



# The role of social media in the food system: influence on adolescent mental health and obesity



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## Introduction

- In the European Union, 54% of 9-16-year-olds use social media (SM) daily, e.g. Snapchat, Facebook, Instagram, WhatsApp.<sup>1</sup> In the USA, 35% of 13-17-year-olds report using SM 'almost constantly'.<sup>2</sup>
- Ultra-process foods are highly promoted on SM, and the line between content and marketing is blurred when shared by influencers and peers.<sup>3,4</sup>
- Adolescents can also experience on SM: bullying, sexual harassment, hate messages, and inappropriate content such as self-harm strategies.<sup>3</sup>
- We conducted qualitative systems mapping exercises with 16-18-year-olds in six countries to capture their views about the drivers of adolescent obesity. SM was consistently reported as negatively impacting mental health, which in turn, encouraged excessive and compulsive dietary intakes, and reduced motivation to eat healthily.<sup>5,6</sup>

## Study aim & objectives

To examine the associations between SM use and both adolescent mental health and diet, including:

- associations specific to SM influencers and celebrities;
- by health equity characteristics using the PROGRESS-Plus framework,<sup>7</sup> which stands for: Place, Race, Occupation, Gender, Religion & culture, Education, Socioeconomic status at the individual level, and Social capital, and the 'Plus' included age, disability, and sexual orientation.

## Results

- 21 studies on 12 countries were included, representing a total of 379,380 participants. All provided eligible data at only one point in time except for one cohort study.
- SM use was assessed in different ways, e.g., by time (n=13), type of experience (n=7), type of platform (n=6), and excessive/disordered use (n=5).
- Most studies assessed body dissatisfaction (n=11) and disordered eating (DE) symptoms (n=13), while few looked at dietary intake (n=4).
- The findings suggest significant positive correlations between SM use and both depressive and DE symptoms, as well as between body dissatisfaction and DE (**bold black lines in Figure 1**).
- There is also evidence of associations with a high risk of bias between SM use and: body dissatisfaction, anxiety, compulsive over-eating, and weight loss/control behaviours (**bold red lines in Figure 1**).
- Four studies identified body image, self-esteem, or anxiety as a moderator acting between SM exposure and dietary outcomes (including binge eating, DE in general, respecting hunger and satiety cues, and emotional eating) (**bold and underlined in Figure 1**).
- Only 1 study focussed on SM influencers & celebrities.
- Sex/gender was the only equity characteristic assessed (n=8), with mixed results.

## Conclusions

- SM potentially plays a role in the food system and obesity by negatively affecting adolescent body image, self-esteem, anxiety, depressive symptoms and DE, directly and indirectly.
- Policy interventions are needed to mitigate the impacts of SM on adolescents, especially on body image and DE.
- More follow-up studies are needed on causal pathways, SM influencers, equity, dietary intake, and for standardising tools for measuring SM exposure, body image and DE.

## Methods

- Systematic review of quantitative studies on SM and both adolescent (aged 10-19 years) mental health and diet, published from 2019-2023.
- The literature was searched in 11 databases.
- Mental health outcomes included: body image, self-esteem, stress, interpersonal relationships/loneliness, anxiety, and depressive symptoms.
- Dietary outcomes included: any.
- Titles & abstracts were screened using the priority screening feature in EPPI-Reviewer.<sup>8</sup> We stopped screening when none was included out of 75.
- Risk of bias was assessed using the ROBINS-E tool.<sup>9</sup>
- Data was extracted narratively by association between SM-mental health, SM-diet, by health equity characteristic, and relating to SM influencers and celebrities.
- Protocol registration: PROSPERO (CRD42023399929).

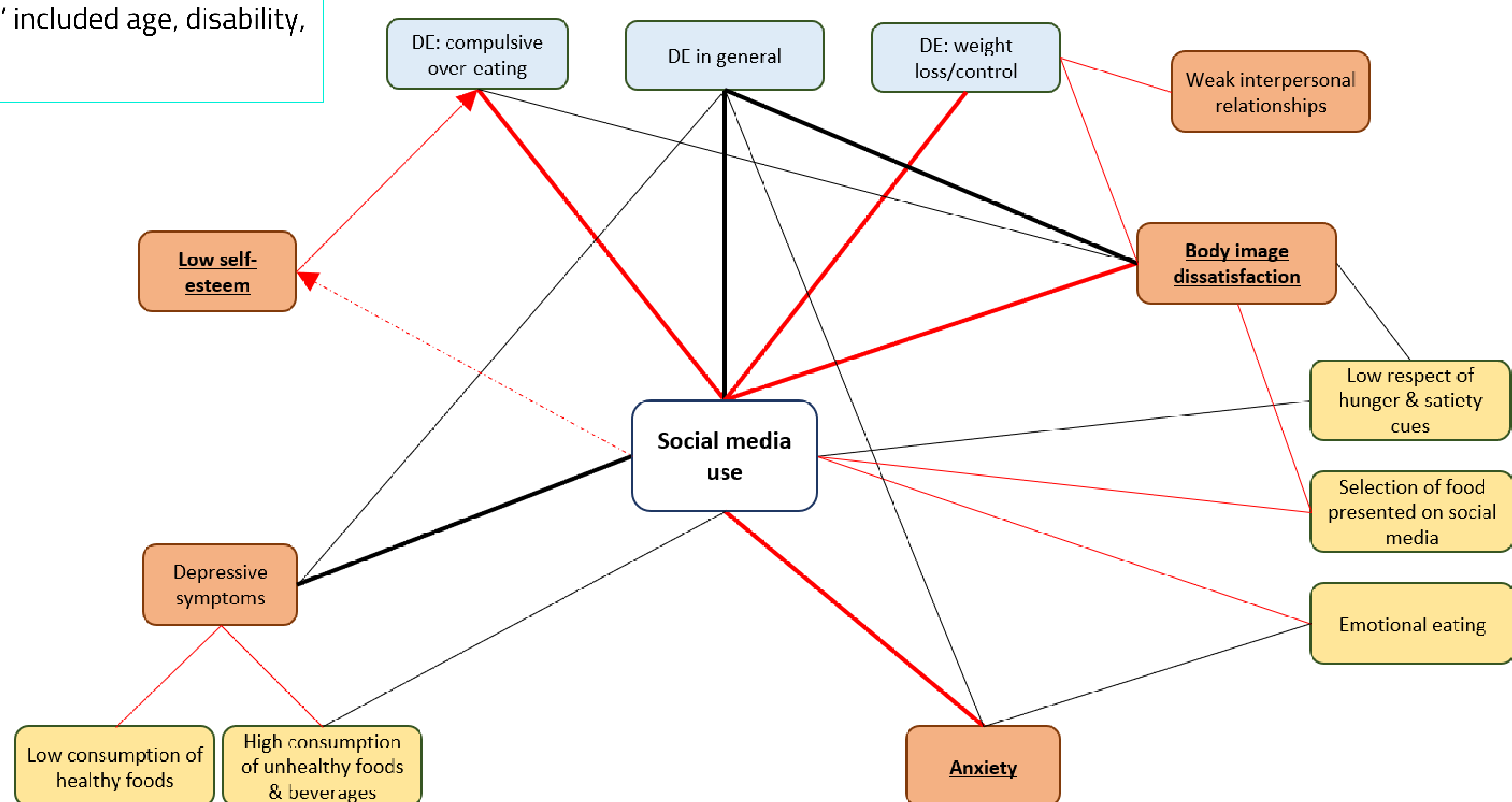


Figure 1: Associations between social media use and mental health (orange), DE (blue) and other dietary outcomes (yellow)

This figure only presents the associations that are overall statistically positive across studies unless they are part of a potential pathway of effect. None involved stress or breakfast consumption. **Lines:** Plain: evidence overall statistically significantly positive; Dotted: evidence overall not statistically significant or mixed; Bold: stronger evidence ( $\geq 3$  studies and  $\geq 1,000$  participants); Red: large influence of studies with a high or very high risk of bias; Arrow: direction of effect suggested in a cohort study.

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