

Abortion and Women's Reproductive Health Care Rights

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Abortion is a fact in the lives of many women. Approximately 20% of American women of childbearing age have already had an abortion, and it is estimated that one out of three American women will have had one by age 45.¹

Robinson and colleagues authored a review article entitled "Is there an abortion trauma syndrome? Critiquing the evidence?" (2008)² that exemplifies the American Psychiatric Association's position on reproductive rights. Accordingly, the content of this Position Statement is largely based on that article and its cited references.

There has been much debate on the issue of mental health sequelae after abortion. Some argue that "abortion trauma syndrome",³ "post-abortion depression",⁴ and "post-abortion psychosis"⁵ are significant risks for women undergoing abortion. These postulated conditions have been used as rationale for changes in U.S. public policy. For example, in some states physicians are required to inform patients that abortion will increase their risk of depression and suicidality.

Methodological Issues

The quality of the research used to justify existence of the above-proposed syndromes varies widely, with significant methodological flaws in the research not always evident to individuals who lack in-depth knowledge of the abortion research literature. Methodological issues that must be carefully considered include: sampling and generalization; appropriateness of comparison groups; conceptualization and control of relevant variables surrounding the abortion decision; employment of recognized and meaningful measures of outcomes; application of appropriate statistical analyses for the data collected; and interpretation of findings, including avoidance of misattribution of causal effects.²

Sampling and generalization represent a frequent methodological issue in the abortion literature because samples often are not representative of women who have had abortions. For example, in some studies of abortion outcome, researchers recruited women who had already self-identified as suffering negative psychological effects from abortion, and then used their self-reports as evidence for high rates of ill effects in all women who have had abortions.⁵ Additionally, public data sets based on surveys or interviews often involve retrospective reporting of those variables used in sample selection. Later feelings about an abortion may be influenced by many factors, including subsequent reproductive experiences, failure to recall the circumstances leading to the decision to abort, current depression related to stressful life events, or the effects of public campaigns attributing psychological problems to abortion.² Finally, findings from designs that use sampling exclusion as a means of controlling for pre-existing mental health problems should be generalized only with caution. For example, such research designs could advantage the delivery group by eliminating the women most vulnerable to the chronic stress of dealing with an unwanted child.²

Selection of comparison groups must also be carefully considered. Some studies fail to use a comparison group, or use as a comparison group other women in general,⁶ women who have never been pregnant,⁷ who have

delivered (wantedness of pregnancy unspecified) but have never had an abortion,⁸ are currently pregnant,⁹ had a spontaneous abortion,⁹ or have delivered wanted pregnancies.¹⁰ Comparing women who have unwanted pregnancies or who are forced by circumstance to terminate a pregnancy to those who are happy to be pregnant will bias the outcome. Robinson et al. attest that, at minimum, the appropriate comparison group for assessing relative risks of negative mental health outcomes of abortion is women who carry unwanted pregnancies to term.²

A third methodological issue of importance relates to the relevance of variables that are analyzed. The prevalence and incidence of abortion, childbearing, and mental disorder vary with age, race/ethnicity, education, income, marital status, and parental status. Unfortunately, studies that at least use clinically relevant outcome measures may lack even these basic controls.²

Beyond the above basic demographic variables, it is essential to control for previous psychiatric history and pre-existing, co-occurring, and subsequent conditions. Many studies attribute postabortion mental states to the abortion itself without providing adequate control for pre-abortion mental states, despite the literature suggesting that previous psychiatric history is the most consistent predictor of post-abortion psychiatric disorder.¹⁰ Moreover, past psychiatric history itself may be associated with predisposition to unwanted pregnancy.² Finally, studies that do not consider pre-existing or co-occurring stressful circumstances in women undergoing abortion might attribute emotional distress to the abortion when it is actually a product of the woman's larger life circumstances. For instance, rape or incest might result in unwanted pregnancies. Once pregnant, others might pressure the woman to have or not have an abortion, and the woman might avoid discussing her decision with others, thereby narrowing her support network.²

Choice of outcome measures is a fourth important methodological issue. Numerous methods have been employed to assess post-abortion mental states, including both well-validated but also psychometrically questionable psychological measures of psychiatric symptoms; mental health admissions records; items on health surveys performed for other reasons; check lists or openended self-reports of negative feelings; and single-item questions.² Simply relying on selfreported "feelings" about abortion, as opposed to using validated measures, can be problematic. Furthermore, studies should distinguish emotions or other psychological parameters such as selfesteem from clinically significant disorders.²

A fifth notable methodological issue involves application of appropriate analyses. Robinson et al.'s review suggested that in studies of the impact of abortion versus delivery of a first pregnancy event on subsequent mental health, a common major design flaw relates to controlling for overall parity rather than for births subsequent to the initial pregnancy. That is, including the initial birth in the covariate controls for its negative effects, thereby biasing the findings in the direction of the delivery group.²

A final methodological issue that bears scrutiny is that of inappropriate interpretations and conclusions. Obviously, ethical concerns preclude experimental research designs to study the effects of abortion. Of course, abortion is not a randomly assigned treatment, with the effects of abortion often confounded with the effects of unwanted pregnancy. Thus, findings based on research studies that do not control for covariates such as intimate violence exposure do not provide evidence that abortion is independently associated with risk for post-abortion negatives outcomes. Ultimately, even when apparently controlling for all known covariates, correlation does not prove causality.²

Studies of Psychiatric Consequences of Abortion

From a literature search of Medline, Psychinfo, and the Social Sciences Citation Index, Robinson et al. identified 216 peer-reviewed articles published since 1990.² In a sample of articles that have been cited in amicus briefs and used in testimony as evidence as to whether abortion has clinically significant mental health outcomes, they identified flaws in research methodology in health register studies, physician diagnoses, and survey data that have been associated with specific patterns of findings, and discussed major papers that

have attempted to correct such flaws.² Important examples of these articles and their associated methodological flaws are discussed below.

Health Register Studies

Based on health register studies from Scandinavia that became the model for U.S. studies based on Medi-Cal records, the claim that abortion increases risk of suicide and death was supported. However, several methodological issues were evident within these studies. The first example of such issues appears in a 1996 records study, in which Gissler et al. examined the demographics of all women in Finland who had committed suicide within one year of abortion or birth, and found a suicide rate of .35 per 1000 abortions and .06 per 1000 deliveries.¹¹ A major flaw in this study for U.S. application is that the wantedness of the pregnancy was not ascertained.² In Scandinavian countries, use of contraception is normative such that a larger proportion of abortions may be therapeutic, and thus involve wanted pregnancies, than in the U.S. Consequently, abortion might be undertaken by women who are at a higher risk for suicide because of factors associated with termination of a wanted pregnancy, including depression, low social class, limited social support, or previous life events.¹²

A second example of such issues is found in a 2004 records study, in which Gissler et al. examined pregnancy-associated death (defined by the American College of Obstetricians and Gynecologists (ACOG) as a death of a woman while pregnant or within one year of the termination of the pregnancy), irrespective of the cause of the death, in 156,789 women who had an abortion and 865,988 women who had a live birth/stillbirth.¹³ Women who had abortions were more likely to die from violent causes. When a more relevant indicator of abortion safety, pregnancy-related death (defined by ACOG as death while pregnant or within one year of termination of the pregnancy from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes), was measured, it was revealed that such mortality was higher in the birth group than in the abortion group. Again, the wantedness of the pregnancy was not ascertained, and the authors themselves caution readers not to assume causality.

California Medicaid (Medi-Cal) Records¹⁴⁻¹⁷ are not well suited for generalization of findings, unlike the Scandinavian studies.² Such factors as high-mobility in and out of the system, use of differential exclusion criteria with women having subsequent abortions excluded from the delivery group, and undocumented psychiatric and reproductive history limit generalization. Furthermore, key covariates including pregnancy wantedness, violence exposure, socioeconomic class, and marital status are not accounted for, as compared to the Scandinavian studies that accounted for the two latter covariates. Lastly, the Medi-Cal studies do not differentiate therapeutic abortions undertaken for health or fetal indications, and do not control for violence exposure.

Reardon and colleagues have published numerous articles aimed at documenting the negative effects of abortion based on these Medi-Cal records.¹⁴⁻¹⁷ In one such study by Reardon et al.¹⁴ who used the study by Gissler et al.¹³ as a model, significant data, including that pertaining to such categories as "illegal immigrants" and undefined "aberrant, indeterminate and 'out-of-scope' data", are excluded. Consequently, death rates are comprised of a subsample of 133,950 women out of 249,625 female Medi-Cal recipients who had either their first known abortion or delivery in the last six months of 1989. Over the 8-year period of the study, the figures were 728.2 vs. 585.5 per 100,000. Rates of violent deaths were higher in the abortion group (356.1 vs. 247.3 per 100,000). Information regarding key covariates including pregnancy wantedness, marital status, race, and previous parity or abortion history are lacking.² In addition, neither ACOG-defined pregnancy-associated or pregnancy-related deaths (those occurring within a year of the pregnancy event) were reported.²

Based on a similar design using the Medi-Cal database, Reardon et al.¹⁶ compared rates of inpatient psychiatric claims for first time admissions during the four years following the first abortion or delivery over a 6-month period. Major methodological issues include the exclusion of women with a history of

inpatient psychiatric admissions or pregnancy events in the year prior to the target pregnancy, and lack of control for previous psychiatric history. The resulting subsamples were not equally representative of the larger groups, with a greater proportion of subjects excluded from the abortion sub-sample. Age and months of Medi-Cal eligibility were controlled, but women who had subsequent abortions were differentially excluded from the delivery group.² Women in the abortion sub-sample had significantly higher inpatient admission rates at all time periods studied. However, covariates such as pregnancy wantedness, race, and marital status were not ascertained. In addition, women had to make a claim in the system during the period of the study for a negative outcome to be registered. Selection bias is possible, as women who had an abortion (and therefore were not responsible for an infant) could have more opportunities to obtain education, employment, and increased incomes. Such women, no longer eligible for Medi-Cal, would exit the system and not be included in studies that follow system activity over time. Only the most disadvantaged women would be retained in the abortion group.² Furthermore, women who had delivered may have been less likely to have a psychiatric admission because of child-care responsibilities, concern about being away from the infant, or fear of losing custody of her children.²

In a subsequent study using a parallel design including differential exclusion to examine outpatient admissions, and controlling for both inpatient and outpatient claims in the year before the pregnancy event, Coleman, Reardon, Rue and Cougle found less of a disparity in adjusted outpatient admission rates between the abortion and delivery groups.¹⁵ The differences found between abortion and delivery groups in years 3 and 4 were not statistically significant.

Physician Diagnoses

Gilchrist et al., using a clinically relevant outcome measure, studied physician diagnoses in a large, longitudinal study of 13,261 women controlling for a large number of relevant covariates.¹⁸ They measured rates of reported psychiatric disorders among four groups of women who experienced an unplanned pregnancy: women who did not request an abortion, women who had an abortion, women whose request for an abortion was denied, and those who requested abortion but then changed their minds. The analysis controlled for age, history of psychiatric illness, marital status, smoking, education, parity, and abortion history. Violence exposure was not controlled. Rates of total reported psychiatric disorders were no higher after abortion than after childbirth. Women with a previous history of psychiatric illness were most at risk for subsequent disorder, whatever the pregnancy outcome.

In this study, the number of cases of deliberate self-harm (DSH) was low, but in women with no previous history of psychiatric illness, DSH was more common in those who had a termination or who were refused a termination. The authors concluded that the DSH findings are most likely explained by confounding variables, such as adverse social factors, associated both with the request for termination and with subsequent self-harm. This conclusion is speculative, as they did not control for either a history of childhood maltreatment or partner violence, although both have been strongly associated with self-injurious behavior and abortion.¹⁹⁻²⁷ Gilchrist et al. concluded that rates of total reported psychiatric disorder were no higher after termination of pregnancy than after childbirth.¹⁸

Survey Data

Reardon and Cougle²⁸ and Cougle et al.,²⁹ based on data from the U.S. National Longitudinal Survey of Youth (NLSY), studied risk of depression following first pregnancy. In the survey, a cohort of men and women aged 14-21 years were followed in 1979. Women with subsequent abortions were again differentially excluded from the delivery group. Among women with an unintended first pregnancy, married women who aborted were at greater risk for depression than married women who delivered. For unmarried women, risk of depression was comparable in the abortion and delivery groups.²⁸ These findings were invalid because the data were miscoded such that the first unintended pregnancy was not correctly identified.³⁰

Using the same database, Cougle et al. compared women with a history of abortion versus delivery relative to depression.²⁹ The procedure was similar to the first study (i.e., based on miscoded data), except that intendedness of first pregnancy was not identified. They reported that a prior history of abortion was significantly associated with scores on the CES-D scale. Aside from miscoding of data, another issue was the exclusion of a large number of at-risk subjects who became pregnant prior to 1980. These women were excluded in an attempt to measure pre-pregnancy psychological state by assessing "external locus of control" scores, a measure that is not consistently correlated with poor mental health and that was not used until 1980. Schmieg and Russo later showed that this sampling approach removed the women with the highest risk for depression, i.e., those who delivered at an early age, from the delivery group.³¹ As the remaining sample is no longer representative of first pregnancies, the results are not generalizable to all first pregnancies, even if they had been based on properly coded data.²

In an effort to address the methodological issues in the Reardon and Cougle research previously discussed, Schmieg and Russo³¹⁻³³ examined the NLSY data. By identifying 1,242 women with an unwanted first pregnancy that ended with a delivery or an abortion, they showed that women who had been excluded in the previous studies²⁸⁻²⁹ due to delivering a child before 1980 had a significantly higher risk of experiencing depression than women who had delivered after 1980. Covariates included education, income, age at first pregnancy, race, marital status and total number of children. When these women were included in the analyses, pregnancy outcome did not predict depression scores; 28.6% of women who had delivered versus 24.8% of those who had aborted had CES-D scores in the high-risk category, representing a non-significant difference. There was no evidence that terminating compared to delivering an unwanted first pregnancy, in the U.S. context of legalized abortion, changes risk for subsequent depression. However, delivering a first, unwanted pregnancy was associated with lower education and income and larger family size, all risk factors for depression. Furthermore, Schmieg and Russo showed that debates over points of design did not change the pattern of results, and no association of abortion with subsequent depression risk was found.³²⁻³³

From the 1995 National Survey of Family Growth (NSFG), Cougle et al. examined the risk of "generalized anxiety" following first unintended pregnancies ending in abortion or childbirth.³⁴ Women reported the timing of their first period of anxiety and their first pregnancy. Those with subsequent abortions were differentially excluded from the delivery group, and women who reported a period of anxiety before their first pregnancy were excluded from the study. Women who terminated a first pregnancy were found to have significantly higher rates of subsequent anxiety when controlling for race and age at interview. However, estimated rates of generalized anxiety were substantially higher than those found in other surveys.³⁵ Major issues included that standardized tests were not used to measure post-abortion anxiety, analysis did not weigh the data as required by the sampling design, and the NSFG measure of anxiety did not correspond to the criteria used in either DSM-III-R or DSM-IV.² Recall bias may also have affected the participant memory of the first onset of anxiety. As well, exposure to violence was not assessed despite the availability of information on rape history in the data set.²

Noting that the analysis of NSFG data set in the above study had not used appropriate sampling weights, Steinberg and Russo²⁹ reanalyzed these data. When rape history, age at first pregnancy outcome, race, marital status, income, education, subsequent abortions, and subsequent deliveries were controlled, there was no relationship between abortion of the first pregnancy and subsequent anxiety symptoms.

Due to the limitation of the NSFG data not measuring clinically diagnosable GAD or exposure to violence beyond rape, Steinberg and Russo analyzed the National Comorbidity Survey (NCS) data to examine the relationship between abortion of first pregnancy with GAD, social phobia, and PTSD.³⁶ Although mental health outcomes are well defined in the NCS, wantedness of pregnancy is not identified. Despite this delivery group advantage, pregnant women who reported having an abortion did not differ in rates of GAD or social phobia from women without an abortion. Women who experienced abortion had

substantially higher rates of PTSD, however. Logistic regression analyses found these rates accounted for by the higher rates of violence in the lives of women in the abortion group. The authors concluded that the elevated rates of anxiety found in Cougle et al.³⁴ likely reflect elevated PTSD symptoms that were unidentified due to inadequacies of the NSFG data set.³⁶

A highly cited study by Fergusson et al. analyzed data from a 25-year longitudinal study of a birth cohort of New Zealand children.³⁷ Even after adjusting for co-variant factors such as greater childhood social and economic disadvantage, family dysfunction, and individual adjustment problems, significant associations were found between abortion and mental problems such as anxiety, depression, suicidal behaviors and substance abuse. This study is unusual in the range of outcomes assessed and the number of factors controlled. However, like the NCS data analyzed by Steinberg and Russo³⁶, wantedness of pregnancy could not be identified, making interpretation of differences problematic.² Unlike the NCS, exposure to partner violence was not assessed. Most importantly, in order to obtain an abortion in New Zealand, one must prove to two specialist consultants that: the pregnancy would seriously harm the life, physical, or mental health of the woman; the woman is severely mentally handicapped; or the pregnancy was the result of rape or incest. This suggests an inclusion bias towards vulnerable, high-risk women in the abortion group.²

Studies specifically designed to examine predictors of abortion outcomes

In a carefully designed longitudinal study, Major et al. examined predictors of variation in women's mental health after abortion.³⁸ In the study, 882 women received standardized tests of depression, post-traumatic stress, and self-esteem at one hour pre-abortion, and one hour, one month, and two years post-abortion. Two years after the abortion, 72% of women reported they were satisfied with their decision and 69% would have the abortion again if they had to make the decision over. The percent of women experiencing clinical depression within two years after the abortion equaled the rate of depression nationally among all women 15-35 years of age. Depression levels at all times were lower post-abortion than pre-abortion, while self-esteem was higher post-abortion. The most common emotion was relief. A pre-pregnancy history of depression consistently predicted poorer postpartum mental health and more negative abortion-related emotions and evaluations. Although there was a 50% attrition rate, detailed analyses found no systematic bias in the follow-up group. This study was limited by the lack of a good baseline measure of mental health prior to discovery of pregnancy and insufficient information on violence exposure; however, these factors, if present, should increase the risk of negative consequences in the abortion group.²

Two studies have examined the impact of clinic demonstrators on women seeking abortion.³⁹⁻⁴⁰ In these two studies, Cozzarelli and Major found that the greater the exposure to anti-abortion activities, such as picketing and blocking entrance to clinics, the more depression reported one hour post abortion as measured by the SCL-90 depression subscale. The presence of pro-choice escorts helped buffer the negative impact. In addition, these studies found that women conflicted about having an abortion were more depressed overall and more strongly affected by antiabortion demonstrations. The number of picketers and the intensity of their activities were positively correlated with higher post-abortion depressive symptoms.

Overall, in assessing the clinically relevant literature, an association of abortion with negative mental health outcomes is found in designs that do not control for wantedness of pregnancy. In studies controlling for wantedness of pregnancy in which abortion was associated with negative mental health outcomes, differential exclusion was used to advantage the delivery group. A significant association between abortion and negative mental health outcomes does not exist in studies that control for wantedness of pregnancy and/or violence exposure, despite the fact that women who have abortions have experienced an unwanted pregnancy and that abortion is stigmatized in many areas of society.²

Conclusion

Currently, studies concluding that abortion causes psychiatric illness have numerous methodological problems and should not be used as a basis for public policy. The above analysis underscores the importance of selecting appropriate comparison groups and controlling for wantedness of the pregnancy using reliable measures of mental health, appropriate statistical analyses, and identifying and controlling variables such as psychiatric history, violence exposure, social support, personal characteristics, circumstances at time of abortion, barriers to access, and other influences on self-reported mental status. There continues to be a lack of convincing evidence that induced abortion of an unwanted pregnancy is *per se* a significant risk factor for psychiatric illness. These findings are consistent with those of The Royal Australian and New Zealand College of Obstetricians and Gynecologists, who concluded that legal and voluntary termination of pregnancy rarely causes immediate or lasting negative psychological consequences in healthy women based on a systematic review.⁴¹

Appropriate support and counseling should be offered to women who have significant risk factors such as a pre-existing mental disorder, which is strongly associated with exposure to sexual abuse and intimate violence. Further investigation should evaluate the impact of existing legislation and regulation and the effects of social attitudes and behaviors on women who have abortions, and, perhaps more importantly, determine how best to foster resilience and help women avoid unwanted pregnancies.

References

1. Council on Scientific Affairs, American Medical Association. Induced termination of pregnancy before and after Roe v Wade: trends in the mortality and morbidity of women. *JAMA* 1992; 268: 3231-9.
2. Robinson GE, Stotland NL, Russo NF, Lang JA, and Occhiogross M. Is there an abortion trauma syndrome? Critiquing the evidence. *Harvard Review of Psychiatry*. In press.
3. Rue VM. Postabortion trauma: controversy, diagnosis and treatment. Straham NH: Institute for Pregnancy Loss, 1998.
4. David HP, Rasmussen NK, Holst E. Postpartum and postabortion psychotic reactions. *Fam Plann Perspect* 1981; 13 (2): 88-92.
5. Franz W and Reardon D. Differential impact of abortion on adolescents and adults. *Adolescence* 1992; 27 (105): 161-172.
6. Russo NF and Denious JE. Violence in the lives of women having abortions: implications for public policy and practice. *Prof Psychol: Res and Prac* 2001; 32: 142-150.
7. Felton GM, Parsons MA, Hassell JS. Health behaviour and related factors in adolescents with a history of abortion and never-pregnant adolescents. *Health Care for Women International* 1998; 19: 37-47.
8. Fergusson DM, Horwood LJ, Ridder EM. Abortion in young women and subsequent mental health. *J Cld Psych and Psychiatr* 2006; 47: 116-124.
9. Bailey PE, Bruno ZV, Bezerra MF, Queiroz CM, Chen-Mok M. Adolescent pregnancy 1 year later: the effect of abortion vs. motherhood in northeast Brazil. *Journal of Adolescent Health* 2001; 29: 223-232.
10. Gilchrist AC, Hannaford PC, Frank P, and Kay CR. Termination of pregnancy and psychiatric morbidity. *Brit J Psychiat* 1995; 167: 243-248.
11. Gissler M, Hemminki E, Lonnqvist J. Suicides after pregnancy in Finland, 1987-94: Register Linkage Study. *Brit Med J* 1996; 313: 1431-34.
12. Gissler M and Hemminki E. Pregnancy-related violent deaths. *Scand J Public Health* 1999; 27 (1): 54-5.
13. Gissler M, Berg C, Bouvier-Colle MH, Buekens P. Pregnancy-associated mortality after birth, spontaneous abortion, or induced abortion in Finland, 1987-2000. *J Obstet Gynecol* 2004; 190: 422-7.
14. Reardon DC, Ney PG, Scheuren F, Cougle J, Coleman PK, Strahan TW. Deaths associated with pregnancy outcome: a record linkage study of low income women. *South Med J* 2002; 95: 834-41.
15. Coleman PK, Reardon DC, Rue VM, Cougle J. State-funded abortions versus deliveries: a comparison of outpatient mental health claims over 4 years. *Am J Orthopsychiat* 2002; 72: 141-52.
16. Reardon DC, Cougle JR, Rue VM, Shuping MW, Coleman PK, Ney PG. Psychiatric admissions of low-income women following abortion and childbirth. *CMAJ* 2003; 168: 1253-6.
17. DC Reardon and PK Coleman. Relative treatment rates for sleep disorders and sleep disturbances following abortion and childbirth: a prospective record based-study. *Sleep* 2006; 29(1): 105-106.
18. Gilchrist AC, Hannaford PC, Frank P, Kay CR. Termination of pregnancy and psychiatric morbidity. *Brit J Psychiat* 1995; 167: 243-248.
19. Fergusson DM, Horwood LJ, Ridder EM. Abortion in young women and subsequent mental health. *J Cld Psych and Psychiatr* 2006; 47: 116-24.
20. Russo NF, Denious JE. Violence in the lives of women having abortions: implications for public policy and practice. *Prof Psychol: Res and Prac* 2001; 32: 142-150.
21. Steinberg JR, Russo NF. Abortion and anxiety: What's the relationship? *Social Science & Medicine* 2008; 67(2): 238-52.
22. Dietz PM, Spitz AM, Anda RF, Williamson DF, McMahon PM, Santelli JS, Nordenberg DF, Felitti VJ, Kendrick JS. Unintended pregnancy among adult women exposed to abuse or household dysfunction during their childhood. *JAMA* 1999; 282: 1359-1364.
23. Glander SS, Moore ML, Michiellute R, Parsons LH. The prevalence of domestic violence among women seeking abortion. *Obstet Gynecol* 1998; 91: 1002- 1006.
24. Gazmararian JA, Adams MM, Saltzman LE, Johnson CH, Bruce FC, Marks JS, Zahniser SC. The relationship between pregnancy intendedness and physical violence in mothers of newborns. *Obstet and Gynecol* 1995; 85(6): 1031-1038.
25. Wyatt GE, Guthrie D, Notgrass CM. Differential effects of women's child sexual abuse and subsequent sexual revictimization. *Journal of Consulting and Clinical Psychology* 1992; 58: 758-767.
26. Coleman PK, Reardon DC, Cougle J. The quality of the caregiving environment and child developmental outcomes associated with maternal history of abortion using the NLSY data. *J Child Psychol Psyc* 2002; 43(6): 743-57.
27. Coleman PK, Reardon DC, Rue VM, Cougle J. A history of induced abortion in relation to substance use during subsequent pregnancies carried to term. *Am J Obstet Gynecol* 2002; 187(6): 1673-8.
28. Reardon DC and Cougle JR. Depression and unintended pregnancy in the national longitudinal survey of youth: a cohort study. *BMJ* 2002; 321: 151-2.
29. Cougle JR, Reardon DC, Coleman PK. Depression associated with abortion and childbirth: a long term analysis of the NLSY cohort. *Med Sci Monitor* 2003; 9: 105-12.
30. Coleman PK, Reardon DC, Cougle J. The quality of the caregiving environment and child developmental outcomes associated with maternal history of abortion using the NLSY data. *J Child Psychol Psyc* 2002; 43(6): 743-57.
31. Schmiege S and Russo NF. Depression and unwanted first pregnancy: longitudinal cohort study. *BMJ* 2005; 331 (7528): 1303.
32. Russo NF and Schmiege SJ. Debates about our design are beside the point: the Reardon and Cougle findings are invalid and cannot be reproduced with properly coded data. *BMJ* 2005. Online Letter to the Editor: <http://bmj.bmjjournals.com/cgi/eletters/331/7528/1303>. Accessed 1 December 2008.
33. Russo NF and Schmiege SJ. Depression and unwanted first pregnancy: methodological issues, additional findings. *BMJ* 2006. Online Letter to the Editor: <http://bmj.bmjjournals.com/cgi/eletters/331/7528/1303>. Accessed 1 December 2008.
34. Cougle JR, Reardon DC, Coleman PK. Generalized anxiety following unintended pregnancies resolved through childbirth and abortion: a cohort study of the 1995 national survey of family growth. *J Anx Disord* 2005; 19: 137-42.

35. Wittchen HU, Zhao S, Kessler RC, Eaton WW. DSM-III-R generalized anxiety disorder in the national comorbidity survey. *Arch of Gen Psychia* 1994; 51: 355-364.
36. Steinberg JR and Russo NF. Abortion and anxiety: what's the relationship? *Social Science & Medicine* 2008; 67(2): 238-52.
37. Fergusson DM, Horwood LJ, Ridder EM. Abortion in young women and subsequent mental health. *J Cld Psych and Psychiat* 2006; 47: 116-24.
38. Major B, Cozzarelli C, Cooper ML, Zubek JR, Richards C, Wilhite M, Gramzow RH. Psychological responses of women after first-trimester abortion. *Arch Gen Psychiat* 2000; 57: 777-84.
39. Cozzarelli C and Major B. The effects of anti-abortion demonstrators and pro-choice escorts on women's psychological responses to abortion. *J Soc Clin Psychol* 1994; 13: 404-27.
40. Cozzarelli C, Major B, Karrasch A, Fuegen K. Women's experiences of and reactions to anti-abortion picketing. *Basic Appl Soc Psych* 2000; 22: 265-275.
41. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. *Termination of Pregnancy: A Resource for Health Professionals*. RANZCO, East Melbourne, Australia, 2005.