Reviewer's report

Title: Factors and common conditions associated with adolescent dietary supplement use: an analysis of National Health and Nutrition Examination

Version: 2 Date: 28 January 2008

Reviewer: Rainer Ludtke

Reviewer's report:

Dear Editor,

I'm not sure exactly why you asked for a statistical review. My guess is that using weighted logistic regression is the crucial point because weighting observations is not common in the medical literature. But, from a statistical point of view, weighting is absolutely necessary in complex (stratified, clustered and multistage) surveys. Thus, I perfectly agree with the author's in choosing this analysis.

There are some more comments on the statistics I'd like to give:

1. the authors use a Bonferroni adjustment in order to correct for multiple statistical errors. This procedure is known to be conservative and might be replaced by a procedure which maintains the global type I error but has more power than Bonferroni's adjustment, e.g. Holm's modifications of the Bonferroni procedure (Holm, S (1979): "A simple sequentially rejective multiple test procedure", Scandinavian Journal of Statistics, 6:65-70). The latter is easy to implement and can be done without great effort.

2. I am a little bit concerned why the authors present p=0.005 as the Bonferroni corrected p-value. As far as I can see there are 13 statistical tests performed simultaneously, this would lead to a Bonferroni adjusted p-value of p=0.05/13=0.0384).

3. in the multivariable logistic regression analysis age is classified into only two groups (11-15, and 16-19). This might obscure some more complex patterns of use. I therefore suggest either to use more refined age groups (e.g. with a class length of 2 years) or to fit continous terms such as a polinomial (a quadratic term probably will do).

4. Although the authors do not explicitely state it they implicitly say that weighted logistic regression with weights chosen according to complex multistage designs cannot be performed by SAS, only by STATA. Although I never used it I know of the SURVEYLOGISTIC procedure in SAS which (from my point of view) exactly does what the authors needed.

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.