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Dynamic Interactions between Social Media, Social Norms and Adolescent Health

Statistical Analysis Plan

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With regard to health behaviour, adolescents constitute an exceptionally vulnerable demographic. The years of life between the ages 10 to 19 are an important phase for the development of (un)healthy habits such as the regular consumption of alcohol or regular physical activity.
Previous research showed that, in addition to sociodemographic factors, both social media use and perceptions of social reality seem to affect such behaviours. Furthermore, adolescents are very much aware of the effects of their media consumption and tend to carry assumptions on the strength of such media effects. Hence, our research aims to investigate the extent to which perceived social norms are influenced by the exposure to media content related to health behaviours and whether this effect is mediated by the perception of a media influence (RQ1). Further, considering that behaviour change usually happens gradually it is plausible to assume that the media exposure experienced by our peers not only affects their present behaviours and attitudes but also, conceivably, exerts even greater influence on their future behaviours and attitudes. Thus, we want to investigate the extent to which anticipated future social norms are influenced by the exposure to media content related to health behaviours (RQ2).

1 Objectives and Hypotheses

In this study, we will test several hypothesis to investigate the direct and indirect influence of health content on social media on social norms, and on attitudes and behaviours. For this, two research questions have been defined:

RQ 1. To what extent is the effect of exposure to media content related to health behaviours on perceived social norms mediated by the perception of a media influence on others?
RQ 2. To what extent is the effect of exposure to media content related to health behaviours on anticipated future social norms mediated by the perception of a media influence on others?
RQ 3. Does the IPMI-Model including anticipated social norms offer additional explanatory power compared to the current operationalizations?

To answer these research questions, the following hypotheses were formulated:

H1.1 Exposure to media content related to health behaviours is associated with an increase in perceived social norms about these behaviours.
H1.2 Exposure to media content related to health behaviours is indirectly associated with perceived social norms, mediated by peers' perceived exposure to such content and the perceived influence of such content on peers

H2.1 Exposure to media content related to health behaviours is directly associated with anticipated future norms about those behaviours

H2.2 Exposure to media content related to health behaviours is indirectly associated with anticipated future norms, mediated by peers' perceived exposure to such content and the perceived influence of such content on peers.

H3 The IPMI-Model including anticipated social norms in place of current perceived social norms shows a better fit than the original model.

2 Primary and secondary Outcomes

All constructs are defined in the separate questionnaire documentation. A detailed discussion of the chosen constructs will be added here at a later stage.

3 Sampling and sample size calculation

A random sample of schools from the national statistics of educational institutions (Bundesamt für Statistik [BFS], 2022) was drawn and the selected schools have been asked for their participation. Because the large variations in the number of classes per school and the number of students per class, multiple consecutive samples were drawn to reach the aim of 1’200 – 1’600 participants.

Power analysis will follow after the data collection of wave 1.

4 Effect size

Because of the complexity of the model and incompatible operationalization of central constructs in past research no confident estimate of an expected effect size could be determined. Effects of social media use on health behaviours are expected to be small, effects of social norms on health behaviours are expected to be medium.

5 Confidence intervals

Confidence levels of 95% will be reported throughout the study.

6 Multiplicity

No strategy for error adjustment has been designed yet.

7 Analysis method

The data will be analysed with latent growth curve modelling and advanced structural equation modelling. This allows for the distinction of within- and between-person effects.