

SHOS-A Investigation of Duplicate Suicide Attempt Cases (02/12/22)

I. Discovery

SHOS-A analytic work and published results include two suicide attempt cases with questionnaires at two different time points (i.e., each soldier has two distinct questionnaires on different dates].

II. Question

Several papers have been published using the SHOS-A analytic data file that includes the two duplicate respondents. Is there reason for concern regarding how this may have affected the published SHOS-A results?

III. Follow up Results

A sensitivity analysis, including rerunning models, checking weights and risk scores, and examining correlations, was undertaken to determine whether the elimination of duplicate records might have led to results that differ from those published. The main question of interest focused on potential bias in the regression coefficients and/or its effect on statistical significance.

A set of final models, found among the published work, was rerun eliminating duplicate cases. Specifically, four separate data sets were created in order to capture the different possible combinations of unique responses from each of the two duplicate soldiers. The results of rerunning all models with each non-duplicate data sets showed results consistent to those published with the exception of one model: the model predicting suicide attempts among suicide ideators (adjusting for socio-demographics and mental disorders) in Table 3 of Naifeh et al. (2021). In two out of the four data sets, the main effect of distress intolerance on attempts among ideators changed from statistically significant ($p < .05$) to moderately significant ($p = .05 - .10$). However, the point estimate was in the same direction and of the same magnitude as the published results.

- See PDF below titled 'Replicating_Papers.pdf'

In order to further understand this discrepant result, we conducted a series of additional analyses: Additional analysis included examining weights and the sum of weights. Examining each weighted value, across both pairs of surveys, it was observed that the weighted values were identical. Hence, regardless of which non-duplicate data set we used in the reanalysis, the weights would be the same. The sum of the weights, when removing duplicate records, resulted in a total sum of weights value of 72.6, identical across each dataset. In contrast, the total sum of weights value in the original analysis equaled 74. This means that the coverage across each non-duplicate data set accounted for 98% of the original sum of weights.

- See PDF titled 'SHOSA_SumOfWeights_111021.pdf'

We crossed checked a set of demographic variables to ascertain whether duplicate records were in fact the same individual. Duplicates matched exactly on sex, education, race, age, marital status.

- See PDF titled 'SHOSA_Demos_111021.pdf'

We examined the covariates used in the models for possible differences. We observed differences in the risk score used to adjust the model.

- See PDF titled 'SHOSA_Paper3_Covariate_Examination_110321.pdf'

Finally, we ran two separate models to understand the relationship between the risk score and distress intolerance. We first examined distress intolerance as a predictor of attempts among ideators without controlling for the risk score. We then ran the same model controlling for the risk score. Adding the risk score changes the results in one combination of duplicates but not in the other. If we dig a little more, we see that the correlation between distress intolerance and the risk score differs between models. Thus, a possible explanation for the significance of distress intolerance in one case but not the other is due to the difference in the correlation between distress intolerance and the risk score – the correlation was three times stronger in the model that lost significance.

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IV. Conclusion

Given the thorough examination of the duplicate responders by way of our sensitivity analysis and because results did not differ from the original published work except with one slight exception, we feel confident with the original SHOS-A results.

References

Naifeh, J. A., Nock, M. K., Dempsey, C. L., Georg, M. W., Aliaga, P. A., Dinh, H. M., Fullerton, C. S., Mash, H., Kao, T. C., Sampson, N. A., Wynn, G. H., Zaslavsky, A. M., Stein, M. B., Kessler, R. C., & Ursano, R. J. (2021). Association of emotion reactivity and distress intolerance with suicide attempts in U.S. Army soldiers. *Suicide & Life-Threatening Behavior*.
<https://doi.org/10.1111/sltb.12821>

Source Documentation:

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