

## WHAT CAN BE LEARNED ABOUT SURVEY NON-RESPONSE THROUGH RECORD LINKAGE? EXAMPLES FROM HEALTH EXAMINATION SURVEYS.

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Declining participation rates are a problem in survey research, especially since data is not missing at random. Survey non-participants differ from participants in characteristics related to the outcomes of interest. In Europe, the participation rates in health examination surveys (HESs) used to be around 80-90% in 1970's and 1980's. In many recent HESs participation rates have been 40-60%.<sup>1,2</sup>

In Finland, we have a unique possibility to link survey samples to several nationally representative administrative registers using personal identification codes. In the framework of the Non-participation in Health Examination Survey (NoPaHES) project (<http://www.ehes.info/nopahes>), we have linked several Finnish health examination surveys (FINRISK study 1972-2012, Health 2000/2011 surveys, and Migrant Health and Wellbeing Survey) to national administrative registers covering causes of death, hospital discharges, cancers, entitlement to specifically reimbursed medications due to specific conditions, and purchase of medications by Anatomical Therapeutic Chemical (ATC) codes, socio-economic position and geographical information of the places of residence and the examination centres. This allows us to study the characteristics of survey non-participant in respect to their socio-economic position and health outcomes, and to learn about the effect of non-participation on the quality and representativeness of the survey results. We have observed that survey non-participants have excess mortality in 1-20 years follow up. Non-participants also have higher hospitalization rates during the survey period than participants.

Data obtained via record linkage offers also a unique opportunity to compare methods for missing data analysis with real data and to develop new methods that utilize the data available for the non-participants.

### References

<sup>1</sup> European Health Interview & Health Examination Surveys Database. Available at <https://hishes.wiv-isp.be>

<sup>2</sup> Tolonen H, Ahonen S, Jentoft S et al. Differences in participation rates and lessons learned about recruitment of participants – The European Health Examination Survey Pilot Project. *Scand J Public Health* 2015; 43(2):212-9.