Letter to the editor of BJOG

Re: A recent study by economists on the impact of home births on infant outcomes confuses the debate on homebirth

Title: Recent study by economists makes an important contribution to the debate on homebirth safety

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Sir,

We respond to the letter by De Jonge et al.[1] claiming that our study[2] confuses the homebirth debate. We argue the opposite.

True experiments on homebirth safety are unfeasible. Observational studies tend to suffer from confounding. The case-mix differs between low-risk women choosing home/hospital on countless measurable and unmeasurable characteristics. Multiple regressions cannot control for all differences. Nor is utilizing planned instead of actual birth place a full solution. Hence, it is unclear whether the absence of mortality differences between home and hospital births in De Jonge et al.[3] reflects residual confounding, or really shows that homebirths are safe.

The next-best option to true experiments are "natural experiments" in which perfectly similar women end up in different birth places due to some external, quasi-random factor. This is what we do in our study. De Jonge et al. apparently misunderstood this fact. We find that homebirths increase infant mortality for low-risk low-income women.

De Jonge et al. claim that our finding is solely due to the inclusion of prematures.[1] This is not true:

1. We also conducted analyses using only at-terms (available upon request), as well as separate analyses for deliveries before and after 40 weeks of gestation. In all cases, our results remained unchanged.
2. Importantly, our results are valid only for a subgroup of women: those who are affected by the external factor (the "instrumental variable"). Preterm (and postterm) deliveries are essentially unaffected by our instrumental variable, so our conclusions do not apply to (and are not influenced by) them.

De Jonge et al. mention that our effect size is larger than the sample average mortality rate.[1] It would be misleading to focus too strongly on point estimates when confidence intervals are wide. As we mention in our paper, our confidence interval starts at 2.1 deaths per 1,000 births, which is significantly lower than the mortality rate in our sample. Moreover, as mentioned above, our results only refer to a subgroup of women for whom neonatal mortality rates may be higher.

Finally, De Jonge et al. criticize our use of actual rather than planned birth place.[1] We use actual place of birth because the case-mix differs across planned place of delivery due to self-selection.[4] In addition, we find the same results in our paper when we reclassify women who were referred during delivery according to their planned place of delivery. And we conducted analyses using planned place of birth instead of actual place of birth (results available upon request). Each time, our results remained the same.

De Jonge et al. had all the information given above in writing and in greater detail before they submitted their letter to BJOG. Their similar letter to the journal where we published our article was rejected on the abovementioned grounds. This makes us wonder why De Jonge et al. still proceeded with writing this letter.

Though our results only show that homebirths are unsafe for certain groups of low-risk women, our results are closer to demonstrating causality than De Jonge et al.[3] who claim that homebirths are safe for all low-risk women. We therefore strongly disagree with their statement that our study is what confuses the debate.

[1] Jonge, A., Verhoeven, C., & Thornton, J. (2016). Re: Perinatal mortality and morbidity up to 28 days after birth among 743 070 low-risk planned home and hospital births: a cohort study based on three merged national perinatal databases. BJOG, 123(7), 1235-1236.

[2] Daysal NM, Trandafir M, Van Ewijk R. Saving lives at birth: the impact of home births on infant outcomes. Am Econ J Appl Econ 2015;7:28–50.
[3] De Jonge A, Geerts C, Van der Goes B, Mol B, Buitendijk S, Nijhuis J. Perinatal mortality and morbidity up to 28 days after birth among 743 070 low-risk planned home and hospital births: a cohort study based on three merged national perinatal databases. BJOG 2015;122:720–8.
[4] van der Kooy J, Poeran J, de Graaf J, Birnie E, Denktaş S, Steegers E, Bonsel G. Planned home compared with planned hospital births in The Netherlands. Obstetrics & Gynecology 2011;118:1037–1046.