Author’s response to reviews

Title: The effects of martial arts participation on mental and psychosocial health outcomes: A randomised controlled trial of a secondary school-based mental health promotion program

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Author’s response to reviews:

Responses to editor’s and reviewer’s comments

Editor

In the section “Ethics approval and consent to participate” in the Declarations, please give the reference numbers for the ethical approval

Author Response

Revised as requested.

Reviewer 1

Overall this is well written protocol but there are a number of major issues which is due to a lack of detail.

Author Response

Thank you. See below.

Reviewer 1

The title of the paper is to evaluate the training effects of martial arts participation on mental health outcomes: A randomised controlled trial of a secondary school-based mental health promotion program- however the intervention consists of martial arts and psycho education and therefore the title should accurately reflect this.
Author Response

Change title to read

‘The effects of martial arts participation on mental and psychosocial health outcomes: A randomised controlled trial of a secondary school-based mental health promotion program’

Reviewer 1

A major difficulty with the protocol is the absence of an inclusion and exclusion criteria- I have read the paper a number of time and am unsure who they are targeting - the protocol states that they are aims to develop valid and reliable data regarding the efficacy of a martial arts based therapeutic intervention as an alternative to psychological therapy. It is unclear if the intervention is targeting ie young people with pre existing or current mental health problems or whether it is targeting young people with no known mental health problems. Due to this it becomes difficult to assess the protocol (ie primary and secondary outcome measures).

Author Response

While we note that exclusion criteria for the protocol are stated on page 6, lines 17-22; we agree this is a reasonable point regarding explicitly stated inclusion criteria. Inclusion criteria have been stated explicitly on page 6.

Reviewer 1

This latter point also relates to rationale as the premise of the study is based on the rationale that the intervention is an inexpensive alternative to psychological therapy but if they don't have a mental health difficult then the premise of this rationale is flawed. Further even if the authors intend to offer this to young people with a mental health problem then I did not understand why it would be deemed an inexpensive alternative to a group psychological intervention as time and resource is comparable.

Author Response

This is good point. We have revised the overall rationale of the paper to be stated as: “This study aims to examine the efficacy of a martial arts based therapeutic intervention to improve mental health outcomes.” (See page 1, page 4).

Reviewer 1

The rationale for the choice of the primary outcome should be justified.

Author Response
Agreed and revised. See pages 9-10.

Reviewer 1

There is no mention of PPI in the protocol and its exclusion should be justified.

Author Response

We are unclear of what the reviewer means by PPI. Please clarify.

Reviewer 2

I see that this paper has already been reviewed, I was not involved first time round. I think this paper describes the protocol for a valuable and important study. I have some minor points to feedback.

Author Response

Thank you.

Please note: this is the first review of the paper.

Reviewer 2

1. Can the authors consider terminology. We have mental health difficulties as the main terms used but also mental health issues (even in the abstract) and mental illness, mental health problems in the main text. I recommend one term throughout.

Author Response

Agreed and revised. We have used the term: “mental health problems”

Reviewer 2

2. The abstract says the study aim is to "develop" valid and reliable data. Do you develop data? I am not sure. You collect data. I recommend changing this in the abstract and body of the text.

Author Response

Agreed and revised.
Reviewer 2

3. The intervention is martial arts, but there are different types. I think earlier in the text (page 3) it could be made clear this is a bespoke programme designed for the study using a mix of different martial arts theory and practice plus psycho-education.

Author Response

Agreed and revised. See page 4.

Reviewer 2

I had a couple of comments about study design. It suggests that children have to attend all 10 sessions to achieve "intervention dose". Is this realistic - or will they make up for missed sessions - so everyone has to attend 10 - i think that could be made clearer in the protocol.

Author Response

Agreed. This is a good point. We have added further information regarding the intervention and intervention dose on pages 7-8.

Reviewer 2

The abstract suggests this is both a feasibility and efficacy trial - is it? is it about feasibility- if it is can that be added to the title so this is clear.

Author Response

We have removed the term “feasibility”.

Reviewer 2

There doesn't seem to be any qualitative work planned - this is a limitation. Why is this? Can it be acknowledged in the limitations section - as it would be better to have some data to explore mechanism of impact, user satisfaction etc.

Author Response

Qualitative work is planned for future research. We have added this as a limitation in the discussion section. See page 12.
We don't know what the primary outcome measure is.

Author Response

Revised. See pages 10-11.

Reviewer 2

A few minor points in main text page 3 talks about the cost of treatment being a barrier to help seeking. Can we add poor availability of treatment - its not always cost in the UK - there is just nothing available.

Author Response

Excellent point. We have added this to the text. See page 3.

Reviewer 2

page 4 talks about previous research that shows the "psychological effects" of martial arts training - do they show anything else as well - increased MH awareness, symptom reduction (is that a psychological effect??)

Author Response

The two paragraphs preceding this statement on page 4 provide details of previous research examining psychological effects of martial arts training including symptom reduction and promotion of wellbeing. We would argue that these are types of psychological effects.

Reviewer 2

page 4 para 3 does not mention feasibility only efficacy. and uses that term develop data - see point above

Author Response

Revised.

Reviewer 2

page 5 - can the primary outcome measure be named. One page 8 I think it suggests resilience will the main focus?
Author Response

Revised. See pages 10-11.

Reviewer 2

We don't know how the power calculation was established - based upon what?

Author Response

Power calculation was made to determine the n required for intervention and control groups based on $1 - \beta = 0.8; \alpha = 0.05; \text{ and } d=0.3$.

Reviewer 2

page 9 top of the page says you will look at the mechanism underpinning this relationship. How will you do this based upon quant data only?

Author Response

Revised. We have deleted the statement regarding “explanations of the mechanisms underpinning this relationship”.

Reviewer 2

My final reflection would be the involvement of young people in this study - is there any? Would be great to see teachers, parents and kids as part of the team in some way following co-production in research methods - there is a great resource in Australia by Cath Roper / Flick Grey / Emma Cadogan.

Author Response

In the current study this element has not been incorporated. However, this is planned for future work regarding developing the intervention as a sustainable school based program.

Reviewer 3

I think this is an excellent study of an understudied and promising approach to supporting young people to develop character. There is too little rigorous research in the area of martial arts.

Author Response
Thank you.

Reviewer 3

Just a few thoughts on the design ---is there anyway to make the control group equivalent, in terms of physical activity, to the intervention group, so that you can examine the benefits that are associated with martial arts over and above that associated with physical activity?

Author Response

At this stage this is not a logistically feasible revision, however this is an interesting point to consider for future directions regarding developing the study.

Reviewer 3

This does not require revision here, but I was a little uncertain how the salutogenic health model mapped to the intervention. Perhaps one paragraph is not enough to explain the mapping.

Author Response

Since submitting the protocol (October 2018) we have significantly revised the theoretical framework of the study and are no longer incorporating the salutogenic health model. This has been revised as a dichotomous health model. See page 8.

Reviewer 3

Why are continuous variables being converted to categorical variables? what justifies the loss of information?

Author Response

Good point. We have changed this and continuous variables will be used for analysis.

Reviewer 3

Is there any plan to do meditational analyses (e.g., argue that the intervention influences certain processes, say self-efficacy, and these processes, in turn, influence key outcomes. Resilience sounds like a mediator, but it does tend to be highly correlated with outcomes (e.g., sometimes resilience and mental health are used synonymously), so resilience may not be the best candidate for mediation.

Author Response
We had not planned meditational analysis, however this is an interesting idea that we will give further consideration. Thank you for the suggestion.