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# Ticks and Tick-borne Diseases

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Letters to the Editor

## Self-reported vaccination coverage against tick-borne encephalitis in Slovenia



Dear Editor,

Recently W. Erber and H.J. Schmitt presented the results on Self-reported tick-borne encephalitis (TBE) vaccination coverage in Europe (Erber and Schmitt, 2018). Published estimates may be subject to major selection and participation bias. I am confident, the published estimate (24.2%) for Slovenia for 2015 is a huge overestimation.

In Slovenia, we obtained two reliable national estimates of self-reported uptake of vaccination against TBE in a probability sample of the Slovenian general population aged 15 years or more, by adding some questions on vaccination against TBE to the Slovenian version of the European Health Interview Survey (EHIS) (Grgič-Vitek and Klavs, 2012). Details of the survey methods have been published previously (NIJZ, 2015; Božič and Zupanič, 2009), methodological strengths included the use of reliable general population sampling frame, two stage probability sampling, sufficiently high survey response and weighing the data.

The first estimate of self-reported TBE vaccination uptake was from the 2007 EHIS, 12.4%, with 95% confidence interval (CI) 10.9–14.0% (Grgič-Vitek and Klavs, 2012). The second estimate was from 2014 EHIS, when 15.8% (95% CI: 14.9–16.7%) of all the respondents answered that they have already been vaccinated against TBE (at least once), which was significantly higher than in 2007, and the coverage showed inequalities according to education (NIJZ, 2018).

What might be the explanation for much higher estimate of 24.2% in 2015 in the recently published paper (Erber and Schmitt, 2018)? In the Methods the authors explain that participants were primarily recruited via online panels. I cannot agree with the authors that the strengths of their survey include the use of a reliable general population sampling method. Online panel recruitment does not involve probability sampling from the general population. Also participation bias can make the results non-representative. Better participation of respondents who are interested in vaccination or non-response of persons

who are not interested or who might oppose vaccination could give higher estimates of vaccination coverage.

However, online panels can be a useful tool for surveys. Our reliable estimates allow the authors to validate the accuracy of their findings. Different findings suggest results of such surveys should be interpreted with caution and show the value of probability sampling to permit generalizing research findings to a general population.

Nevertheless, in Slovenia, one of the countries with the highest reported incidences of TBE, the vaccination coverage for TBE is far too low, irrespective of different findings. Hopefully, inclusion of vaccination against TBE into national immunization programme for an age defined group of children and adults in the near future will increase vaccination coverage and reduce the social inequality in access.

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