

## Peer Review Report

# Review Report on Different Patterns of Social Media Use and Their Association with Body Image Among

Original Article, Int J Public Health

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### EVALUATION

#### **Q 1** Please summarize the main findings of the study.

The study found support for some of its expectations, such as that intense and problematic social media users perceived themselves as too fat or too thin. It also uncovered several gender differences in these associations, like the significant effects of intense use for girls and not boys.

#### **Q 2** Please highlight the limitations and strengths.

The study's strengths include the currently relevant topic of social media effects on youth's body image and a robust sample from many countries. At this point, I think the most significant limitation is the lack of theoretical explanation and justification for the studied relationships. However, I believe this may be an issue of writing and not the execution of the study per se. I was also concerned by the missing reliability and validity evidence for the measures used, and I am keen to see the authors' response on this matter.

#### **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.

Review of Social Media Use and Body Image Among Adolescents in 42 European Countries

The presented research paper tackles a currently important topic of social media effects on youth's body image, using a robust sample from 37 countries worldwide. I think the study has the potential to enrich the literature on social media effects on body image, especially as it targets multiple social media patterns.

Yet, I believe the paper needs substantial revising before a potential publication. I summarize my comments and suggestions below. I realize the changes I recommend are extensive and require much attention and work. However, I believe they could help the authors to clarify the communication of their research results, which are interesting and might contribute to the field.

#### Overall commentary

In my view, the whole paper would benefit from additional proofreading. The writing could be smoother in many places, improving the flow and clarity.

I suggest being consistent in naming your main variables throughout the paper (e.g., "self-image" in the contribution to the field, "body image" or "body self-image" elsewhere).

I recommend revising the title to be more informative of what the study examines, such as specifying the focus on social media use patterns and their association (or impact (?) on body image.

#### Contribution to the field

This contribution is unclear to me; please revise and clarify: "Thirdly, the study extensively references body image among adolescents using the variable of self-image and body weight congruence."

#### Introduction

##### Major comments

I think that the introductory paragraphs, as well as other introduction chapters, could be generally improved for a better flow. In the introductory paragraphs, several sentences do not seem to be strongly related to the study's rationale and the research aims. See, for example: A previous study found that intense social media users showed the highest levels of social well-being, while problematic social media users had the lowest (Boniel-Nissim et al., 2022); Furthermore, it was reported that self-perceived body weight mediated the observed associations between overweight or obesity and mental well-being. I would recommend omitting them and others like that.

I also suggest talking more directly to the point of the study. For instance, at the beginning, the authors talk about using SM "for connection and friendship maintenance" and "to communicate with peers" and the effects of the SMU patterns on social well-being. However, they could instead mention appearance-related social media use in connection to the SM use patterns. I mean, interaction with appearance content can be passive, like exposure, but also active, like posting, editing, commenting, etc. This could be mentioned instead, as it is more relevant to the study focus.

At some points, the introduction fails to follow the structure from a broader, more general perspective to more specific information presented. For example, in the beginning, it elaborates on SM use and then proceeds to describe the effects of general internet use. In a similar sense, the last introductory paragraph starting, "Body image is a complex psychological construct..." does not fit in my opinion because it is too general. I suggest reorganizing the presented information and going from the broader theoretical assumptions to a more concrete rationale and research goals. Also, this paragraph mentions body dissatisfaction and body image disturbance but does not proceed to define and elaborate on the main variable of interest, the BWC.

To sum up, the first four introduction paragraphs should be written more directly to the study's main focus. The paragraphs should go from general (not too general, though) to specific, and they should not elaborate on the variables that are not a focus to such an extent. Instead, the studied variables should be clearly defined, and the expected relationships should be briefly but sufficiently explained.

I also recommend revising the introduction and the whole paper for clarity, as some sentences seem a little misleading and do not offer a convincing rationale. For example: The following study aimed to highlight the association between different categories of SMU, body self-image, and BWC among adolescents. This sentence sounds like the body self-image and BWC are separate variables included in the study, which is not true.

It is not addressed that the SMU intensity is measured in regards to social contacts, not how often adolescents use social media in general. I find it crucial to acknowledge this. The introduction should provide clear reasoning for why intense communication with friends and others on social media should impact body weight congruence. The same applies to problematic SMU.

Generally, the introduction is, in my opinion, too short and does not include several important parts. Although it speaks (too broadly, though) on the social media effects on body image, which is relevant, the specific rationales for the impact of the SMU patterns on body weight congruence are lacking. SMU patterns are, from my perspective, not sufficiently defined and explained; the same goes for body weight congruence and their relationship. After reading the introduction, it should be evident and clear which variables and associations the study focuses on and why.

I like that you mention the Tripartite influence model to frame the study's research goals. However, newer models have been published specifically for using the new or social media. These should be referenced as well or instead of the Tripartite influence model (Thompson et al., 1999). See for example Rodgers (2016): The Relationship Between Body Image Concerns, Eating Disorders and Internet Use, Part II: An Integrated Theoretical Model

The current study section does not state specific hypotheses for the relationship between the SMU patterns and body weight congruence. However, the authors seemed to have specific expectations drawn from the theory.

In your view, why is it essential to distinguish between intensive and problematic SM use regarding the effects on body image? Why study both, since the effects of social media on body image are expected to happen through the increasing exposure and subsequent internalization of appearance ideals? How should addiction symptoms (problematic SMU) relate to body image, if not through increased exposure that is already captured by the active pattern? I suggest clarifying and elaborating on this in the current study section and in the previous chapters of the introduction, as it seems to be a critical contribution.

#### Minor comments

I don't understand the logic of this sentence; please clarify: Therefore, body weight congruence (BWC), which refers to the discrepancy between actual and perceived body size, can be evaluated as a measure of self-perceived body weight.

In the further introduction chapters, I am unsure if defining body image disturbance is relevant. I would argue not since it is not a focus of this study.

I suggest using "girls" or "women" instead of "females", which has been lately considered dehumanizing. The same goes for "males".

It is unclear if the study compares the relationship between SMU patterns and BWC across the 42 countries or works with one sample composed of these countries. Also, the cross-national comparison is emphasized as the study's strength, yet the differences between the individual countries seem not to be a focus of this study.

It is not very much evident from the introduction that the study focuses on two outcome variables, BWC and subjective body weight.

## Methods

### Major comments

Could you provide more details on the "cross-country comparability" and "congruence of the adopted subjective body weight measure" criteria? What exactly was the benchmark for the country being included or excluded?

Why did the study select the ages of 11, 13 and 15? Why not the whole spectrum from 11 to 15? This should be explained.

I would say that 40% missing values is quite a benevolent criterion. How much data was missing in the individual countries? If the missingness was substantial, did you perform analysis and sensitivity checks to ensure the results were not biased? How did you deal with the missing data (pairwise x listwise deletion, fiml)?

Problematic SMU measure: Include the content of all nine items. Also, on what basis did the six or more symptoms indicate problematic use?

Could the authors provide information on the measures' reliability and validity?

I wonder if the binary categorization of SMU patterns does not omit important information, for instance, about the users that use only a little and do not fit the utilized categories. Maybe using the ordinal variables might be a better approach? I would like to hear authors' opinions on this.

I appreciate the efforts to adjust the statistical significance level for multiple comparisons. However, with such an enormous sample size, even the slight effects are statistically significant, as can be observed in the results. I recommend the authors consider additional alpha level adjustment, reflecting the very large sample size they use.

### Minor comments

If 38 countries were in the final analysis, I think that the paper should not state throughout that it analyses data from 42 countries.

## Results

The results are a little bit difficult to follow. As a thought, it might help to organize them differently, maybe dedicating to the full sample and then, in a separate paragraph, to the gender differences (?). Anyway, I suggest the authors consider ways to make the results more straightforward and easy to follow.

I urge the authors to interpret the effect's size, not rely solely on p values.

## Discussion

### Major comments

Similar to the introduction, the discussion builds on the SMU effects on social well-being, which is less relevant to body image.

Overall, the discussion should, in a way, mirror the introduction after it is revised. That is, it should connect the results with the theory and evidence from relevant studies on appearance-related social media use and body image.

Similar to the results section, the discussion was also a bit difficult to follow, as there are many groups compared and many findings.

Why should more intense social media use lead to adolescents perceiving themselves as thinner than they are? The association is more evident for believing they have larger bodies, but it needs to be explained for believing they are thinner. This arose from the discussion, but the clarification is also lacking in the introduction.

### Minor comments

This is not clear to me: (...) and two different but complete perceptions of body image.

#### PLEASE COMMENT

##### **Q 4** Is the title appropriate, concise, attractive?

I recommend revising the title to be more informative of what the study examines, such as specifying the focus on social media use patterns and their association (or impact (?)) on body image.

##### **Q 5** Are the keywords appropriate?

Yes

##### **Q 6** Is the English language of sufficient quality?

Yes, although I believe the additional proofreading could benefit the paper, as some parts were less clear to me and harder to comprehend

##### **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?)

Yes

#### QUALITY ASSESSMENT

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

#### REVISION LEVEL

**Q 15** Please make a recommendation based on your comments:

Major revisions.