Reviewer's report

Title: Does Presence of Metabolic Syndrome Impact Anxiety and Depressive Disorder Screening Results in Middle Aged and Elderly Individuals? A Population Based Study

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Reviewer: Aradhna Kaushal

Reviewer's report:

General Comments

This paper reports whether screening results for depression and anxiety disorder differ if patients have metabolic syndrome. These findings could have implications for primary care and could reduce false positive screening results. More work is needed on this paper to justify the methods that they use and a deeper discussion on explaining their findings.

Introduction

There is quite a bit in the introduction about how GAD and MDD are under diagnosed in primary care. I can see how this is a public health concern but it needs to identify the research gap this paper addresses more specifically i.e. will understanding how MetS can impact screening help identification of GAD and MDD?

A more comprehensive description of metabolic syndrome is needed. Currently there it is described as "a cluster of cardiovascular disease and type-2 diabetes risk factors". What are these risk factors? How are they diagnosed? What is the prevalence of MetS? What are the somatic symptoms which overlap with GAD and MDD?

More about the relationship between MetS and depression is needed here, particularly in relation to bi-directional associations. Aside from line 80-81 they are discussed as concurrent and independent health problems.

What were your hypotheses about how MetS would be related to screening based on previous research? Did you expect different results for GAD and MDD (especially considering reference 40 "Depression but not anxiety associated with metabolic syndrome in primary care")?
Methods

Methods seem appropriate for research question.

Did you formally test for differences between responders and non-responders? These data could be included in supplementary materials.

Describe in more detail how you determined optimal cut-off score.

Results

You don't report NPVs or accuracy in the results.

Discussion

Line 214: Why do self-reported instruments increase probability of false-positive screening result? How this relates to your findings needs to be clearer.

A limitation of this research is the cross-sectional nature design. There needs to be further discussion about the bi-directional associations between MetS, and GAD and MDD are related to each other. Are there any studies investigating this? Is there a way to tell if somatic symptoms are from MetS or GAD, or both? There also needs to be a discussion about mechanisms.

Line 235-241 Are there any comparable studies looking at just type-2 diabetes and optimal cut-off scores?

Tables and Figures

Tables are well presented.

A plot of the final ROC curves in addition to the tables would be useful.

Abstract

Line 32 needs to be re-worded to clarify that these are screening tools.
Readability

There are minor grammatical errors which sometimes obscures meaning. It will need to be carefully proofed and edited.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

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