Reviewer’s report

Title: Dietary Quality linkage to Overall Competence at School and Emotional Disturbance in Representative Taiwanese Young Adolescents: dependence on Gender, Parental Characteristics and Personal Behaviors

Version: 0 Date: 07 Oct 2017

Reviewer: Megan Whatnall

Reviewer's report:

Overall comments

This paper explores the associations between emotional disturbance, school performance and dietary intake in Taiwanese adolescents. These are important and relevant areas for research in a vulnerable life stage.

However, the paper would benefit from some revisions before it is publishable.

Main comments are that the aims of the paper are not clearly stated and this has impacted on the order/logic of the rest of the paper, mainly the presentation of results and order of discussion points.

Background

Overall the background could be improved by adding further detail and discussion of the current literature, and clarity of study aims. This is an important topic, however there needs to be more rationale as to why it is important.

Line 25: The aims of the paper need to be made clearer. There seems to be quite a few aims: exploring the association between diet and emotional disturbance, the association between diet and school performance, and the association between emotional disturbance and school performance, as well as influence of puberty, parental and personal characteristics. Are there primary and secondary aims?

If the authors state these aims more clearly here the reporting of the rest of the paper should follow this logic. i.e. if the primary aim is exploring the association between emotional disturbance and school performance these results should be reported and discussed first.

The background also needs to address and include stronger justification for why all of these associations are being studied and what studies already exist in this area.

- The link between emotional disturbance and school performance is not currently addressed
- The impacts of puberty, parental and personal behavioral characteristics are also not sufficiently addressed

Line 7: Not sure 'expected' objective is the best wording to use here. Consider rephrasing, for example, desired objective?

Several key terms in the background, and the paper as a whole, have been referred to differently and interchangeably throughout. To prevent confusion and aid readership it would be recommended to use one or the other consistently.

- Emotional disturbance and behavioural disturbance have been used interchangeably, for example Line 12 uses emotional disturbance where Line 16 uses behavioural disturbance

- School performance is also referred to as cognitive and scholastic performance, performance or overall competence

- Dietary quality and dietary status are used interchangeably

Line 17: In regards to the references cited for the association between diet and cognitive and scholastic performance - there are several systematic reviews exploring the associations between diet and academic achievement in children and adolescents that are pertinent to refer to here -


Line 18: Please explain the appropriateness of references 14 and 15 here?

Line 19: Not sure of the relevance of metabolic syndrome and diabetes here?

Line 19: Dietary quality has also been shown to play a role in emotion, mood [19] and mental performance [7].

The authors could provide further explanation of this point, how and in what direction are these factors associated?
Measures

Line 65 & Line 74 - what is the rationale behind the relevant z-score cut points for emotional disturbance and overall competence?

Line 80-82: were the FFQ and 24 hr recalls completed by/with the adolescents? This detail needs to be added.

Line 93: Are there data on mean scores on the YHEI-TW from other studies using this measure? If yes it may be useful to report this to provide context for the scores reported in this study.

Line 96: 'Covariates were collected from questionnaires'. Were questionnaires completed by the adolescents or others? This detail needs to be added.

Line 102: What reference ranges were used for determining BMI classifications (i.e. underweight, normal weight, overweight, obese)? Detail of cut points and a reference should be provided.

Line 101: Are the physical activity ranges based on Taiwanese recommendations? Explanation and a reference should also be provided here.

Statistical analysis

This section does not provide enough detail of the statistical methods used.

Line 106: The variables compared using t-tests and chi squared tests should be specified.

Line 107: A sentence should be added to describe how variables are reported - this has been included as a footnote to table 1 but should also be briefly explained here.

The outcomes of dietary quality, emotional disturbance and overall competence have not been referred to, please provide an explanation of how these were treated in the multiple linear regression models?

Line 122: Please provide a brief explanation of what SUDAAN is and how it was used in analyses.

Results

The results section would be easier to read with sub headings - these should relate to the different aims/analyses conducted and follow the order of study aims as per previous comments.
In addition only key results should be presented in the text, as there is quite a bit of repetition of what is in the tables.

Line 115: it would be good to see a few key descriptive statistics of the overall sample reported in the opening paragraph of the results section, to provide a quick overview of the sample, e.g. mean age and gender split, as well as for primary outcomes, e.g. mean emotional disturbance, overall competence and dietary quality scores.

Line 132: Results are reported here for HDL cholesterol, however this measure hasn’t been mentioned previously in the paper. All measures included in analyses should be mentioned in the methods section.

Discussion

It would be recommended to add an opening paragraph to briefly reiterate the study aims and summarise the main findings in relation to the aims.

The sub headings in the discussion should be consistent with and follow the same order as the study aims, and the presentation of results.

The sub headings could also be more descriptive than current - e.g. Line 210: As opposed to Personal behaviours, the sub heading could be something like Associations between personal behaviours with school performance and emotional disturbance

It would also be recommended to add a paragraph on the implications of the study findings e.g. what does this paper add to the evidence base? What are the implications for health promotion practitioners or others working with adolescents in the school setting?

Line 181: emotional disturbance and school performance paragraph - this area of the discussion is particularly lacking. The authors need to elaborate on the associations found and how this compares with other studies.

Line 184: What are these factors that may be contributory to the relationship between emotional disturbance? Need to be discussed.

Line 186: Dietary quality and pattern paragraph - As per comments made in the background section there are key literature missing -


Line 187: The association between dietary quality and emotional disturbance is not further elaborated on? This finding also needs to be discussed.

Conclusions

Line 263: 'These associations may have both immediate and longer term health relevance.'

What are the implications of the study findings- as per comment above a paragraph on study implications would benefit the paper and an additional sentence could be added here in the conclusion on this point.

Tables and Figures

What is the justification for presenting some of the multiple linear regression results in tables and others in figures? The tables are easier to read and interpret than the figures.

Tables 1 and 2

If characteristics are presented by overall competence categories, percentages within each overall competence category should add to 100 rather the percentages for each characteristic category adding to 100. i.e. for gender it should be the percentage of the group with z-score ≤ 6 who are male/female adding to 100% and the same for the group with z-score >6.

Consider adding a total or all participants column as well to both tables for ease of comparison.

Table 2

Results are reported here for a number of variables (height, weight, triceps skin fold thickness, mid arm muscle circumference, waist circumference, blood pressure and plasma metabolic analytes) that have not been mentioned in the body of the paper. These variables and the methods of their measurement should be added to the methods section of the paper.
Level of interest
Please indicate how interesting you found the manuscript:

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Please indicate the quality of language in the manuscript:

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