

Peer Review Report

Review Report on Functional status, mood state, and physical activity among women with post-acute COVID-19 syndrome

Original Article, Int J Public Health

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Submitted on: 16 Apr 2022

Article DOI: 10.3389/ijph.2022.1604589

EVALUATION

Q 1 Please summarize the main findings of the study.

This is a matched case-control study that examines adverse consequences in functional status, mood state, and leisure-time PA among women with post-acute COVID-19 syndrome. Key findings showed that SARS-CoV-2 participants exhibited poorer functional status ($p=0.008$) and reduced leisure-time PA ($p=0.004$) than controls. At the same time, SARS-CoV-2 participants reported greater TMD (e.g. increased tension, increased confusion, and decreased vigor).

Q 2 Please highlight the limitations and strengths.

Strengths

- This is a well written and very interesting study. The fact that no prior work has examined effects on functional status, mood state, and leisure-time physical activity (PA) in post-acute COVID-19 syndrome, presents an exceptional opportunity to better understand the impact of post-acute COVID-19 syndrome in women.
- The study outcomes are correctly defined and measured through reliable scales (i.e. POMS, PFSDQ-M, LSI). The results are presented in a well-organized way.

Limitations

- Methodological issues regarding sample definition and statistical approach compromises the reliability and validity of the study. For instance, the absence of an antibody testing for control participants and the lack of a complex statistical analysis between group differences, must be addressed by the authors.
- Although the authors collected participant's sociodemographic information, they did not examine any of these factors in the current study.

Q 3 Please provide your detailed review report to the authors. The editors prefer to receive your review structured in major and minor comments. Please consider in your review the methods (statistical methods valid and correctly applied (e.g. sample size, choice of test), is the study replicable based on the method description?), results, data interpretation and references. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

METHODS

The authors state that eligible participants were recruited from the community within a 115-mile radius of Bloomington, Indiana. Not sure about the 115-miles radius rationale, how did the authors define that measure? It seems that a 115-miles radius covered rural and urban areas. If so, were all these areas equally impacted by COVID-19 pandemic (e.g. incidence rates, government lockdowns, etc.). How the authors control these variables in terms of exposure?

The authors say that they used an initial phone screen approach to select prospective participants, yet do not specify how and where they obtain this data. Were individuals located by phone using residential listings for

instance? Did the authors randomly select phone numbers? In addition, was a standardized questionnaire or interview implemented during this initial phone screen? Please, clarify.

The authors state that case-control individuals were matched by age, BMI, smoking status, and cardiopulmonary disease. However, in the methodology section both smoking status and the existence of cardiopulmonary disease were considered as an exclusion criterion for the study. This seems to be a contradiction since you cannot match excluded variables.

The authors state that descriptive information was gathered from a questionnaire. However, there is no mention a standardized questionnaire was used. How did the authors define the selected descriptive variables?

It seems that the authors overlooked the status of mental health disorders and substance abuse (recent or lifetime) among participants. It's hard to understand why authors did not address these variables considering study outcomes (e.g POMS, LSI). There is recent evidence that identifies mental disorders as a health risk factor for COVID-19 infection and its adverse outcomes. This may be relevant to your discussion
DOI:10.1002/wps.20806

Statistical

Bivariate correlations were used to examine relationships of interest. Though, they did not examine the combination of sociodemographic variables (i.e yearly income, employment, education) to better understand the differences between cases and controls from a more complex statistical approach.

DISCUSSION

The author's decision of dichotomizing the SARS-CoV-2 participants by symptomatic versus asymptomatic was useful since showed interesting results. However, further exploration of the results in the discussion section should be developed.

PLEASE COMMENT

Q 4 Is the title appropriate, concise, attractive?

Yes, the title is appropriate and highly attractive

Q 5 Are the keywords appropriate?

Anxiety as a keyword should be removed. Mental Health and mood state profile suits better

Q 6 Is the English language of sufficient quality?

This is a well written study

Q 7 Is the quality of the figures and tables satisfactory?

Yes.

Q 8 Does the reference list cover the relevant literature adequately and in an unbiased manner?)

Reference did cover relevant and pertinent literature.

QUALITY ASSESSMENT

Q 9 Originality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Q 10 Rigor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 11 Significance to the field	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Q 12 Interest to a general audience	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Q 13 Quality of the writing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Q 14 Overall scientific quality of the study	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REVISION LEVEL

Q 15 Please make a recommendation based on your comments:

Major revisions.