Reviewer's report

Title: Sun protection and exposure behaviors among Hispanic adults in the United States: differences according to acculturation and among Hispanic subgroups

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This study uses data from the 2010 National Health Interview Survey to examine the prevalence of various methods of sun protection (sunscreen, shade seeking etc) among a large, population-based sample of Hispanic adults in the US (n=4582) with diverse countries of origin. The study explored other important covariates of sun protection in this population including skin sensitivity to UV exposure and the frequency of sunburns in the past year. The goal of the analysis was to uncover differences in risky and protective behaviors correlated with acculturation (assessed by proxy measures of language used when speaking and country of nativity), skin sensitivity, and specific Hispanic origin.

Results of the analysis showed that higher levels of acculturation were associated with increased sunscreen use, yet acculturation was associated with lower utilization of other sun protection behaviors and a higher incidence of sunburns. Univariable and multivariable analyses also found significant differences in sun protection behaviors and sunburn rates across diverse Hispanic countries of origin. The paper provides some important additions to the literature, but could usefully incorporate further discussion and caveats as described below.

The paper argues the need for culturally relevant clinical and public health initiatives aimed specifically at Hispanics in order to inform them of the need for sun protection and the dangers of UV exposure. In light of this, the authors should provide information about skin cancer incidence and prevalence among Hispanic in the U.S. – is it really high enough to warrant targeted prevention initiatives, or is the issue more specifically the need for early detection only? In the discussion, please also provide some brief information about sun protection behaviors in other US sub-populations (such as Caucasians) as a comparison, to better inform readers about the level of priority for interventions among Hispanics. Additionally, information about acral versus cutaneous skin cancer rates in Hispanic would be useful to provide, since it has been shown that rates of acral melanoma are higher in Hispanics than in Caucasians, and it has not been proven that UV radiation is a causative factor for such lesions at all.

The limitations section of the paper appropriately notes the use of proxy – rather than direct self-report - measures of acculturation. According to Lara et al. (reference 20), the use of language as one of these measures can be especially limiting, and the use of proxy measures subscribes to a unidimensional model of
acculturation. While the creation of a bidimensional or multidimensional measure may be impossible using information from the questionnaire, it would be advisable to use an additional marker for acculturation, such as percentage of one’s life lived in the U.S. in order to better inform the analysis. Additionally, the use of U.S. or foreign nativity as a measure of acculturation produces contradictory findings when it comes to sunscreen use in the univariable versus multivariable analyses. An explanation of these findings would be useful.

Order of immigration is a potential confounder, given that a population of one origin may behave in a more acculturated manner on average due to the historical time of influx of that population. For instance, the paper notes that Puerto Ricans averaged more sunburns in the past year than Mexicans. This is seen to be correlated with greater acculturation. This link would not be surprising seeing as the greatest Puerto Rican influx to the U.S. happened in the mid 20th century, while Mexican influx to the U.S. has been greatest in the last few decades. Therefore, order of immigration can be linked to both heritage and sunburn incidence, confounding the results. Further discussion of these issues would be useful.

Lastly, there are a few points that need clarification. Individuals who reported more than one origin (n=220) were not included in the analysis. An explanation of why this exclusion was made would be useful. Also, it is noted that those who did not give any information about sun protection or exposure were excluded (n=342), but it was never specified how the analysis accounted for partially completed questionnaires, or single missing items. Additionally, since those born in Puerto Rico are considered citizens of the U.S., they can be seen as being born in the U.S. It is not specified in the paper whether or not these individuals were sorted into the “Born in U.S.” or “Born outside of U.S.” category, and this can be a potential source of confusion.