Reviewer’s report

Title: Guideline use among different healthcare professionals in diagnosing Attention Deficit Hyperactivity Disorder in Dutch children; who cares?

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Reviewer: Hon Wah Lee

Reviewer's report:

The manuscript presents the results of a questionnaire survey targeting at healthcare professionals in the Netherlands on the use of ADHD guidelines in their diagnosis of Dutch ADHD children. I think it is a worthwhile effort to investigate the extent to which such guidelines are used in ADHD diagnosis, but I have some methodological concerns about the experimental design of this study and other concerns about the arguments presented.

1. General practitioners are underrepresented in the study but nonetheless are highlighted in their analysis and discussion.

- "GPs from only two provinces were approached" (p.15, line 4) --> this should be mentioned upfront in respondent selection under the Methods section (and not only as a limitation). Since all other respondent groups were approached country-wide, this represents a clear selection bias for the GP group and the authors should explain and justify this decision.

- Compared to the very high response rate from other healthcare professionals, only 111 of the 1450 questionnaires were returned from GPs. This also represents a clear response bias.

- The authors write that "Because numbers of respondents per professional were low, and varied between subgroups, subgroup analyses were not performed" (p.9, lines 33-38), and "Due to the low number of GPs, no conclusions could be drawn for this group" (p.14, line 7). Despite the fact that no subgroup analysis was actually performed and conclusions are deemed inappropriate, the authors intriguingly highlight the results obtained from GPs throughout the manuscript. The results obtained from this biased sample may present a misleading picture about how guidelines are actually used among GPs.

2. The information and data presented are sometimes unclear.

- It is unclear which question or option in the questionnaire the figures about guideline use (pp.10-11) actually comes from. My guess is that it comes from Q.8 of the questionnaire asking how the respondent diagnoses ADHD. Option c "Without a protocol; differs each case" should
be considered no guideline use. But how about option b "Following my own protocol/methods"? Since the questionnaire does not ask how one's "own protocol/method" was developed, I would imagine that these protocols/methods may also follow or resemble those national guidelines. Is this option considered guideline use or not?

- On pp.9-10, it is written "186 professionals were actually involved during the diagnostic process of ADHD, 176 professionals referred children with symptoms of ADHD to another care professional. In particular, youth health care physicians (45/50), GPs (98/111) and paediatricians (22/40) were excluded..." -- The numbers here suggest that 165/201 respondents were excluded from analysis, but these numbers do not match the total number of excluded respondents or the numbers shown in Figure 1. Is any information missing here? Also, there is no clear information provided about how many of these respondents were from each category of profession (unless we work backward from the numbers in Figure 1).

- In Table 1, where does the category "remedial teacher" come from? It is not provided as an option for profession in the questionnaire, and they are also not healthcare professionals. Why were they included in this study?

- It is written that "Univariate and bivariate statistical analyses were used to assess frequencies of responses by demographic variables" (p.9). What exact statistical tests were actually used? Given that no subgroup analyses were actually performed, what were these analyses for? In particular, there is no statistics (but only percentages) included anywhere in the manuscript. Without any subgroup analysis or statistical evidence, the group differences presented by the authors do not seem very convincing.

3. There are some problems with the questionnaire design

- Some questions actually require an option for "not applicable" (e.g. Q9, Q12).

- Some questions asking respondents to rate "how often" sometimes on a 3-point Likert scale (Q.19) and sometimes on a 5-point scale (e.g., Qs 13 and 15), which is inconsistent.

- For the above questions, '0' is in fact a possible answer but the Likert scales always start with '1'.

4. Some arguments / conclusions are not strongly supported by evidence.

- The authors write "GPs guideline use was 50%" (p.11, line 7). But according to Figure 2, guideline use among psychologists and pediatricians was both about 60%, respectively, which is not so much different from GPs. Since results for GPs were obtained from a very small sample and are underrepresented in this study and there are no statistical comparisons, I am not sure if it
is appropriate and justified to conclude that "they demonstrated the lowest adherence to the guidelines" (p.16, lines 17-20).

- I am also unsure if the authors' conclusion that GPs "demonstrated the lowest adherence to the guidelines, which can lead to misdiagnosis" is substantiated. First, it is unclear whether the GPs use their own protocols instead of guidelines, as mentioned above. Second, even if no guidelines are used, GPs' professional knowledge in ADHD and experience in diagnosing ADHD may be just as useful as published guidelines. Saying that no adherence to the guidelines can lead to misdiagnosis seems to be an underestimation of and a disrespect for their professionalism. I think the authors should provide some evidence to demonstrate this strong claim, otherwise this idea should be rewritten.

- It is also unclear why the authors emphasize the need for interviews in their argument when "no guideline requires the use of a standardized interview" (p.6). To pursue this argument, it would be necessary to explain in greater detail the advantages of interviews over other diagnostic tools required by those guidelines. Without this, it seems unsupported to say that "Most respondents performed an interview based on their own knowledge, which may either lead to inaccurate diagnosis or undetected comorbidities" (p.13, lines 26-28) when interviews are not required and probably only used as a supplementary tool in addition to other required diagnostic procedures described by the guidelines.

- "However, part of these additional IQ and neurological tests was possibly not indicated" (p.13, lines 47-49) --> I think this point merits further elaboration, as these tests are sometimes considered necessary in a diagnosis as ADHD has been found to be associated with IQ and neurological deficits.

- "The number of included GPs was low, maybe because they were less involved in ADHD care for children before the release of their own GP guideline in 2014" (p.13, line 55-58) --> I have some doubts about using this to explain the low return rate of GPs. Even if the GPs that the authors approached were not involved in ADHD diagnosis or care, they could still complete the first two questions of the questionnaire.

5. There are quite a number of grammatical errors throughout both the manuscripts and the questionnaire. Further proofreading would be necessary.

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

No
Does the work include the necessary controls?
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