Author's response to reviews

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

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Author's response to reviews: see over
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Dear Dr. Parkin,

Thank you for considering our paper “Factors and common conditions associated with adolescent dietary supplement use; an analysis of National Health and Nutrition Examination”. In this paper, we examine the relationship between dietary supplement use and adolescents. We appreciate the comments from the reviewers and have addressed the points below:

Reviewer 1

Comment 1 Dr. Ludtke wrote: 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.

We thank Dr. Ludtke for his comment. In the original paper we did not use a Bonferroni adjustment as we felt our multivariable logistic regression did not require adjustment for multiple comparisons. Dr. Vohra, from our first set of reviewers, suggested we use a Bonferroni adjustment which is why we added it to the paper. Please advise which statistically procedure you would like us to use Bonferroni, Holmes or none.

Comment 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).

We thank Dr. Ludtke for his comment. In our final model, there were 13 statistical tests performed simultaneously, this would lead to a Bonferroni adjusted p-value of .004 (p=0.05/13=0.0038). We have corrected out text on page 6 last paragraph and it reads as follows.
Due to multiple comparisons, statistical significance was set at a p value of .004 (Bonferroni correction).

Comment 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 continuous terms such as a polynomial (a quadratic term probably will do).

We thank Dr. Ludtke for his comment. Originally, we divided the variable into two groups to separate older teens (high school) from the younger adolescents (middle school). We also felt that it would be simpler for the reader to have two groups (older teens vs. younger teens).

We have repeated our analysis using the comments of Dr. Ludtke. First, dividing the ages into two year increments and second using a polynomial. There was no change in the outcome of our model using the polynomial term or dividing the groups into 2 year age increments for the variable dietary supplements, only multivitamins, and non-vitamin supplements (polynomial). Therefore for ease of the reader we will leave the variable as binary. (Table 3 page 17)

Comment 4 Although the authors do not explicitly 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.

We thank Dr. Ludtke for his comment. STATA has some features beyond those available in the current version of SAS. In addition STATA has better documentation; therefore, we used STATA for this analysis.

Thank you again for considering our paper.
Sincerely,

Paula Gardiner MD MPH