



Free and transparent pre- and post-study  
recommendations across research fields

# Applying Harmful Dysfunction Analysis to social media usage in adolescents

A recommendation by **Andrew Jones** based on peer reviews by **Gemma Lucy Smart** , **Veli-Matti Karhulahti**  and **Josip Razum** of the STAGE 2 REPORT:

Simone Amendola, Michael P. Hengartner, Jerome C. Wakefield (2025) The Harmful Dysfunction Analysis applied to the concept of behavioral addiction: A secondary analysis of data from the Health Behaviour in School-aged Children 2018. OSF, ver. 2, peer-reviewed and recommended by Peer Community in Registered Reports.

[https://osf.io/preprints/osf/atwgy\\_v2](https://osf.io/preprints/osf/atwgy_v2)

Submitted: 14 January 2025, Recommended: 19 May 2025

## Cite this recommendation as:

Jones, A. (2025) Applying Harmful Dysfunction Analysis to social media usage in adolescents. *Peer Community in Registered Reports*, 100974. <https://doi.org/10.24072/pci.rr.100974>

Published: 19 May 2025

Copyright: This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>

Amendola and colleagues (2025) examined the usefulness of Harmful Dysfunction Analysis (HDA) in identifying individuals with pathological social media disorder. Harmful Dysfunction Analysis, proposed by Wakefield et al (1992), is a framework for constructing diagnostic criteria, and suggests a disorder is a harmful dysfunction, and defines a dysfunction as a failure of an internal mechanism to perform its naturally designed function. One important distinction of HDA is that harmful consequences of behaviour in the absence of dysfunction does not mean a disorder is present. Both dysfunction and harm are required for diagnosis of a disorder. Their analysis is based on data from the Health Behaviour in School-aged Children study (specifically the Swiss sample, N = 7,510), which is a world health organisation collaborative cross-sectional study of adolescent well-being from 2018 ([https://www.who.int/europe/initiatives/health-behaviour-in-school-aged-children-\(hbcs\)-study](https://www.who.int/europe/initiatives/health-behaviour-in-school-aged-children-(hbcs)-study)). They examined the 9-item Social Media Disorder Scale under DSM-5 and HDA categories (dysfunction and harm), and examine convergence between the scoring methods. Their findings suggested higher prevalence of problematic social media usage and gaming disorder prevalence (33.2 and 9%, respectively) using substance use disorder (DSM-5) compared to prevalence rates of 22.2% and 4.2% when using Harmful Dysfunction analyses. Sensitivity analyses demonstrated similarly findings in a sample of individuals from Hungary. They suggest that their findings might help to eliminate false positive diagnoses for individuals who engage in high intensity social media / gaming usage, that might be mistaken for a mental disorder. However, as discussed by the authors caution is warranted findings are limited to adolescents (aged 11-15) and based on self-reported variables. The Stage 2 manuscript was evaluated by two expert reviewers across one round of in-depth review. Based on detailed responses to the reviewers' comments, the

recommender judged that the manuscript met the Stage 2 criteria and awarded a positive recommendation. **URL to the preregistered Stage 1 protocol:** <https://osf.io/y3ub8> **Level of bias control achieved:** [Level 3](#). *At least some data/evidence that was used to the answer the research question had been previously accessed by the authors (e.g. downloaded or otherwise received), but the authors certify that they had not observed any part of the data/evidence prior Stage 1 to in-principle acceptance.* **List of eligible PCI RR-friendly journals:**

- [Addiction Research & Theory](#)
- [Collabra: Psychology](#)
- [Peer Community Journal](#)
- [PeerJ](#)
- [Royal Society Open Science](#)
- [Swiss Psychology Open](#)

#### **References:**

1. Amendola, S., Hengartner, M. P., & Wakefield, J. C. (2025). The Harmful Dysfunction Analysis applied to the concept of behavioral addiction: A secondary analysis of data from the Health Behaviour in School-aged Children 2018 [Stage 2]. Acceptance of Version 2 by Peer Community in Registered Reports. [https://doi.org/10.31219/osf.io/atwgy\\_v2](https://doi.org/10.31219/osf.io/atwgy_v2)
2. Wakefield, J. C. (1992). Disorder as Harmful Dysfunction: A Conceptual Critique of DSM-III-R's Definition of Mental Disorder. *Psychological Review*, 99, 232–247. <https://psycnet.apa.org/doi/10.1037/0033-295X.99.2.232>

## **Reviews**

### **Evaluation round #1**

DOI or URL of the preprint: <https://doi.org/10.31219/osf.io/atwgy>  
Version of the preprint: 1

#### **Authors' reply, 06 May 2025**

[Download author's reply](#)  
[Download tracked changes file](#)

#### **Decision by [Andrew Jones](#), posted 13 March 2025, validated 14 March 2025**

##### **Revision invited**

Hi,

The reviewers have examined your stage 2 submission and I think we're pretty close to a recommendation. There are a couple of minor points raised that I'm hopeful you can address.

The point about effect sizes (and interpretations being somewhat arbitrary based on thresholds), it might be helpful to consider this paper:

<https://journals.sagepub.com/doi/10.1177/2515245919847202>

Or maybe even consider reporting common language effect sizes.

<https://pubmed.ncbi.nlm.nih.gov/34881941/>

Hope this helps!

### Reviewed by **Josip Razum**, 10 March 2025

Thank you for the opportunity to review stage 2 of this interesting manuscript.

The authors did adhere to the procedures described in Stage 1. Their introduction, rationale and stated hypotheses are the same as in Stage 1.

The data seem to be able to address the study aims.

There is an additional analysis not mentioned in the Stage 1 protocol, i.e., comparing overlapping HDA- and SUD-based PSMU cases with non-overlapping SUD-based cases, but this analysis is justified.

The conclusion that HDA, and especially the HDA2 scoring method, may represent a valid conceptual alternative to the GD-based scoring is supported by the data.

In the discussion section, the relation of these findings to the ICD-11 criteria for gaming disorder could also be mentioned. I know this was already mentioned in the introduction, but it could be elaborated in the discussion as well. Which unique element(s) or advantages over ICD-11 does HDA bring to the table?

Finally, I agree with what the authors said in the Limitations section: the current analysis used existing data and not specifically tailored items for social-media-induced dysfunction and harm. Besides stating this in the Limitations section, I believe it should be mentioned at the beginning of the Future directions section as well and the section could be organized with this in mind. This section essentially discusses ways to better tailor HDA to PSMU (and to behavioral addiction in general) but this is not stated at the beginning, which is why it reads somewhat confusing. Especially since this is then stated for the first time in the Limitations section that follows. Also, the Future directions section could address PSMU more specifically.

### Reviewed by **Gemma Lucy Smart** , 08 February 2025

[Download the review](#)

### Reviewed by **Veli-Matti Karhulahti** , 01 February 2025

During Stage 1, I was a reviewer for one round and it turned out that one of the authors was serving as a reviewer for a paper where I am an author. Therefore, I dropped from the process, as cross-reviewing can easily generate COIs. As I received a review invitation for this Stage 2 version, I decided to accept the invitation with the following caveats

- I'm curious about the results so I'll read them anyway, thus I can share some notes while doing that
- These notes should not be considered as a "review" but extra feedback, and proper reviewers should be invited to carefully review the full Stage 2

Here are my notes:

- Based on one initial read, the reporting seemed solid. In particular, reporting language was appropriate as it did not push confirmation or oversell the results; it all seemed very honest and clear.

- In one small part, I'd consider toning down a bit: "These findings suggest that the HDA approach, as it is designed to do, eliminates false positive diagnoses..." -> I would say "might eliminate" to be safe, as there's indeed no clinical evidence (which is correctly mentioned later).

- For the most central results regarding overlap, I would help the reader by visualising them at least via one Venn diagram

- This is the most important point I have: when the paper reports small, medium, and large effects, I would really try to transform those effects into some raw, real-world effects. There are many ways to do this, but any will be better than rules of thumb thresholds. The discussion could be a place to address this in more detail, eg. by comparing obtained effect sizes to those found in similar designs/tests in other mental health research fields. The PCI RR author guidelines have some tentative guidance/links on this topic.

- At the very end, the paper concludes by addressing design features. Although I fully agree these are very central to the field, the section appears entirely separate from the HDA topic. If you wish to keep that part, I'd suggest trying to build more explicit bridges (or even hypotheses) between design features and HDA.

Veli-Matti Karhulahti