more stressful for younger women (Adler, 1975; Franz & Reardon, 1992).

Cognitive avoidance, which has been implicated in GAD, is a possible mediator that could account for the impact of a negative life event such as abortion and GAD onset. Worry can be a form of cognitive avoidance in that future events receive more focus than present emotional circumstances. Borkovec and Roemer (1995) found evidence consistent with this formulation in that GAD patients were likely to use worry as a means of distracting themselves from more unpleasant topics. Cognitive avoidance is quite common among post-abortive women (Major & Gramzow, 1999). How this type of avoidance may lead to pathological forms of worry is a topic worthy of further research.

The present study was limited in that information obtained regarding pre-pregnancy mental state relied on self-reports of periods of anxiety. In addition, no causal relationship between pregnancy outcome and anxiety could be determined. The association between anxiety and abortion could be the result of many other variables that differentiate women likely to opt for abortion from their peers who decide to carry an unintended pregnancy to term. In addition, the proportion of women in the present study reporting three or more GAD symptoms for six months or more is higher than the accepted lifetime prevalence rate of GAD in the general population (5%; American Psychiatric Association, 1994). Thus, interpreting the presence of anxiety in this group as clinically diagnosable general anxiety disorder is not recommended.

The present investigation's findings of higher rates of generalized anxiety among aborting women are consistent with other studies noting anxiety as a possible negative effect of induced abortion (Franco, Tamburrino, Campbell, Pentz, & Jurs, 1989; Moseley, Follingstad, Harley, & Heckel, 1981; Niswander, Singer, & Singer, 1972). A history of abortion may be a useful marker for identifying patients at risk of GAD. Additional research is warranted.

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