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BRFSS RE-WEIGHTING FOR CHILD ESTIMATES

Luhua Zhao, Hank Wells and Glen Laird¹

ABSTRACT

The Behavioural Risk Factor Surveillance System (BRFSS) is an ongoing, state-based telephone survey. It is used to collect data on the behaviours and conditions that place adults at risk for the chronic diseases, injuries, and preventable infectious diseases that are the leading causes of morbidity and mortality in the United States. Recently, BRFSS has added some questions concerning children but it provides no weight variable for child estimates. The objective of this study was to re-weight the BRFSS data to be able to produce more accurate child estimates. Using the current final adult weight in BRFSS, `_FINALWT`, we changed the measurement unit to children and created new weight variables.

The following two weighting variables were created:

1. `CHILDWT_HH` = $(_FINALWT / (POSTSTR * NUMADULT)) * POSTSTR2$, where `POSTSTR` and `NUMADULT` are variables from BRFSS that represent the adult-level post-stratification and the number of adults in the household, respectively. `POSTSTR2` is the new post-stratification coefficient on the total number of children in each state. Obviously, `CHILDWT_HH` is the household weight multiplied by the child-level post-stratification coefficient, `POSTSTR2`.
2. `CHILDWT`. It is the child weight with post-stratification. The formula is `CHILDWT` = $(_FINALWT * CHILDREN / (POSTSTR * NUMADULT)) * POSTSTR2$, where `CHILDREN` is the number of children in the household.

`CHILDWT_HH` can be applied to the child questions only when the question of interest contains information of the total number of children in the household (e.g. the total number of children in the household or the number of children who ever had asthma, but not, say the age of one child first diagnosed with asthma). `CHILDWT` and its application resemble `_FINALWT`. It can be applied to the child questions only when the question of interest contains the information of one randomly selected child in the household. To use `CHILDWT` on a question that contains information of the total number of children, a household prevalence must be used as the response variable. Both of these two weight variables are open to re-post-stratification if states have appropriate information. Because of the lack of demographic information, our weight variables were post-stratified on the urban (residents in MSA) and non-urban child populations of each state. Examples using `SUDAAN` code are provided.

¹ Luhua Zhao, Hank Wells and Glen Laird, *Research Triangle Institute*