

Scale-up Estimators in CATI Surveys for Estimating the Number of Choking Injuries in Children

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The foreign body injuries in the upper aero-digestive ways are rare but not negligible events. Available data about foreign body injuries are those coming from the discharge records of the hospitals and from the death certificates. These data do not include the self-resolved injuries – those of minor severity – and indeed these cases are lost at observation. Thus, the overall injury rate is grossly underestimated.

It emerges the need of getting a reasonable estimate also of the non hospitalized cases. Common methods of probabilistic sampling are quite inadequate in this respect and better results are commonly obtained from non probabilistic sampling schemes.

Then, the idea is to estimate the number of all injuries with the scale-up method. This is a novel approach to estimate the size of hidden or hard to count subpopulations. Respondents are interviewed about the number of people known in several subpopulations (of known size) and a subpopulation E (which size is to be estimated).

Assuming that the proportion of subjects belonging to E over the number c of people in the social network of a person is the same that in the overall population we get the scale-up estimate of the size of the target subpopulation E .

We performed a CATI survey on a sample of about 1000 Italian women aged 18-50. 33 subpopulations of known size were chosen from Census and divided in two groups: populations with low sensitivity impact and high sensitivity impact.

Six different questionnaires were formed combining in different ways the target questions and the questions with low sensitivity and high sensitivity. The reason of these six different questionnaires was aimed at understanding how respondents react to each kind of question. Then, the results from the different questionnaires were compared.