

Response to “The Enduring Association of a First Pregnancy Abortion With Subsequent Pregnancy Outcomes: A Longitudinal Cohort Study”

Monica Cations¹  and Judith Dwyer²

Keywords

abortion, health care, response

To the Editor,

In their recent publication, Studnicki *et al*¹ examine the association between abortion of a first pregnancy and subsequent pregnancy outcomes among 5453 women receiving Medicaid benefits in seven United States. They conclude that women whose first pregnancy ends with abortion are more likely to end subsequent pregnancies with abortion, and that their health suffers as a result. Here we describe several methodological limitations that, in our view, introduce bias to the research and limit the conclusions that can be drawn from the results.

A key conclusion made by Studnicki *et al*¹ is that “*subsequent natural losses among women who had a first-pregnancy abortion were 1.53 times more common than among women whose first pregnancy ended in a live birth and 1.72 times more likely than women whose first pregnancy ended in a natural loss*” (p. 3). However, the authors provide no evidence of testing the statistical significance of this difference between groups. The authors note that women who ended their first pregnancy with abortion recorded more pregnancies overall, but again do not assess the statistical significance of this difference or control for this when comparing on natural loss outcomes. These differences may be due to chance.

Where statistical comparisons are conducted, major sources of bias are introduced by the omission of essential sociodemographic covariate factors in modelling. There is consistent evidence that sociodemographic factors including race and socio-economic status are associated with pregnancy outcomes.² The role of personal views about abortion is also not considered. That a woman who has chosen to end their first pregnancy is more likely to choose to end subsequent pregnancies can be explained by personal attitudes toward pregnancy and childbirth, fertility, domestic violence, lack of social support, racial discrimination, financial limitations, and many other factors.³ That these were not accounted for in statistical

modelling limits the ability to conclude that abortion alone can predict later outcomes. Statistical corrections are also not applied to address the bias introduced by multiple comparisons.

In their reporting of the results of logistical regression modelling (Table 2, p. 4), it is unclear which comparator group is used to compare outcomes for those who ended their first pregnancy with abortion. If only women whose first pregnancy ended in birth are used as a comparator group, this may mask factors other than abortion that can explain the observed differences. Alternatively, if the natural loss and birth groups were combined as a comparator group, this combines two groups with important differences and is not consistent with the stated aims of this study (p. 2). Indeed, data about the group of women whose first pregnancy ended in natural loss is not presented in Table 3 about number of subsequent pregnancies. These data would have provided important contextual information about how those whose first pregnancy did not end in birth do or do not differ.

The insurance claim codes used to allocate participants into the “abortion” group contain a breadth of abortions including those occurring late in pregnancy. Late-term abortions are usually conducted where a medical or genetic condition threatens the life of the baby or the mother, and this may have implications for a woman’s later pregnancies.⁴ Grouping of these codes reduces the ability to draw nuanced conclusions from the results.

¹ College of Education, Psychology and Social Work, Flinders University, Adelaide, South Australia, Australia

² College of Medicine and Public Health, Flinders University, Adelaide, South Australia, Australia

Corresponding Author:

Monica Cations, College of Education, Psychology and Social Work, Flinders University, GPO Box 2100 ADELAIDE SA 5001, Australia.
 Email: monica.cations@flinders.edu.au



Beyond these important methodological limitations, the overall framing of the paper raises concern. As stated by the authors, the aim of the research is: "...to determine whether or not the outcome of the first pregnancy establishes a marker which differentiates a woman's reproductive trajectory. If the outcome of a first pregnancy is associated with the increased risk of lifetime morbidity and mortality, a robust informed consent and educational process is essential" (p. 2). However, only the outcome of subsequent pregnancies is included as an outcome in the analysis. No data is presented about risk for lifetime morbidity and mortality and so the aim of the research is not achieved. The basic policy proposition of the paper is that abortion is a long-term health risk, with a strong focus on risks in the introduction and synthesis sections of the work. However, the epidemiological and clinical evidence regarding reproductive risks is clear that legal abortion is safe⁵ and the health consequences for women of childbirth and parenting are more serious than those associated with legal abortion.⁶

The use of an inception cohort design and administrative data with no loss to follow up are key strengths of Studnicki *et al's*¹ research. However, features of the framing, group selection, and analysis methods of this research limit its interpretability. If future research about factors that predict abortion is warranted, close attention should be paid to design and analysis methods to ensure that bias can be reduced as far as possible.


Declaration of Conflicting Interests

The authors declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: MC and JD are members of the South Australian Abortion Action Coalition.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: MC is supported by a Medical Research Future Fund/National Health and Medical Research Council Investigator Grant (GNT 1194084).

ORCID iD

Monica Cations  <https://orcid.org/0000-0002-9262-0463>

References

1. Studnicki J, Longbons T, Reardon DC, et al. The enduring association of a first pregnancy abortion with subsequent pregnancy outcomes: A longitudinal cohort study. *Health Serv Res Manag Epidemiol.* 2022;9:23333928221130944. doi:10.1177/23333928221130942
2. Nyarko SH, Potter L. Effect of socioeconomic inequalities and contextual factors on induced abortion in Ghana: A Bayesian multilevel analysis. *PLOS ONE.* 2020;15(7):e0235917. doi:10.1371/journal.pone.0235917
3. Chae S, Desai S, Crowell M, Sedgh G. Reasons why women have induced abortions: A synthesis of findings from 14 countries. *Contraception.* 2017;96(4):233–241. doi:10.1016/j.contraception.2017.06.014
4. Barel O, Vaknin Z, Smorgick N, et al. Fetal abnormalities leading to third trimester abortion: Nine-year experience from a single medical center. *Prenat Diagn.* 2009;29(3):223–228. doi:10.1002/pd.2188
5. World Health Organization. Abortion care guideline. Published online 2022.
6. Raymond EG, Grimes DA. The comparative safety of legal induced abortion and childbirth in the United States. *Obstet Gynecol.* 2012;119(2 Part 1):215. doi:10.1097/AOG.0b013e31823fe923

Author Biographies

Monica Cations is a clinical psychologist and epidemiologist. She is a Senior Research Fellow at the Flinders University College of Education, Psychology and Social Work.

Judith Dwyer is the former Director of Research in the Department of Health Care Management in the College of Medicine and Public Health, and a former CEO of Southern Health Care Network in Melbourne, and of Flinders Medical Centre in Adelaide, having worked in the Australian health system for more than 20 years.