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Coleman, Coyle, Shuping, and Rue make false statements and draw erroneous conclusions in analyses of abortion and mental health using the National Comorbidity Survey

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We are writing regarding "Induced abortion and anxiety, mood, and substance use disorders: Isolating the effects of abortion in the national comorbidity survey" (Coleman et al., 2009) and its associated corrigendum, which was published in July 2011 (Coleman, Coyle, Shuping, and Rue, 2011).

In a separate publication (Steinberg and Finer, 2011), we reported that were unable to replicate the findings reported by Coleman et al. in their original paper. We followed with an inquiry to the editors of the *Journal of Psychiatric Research*. In response to our inquiry, Coleman and colleagues prepared a corrigendum, indicating that they had used incorrect weights in their original analyses and reporting the results of their analyses re-run with correct weights.

We are now able to replicate the numbers in the corrigendum and, equally importantly, we are also able to deduce the specific analyses performed. We conclude that the corrigendum is an insufficient response. Once the problem of incorrect weighting is resolved, a more serious

problem becomes evident, involving untrue statements about the nature of the dependent variables and associated false claims about the implications of the findings.

In the National Comorbidity Survey (NCS) data, which are publicly available, mental health diagnoses are coded as present or absent by NCS staff over various time periods, including the 30 days preceding the interview, the 12 months preceding the interview, and anytime during the respondent's lifetime. Determining the "effects of abortion" — i.e., relating the likelihood of mental health diagnoses to the experience of abortion — is not possible unless it can be established that the diagnoses occurred after the abortion. Diagnoses in the past 30 days are more likely to occur after reported abortions than are diagnoses made in the past 12 months, and certainly more likely than diagnoses over one's lifetime. Lifetime measures provide no assurance that the abortion preceded the mental health diagnoses. In fact, for many women, the first onset of psychiatric illnesses occurred before the abortion (see Steinberg and Finer, 2011; and Steinberg et al., 2011).

Coleman et al. (2009) explicitly acknowledge the importance of temporal order in establishing causal effects. Despite this, they not only use inappropriate measures of psychiatric diagnoses, but repeatedly claim that they are something else. In Section 2.3 of their 2009 paper, they state (p. 772), "The psychiatric illnesses were assessed as 'present' or 'absent' at the time of data collection, providing assurance that in most cases, the abortion preceded the diagnosis." While they do not explicitly state that they used the 30-day diagnoses, the only time period that can be considered an assessment as "present" or "absent" at the time of the interview is the 30-day (also called current) diagnosis.

In later statements, Coleman et al. change their claim and declare that they were using 12-month measures. They explicitly state this in a December 2010 blog post on the Washington Post web site (http://voices.washingtonpost.com/checkup/2010/12/study_disputes_abortion_mental.html) and in a March 2011 presentation for the American Association of Pro-Life Obstetricians and Gynecologists (found online at: http://www.aaplog.org/media_files/Coleman_2011.ppt). Finally, in their July 2011 corrigendum, they never explicitly state the time period under consideration, but claim their only mistake was that they used incorrect weights.

Table 1 below presents Coleman et al.'s corrected findings in the corrigendum and compares them with the 30-day, one-year, and lifetime diagnoses. This replication of the corrigendum analyses, which used correct weights, shows that the authors *did not* use the 30-day or 12-month diagnoses, but rather lifetime diagnoses in both cases. (We were also able to determine that the original Coleman et al. [2009] paper used lifetime diagnoses.)

The use of lifetime diagnoses, which readers are led to believe are 30-day diagnoses, renders the findings meaningless and provides no support for a number of statements that remain in the paper. For example, Table 6, which presents measures of population attributable risk, does not make sense given that there is no way of ensuring that the abortion occurred before the mental health problems. In their original discussion (which is not modified in the corrigendum), Coleman et al. comment on their findings as though the abortions preceded the mental health diagnoses. For example, they refer to "post-abortion mental health problems" (p.775), state that their study "is essential to the process of clarifying the mental health risks unique to abortion"

(p.776), and note that future research should examine mediating mechanisms linking abortion to these various disorders. Moreover, the language in the very title, “Isolating the effects of abortion in the national comorbidity survey,” is simply wrong. All of these are erroneous statements or analyses given that the mental health diagnoses used were lifetime diagnoses.

In sum, the corrigendum that these authors have offered unfortunately fails to disclose key information and maintains the false impression that temporal order has been addressed. The paper and corrigendum contain misleading and erroneous information that serves to confuse the relationship of abortion and mental health even more, and reveals the invalidity of the original analyses. These deficiencies are fundamental analytical errors that were incorrectly presented in the original paper and perpetuated in the corrigendum, not a scholarly difference of opinion.

References

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Table 1. Percent of women with mental health diagnoses during different time frames (30-day, 12-month, and lifetime) by abortion history

	Respondents with abortion history				Respondents with no abortion history			
Diagnosis	**Coleman et al. corrigendum**	**30-day (i.e., current) diagnosis**	**12-month diagnosis**	**Lifetime diagnosis**	**Coleman et al. corrigendum**	**30-day (i.e., current) diagnosis**	**12-month diagnosis**	**Lifetime diagnosis**
Panic disorder	6.8	1.9	4.0	6.8	4.6	1.8	3.0	4.6
Panic attacks	12.6	3.5	7.0	12.6	9.7	3.1	6.0	9.7
PTSD	16.3	4.5	8.4	16.4	9.1	2.8	5.1	9.1
Agoraphobia w/ or w/o panic disorder	13.5	6.0	7.9	13.5	8.1	2.5	4.8	8.1
Agoraphobia w/o panic disorder	10.8	5.1	6.6	10.8	6.2	1.6	3.4	6.2
Alcohol abuse w/ or w/o dependence	27.5	4.0	9.0	27.5	12.6	1.0	3.5	12.6
Alcohol abuse w/o dependence	10.8	0.3	1.6	10.8	6.0	0.4	1.6	6.0
Alcohol dependence	17.7	5.5	9.0	17.7	7.4	1.5	3.2	7.4
Drug abuse w/ or w/o dependence	17.4	1.8	3.3	17.4	7.2	0.5	0.1	7.2
Drug abuse w/o dependence	7.4	0.1	0.3	7.4	3.0	0.1	0.4	3.0
Drug dependence	12.1	2.2	4.5	12.1	5.1	1.0	1.6	5.1
Bipolar 1	3.1	0.6	1.7	3.1	1.5	0.8	1.1	1.5
New mania	0.8	0.0	0.8	0.8	0.3	0.2	0.2	0.3
Major depression w/o hierarchy	30.6	8.3	15.9	30.6	20.9	5.5	12.7	20.9
Major depression w/ hierarchy	27.8	7.9	14.0	27.8	18.3	4.6	10.9	18.3