



# Exploring the Negative Consequences of Online Body Shaming: A Study of Czech Adolescents

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## Abstract

With the growing use of social networks, online body shaming is becoming a widespread and often socially acceptable phenomenon. However, unlike cyberbullying, the consequences of online body shaming are largely unknown. Therefore, we aimed to investigate the prevalence of behavioral, relational and cognitive-emotional responses to the experience of online body shaming. The study included a population-based cohort of 9441 adolescents aged 11–17 years. Data were collected using a questionnaire developed by the research team utilizing multiple-choice questions. The experience of online shaming was categorized based on whether it focused on the victims' online presentation, appearance, or physical constitution. The results showed that 25.84% of teenagers had experienced online body shaming. We observed up to 50% prevalence of relational responses in both online and offline space and 25–45% prevalence of cognitive-emotional responses, primarily associated with depression- and anxiety-like feelings. This was accompanied by up to 15% prevalence of psychosomatic problems and substance use. These responses were significantly more prevalent in girls. Body shaming targeting teenagers' physical constitution resulted in up to 21 times higher odds of negative responses compared to body shaming with a different focus. These findings suggest that online body shaming can have similarly detrimental effects on mental health, social functioning, and self-perception as cyberbullying.

**Keywords** Teenagers · Online body shaming · Prevalence · Behavioral response · Relational response · Cognitive-emotional response

## Highlights

- One quarter of teenagers have experienced online body shaming at least once.
- The most common responses to online body shaming included changes in relational behavior and lowered emotional well-being.
- Online body shaming that targeted victims' physical attributes and broader appearance was associated with significantly greater negative responses than shaming targeting only online expressions (content).
- Girls both experienced online body shaming more frequently and showed a significantly higher prevalence of negative responses to it.

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The rapid development of online tools and social networks has revolutionized the way people interact and communicate with each other. In the Czech cultural environment, in the Czech cultural environment, there is a long tradition of children and adolescents spending substantial time engaging in outdoor activities such as playing sports, meeting friends, pursuing hobbies, etc. This is reflected in the availability of a wide range of leisure activities, the many different clubs and sport/social/entertainment organizations etc. However, nowadays young people/

adolescents in the Czech Republic, as elsewhere in the Western world, are moving to a large extent to the online spaces (García-Jiménez et al., 2013; Marciano et al., 2022). This shift is driven by the influence of peer-group influencers, social trends, the possibility of easy self-presentation, networking, social validation through likes and comments. Recently, the COVID-19 pandemic further exacerbated this shift, as the closure of schools and most public life led to a significant increase in the online presence of children and adolescents (Salzano et al., 2021).

These technologies have brought many benefits, including easy access to information, increased social connectivity and enhanced creativity. However, these advancements have also introduced new risks, including cyberbullying, internet/online (body) shaming, and taunting, which has become a significant global issue in recent years (Mayer et al., 2021; Muir et al., 2021). Although online shaming is interchangeable with cyberbullying and tends to be considered a common form of cyberbullying, it differs in significant ways. First, online shaming is often socially more acceptable compared with cyberbullying and tends to be viewed less seriously from the perpetrator's perspective despite its negative impact on victims (Kowalski, 2000; Kruger et al., 2006). Second, compared with cyberbullying, which is often motivated by personal reasons and directly targets an individual with the intention to harm, online shaming may not always involve such targeted motivations. Instead, it may serve as a means of venting personal frustrations, seeking amusement, or reflecting broader societal trends of negativity (Cook et al., 2018; Hardaker, 2013; Walther, 2022). These factors increase the likelihood of individuals engaging in online shaming, making it a more pervasive issue than cyberbullying.

Body shaming refers to the unsolicited expression of negative opinions in relation to the target person's appearance, which usually takes the form of insults and can occur both on social media and in offline environments (Gam et al., 2020; Schlüter et al., 2023). Such shaming can target an individual's body composition, shape, general appearance (including clothing choices and use of filters on social media), and even perceived differences from others based on characteristics such as height, body proportions, race, and skin color.

Adolescents are particularly vulnerable to body shaming due to the biological and psychological changes they undergo, heightened self-consciousness, and the challenges of self-identity formation during this developmental stage (Lally et al., 2017). Unlike other forms of cyberbullying, body shaming directly attacks personal appearance, significantly affecting self-worth and mental health. It can disrupt identity formation, potentially leading to depression, anxiety, and disordered eating (Bottino et al., 2015; Brewer & Kerslake, 2015). Moreover, the impact of body shaming

may be caused not only by attacks directed specifically at a teenager's body, but also by attacks focused on seemingly relatively innocuous characteristics and expressions of teenagers. For example, the phenomenon of "Snapchat dysmorphia" illustrates how the use of filters and edited images on social media can distort self-perception and lead to body dissatisfaction (Eshiet, 2020). Adolescents who frequently edit their photos are more likely to experience body image concerns and may be more susceptible to body shaming (Gioia et al., 2020).

Moreover, two other key developmental processes take place during this sensitive period. As Erikson described, adolescence is a significant period of self-identity formation as a key personality attribute important for future adult life. Online body shaming represents a risk factor with the potential to disrupt this process of identity formation or the resulting identity of the teenager. Second, adolescence is characterized by a strong orientation towards peer acceptance. This results in teenagers' emphasis on popularity, inclusion in social groups, conformity and acceptance by others, which also affects their formation of own identity. All these aspects are reflected in the fragility of the adolescent personality and come across the potentially hostile environment of the online space (Birkeland et al., 2012; Brown & Larson, 2009; Erikson, 1980; Hazen et al., 2008; Noam, 1999). Combined with the pressure of pervasive portrayals of an often unrealistic ideal of beauty, there is a risk of succumbing to unhealthy expectations about one's own appearance (Cuzzolaro & Fassico, 2018; Gam et al., 2020; Li, 2021).

The potential consequences of online shaming for teenagers are multifaceted. Previous studies have shown that cyberbullying and online shaming can lead to various maladaptive responses, including increased engagement in risky behaviors (e.g. eating disorders), somatic symptoms, or substance use (Beckman et al., 2012; Bonanno & Hymel, 2013; Bucchianeri et al., 2014; Hinduja & Patchin, 2007; Puhl & Luedicke, 2012; Schultze-Krumbholz & Scheithauer, 2009; Sourander et al., 2010; Willard, 2007). Relationship problems such as loss of trust, withdrawal, and aggression have also been linked to online shaming (Schultze-Krumbholz & Scheithauer, 2009; Willard, 2007; Wong et al., 2014; Ybarra & Mitchell, 2004) and negative cognitions and emotions including depression, anxiety, social isolation, negative self-perception and suicidal thoughts (Bucchianeri et al., 2014; Hamm et al., 2015; Hinduja & Patchin, 2007; Kowalski & Limber, 2013; Mishna et al., 2010; Patchin & Hinduja, 2011; Puhl & Luedicke, 2012; Tokunaga, 2010; Willard, 2007; Ybarra & Mitchell, 2007). However, most studies have sought to examine the prevalence and consequences of cyberbullying as an aggressive, intentional act or behavior targeted on a

specific person with the aim of causing harm (Moreno, 2014).

Previous studies have also shown that girls and boys may experience and respond to online body shaming differently, largely due to societal pressures and sex-specific socialization processes (Brasil et al., 2024; Calogero & Thompson, 2010; Mahon & Hevey, 2021). For example, Objectification Theory (Fredrickson & Roberts, 1997) suggests that in Western societies, female bodies are often more scrutinized and evaluated than male bodies, contributing to a heightened sensitivity to body image and self-esteem issues among adolescent girls. This theory posits that women and girls are socialized to internalize an observer's perspective as a primary view of their physical selves, making them more susceptible to body image concerns and mental health risks, such as anxiety and depression, when exposed to body shaming.

The heightened focus on appearance during adolescence aligns with broader societal expectations, where physical attractiveness is often more emphasized for girls than boys (Lally & Valentine-French, 2019). As a result, girls may experience body shaming more intensely, as it directly targets an aspect of their identity that society has taught them to prioritize. Research supports that these internalized standards make adolescent girls more vulnerable to negative cognitive-emotional responses, such as low self-esteem, negative self-perception, and body dissatisfaction (Efrati & Spada, 2024).

Boys, in contrast, may be less vulnerable to the self-esteem impacts of body shaming due to a combination of different societal expectations and socialization. While boys also face societal pressures regarding appearance, they are typically encouraged to value traits like physical strength or athleticism over beauty (Connell, 2005). This disparity may lead boys to perceive and respond to body shaming differently. Studies suggest that boys might exhibit externalizing behaviors, such as aggression or retaliatory actions, in response to online shaming rather than internalizing it, as girls often do (Keenan & Shaw, 1997). These behavioral differences are also influenced by traditional masculine norms that promote assertiveness, which can result in boys adopting a confrontational approach when dealing with social stressors like body shaming (Connell, 2005).

So far, scarce research has been conducted on the prevalence and consequences of online (body, appearance and/or online content) shaming, as a less severe and often socially accepted way of humiliating others that does not have to be motivated by a direct desire to harm a specific person, and existing knowledge is largely anecdotal. Moreover, the extent to which teenagers' reactions vary based on the nature of shaming content that targets core aspects of their body identity, or their sex is not yet fully understood.

Given the increasing prevalence of online shaming and its potential impact on adolescents' psychological well-being, further research is necessary to understand the relationship between targeted online shaming and the prevalence of behavioral, relational, and cognitive-emotional responses. This study aims to address this gap by examining how various forms of online shaming influence teenagers' responses and whether these responses differ based on sex and the type of shaming experienced.

In addition to the main objective of exploring cross-sectionally this issue and uncovering existing patterns of relationships, we formulated several assumptions:

- Online body shaming targeting adolescents' body physique will be associated with a higher prevalence of pathological behavioral responses than shaming targeting adolescents' online expressions (content).
- Online body shaming targeting adolescents' body physique will result in more pronounced negative reactions in relationships with others than shaming targeting adolescents' online expressions (content).
- Online body shaming targeting adolescents' body physique will be related to poorer emotional well-being than shaming targeting adolescents' online expressions (content).
- Relational and cognitive-emotional responses to online body shaming will be more common than pathological behaviors.
- The prevalence of negative responses to online body shaming will be higher for girls compared to boys.

## Method

### Participants and Procedure

This study was part of the research Czech Children in the Cyberworld conducted by the Centre for Prevention of Virtual Risk Communication (CPVRC) at the Faculty of Education, Palacký University Olomouc in cooperation with O2 Czech Republic.

The recruitment process involved multiple steps. First, outreach was conducted with school principals and teachers through CPVRC's Researcher 1.0 database (45,000 contacts, covering approximately 25% of Czech teachers). The consent process involved obtaining approvals from school management, parental informed consent via cooperating teachers, and participant consent. Data were collected anonymously via an online survey using Google Forms and the Research 1.0 data collection tool. The survey was administered in schools during school hours between February 1 and May 1, 2022.

The sample included students from all 14 regions of the Czech Republic (covering representationally the whole Czech Republic) with the largest representation of Moravian-Silesian (18.7%), Olomouc (13.2%), South Moravian (11.2%) and Central Bohemian (9.4%) regions (Supplementary Table S1). Most participants were primary school students ( $N = 7406$ , 78.5%), with the remainder attending various types of secondary school. Final study sample comprised 9441 adolescents aged 11–17 years with mean age  $\pm$ SD  $14.37 \pm 1.61$ , including 5089 girls (54.2%, mean age  $\pm$ SD  $14.42 \pm 1.64$ ) and 4304 boys (45.8%, mean age  $\pm$ SD  $14.31 \pm 1.57$ ). Sex information was not available for 48 respondents. This population represented 1.7% of the total population of pupils/students in the Czech Republic (561,500 students).

## Measures

An ad hoc questionnaire was developed by the research team based on their expertise and a thorough literature review. The questionnaire underwent a process of content validation through expert judgment, involving four experts specializing in the field of psychology and risky behavior in the online environment. The reliability of the questionnaire (stratified Cronbach's Alpha) was found to be excellent with composite reliability  $\alpha = 0.9$ . It included demographic data (age, sex, school type), a multiple-choice item assessing online body shaming experience, and three items capturing responses to shaming (see Supplementary File W1 for full survey translation). Before completion, participants were instructed to report only experiences and responses related explicitly to online body shaming. For each item, participants then selected all the options that were true for them.

## Classification of Online Shaming Experiences

Online body shaming was measured using a multiple-choice item. Participants were asked to select all forms of online body shaming they had experienced. The individual options described different forms of body shaming, targeting different aspects of teenagers' body and self-identity. This included both direct attacks on the physical body and attacks on other appearance attributes (such as clothing, accessories, use of photo filters, etc.) that have previously been shown to be associated with and affecting body perception and self-body-identity. All responses were stratified and ranked by the target of online shaming depending on how much the shaming targeted the teenagers' core body identity. We refer to this level in the following text as the 'intensity of online shaming experience'. This stratification yielded 4 categories. The least intense was shaming targeting teenagers' online expressions – online content-focused shaming (involving mocking the content they

wrote on social media and filters used on photos). The second level was appearance-focused shaming (i.e., a deliberately chosen and easily modifiable outward image). This included mocking clothing, fashion accessories (such as earrings or piercings), tattoos, mobile phones, etc. This group also included teenagers with a combination of online content- and appearance-focused shaming. The third level included individuals with experiences of body-focused shaming (i.e., biologically conditioned appearance that is not primarily intentional and difficult to affect/change – body physique). Specifically, this included shaming focused on the face, body, and medical aids (braces, glasses, hearing aids, etc.). This group also comprised teenagers with a combination of online content- and body-focused shaming experiences. The group with the highest intensity of online shaming consisted of teenagers who reported experiencing all three types of shaming.

## Responses to Online Body Shaming

Responses to body shaming were (based on the literature review) classified into three domains that included additional subcategories. The first domain was behavioral responses, which included psychosomatic difficulties (items as 'I experienced physical problems (headaches, stomach-aches, vomiting sensations, chest pain, etc.)'), disordered eating ('I have almost stopped eating.'), escaping behavior ('I delete previous content on my social network profile (photos, videos, etc.)'), and increased substance use ('I have started drinking alcohol (beer, cider, mixed alcoholic drinks, etc.)'). The second domain was relational responses, which included loss of trust (items as 'I have started to trust other people LESS in the ONLINE world.'), withdrawal from relationships ('I have started to talk LESS to other people in the ONLINE world (not talking to them at all or less, not seeking out/refusing communication with others, etc.)'), and reciprocal hurting ('I started hurting others in the ONLINE environment too (writing nasty comments, heckling others' photos, returning insults, etc.)'). The third domain, cognitive-emotional responses, was based on the HUMAINE framework (Humaine, 2006) and included forceful emotions (items as 'I was angry.'), passive emotions ('I rejoiced less (laughed less)'), uncontrollable emotions ('I had fears and worries.'), negative thoughts ('I started doubting myself (doubting my abilities, thinking I am worthless, etc.)'), and self-harm ideations ('I thought about how I'd rather not even be there.'). The complete key for assigning each option to categories is indicated in Supplementary file W1.

The coding of the items was as follows. A negative response in each category (such as disordered eating, psychosomatic difficulties, forceful emotions, etc.) was first binary coded as 'present' for each individual participant if

he/she selected at least one of the options assigned to a given category (otherwise it was coded as 'absent'). The overall prevalence of a given category was then calculated as the sum of all 'present' responses.

## Statistical Analysis

The reliability of the multiple-options scale was verified via stratified Cronbach's Alpha (Cronbach et al., 1965; Meyer, 2010). Prevalences are presented as absolute values and percentages. Percentages were calculated within the subgroups of interest (e.g., boys, participants with appearance-focused shaming, etc.). The differences in prevalences were analyzed using Fisher's exact test and one-way and two-way Pearson's chi-squared test depending on the presence of cells with a value < 10. Two-way Chi-square post-hoc test with Pearson residuals and Benjamini-Hochberg correction was used to identify significantly different groups in the 2×K setting. One-way Chi-square post-hoc test with Benjamini-Hochberg correction was used to identify significant sex differences in the prevalence of negative responses in each group by the intensity of online shaming. A series of logistic regressions was used to assess the differences in the odds of the presence of negative reactions depending on sex and type of online shaming experience. The assumptions of all tests were verified before the analysis.

All statistical analyses were performed as two-tailed and all values  $P < 0.05$  were considered statistically significant. Data analyses and visualizations were performed in RStudio (v.2022.07.2 + 576 with R environment v.4.2.1).

## Results

### Prevalence of Online Shaming Experience and Overall Negative Responses

The results showed that 25.86% (2441) of respondents reported experiencing online body shaming (Fig. 1A). This experience took several different forms in terms of the target of shaming, with the data showing the presence of all possible combinations of the individual types (Fig. 1B). When classifying these experiences based on their intensity, the second highest category appeared to be the most frequently represented, involving body shaming (physical appearance), followed by a combination of appearance and body shaming and respondents' online content shaming (Fig. 1C).

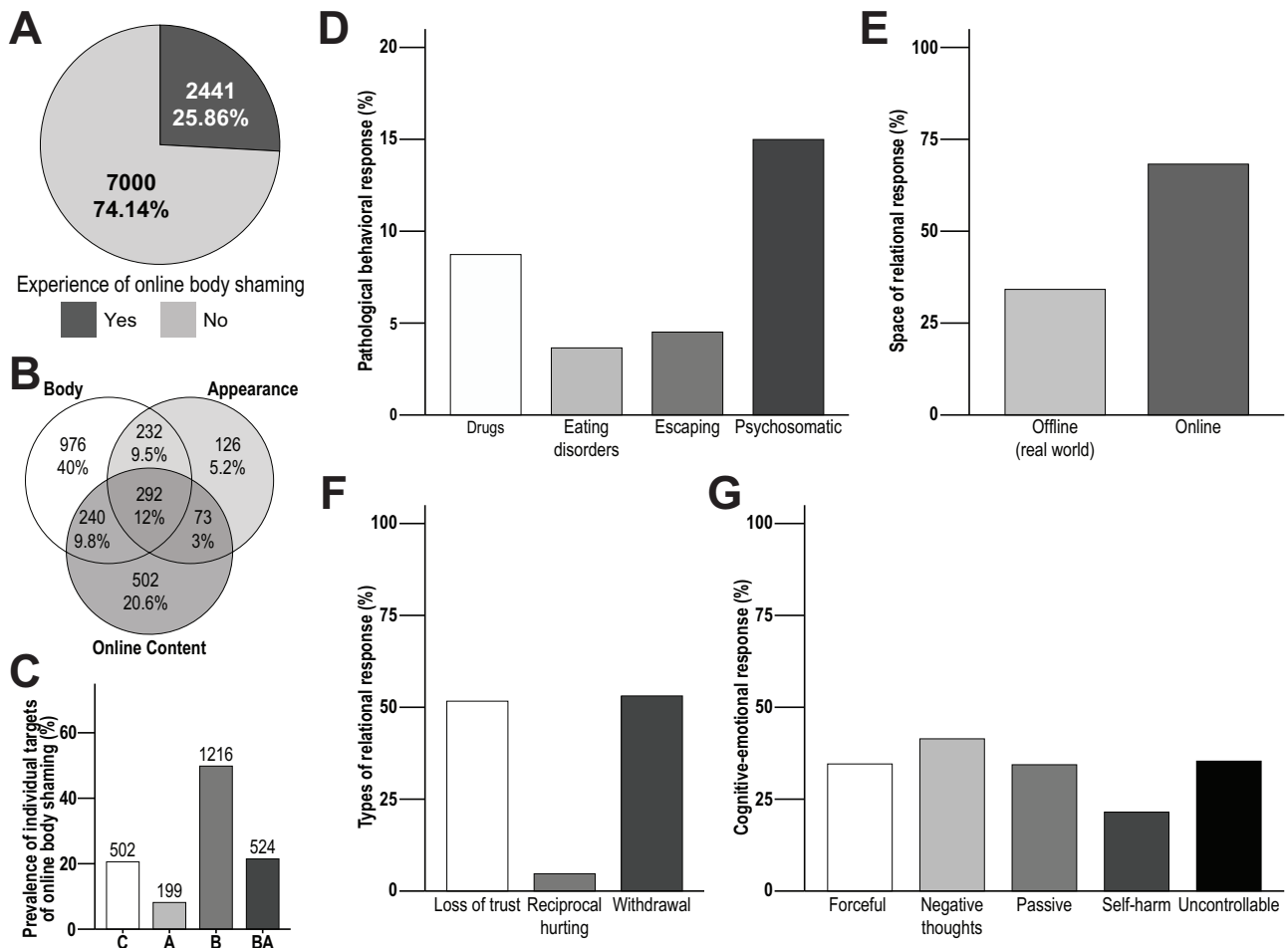
Analysis of the overall prevalence (Supplementary Table S2) revealed that pathological behavioral responses to online shaming were generally the least abundant (Fig. 1D), with psychosomatic difficulties (366, 15%) and increased

substance use (213, 8.7%) being the most common. Changes in relational behavior in response to online shaming occurred primarily in the online space (1666, 68.3%), although 834 (34.2%) respondents also reported changes in real-world relationships (Fig. 1E). In terms of the forms of relationship changes (Fig. 1F), withdrawal from relationships (1296, 53.1%) and loss of trust (1261, 51.7%) appeared equally frequently. Reciprocal hurting of others was reported by 4.7% (115) respondents. The overall prevalence of negative cognitive-emotional reactions ranged between 21 and 41% (Fig. 1G). Negative thoughts were the most prevalent (1011, 41.4%), whereas self-harm thoughts were the least present (524, 21.5%). The prevalence of other types of reactions was similar (34–35%).

### Effect of the Intensity of Online Shaming on the Prevalence of Negative Responses

An examination of the impact of different types of online shaming revealed that the prevalence of negative reactions was significantly dependent on the intensity and the target of the shaming. Across all variables observed, we witnessed a gradual increase in the prevalence of negative responses as the intensity of online shaming increased and shaming became more personal (Table 1, Supplementary Table S3, Supplementary Fig. 1A–D). Except for relational responses in the online space, which showed the highest prevalence among all variables across all types of shaming and reciprocal hurting, this upward trend was remarkably stable. At the same time, online shaming targeting both appearance and body was shown to be associated with a significantly higher presence of negative responses among respondents, in many cases twice as high and exceeding 50% prevalence.

To further explore this negative effect, we performed a logistic regression to calculate the odds of the presence of different forms of negative responses relative to the intensity of online shaming (Table 2, Supplementary Fig. 1E). When compared with having only experienced shaming because of online content, for appearance shaming, the odds of negative responses were significantly higher for substance use (OR [95% CI] (ibid), 3.44 [1.49, 8.18]), relational change in both online and offline environments (1.64 [1.16, 2.34] and 1.46 [1, 2.12], respectively) by withdrawing from relationships (1.61 [1.16, 2.24]) and for passive emotions (1.57 [1.07, 2.3]). Body shaming appeared to pose a greater risk for the presence of negative responses, with significantly higher odds ratios being observed for all variables except for escaping behavior and reciprocal hurting, showing 28 to 676% higher odds of the presence of negative responses. The experience of mocking both appearance and body showed the most detrimental effect on the prevalence of all negative reactions examined. The odds of the presence of individual responses were in this case



**Fig. 1** Prevalence of online shaming experiences and behavioral, relational, and cognitive-emotional responses. **A** Pie charts show the total number of teenagers with at least one experience of online shaming. **B** Venn diagram displays the distribution of individual combinations of the three basic forms of online shaming. Barplots show the prevalence (in %) of **C** Online shaming experiences within intensity level classification [C: Content only, A: Appearance

1.85 times to 27.5 times higher (when compared with mocking online content only), with at least 4 times higher in half of the cases.

### The Effect of Sex on the Prevalence of Negative Responses to Online Shaming

Next, we examined whether the experience of online shaming and negative responses to it differed depending on respondents' sex. A total of 1606 (31.6%) girls and 822 (19.1%) boys reported having experienced online shaming, indicating that girls experienced shaming significantly more often ( $X^2[df] = 5.22[1]$ ,  $P = 0.022$ ). An analysis of the differences in the prevalence of individual responses to online shaming revealed that all forms of negative responses were significantly more prevalent in girls (Table 3, Supplementary Fig. 2A–D), with the exception of escape

(+content), B: Body (+content), BA: Body and appearance (+content)], and negative **D** Behavioral, **E**, **F** Relational and **G** Cognitive-emotional responses. The values of the individual bars represent separately the proportion of participants who reported the presence of a given response to online body shaming (out of all participants with experience of online body shaming). The values of the individual bars are therefore independent of each other within the plots

behavior which showed no significant difference between sexes ( $X^2[df] = 2.35[1]$ ,  $P = 0.125$ ) and reciprocal hurting which was more prevalent in boys (71 (8.5%) versus 44 (2.7%) cases,  $X^2[df] = 40.62[1]$ ,  $P < 0.001$ ). This pattern was further supported in the logistic regressions, with girls being 1.23 to 4.62 times more likely than boys to suffer negative responses (Table 4, Supplementary Fig. 2E), while boys were 3.3 times more likely to engage in reciprocal hurting.

### Prevalence of Negative Responses in Relation to the Interaction between the Intensity of Online Shaming and Sex

Observing a significant effect of both intensity of online shaming and sex on the prevalence of negative responses, we were further interested in whether these prevalences

**Table 1** Prevalence (Frequency [%]) of negative responses to online body shaming experience by intensity of body shaming (N = 2441)

	Target of online body shaming <sup>a</sup>				X <sup>2</sup> /Fisher test
	Online Content	Appearance (+Content)	Body (+Content)	Appearance & Body (+Content)	P (X <sup>2</sup> stat)
<b>Pathological behavior</b>					
Drugs use	10 [1.99]***	13 [6.53]	97 [7.98]	93 [17.75]***	<0.001 (84.2)
Eating disorders	2 [0.4]***	3 [1.51]	32 [2.63]*	52 [9.92]***	<0.001 <sup>b</sup>
Escaping behavior	16 [3.19]	11 [5.53]	43 [3.54]	40 [7.63]***	<0.001 (17.1)
Psychosomatic issues	38 [7.57]***	23 [11.56]	174 [14.31]	131 [25]***	<0.001 (65.2)
<b>Space of relational response</b>					
Offline (real world)	108 [21.51]***	57 [28.64]	397 [32.65]	272 [51.91]***	<0.001 (113.0)
Online	294 [58.57]***	139 [69.85]	838 [68.91]	395 [75.38]***	<0.001 (34.5)
<b>Relational responses</b>					
Loss of trust	210 [41.83]***	99 [49.75]	599 [49.26]*	353 [67.37]***	<0.001 (74.3)
Reciprocal hurting	22 [4.38]	12 [6.03]	40 [3.29]**	41 [7.82]***	<0.001 (17.7)
Withdrawal	196 [39.04]***	101 [50.75]	651 [53.54]	348 [66.41]***	<0.001 (77.6)
<b>Cognitive-emotional responses</b>					
Forceful negative emotions	141 [28.09]**	58 [29.15]	406 [33.39]	239 [45.61]***	<0.001 (40.9)
Negative thoughts	114 [22.71]***	59 [29.65]**	496 [40.79]	342 [65.27]***	<0.001 (206.8)
Passive negative emotions	98 [19.52]***	55 [27.64]	406 [33.39]	280 [53.44]***	<0.001 (138.0)
Self-harm ideations	41 [8.17]***	22 [11.06]***	241 [19.82]	220 [41.98]***	<0.001 (198.3)
Uncontrollable negative emotions	110 [21.91]***	42 [21.11]***	425 [34.95]	286 [54.58]***	<0.001 (142.2)

<sup>a</sup>Values shown as frequency [%]. Asterisks indicate significant Pearson residuals (groups significantly differing from expected values)

<sup>b</sup>Fisher exact test

\*P < 0.05, \*\*P < 0.01, \*\*\*P < 0.001

were determined by the interaction of these two parameters. Overall, girls showed a similar (previously described) upward trend in the prevalence with increasing intensity having the highest values within the categories involving body, while boys exhibited in most cases the highest values in the two categories involving appearance (Table 5, Supplementary Fig. 3). In the context of pathological behavioral responses, we observed an overall significant difference only within substance use (P < 0.001), where the prevalence differed between boys and girls with body-focused shaming experiences (X<sup>2</sup>[df] = 7.4[1], adj. P = 0.026).

The ratios of relational responses differed significantly in both online (X<sup>2</sup>[df] = 50.69[3], P < 0.001) and offline (X<sup>2</sup>[df] = 39.85[3], P < 0.001) spaces, with girls manifesting more frequent negative responses in the online space when experiencing content-focused shaming (X<sup>2</sup>[df] = 9.19[1], adj. P = 0.009) and in the real world when experiencing content-focused (X<sup>2</sup>[df] = 11.06[1], adj. P = 0.004), body-focused (X<sup>2</sup>[df] = 15.81[1], adj. P < 0.001) and combined appearance-body-focused (X<sup>2</sup>[df] = 6.91[1], adj. P = 0.034) shaming. In terms of

the type of relational response, prevalence ratios differed for loss of trust (X<sup>2</sup>[df] = 52.74[3], P < 0.001) and withdrawal (X<sup>2</sup>[df] = 30.07[3], P < 0.001), both of which were more prevalent in girls who experienced content-focused shaming (X<sup>2</sup>[df] = 14.12[1], adj. P < 0.001 and X<sup>2</sup>[df] = 10.14[1], adj. P = 0.006, respectively). In contrast, we found a significantly higher prevalence of reciprocal hurting in boys in response to appearance-focused shaming (X<sup>2</sup>[df] = 20.21[1], adj. P < 0.001).

Within cognitive-emotional responses, prevalence ratios differed across all variables. Girls showed significantly higher prevalences of negative thoughts and uncontrollable negative emotions across all types of online shaming, for passive emotions in all but appearance-focused shaming and for self-harm thoughts only in the case of body- and appearance-body-focused shaming.

Sex-specific odds ratios were not significantly different between sexes except for five cases. Girls displayed significantly higher odds ratios than boys for substance use related to the experience of body-focused shaming when compared with content-only shaming (OR [95% CI](ibid.),

**Table 2** Odds ratios of presence of different forms of negative responses depending on the intensity of online shaming (reference group: content only)

Predictor	OR [95% CI]		OR [95% CI]
<b>Behavioral reaction</b>		<b>Relational reaction (space)</b>	
<i>Drugs use</i>		<i>Online space</i>	
Appearance	3.44 [1.49, 8.18]**	Appearance	1.64 [1.16, 2.34]**
Body	4.25 [2.32, 8.79]***	Body	1.57 [1.26, 1.94]***
Body+Appearance	10.62 [5.73, 21.98]***	Body+Appearance	2.17 [1.66, 2.83]***
<i>Eating disorders</i>		<i>Offline space</i>	
Appearance		Appearance	1.46 [1, 2.12]*
Body	6.76 [2.04, 41.8]**	Body	1.77 [1.39, 2.27]***
Body+Appearance	27.54 [8.5, 168.91]***	Body+Appearance	3.94 [3, 5.19]***
<i>Escaping behavior</i>		<b>Emotional reaction</b>	
Appearance	1.78 [0.79, 3.87]	<i>Forceful</i>	
Body	1.11 [0.63, 2.05]	Appearance	1.05 [0.73, 1.51]
Body+Appearance	2.51 [1.41, 4.67]**	Body	1.28 [1.02, 1.62]*
<i>Psychosomatic issues</i>		Body+Appearance	2.15 [1.66, 2.79]***
Appearance	1.6 [0.91, 2.74]	<i>Negative thoughts</i>	
Body	2.04 [1.43, 2.98]***	Appearance	1.43 [0.99, 2.07]
Body+Appearance	4.07 [2.8, 6.05]***	Body	2.3 [1.85, 2.98]***
<b>Relational reaction (type)</b>		Body+Appearance	6.4 [4.87, 8.45]***
<i>Loss of trust</i>		<i>Passive</i>	
Appearance	1.38 [0.99, 1.92]	Appearance	1.57 [1.07, 2.3]*
Body	1.35 [1.09, 1.67]**	Body	2.07 [1.61, 2.67]***
Body+Appearance	2.87 [2.23, 3.71]***	Body+Appearance	4.73 [3.59, 6.28]***
<i>Reciprocal hurting</i>		<i>Self-harm</i>	
Appearance	1.4 [0.66, 2.84]	Appearance	1.4 [0.8, 2.39]
Body	0.74 [0.44, 1.28]	Body	2.78 [1.98, 3.99]***
Body+Appearance	1.85 [1.1, 3.21]*	Body+Appearance	8.1č [5.71, 11.84]***
<i>Withdrawal</i>		<i>Uncontrollable</i>	
Appearance	1.61 [1.16, 2.24]**	Appearance	é95 [0.63, 1.41]
Body	1.8 [1.46, 2.23]***	Body	1.91 [1.51, 2.45]***
Body+Appearance	3.09 [2.4, 3.99]***	Body+Appearance	4.28 [3.27, 5.64]***

\*P &lt; 0.05, \*\*P &lt; 0.01, \*\*\*P &lt; 0.001

girls, 9.07 [3.36, 37.18] vs. boys, 1.13 [0.44, 3.1],  $Z = 2.71$ ,  $P = 0.007$ ). In contrast, boys exhibited significantly higher odds ratios for a change in online (boys, 0.94 [0.58, 1.55] vs. girls, 2.61 [1.57, 4.41],  $Z = 2.81$ ,  $P = 0.005$ ) and offline (boys, 1.03 [0.75, 1.4] vs. girls, 1.98 [1.43, 2.75],  $Z = 2.84$ ,  $P = 0.005$ ) relationships linked to appearance-focused shaming and for a change in online relationships (boys, 0.93 [0.56, 1.53] vs. girls, 2.54 [1.42, 4.53],  $Z = 2.57$ ,  $P = 0.01$ ) and withdrawal from relationships (boys, 1.31 [0.98, 1.74] vs. girls, 2.31 [1.65, 3.26],  $Z = 2.52$ ,  $P = 0.01$ ) linked to body-focused shaming.

## Discussion

The motivation for this study stemmed from the fact that the negative consequences of online body shaming remain

largely unexplored. Given that most previous studies of the impact of negative or offensive behavior online have focused on the effect of cyberbullying; in interpreting our findings we will compare our data with these studies to assess the extent to which relatively milder forms of online shaming have similar negative consequences to more severe acts such as online shaming and cyberbullying. We observed that a quarter of teenagers have at least once experienced online body shaming, which is consistent with previous findings on online shaming, considering the wide range of prevalences previously described (AlJaffer et al., 2021; Gohal et al., 2023; Public Health, 2014; Tokunaga, 2010; Zhu et al., 2021). Shaming of physical appearance (face, figure, using of medical aids) was the most common form, twice as common compared with shaming targeting appearance (clothing, fashion accessories) and online content (posts, photo filters) of participants. Consistent with a



**Table 3** Prevalence of negative responses to online body shaming experience by sex (N = 2441)

	Sex <sup>a</sup>		X <sup>2</sup> test
	Girls	Boys	P (X <sup>2</sup> stat)
<b>Pathological behavior</b>			
Drugs use	172 [10.62]	41 [4.91]	<0.001 (21.5)
Eating disorders	78 [4.82]	11 [1.32]	<0.001 (18.1)
Escaping behavior	80 [4.94]	29 [3.47]	0.125 (2.4)
Psychosomatic issues	271 [16.74]	93 [11.14]	<0.001 (12.8)
<b>Space of relational response</b>			
Offline (real world)	658 [40.64]	170 [20.36]	<0.001 (98.7)
Online	1168 [72.14]	493 [59.04]	<0.001 (40.3)
<b>Relational responses</b>			
Loss of trust	980 [60.53]	274 [32.81]	<0.001 (165.8)
Reciprocal hurting	44 [2.72]	71 [8.5]	<0.001 (40.6)
Withdrawal	935 [57.75]	357 [42.75]	<0.001 (47.2)
<b>Cognitive-emotional responses</b>			
Forceful negative emotions	581 [35.89]	260 [31.14]	0.029 (4.8)
Negative thoughts	844 [52.13]	159 [19.04]	<0.001 (246.0)
Passive negative emotions	673 [41.57]	160 [19.16]	<0.001 (120.5)
Self-harm ideations	454 [28.04]	66 [7.9]	<0.001 (131.1)
Uncontrollable negative emotions	716 [44.22]	142 [17.01]	<0.001 (176.2)

<sup>a</sup>Values shown as frequency [%]. Percentages are calculated for respondents with an experience of online body shaming

number of previous studies, girls experienced online shaming significantly more often than boys (Devine & Lloyd, 2012; Goebert et al., 2011; Kim et al., 2019; Kowalski & Limber, 2013; Slonje & Smith, 2008). However, it is worth noting that a number of other studies have not found sex differences (Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Slonje et al., 2012).

The sex differences observed in this study may be attributable to the fact that unlike boys who are more likely to be online for gaming, girls are more likely to be online for social networking, leading to a greater likelihood of being involved in cyberbullying and online shaming (Snell & Englander, 2010; Sticca et al., 2013).

We then classified teenagers' negative responses to online shaming into three areas. The most represented were responses linked to relationships in the online space including withdrawal from relationships and loss of trust. The observed 50% prevalence of these responses signals the presence of a significant risk since, in addition to the immediate impact on the social life of teenagers, they may have long-term negative implications for further socialization and relationship formation later in adolescence and adulthood (Schultze-Krumbholz & Scheithauer, 2009;

**Table 4** Sex-related odds ratios of presence of different forms of negative responses (in girls compared to boys)

Predictor	OR [95% CI]
Drugs	2.28 [1.62, 3.29]***
Eating disorders	3.76 [2.08, 7.52]***
Escaping	1.43 [0.94, 2.25]
Psychosomatic	1.59 [1.24, 2.06]***
<b>Relational reaction (type)</b>	
Loss of trust	3.13 [2.63, 3.74]***
Reciprocal harming	0.3 [0.2, 0.44]***
Withdrawal	1.81 [1.53, 2.15]***
<b>Relational reaction (space)</b>	
Online space	1.78 [1.49, 2.13]***
Offline space	2.66 [2.19, 3.24]***
<b>Emotional reaction</b>	
Forceful	1.23 [1.03, 1.47]*
Negative thoughts	4.62 [3.79, 5.65]***
Passive	2.98 [2.45, 3.65]***
Self-harm	4.51 [3.46, 5.98]***
Uncontrollable	3.85 [3.14, 4.75]***
Drugs	2.28 [1.62, 3.29]***

\*P < 0.05, \*\*\*P < 0.001

Willard, 2007; Wong et al., 2014; Ybarra & Mitchell, 2004). Surprisingly, more than a quarter of teenagers also showed changes in real-life relationships. Although some of these responses were likely directed toward friends and acquaintances who were the source of shaming, these results suggest that negative experiences in the online space may negatively translate into teenagers' functioning in real life, posing an additional risk to their development and social interactions.

The prevalence of negative cognitive-emotional responses ranged from 25 to 45%. Considering that the most frequent responses involved negative thoughts (like doubt, frustration, guilt, or embarrassment) and passive (e.g., despair, hurt, and sadness) and uncontrollable (anxiety, fear, helplessness, powerlessness, worry, or embarrassment) negative emotions, our results support previous findings that online shaming experience poses a risk particularly for the development of depressive and anxiety disorders associated with reduced self-esteem and socialization tendencies. Given that a quarter of teenagers even reported self-harm thoughts (self-harm or suicidal tendencies), which is consistent with several previous studies of the aftermath of cyberbullying (Bucchianeri et al., 2014; Hamm et al., 2015; Hay et al., 2010; Hinduja & Patchin, 2007; Kowalski & Limber, 2013; Mishna et al., 2010; Patchin & Hinduja, 2011; Puhl & Luedicke, 2012; Tokunaga, 2010; Willard, 2007; Ybarra & Mitchell, 2007), these findings indicate that even theoretically, low-intensity

**Table 5** Prevalence of negative responses to online body shaming experience by intensity of body shaming and sex (N = 2441)

	Target of online body shaming (Girls - Boys) <sup>a</sup>				X <sup>2</sup> /Fisher test <sup>b</sup>
	Online Content	Appearance (+Content)	Body (+Content)	Appearance & Body (+Content)	
<b>Pathological behavior</b>					
Drugs use	3 [1.22]–7 [2.77]	5 [4.63]–8 [9.2]	86 [10.12]–11 [3.12]	78 [19.65]–15 [12.5]	<0.001 <sup>c</sup>
Eating disorders	2 [0.81]–0 [0]	1 [0.93]–2 [2.3]	30 [3.53]–2 [0.57]	45 [11.34]–7 [5.83]	0.074 <sup>c</sup>
Escaping behavior	10 [4.07]–6 [2.37]	6 [5.56]–5 [5.75]	35 [4.12]–7 [1.98]	29 [7.3]–11 [9.17]	0.132 <sup>c</sup>
Psychosomatic issues	24 [9.76]–14 [5.53]	15 [13.89]–8 [9.2]	128 [15.06]–44 [12.46]	104 [26.2]–27 [22.5]	0.145 <sup>c</sup>
<b>Space of relational response</b>					
Offline (real world)	72 [29.27]–35 [13.83]	30 [27.78]–26 [29.89]	332 [39.06]–63 [17.85]	224 [56.42]–46 [38.33]	<0.001 (39.9)
Online	174 [70.73]–120 [47.43]	75 [69.44]–63 [72.41]	609 [71.65]–227 [64.31]	310 [78.09]–83 [69.17]	<0.001 (50.7)
<b>Relational responses</b>					
Loss of trust	134 [54.47]–76 [30.04]	61 [56.48]–37 [42.53]	494 [58.12]–101 [28.61]	291 [73.3]–60 [50]	<0.001 (52.7)
Reciprocal hurting	7 [2.85]–15 [5.93]	1 [0.93]–11 [12.64]	16 [1.88]–24 [6.8]	20 [5.04]–21 [17.5]	0.072 <sup>c</sup>
Withdrawal	121 [49.19]–74 [29.25]	59 [54.63]–41 [47.13]	477 [56.12]–173 [49.01]	278 [70.03]–69 [57.5]	<0.001 (30.1)
<b>Cognitive-emotional responses</b>					
Forceful negative emotions	77 [31.3]–64 [25.3]	32 [29.63]–25 [28.74]	278 [32.71]–126 [35.69]	194 [48.87]–45 [37.5]	<0.001 (34.7)
Negative thoughts	81 [32.93]–31 [12.25]	40 [37.04]–18 [20.69]	436 [51.29]–57 [16.15]	287 [72.29]–53 [44.17]	<0.001 (28.6)
Passive negative emotions	69 [28.05]–29 [11.46]	34 [31.48]–21 [24.14]	329 [38.71]–74 [20.96]	241 [60.71]–36 [30]	<0.001 (26.6)
Self-harm ideations	29 [11.79]–12 [4.74]	15 [13.89]–6 [6.9]	216 [25.41]–24 [6.8]	194 [48.87]–24 [20]	<0.001 <sup>c</sup>
Uncontrollable negative emotions	84 [34.15]–26 [10.28]	29 [26.85]–12 [13.79]	362 [42.59]–61 [17.28]	241 [60.71]–43 [35.83]	0.014 (10.6)

<sup>a</sup>Values shown as frequency [%]. Percentages are calculated for respondents with an experience of online body shaming<sup>b</sup>Test of differences in proportions between both sexes<sup>c</sup>Fisher exact test

online shaming can be a risky and potentially life- and health-threatening factor.

Pathological behavioral responses to online shaming were present at a lower rate of up to 15%, with psychosomatic problems and increased substance use being the most common. Conversely, escape behaviors and eating disorders accounted for less than 5% of cases. This spectrum of observed responses is consistent with previous studies (Beckman et al., 2012; Bonanno & Hymel, 2013; Bucchianeri et al., 2014; Hinduja & Patchin, 2007, 2010; Puhl & Luedicke, 2012; Schultze-Krumbholz & Scheithauer, 2009; Sourander et al., 2010; Willard, 2007) and support the above-mentioned observation that online shaming experience is associated with perceived lack of control and powerlessness (Nixon, 2014; Raskauskas & Stoltz, 2007). This is reflected in somatization behavior and increased substance use acting as a proxy solution, designed to remove/mitigate negative emotions, relax or shift attention (Alipan et al., 2021; Yoon et al., 2019).

To gain a deeper understanding of the dynamics of the consequences of online shaming, we investigated the impact of the intensity of online shaming (here indicating the extent to which online shaming targets core aspects of body identity) on the variability of negative response prevalences. We observed that with increasing intensity of online shaming (the content of shaming becoming more personal and targeted directly the self-perception and body identity of the victims), the prevalence of all observed negative responses increased. The most serious consequences were found when both appearance and body were targeted, with the odds of the presence of a negative response being up to 21 times higher compared with shaming only one of these two targets (with 3.3 times higher odds on average), and up to 27.5 times higher compared with content-focused shaming only (with 6 times higher odds on average). This may be due to several factors. First, shaming combining multiple content targets is more likely to be repeated (i.e., it is not a one-time or rare event), either in the sense of alternating between the different types of taunts or in the sense of a repeated combination of multiple targets in shaming victims. Repeated/more frequent experiences of online shaming are then more likely to lead to more severe negative reactions in teenage victims (Peebles, 2014). Second, shaming of appearance and especially body represents a significant invasion of teenagers' self-perception. This can result in lower body satisfaction (Bucchianeri et al., 2014) all the way to traumatic toxic shame, leading to social isolation due to feelings of inadequacy and lowered self-esteem (Mayer et al., 2021). The disruption of self-perception then predicts a further increase in negative consequences both in the emotional domain such as depression, anxiety etc. (Paxton et al., 2006) and in behavioral responses such as psychosomatic problems, drug

use, eating disorders or suicidal ideation (Bucchianeri et al., 2014; Menzel et al., 2010; Puhl & Luedicke, 2012). Third, we can speculate that when teenagers encounter shaming in one of these contexts (appearance or body), they may reciprocally reinforce their self-perception in other contexts (e.g., compensating for alleged physical deficiencies by dressing fashionably and vice versa) as part of coping with the situation. The experience of shaming all aspects of appearance (and body identity) leaves no space for escape to support self-concept, self-confidence, relation to one's own body and identity, leading to a major escalation of negative consequences. In summary, our findings indicate that the experience of complex multifaceted online shaming of appearance and body puts the teenagers at considerable risk of developing negative behavioral and cognitive-emotional responses.

Finally, we examined sex differences in the prevalence of negative responses to online shaming. We observed that, with two exceptions, the prevalence of negative responses to online shaming was significantly higher for teenage girls. There are several possible explanations for this phenomenon. First, online shaming often involves negative ratings of the character, body, appearance, and/or online content of the victims. Since teenage girls are more likely to engage in social networking in online environments (while boys are more likely to engage in gaming), in which sharing of social media posts/photos is a significant part, the risk of online shaming is greater. Second, girls are more likely to internalize negative feedback and experience self-doubt and low self-esteem as a result. Previous studies have found that girls are more likely than boys to experience negative thoughts and emotions in response to cyberbullying (Kowalski & Limber, 2013). Additionally, in relation to social pressures associated with the ideal of beauty, girls may be more likely to experience body-related shaming, self-objectification, and appearance-related pressures, which can lead to negative emotional and behavioral reactions (Fardouly et al., 2018; Tiggemann & Slater, 2013). Lastly, it is possible that girls are more likely to report the experience of online shaming and the negative response associated with it, which is then reflected in the differences in reporting and help-seeking behaviors (Kowalski & Limber, 2013). In contrast, boys are more likely than girls to engage in retaliatory behavior or aggressive responses to online shaming. This may be related to the fact that boys more likely display direct forms of aggression and confrontation when faced with a stressful event (Taylor et al., 2000; Turton & Campbell, 2007; Wong et al., 2014; Wong et al., 2018). The ongoing process of building one's own masculine identity may also play a role (Malonda-Vidal et al., 2021). These sex-related differences were partially confirmed when considering the intensity of online shaming. Girls showed a significantly higher prevalence than

boys within individual levels of online shaming intensity. Similarly, both sexes demonstrated an increased risk of negative responses when experiencing combined shame of appearance and body.

From a practical point of view, our findings highlight the need for schools, parents, and mental health professionals to pay increased attention to the prevention and intervention of online shaming that targets the specific needs of teenage girls and boys. This may involve raising awareness of the risks of online environments and social networks, teaching girls and boys coping skills for dealing with online shaming, providing support and counseling services and promoting a positive body image and self-esteem. Additionally, parents and teachers should be vigilant in monitoring social media use and intervene quickly when online shaming and/or cyberbullying occurs, while also promoting healthy online behavior and modeling positive social interactions. Overall, addressing online shaming (and more generally cyberbullying) in a targeted and gender-sensitive way is essential for promoting the mental health and well-being of teenagers in the digital age.

### Study Limitations

This study has several limitations. First, within the study design, the experience of online shaming was captured only as a binary identification of the presence/absence of a given type of shaming. Future studies should analyze the effect of the frequency of online shaming experience and the proximity/ familiarity of the source of shaming to better understand the dynamics of the impact of this negative experience on teenagers and their reactions. Second, given that a number of teenagers reported setting up their first social network accounts at a much younger age than the scope of the study covered (i.e., earlier than age 11), future studies should decrease the lower age limit to explore whether their responses to online shaming are similar to those in this study or whether the younger age and different developmental level of children has a different impact on their personality, self-perception as well as relational and emotional behaviors.

### Conclusion

This study is, to the best of our knowledge, one of the first to examine both the broad spectrum of negative consequences of online body shaming and differences in the stratified effect of variously targeted forms of online shaming, as well as their combination on the behavioral, relational and cognitive-emotional functioning of teenagers. The results showed a wide range of responses among teenagers, with both high prevalence rates of negative consequences and an increased risk of developing

threatening pathology. In particular, online body shaming that targeted both victims' physical attributes and broader appearance (clothing, fashion accessories, etc.) resulted in significantly greater negative consequences, especially in girls. These findings indicate that online shaming can have similarly detrimental effects on mental health, social functioning, self-perception, and identity formation as cyberbullying. As teenagers increasingly use social networks from a younger age, when their ability to cope with these negative pressures is less developed, it is of paramount importance to continuously update the related policies and practices, raise awareness, and improve prevention strategies, as well as ensure access to support and care using current technologies.

### Data availability

Supplementary material is enclosed with the dispatch of the article.

**Supplementary information** The online version contains supplementary material available at <https://doi.org/10.1007/s10826-025-03032-z>.

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### Compliance with ethical standards

**Conflict of interest** The authors declare no competing interests.

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