Reviewer’s report

Title: Type D personality is associated with impaired psychological status and unhealthy lifestyle in Icelandic cardiac patients: A cross-sectional study.

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Reviewer: Benjamin Chapman

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This paper from the Denollet group describes associations between Type D personality and a number of intervening factors on the causal path to negative cardiac outcomes. The general associations between Type D and cardiac endpoints are well established, so this attempt to better delineate possible causal mechanisms is well grounded etiologically. The analyses and conclusions drawn are all reasonable. My main suggestions deal with the further elaborating the implications of the work to a general public health and medical (non-psychiatric) audience.

Major

1) The public health significance of Type D is worth paying attention to from a population attributable risk perspective. Might the authors discuss the implications of these findings for prevention and intervention in cardiac-risk prone patients living in the community?

2) An ongoing concern with Typological research in general is the issue of categorical vs. dimensional approaches. Reporting that 10 distinguishes Type D from non-Type D encounters the same difficulty of classifying diabetics as those above a cut-point on the continuous measurement of glucose levels—the goal standard is determined by the cut-point itself, rather than being able to find the cutpoint that maximizes sensitivity/specificity to a gold standard. Since people exist on a Type D continuum, I would encourage the authors to report secondary analyses with the continuous scale score—they could scale the continuous score by interquartile range or standard deviation units (see Harrell 2001 book on regression modeling) so that a 1 unit change represents the same sort of clinical meaningful metric they are probably trying to achieve with categorization. This will also enhance power.

3) Type D may be such a powerful predictor because it encompasses both social inhibition and negative affectivity, and from a personality standpoint is a "compound trait". One gains increasing explanatory precision for effects if one can examine, in this case, the unique and shared predictive power of both subscales in order to determine if it is the negative affect, the social inhibition, or both elements that are important in these negative outcomes. I would suggest this secondary analysis in order to further pinpoint and comment on what exact aspects of Type D we should be most concerned about for given outcomes.
4) While the conclusions are well-put, one area that deserves further elaboration is how personality assessment can be feasibly integrated into health care systems, and how personality phenotype can complement genotyping in the coming area of personalized medicine.

Minor
1) The conceptual model wherein personality is the risk and psychiatric symptoms, behavior, etc. is clear; nevertheless the data are cross-sectional. Have the authors considered whether their data would feasibly support an instrumental variables approach to address this possible endogeneity (i.e., psychiatric symptoms causing personality ratings)? It can be difficult, however, to find reasonable instruments in the data for personality traits.

2) The PSS actually does have cut scores to indicate high stress, so I would remove the sentence stating that it doesn't; the cut score may not be accurate in an Icelanding population because of all the issue involved in translating instruments, so the authors' use of the 75th percentile is still reasonable.

Cohen S. & Williamson G.M. 1988 Perceived stress in a probability sample of the united states in S. Spacapan & S. Oskamp (Eds.) The social psychology of health, newburak park, CA, sage

has cuts for different versions of the scale in the US

4) can the the authors comment on the prevalence of lower htn treatment in Type D? Jerant et al. 2010 Br J of Health Psyc found Neuroticism associated with lower pill-counts, so some speculation on whether this is compliance or lack of health care service use (which would seem less likely if the icelandic system is easy to access and these patients are already in it) might be warranted.

5) The lack of associations between Type D and dz severity may warrant an explanatory sentence for readers. I wonder if the sample represents a fairly uniformly advanced stage of severity, meaning there is too little variation to find an association.

Discretionary
1) First paragraph, "The association of Type D with anxiety, depression, etc." The df for the t-statistic for the depression association is quite different than that for anxiety and I am guessing reflects the corrected df for unequal variances b/w depressed and non-depressed (which would make sense)? Please double check.

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.

Declaration of competing interests:
I declare I have no competing interests