

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.ejcancer.com

Letter to the Editor

Response to the letter commenting on 'Effect of organised cervical cancer screening on cervical cancer mortality in Europe: a systematic review'

Erik E.L. Jansen ^{a,*}, Nadine Zielonke ^a, Andrea Gini ^a, Ahti Anttila ^b, Nereo Segnan ^c, Zoltán Vokó ^{d,e}, Urška Ivanuš ^f, Martin McKee ^g, Harry J. de Koning ^a, Inge M.C.M. de Kok ^a

^a Department of Public Health, Erasmus MC, University Medical Center Rotterdam, Rotterdam, the Netherlands

^b Finnish Cancer Registry, Helsinki, Finland

^c Department of Cancer Epidemiology, CPO Piemonte, City of Health and Science University Hospital, Turin, Italy

^d Center for Health Technology Assessment, Semmelweis University, Budapest, Hungary

^e Syreon Research Institute, Budapest, Hungary

^f Institute of Oncology Ljubljana, Ljubljana, Slovenia

^g London School of Hygiene and Tropical Medicine, London, England, United Kingdom

Received 13 July 2020; accepted 13 July 2020

Available online ■ ■ ■

Dear Editor,

We thank Dr. Dugué and colleagues for their response to our systematic review [1] on the effect of organised cervical screening on cervical cancer mortality in Europe. Dugué and colleagues emphasise how difficult it is to estimate the effect of cervical cancer screening, because no unselected unscreened group is available and women who do not participate in screening often have a higher a priori risk of cervical cancer mortality. This was highlighted in their study [2], which we included in our review, that showed that self-selection bias influences estimates of cervical cancer screening effects.

We agree that self-selection bias affects the effect size of observational studies which compare cervical cancer mortality in screening participants with that in non-participants. This was why self-selection bias was scored for every study that we included, and the estimated effects of cervical cancer screening were presented separately for studies that either corrected for self-selection bias or compared invited with uninvited women. The study by Dugué *et al.* was recognised as a study that did not correct for self-selection bias. Also, in the discussion, we emphasise this important aspect, and that it is a cause of differences among studies.

In addition to self-selection bias, we described other factors that could affect the effect size such as target ages, screening intervals, and participation rates in the invited population [3]. Because it was impossible to stratify for all those factors in our abstract, we included the complete range of studies there and emphasised the distinctions in the rest of the manuscript.

DOIs of original article: <https://doi.org/10.1016/j.ejca.2020.03.034>, <https://doi.org/10.1016/j.ejca.2019.12.013>.

* Corresponding author:

E-mail address: e.e.l.jansen@erasmusmc.nl (E.E.L. Jansen).

<https://doi.org/10.1016/j.ejca.2020.07.012>

0959-8049/© 2020 Elsevier Ltd. All rights reserved.

We however disagree with their statement that it is on this background difficult to interpret or use the estimates provided by us for the monitoring of cervical cancer prevention strategies. It would make implementation of health policies a hazardous investment.

In our discussion section, we suggested using modeling to quantify the effects of factors influencing the cervical cancer mortality reduction. These models can apply different background risks to sections of the population that are less likely to participate in screening to account for self-selection bias, apart from the other mentioned important country or programme characteristics. Sufficiently tailored models can then be validated against the studies identified by our systematic review.

In summary, we agree that self-selection bias as well as other factors play important roles in estimating the exact effect of cervical screening on cervical cancer mortality, as emphasised in our manuscript, but both women, clinicians and policymakers deserve to know whether their specific policy is performing according to international standards.

Funding

This work was supported by the EU-Framework Programme (Horizon 2020) of the European Commission [project reference 634753].

Conflict of interest statement

None declared.

References

- [1] Jansen EEL, Zielonke N, Gini A, Anttila A, Segnan N, Voko Z, et al. Effect of organised cervical cancer screening on cervical cancer mortality in Europe: a systematic review. *Eur J Canc* 2020; 127:207–23.
- [2] Dugué PA, Lynge E, Rebolj M. Mortality of non-participants in cervical screening: register-based cohort study. *Int J Canc* 2014; 134:2674–82.
- [3] Habbema D, De Kok IMCM, Brown ML. Cervical cancer screening in the United States and The Netherlands: a tale of two countries. *Milbank Q* 2012;90:5–37.