Author’s response to reviews

Title: “I love having a healthy lifestyle”. A qualitative study investigating body mass index trajectories from childhood to mid-adulthood

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Author’s response to reviews:

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Dear Professor Mockridge

Re: OBSY-D-18-00043 “Health identity” and trajectory of body mass index from childhood to mid-adulthood – an exploratory mixed methods study

Thank you for the opportunity to revise our manuscript. We have carefully considered the reviews and have made amendments accordingly. Changes to the manuscript have been highlighted as requested. We confirm that the revisions have been approved by the co-authors.

We look forward to hearing from you.

Yours sincerely,

Dr Melanie Sharman

(on behalf of all authors)
Response to reviewers’ comments

Reviewer #1

Comment 1

The study design is described as "exploratory mixed methods," however only qualitative data collection is utilized to explore the implied guiding research question, "how does a social-ecological framework provide insight into individual, social, and environmental factors that may influence diverging weight trajectories across the life course?" The authors correctly note that qualitative data were used for the purposeful sampling plan. That alone does not provide data related to the implied research question. A mixed methods study would address a single research question using two or more methods to collect data, regardless of data type. This study used a purposeful sample and then collected qualitative data only to answer the implied research question and therefore is a qualitative study.

Response 1

We have revised the manuscript throughout to reflect that the study was qualitative. For example:

Title, page 1, line 2

“I love having a healthy lifestyle”. A qualitative study investigating body mass index trajectories from childhood to mid-adulthood

Introduction, page 6, line 131

Thus, the objective of this qualitative study was to use a social-ecological model to investigate individual, social and environmental factors within the work setting that may influence diverging weight trajectories from childhood to mid-adulthood.

Further, we have added more detail to the methods section for the purpose of clarification:

Design and sampling, page 6, line 139

This qualitative study, guided by pragmatism, used purposive sampling to select participants to undertake semi-structured phone interviews. Participants were characterised as being on different body mass index (BMI) trajectories from childhood to mid-adulthood (29). These participants were drawn from the Childhood Determinants of Adult Health (CDAH) study, a prospective quantitative study which has involved three adult follow-ups of a nationally representative cohort who (when aged 7-15 years) completed the 1985 Australian Schools Health and Fitness Survey (n=8,498) (Figure 1) (30,31,32)
We have also rewritten the aim of the study to make it clearer:

Introduction, page 6, line 131

Thus, the objective of this qualitative study was to use a social-ecological model to investigate individual, social and environmental factors within the work setting that may influence diverging weight trajectories from childhood to mid-adulthood.

Comment 2

The second issue that I have with the design is related to the question and why work setting is explored as a space for potential meaning. This reader is not convinced in the background/introduction that work site is a compelling setting for investigation, nor does this seem to provide much utility in the results and discussion. The works by Powell and colleagues and Christalkis and colleagues related to social contagion theory may be useful for a worksite lens.

Response 2

We agree that the selection of the workplace setting could be better justified. We have made changes to the introduction accordingly:

Introduction, page 6, line 121

Most adult Australians aged 35-54 years’ work over 30 hours per week, making work a key influence in daily life (26). Workplaces have social and environmental dimensions likely to elicit common and diverging responses among individuals. For instance, smoke-free workplaces positively impact the smoking behaviour of some but not all employees and some professions appear to be associated with poorer health behaviours than others (27, 28). From a broad pragmatist perspective, which seeks to investigate the realities of ordinary life to create knowledge for practical use, this raises an important question (29). What drives different health-related behaviours among individuals as exposed through the work setting?

Comment 3

I find it odd and concerning that the moderator's guide is not provided in the manuscript.

Response 3

We have now included the moderator’s guide as a supplementary material and referred to this as outlined below:

Measures, page 7, line 176
Comment 4

The socio-ecological framework, rather than the data, seem to be driving your report of "emergent themes." For example, the reported themes focus on workplace social relationships; worksite environmental supports for activity, food, and alcohol; and individual factors like professional training, job type, stress. These themes reflect the framework and are not necessarily being driven by the data. Most concerning is the title, "Health Identity," which I would have expected to be better flushed out and described as a major theme if this is to be defended as the primary finding from the exploratory study.

Response 4

The social-ecological framework was the theoretical framework underpinning this study. The framework was used to inform the development of the interview schedule and to guide analysis. While the analysis focused on individual, social and environmental dimensions of influence, there were emergent themes. Hence, the health identity concept. In response to these comments we have now highlighted “health identity” as a major theme in the results, summarised the findings regarding “health identity” in the newly developed Table 2 and have added more text about this concept in the discussion:

Results, page 10, line 229

Seven key themes emerged from the thematic analysis, exposing individual, social and environmental influences of weight-related behaviours and differences between BMI trajectory groups. The major finding was that an individual’s “health identity” may play a role in shaping BMI trajectories. The main themes are discussed below and summarised in Table 2.

Discussion, page 16, line 381

An individual’s identity is influenced by personal and social contexts, including gender, culture, leisure and work and identity can influence mental or physical health (38,39,40,41). It is increasingly recognised that leisure choices and lifestyles in contemporary society are linked with identity formation (42). The concept of a health identity is congruent with research findings that greater physical activity is associated with a stronger “physical identity”. For instance, children and adolescents’ self-concepts can explain how much effort and time they devote to various physical activities (43).

We have also modified the title in response to ‘Comment 1’ so that the qualitative nature of the study is highlighted. Reference to “health identity” has been removed.
“I love having a healthy lifestyle”. A qualitative study investigating body mass index trajectories from childhood to mid-adulthood

Comment 5

There is considerable debate in qualitative research regarding the degree to which a positivist lens should be employed when describing results. In the case of this manuscript, the tendency to report findings using this lens is strong.

Response 5

Thank you for raising this important point. As you have correctly identified this study sits within the positivist and pragmatic approach and was designed using the social-ecological model to guide the qualitative data collection and analysis. We have added a statement within methods section to clarify this and briefly in the introduction to support the context.

Introduction, page, line 123

Workplaces have social and environmental dimensions likely to elicit common and diverging responses among individuals. For instance, smoke-free workplaces positively impact the smoking behaviour of some but not all employees and some professions appear to be associated with poorer health behaviours than others (27, 28). From a broad pragmatist perspective, which seeks to investigate the realities of ordinary life to create knowledge for practical use, this raises an important question (29). What drives different health-related behaviours among individuals as exposed through the work setting?

Design and sampling, page 6, line 139

This qualitative study, guided by pragmatism, used purposive sampling to select participants to undertake semi-structured phone interviews.

To reflect the social-ecological model, the results have been presented according to the three levels of influence; individual, social and environmental factors. Consequently, the results may appear to be presented with a positivist lens. The authors are aware of this, but consider that reporting the results in this way is an accurate reflection of the paradigm that underpinned the study and social-ecological model used to inform data collection and analysis (Patton, 2011).
Is the finding that persons with an orientation to health and healthy lifestyles are drawn to health professions truly novel?

Response 6

We agree that this is unlikely to be the case, but we have not promoted this as a novel finding. However, it is one of a number of themes that only emerged in the stable and decreasing groups and consequently we felt it important to report this in the results.

Reviewer #2

Comment 1

This is an interesting study to examine "health identify" stratified by BMI trajectories from childhood to adulthood.

Response 1

Thank you for your positive comments

Comment 2

The authors focused on work setting factors. But they also discussed socio-demographics, which seemed to be a little distracting.

Response 2

We have removed the detailed description of participants’ socio-demographic characteristics. These characteristics are now briefly summarised as follows:

Results, page 9, line 213

Participants’ characteristics collected from the 2014-16 CDAH follow up and interviews are described in Table 1. In summary, participants (21 men; 29 women) were middle aged adults, of which most were employed (92%) with dependents (76%) and many had a university qualification (56%)

Comment 3

It was smart to select participants from an existing cohort study, stratified by BMI trajectories. But the target of 50 participants (total) needs stronger justification. For example, what was the
minimal sample size for each BMI trajectory to ensure their representativeness in the final results?

Response 3

As described below in response to Comment 5, it was determined that a sample size of approximately 10 participants from each BMI trajectory was sufficient to identify any distinct difference between categories. One smaller group (n=6) resulted from a smaller pool in the cohort who fell into this category. However, the sample size of n=6 was considered adequate because qualitative researchers have identified that 70% of key themes can be identified after six interviews (Guest 2006). We have added text to the methods section to address this comment:

Recruitment, page 7, line 161

Letters of invitation were mailed every three to four weeks in batches of 25 (five from each group), until the initial target of 50 participants had been confirmed through telephone follow-up. The intention was to have approximately ten participants per BMI trajectory group, although a minimum of six participants was considered adequate given the study aim and analytic approach (34).

Comment 4

Also, they mentioned "data saturation" as the stopping point in Results. It would be better to move it to Recruitment under Methods section, and provide detailed explanation on the criterion/definition of "the absence of new themes emerging" (e.g., how many new interviews they waited/tested in order to conclude this safely?).

Response 4

Reference to saturation has been moved to the recruitment section and more detail has been added as highlighted below.

Recruitment, page 7, line 167

By the 40th interview there was an absence of new themes emerging. An additional ten interviews were conducted to ensure that data saturation had been reached overall and that there was reasonable representation across the BMI trajectory groups. Subsequently, no more than 50 interviews were considered necessary.

Comment 5
As shown in Table 1, the sample size for each BMI trajectory was about 10. This relatively small sample size might not be sufficient to support the authors' discussion on proportions of various themes across different BMI trajectory categories. Also, if the authors decide to discuss the potential differences in theme distributions across the BMI trajectory categories, it is better to show key results in a table or figure so that readers can follow easily.

Response 5

Sample size in qualitative studies are determined as a function of the purpose or aims of a study, sample specificity, analytic approaches and data quality. The narrower the aims, specificity of participants and analytic approaches the smaller the required sample size (Malterud 2016, Palinkas 2015). Qualitative researchers have determined that 70% of key themes can be identified after six interviews (Guest 2006). Based on consideration of the study aim, sample specificity, analytic approach and data quality it was determined that a maximum sample size of 10 for each BMI trajectory was sufficient to identify any distinct difference between categories. Please refer to Response 3 regarding changes we have made to text in the methods in response to this comment.

As suggested we have now developed Table 2 which summarises the key results.

Comment 6

One considerable limitation for this study design is potential inverse causality, e.g., existing BMI trajectory from childhood to adulthood might shape participants' current perceptions on work-related factors. This was mainly due to the temporality issue for the study design, i.e., BMI trajectory from childhood to adulthood already happened before the interview to assess work-related factors. So, their conclusion of "Numerous work-related factors appeared to influence weight-related behaviours of participants, irrespective of BMI trajectory" might not be valid. More caution is needed when interpreting results.

Response 6

We agree that this has not been adequately highlighted in the manuscript. We have now added text to the limitations section to address this and amended text in the abstract.

Limitations, page 19, line 448

Recall error may have also influenced the results given that participants were middle-aged adults and were asked to recollect details across their full work history. It is also possible that a person’s BMI trajectory may have affected their perceptions of the influence of work-related factors.

Abstract, page 3, line 63
Work-related factors may influence weight or weight-related behaviours, irrespective of BMI trajectory, but the concept of an individual’s “health identity” may help to explain divergent BMI trajectories.

Comment 7

"Health identity" seemed to a key concept for this manuscript. But it was not introduced in the Background section, or defined in the Methods section.

Response 7

Health identity was an emergent theme which is why it was not referred to in the introduction and methods section. Please refer to our response to Reviewer 1, Comment 4