

Increasing power of statistical analyses through collaboration

Egberts, M.^{1,2*} (PhD-student), **Veen, D.**^{3*} (PhD-student), van de Schoot, R.³ (supervisor), van Loey, N.^{1,2} (supervisor)

¹ Association of Dutch Burn Centres, Beverwijk, the Netherlands

² Department of Clinical Psychology, Utrecht University, Utrecht, the Netherlands

³ Department of Methodology and Statistics, Faculty of Social Sciences, Utrecht University, Utrecht, The Netherlands

*Both Marthe and Duco will act as presenters during this presentation

Suggested talk duration (15-60 minutes)

25 minutes

Summary (max. 500 words)

Complex statistical models generally require large sample sizes. In practice, these numbers cannot always be easily obtained. In research on the psychological impact of pediatric burns on the family, problems with small sample sizes may arise. In order to obtain a sufficient sample size, prolonged multicenter studies are needed. Using informative priors to increase the power of the statistical analyses can be a solution to sample size problems. In the current project, we use informative priors to estimate a growth curve model with a distal outcome, using prospective data from mothers of young children with burns. The ultimate goal of the project is to compare results obtained with default priors, informative priors obtained from the literature, and priors resulting from expert knowledge. The presentation will be given by an applied researcher and a statistician, addressing issues faced when analyzing small datasets and potential solutions to these problems. Hopefully, this will provide insight in the way in which researchers of these two disciplines can collaborate and support each other.

Relevance to conference theme

The presentation will provide an illustration of a real-life small sample size issue and a potential solution (using informative priors).

Keywords (max. 3)

Informative priors, Bayesian analyses, burns