Selfie-engagement on social media: Pathological narcissism, positive expectation, and body objectification – Which is more influential?

Valentina Boursier[a],[*], Francesca Gioia[a], Mark D. Griffiths[b]

[a] Department of Humanities, University of Naples "Federico II", Via Porta di Massa, 1 - 80133 Naples, Italy
[b] International Gaming Research Unit, Psychology Department, Nottingham Trent University, 50 Shakespeare St, Nottingham NG1 4FQ, UK

ABSTRACT

The current use of social media platforms by active young users/creators of visual content provides an easy medium to achieve narcissistic goals of self-promotion and attention-seeking, and to socialize with self-objectification experiences. One of the most popular activities associated with social media use is selfie-sharing. Consequently, the global focus on online physical appearance approval could reinforce selfie-engagement as a specific body image-related behavior, potentially associated with selfie-marketing strategies for self-improvement, and problematic social media use. The present study evaluated the main direct effect of pathological narcissism, objectified body consciousness, and expectations toward selfies on young women's and men's selfie-engagement. A total of 570 young adults (66.8% females; mean age = 24.4 years, SD = 3.6) participated in an online survey study. Variables were assessed using the Pathological Narcissism Inventory (Fossati, Feeney, Pincus, Borroni, & Maffei, 2015), Objectified Body Consciousness Scale (Dakanalis et al., 2015), Selfie-expectancies Scale (Boursier & Manna, 2018), and a measure of selfie-engagement. Hierarchical regression analyses were performed on independent male and female subsamples. Results showed that body surveillance and positive selfie-expectancies are consistent selfie-behavior predictors, among both men ($R^2 = 0.227$; $p < .001$) and women ($R^2 = 0.332$; $p < .001$). Furthermore, findings confirm women's involvement in appearance concerns and body-image related practices, even though men's engagement in body-objectification deserve attention. The study provides novel findings in the field of self-objectification research as well as contributing to the ongoing debate concerning which psychological factors can be predictive of males' and females' selfie-engagement. The implications of these findings are also discussed in light of the debate on social media use and misuse.

1. Introduction

1.1. Selfie sharing on social media

Social media use is increasingly widespread among young people. For this reason, social networking site (SNS) use has been argued as "a way of being" (Kuss & Griffiths, 2017, p.5) even though it has the potential to provide risky opportunities, especially among teenagers and young adults (Livingstone, 2008; Munno et al., 2017). In this regard, much interest has been addressed concerning the problematic use of social media (e.g., Al-Menayes, 2015; Andreassen et al., 2016; Balakrishnan & Griffiths, 2017), thus evidencing the need to distinguish which specific activities individuals are eventually addicted to via social media use (Kuss & Griffiths, 2017). Similarly, as part of the debate on the controversial conceptual and operational definitions of

behavioral addictions (Billieux, Schimmenti, Khazaal, Maurage, & Heeren, 2015; Griffiths, 2005; Rumpf et al., 2019; Starcevic, 2016) it has also been highlighted there is a need to identify psychological processes underlining behaviors to define them as excessive or dysfunctional (Kardefelt-Winther et al., 2017).

Nowadays, one of the most popular activities associated with social media use is selfie-sharing. Certainly, web-mediated communication platforms represent a perfect environment for socializing with the dominant forms of online content-sharing (i.e. self-images) (Dhir, Pallesen, Torsheim, & Andreassen, 2016). Indeed, it has been stated that photo-sharing positively correlates with SNS use, significantly predicted by people's duration of SNS usage (Doğan & Adıgüzel, 2017). Additionally, the great opportunity of increasing self-disclosure (obviously also via self-images sharing) and monitoring one's own popularity through positive feedback might trigger a *behavior-reward*

feedback loop that serves as a basis for social media addiction (Guedes et al., 2016; Hawk, van den Eijnden, van Lissac, & ter Bogt, 2019).

In recent years, the substantial growth of social media has promoted the spread of user-generated content (i.e., selfies/video/posts/stories), increasing self-published personal information/images, and facilitating opportunities for self-promotion and attention-seeking (Weiser, 2018). According to Nadkarni and Hofmann (2012), social media use fulfils two social needs: self-presentation and the need to belong. In this regard, selfie-sharing appears to be principally associated with one of the aforementioned factors: self-presentation/promotion (Boursier & Manna, 2018; Doğan & Çolak, 2016; Reich, Schneider, & Heling, 2018; Sorokowska et al., 2016).

Recently, psychological mechanisms underlying selfie-behavior have been explored, including social pressure, attention-seeking, belonging, documenting, archiving, retaining special moments, and being creative (Bruno, Pisanski, Sorokowska, & Sorokowski, 2018; de Vaate, Veldhuis, Alleva, Konijn, & van Hugten, 2018; Etgar & Amichai-Hamburger, 2017; Sung, Lee, Kim, & Choi, 2016). Attitudes toward selfie-sharing have been analyzed among adolescents and young adults, in an attempt to estimate the key role of self-presentation and self-disclosure, as well as of self-improvement (self-esteem/self-confidence) via others' approval (Albury, 2015; Boursier & Manna, 2018; Diefenbach & Christoforakos, 2017; Etgar & Amichai-Hamburger, 2017; Katz & Crocker, 2015; Sung et al., 2016).

Moreover, a core element included in selfie-taking, that should be considered, is personal agency comprising the photographers' consciousness in creating, modifying, and sharing their own self-images (Lim, 2016). In this regard, increasing recent research focused on selfie-related practices such as cropping, editing, and manipulating photos before posting them on SNSs (Boursier & Manna, 2019; Chang, Li, Loh, & Chua, 2019; McLean, Jarman, & Rodgers, 2019; McLean, Paxton, Wertheim, & Masters, 2015). Overall selfie-behavior appears to be a complex phenomenon. From this perspective, selfie-marketing (i.e., photo preparing strategies, selfie-taking, selfie-editing, selfie-posting) and expectancies underlying selfie-posting/selfie-sharing might help to clarify quality, as well as frequency, of selfie usage (Boursier & Manna, 2018). Moreover, it has been recently evidenced that self-management utilizing selfie-posting represents a positive outcome of selfie-behavior among adolescents, despite the risk of manipulating selfies and controlling body image through self-portraits (in order to garner approval from peers) might be considered potentially dangerous (Boursier & Manna, 2019). Additionally, psychopathological factors associated with an obsessive–compulsive desire of selfie-taking have been proposed, addressing the potentially addictive nature of this behavior (Balakrishnan & Griffiths, 2017; Griffiths & Balakrishnan, 2018).

Finally, even though posting selfies has been assumed as a gendered process (Albury, 2015), typically engaging girls and women, gender-related differences associated with selfie behavior have been explored, demonstrating that males and females tend to post different selfies (Boursier & Manna, 2018; Dhir, 2016; Qiu, Lu, Yang, Qu, & Zhu, 2015; Sorokowska et al., 2016; Sorokowski et al., 2015). However, the specific use of selfie-sharing as a tool for self-presentation and self-promotion via social media has been confirmed in both males and females, also according to specific selfie-related strategies (Boursier & Manna, 2018; Dhir et al., 2016; Kim & Chock, 2017). More specifically, women's attitude toward selfie-posting and photo-editing has been assessed (Dhir, 2016). Young women share selfies on social media in order to receive positive feedback (Nelson, 2013), and selfie-editing seems to be related to the typical young woman's attempts to cultivate an ideal form of online self-presentation (Chae, 2017). Overall, a "selfie policy" that emphasizes selecting the ideal photo appears popular mainly among young women (Senft & Baym, 2015; Warfield, 2014). Simultaneously, young male's involvement in photo-tagging gratifications (Dhir, 2016) and selfie-posting strategies to improve self-confidence, popularity, and specifically, sexual self-attractiveness have recently been stated (Boursier & Manna, 2018).

The widespread common habits of online self-disclosure via self-images sharing and self-improvement via online selfie-marketing strategies, in order to garner others' approval, make selfie-engagement a matter of debate on social media use and misuse. Indeed, especially comparison-oriented people (e.g. adolescents, narcissists) appear frequently involved in selfie-editing - because of the desire for more ideal online self-presentation - and are consequently engaged in more frequent selfie-taking behavior and social media use (Chae, 2017).

1.2. Narcissism and selfies

Due to the opportunity of displaying individual grandiosity on SNSs, recent scholarly literature has increasingly focused upon narcissism and its association with social media use. Indeed, SNSs represent ideal environments to achieve narcissistic goals given the opportunity of controlling self-presentation on such platforms (Casale, Fioravanti, & Rugai, 2016a).

Narcissists particularly tend to be 'active' SNS users (i.e., content-creators, more engaged in posts and like/comment production, photo posting, and uploading) (Brailovskaia & Bierhoff, 2016; Davenport, Bergman, Bergman, & Fearrington, 2014). In fact, many studies have reported a positive association between narcissism and specific SNS use including status updates or picture postings (e.g., Marshall, Lefringhausen, & Ferenczi, 2015; Ryan & Xenos, 2011; Buffardi & Campbell, 2008; Carpenter, 2012; DeWall, Buffardi, Bonser, & Campbell, 2011), uploading attractive photos and promoting one's own visual content (Mehdizadeh, 2010), photo "liking" and commenting (Panek, Nardis, & Konrath, 2013), making efforts to attract admiring friends (Davenport et al., 2014), and number of online friends and followers (Bergman, Fearrington, Davenport, & Bergman, 2011; Buffardi & Campbell, 2008; Carpenter, 2012; Davenport et al., 2014; Panek et al., 2013).

Consequently, many studies have identified narcissism as an important predictor of selfie practices on SNSs (see Weiser, 2018 for a review; Sanecka, 2017; Sung et al., 2016; Wang et al., 2018).

Indeed, compared with low narcissistic individuals, people with high narcissism are more likely to use *selfie-marketing* for self-presentation and self-promotion on SNSs (Fox, Bacile, Nakhata, & Weible, 2018; Sanecka, 2017), to edit and post selected attractive selfies, in order to elicit positive response, and grow popularity utilizing visual-content sharing apps. Similarly, narcissists appear to perceive their selfies as more attractive than individuals with a lower level of narcissism (Moon, Lee, Lee, Choi, & Sung, 2016). Halpern, Valenzuela, and Katz (2016) suggested that selfies might have a self-reinforcement effect whereby narcissists frequently take selfies in order to maintain positive views of themselves, which in turn increases their narcissism levels. Indeed, frequent selfie-takers and heavy social media users are likely to be extravert and narcissist (Chae, 2017). It has also been shown that narcissism predicts selfie-liking among adolescents (Charoensukmongkol, 2016). Moreover, gender-related studies state that narcissism appears to significantly predict selfie-posting frequency, especially among females (Barry, Doucette, Loflin, Rivera-Hudson, & Herrington, 2017; Fox & Rooney, 2015; Lee & Sung, 2016; McCain et al., 2016; Sorokowski et al., 2015; Weiser, 2015, 2018). More specifically, admiration demand and vanity promote increasing selfie-posting among females (Sorokowski et al., 2015).

Furthermore, unlike previous studies in this area, Etgar and Amichai-Hamburger (2017) and, more recently, Wu, Song, and Ma (2019) did not find an association between selfies and narcissism, while Arpaci (2018) observed that attitudes, intentions, narcissism, and selfie-posting behavior demonstrated mutual correlations only among young men, and surprisingly not among women. Finally, very recently Giordano et al. (2019) pointed out that high levels of narcissism are associated to more frequent selfie-related behaviors, which mediate the relationship between narcissism and problematic smartphone use, both in young men and women.

As previous literature has stated, two subtypes of narcissism appear to co-exist, characterizing distinct and separate, or fluctuating and co-occurring personality traits (Miller et al., 2018). Grandiose narcissism (or 'overt' narcissism) reflects grandiosity traits and it is typical of individuals who search for admiration, show high self-esteem, exhibitionism, dominance and arrogance (Miller & Campbell, 2008; Wink, 1996). Vulnerable narcissism (or 'covert' narcissism) characterizes individuals with low self-esteem, insecure sense of grandiosity, shame, and being hypersensitive evaluation by others (Dickinson & Pincus, 2003; Pincus & Roche, 2011).

To date, only a few studies have explored the association between different subtypes of narcissism and selfie-posting among adolescents and young adults. One recent study evidenced that higher levels of grandiose-exhibitionist narcissism and lower levels of self-esteem were associated with posting more selfies especially among females (March & McBean, 2018). Another study reported that grandiose narcissism was associated with posting more selfies and experiencing more positive affects when taking selfies (McCain et al., 2016). Conversely, the same study found that vulnerable narcissism was associated with negative affect when taking selfies.

It seems that previous studies differ in their methodologies and measures. However, even though an association between grandiose/exhibitionist tendencies and selfie-posting behaviors appears to be consistent with many findings across multiple samples (Singh, Farley, & Donahue, 2018), these results demonstrate that selfie-posting behavior is a multidimensional phenomenon, and not uniquely associated with narcissistic personality traits.

For instance, recently Barry et al. (2017) reported a significant association between some particular dimensions of narcissism and specific categories of selfies (e.g., vulnerable narcissism and physical appearance selfies), confirming the relationship between narcissism and variables concerning societal attitudes about appearance, expressed by carrying out social media-related practices (Barry et al., 2017). Finally, a cross-sectional study by Wang et al. (2018) among Chinese young adults showed the mediating role of body satisfaction between narcissism and selfie-posting, and the moderating effect of attitudes toward selfies on the relationship between body satisfaction and selfie-posting.

1.3. Body objectification on SNSs

As a result of predominantly image-based SNSs, the endorsement of photos as a medium to express one's own identity and obtaining social approval has promoted the interest of a new research field, in which appearance evaluation and comparison, body concerns, and objectification potentially occur.

According to the *objectification theory* (Fredrickson & Roberts, 1997), as a result of an internalization process – known as *self-objectification* – an outside observer's perspective on physical selves might be assumed and internalized, together with socio-cultural body standards, that individuals could feel forced – more or less – to accomplish. McKinley and Hyde (1996) associated this experience with three specific components of *objectified body consciousness* (OBC): *body surveillance* (the individual's constant body monitoring, due to the assumption of an outside observer's perspective), *body shame* (the perceived failure in achieving ideal standards of beauty), and *appearance control beliefs* (personal belief of controlling one's own bodily appearance).

Traditionally, body-objectification has been considered a gendered-process, valid and true exclusively for women in Western societies. Media exposure to cultural standards of beauty promoted objectified body images (for a review, see Grabe, Ward, & Hyde, 2008), encouraging women's self-body objectification, in terms of body surveillance and shame (Aubrey, 2006; Fredrickson & Roberts, 1997; Meier & Gray, 2014). According to this perspective, high exposure to pictures and appearance-related conversations and comparisons on SNSs (e.g., *Facebook* and *Instagram*) are strictly related to appearance concerns and they promote self-objectification (Arroyo & Brunner, 2016; Bell,

Cassarly, & Dunbar, 2018; Cohen, Newton-John, & Slater, 2018; Fardouly & Vartanian, 2015; Fardouly, Diedrichs, Vartanian, & Halliwell, 2015; Fardouly, Willburger, & Vartanian, 2018; Feltman & Szymanski, 2018; Manago, Ward, Lemm, Reed, & Seabrook, 2015; Meier & Gray, 2014; Trekels, Ward, & Eggermont, 2018). However, the current widespread use of social media platforms for peer interactions by active users/creators of visual content (no more view-only users) provides a new and easy medium to socialize with self-objectification experiences and increase objectified body consciousness (Boursier, Gioia, & Griffiths, 2020; Caso, Fabbricatore, Muti, & Starace, 2019; de Vries & Peter, 2013; Manago et al., 2015; Ramsey & Horan, 2018), particularly relying upon women's body dissatisfaction (Casale, Gemelli, Calosi, Giangrasso, & Fioravanti, 2019).

Nevertheless, on SNS profiles, individuals habitually appear to look at themselves from an observer's perspective (Fardouly et al., 2015). Consequently, body-objectification is now becoming prevalent among male as well as female active social media users (e.g., Dakanalis et al., 2015; Holland & Tiggemann, 2016; Karsay, Knoll, & Matthes, 2018; Manago et al., 2015; Moradi, 2010; Vandenbosch & Eggermont, 2012).

Furthermore, social media use could be a pivotal catalyst for appearance concerns, likely leading to appearance-related activities, such as selfie-sharing and selfie-editing (Brown & Tiggemann, 2016; Cohen, Newton-John, & Slater, 2017; Doğan & Çolak, 2016; Holland & Tiggemann, 2016; Mills, Musto, Williams, & Tiggemann, 2018).

From this perspective, on the one hand, many empirical studies have confirmed the problematic close relationship between body image management and SNS use (Manago et al., 2015; Moya-Garofano & Moya, 2019; Slater & Tiggemann, 2015; Tiggemann & Slater, 2013, 2015; Kuss & Griffiths, 2017; Salomon & Brown, 2019). On the other hand, many scholars have investigated selfie-behavior on SNSs in relation to body image and appearance preoccupations (Boursier & Manna, 2019; Gilliland, Kiss, Morrison, & Morrison, 2018; Mills et al., 2018; Seyfi & Arpacı, 2016; Shin, Kim, Im, & Chong, 2017; Veldhuis, Alleva, Bij de Vaate, Keijer, & Konijn, 2018).

Recently it has been reported that higher frequency of posting objectified self-images might be associated with trait self-objectification and receiving more likes in young adult women (Bell et al., 2018). Furthermore, surveillance has been evidenced as a moderator of the relationship between photo investment and body dissatisfaction in young women (Cohen et al., 2018). Chang et al. (2019) pointed out that selfie-posting has a direct and positive association with body esteem among adolescents. Moreover, it has been evidenced that positive feedback and body satisfaction mediate the relationship between selfie-posting and self-esteem among females (Wang et al., 2018). A few studies have shown that greater selfie-posting behavior is associated with greater body satisfaction especially among females (Cohen et al., 2018; Ridgway & Clayton, 2016). However, it has also been reported that selfie-investment and manipulation are related to body dissatisfaction among both males and females (Lonergan et al., 2019). Previously, McLean et al. (2015) also found high selfie-investment and manipulation, especially among adolescent girls dissatisfied with their own body appearance.

In summary, the empirical evidence suggests there is a clear association between selfie-posting and body-esteem/satisfaction, often influenced by others' approval and comparisons via social networking sites. However, only a few studies have analyzed the specific impact of OBC on active SNS users (i.e., Boursier et al., 2020; Veldhuis et al., 2018; Lamp et al., 2019; Zheng, Ni, & Luo, 2019). More specifically, Zheng et al. (2019) observed that self-objectification predicted selfie-posting especially among girls with higher levels of imaginary audience ideation, highlighting the pivotal role of an internalized observer's view. Veldhuis et al. (2018) noted the predictive role of body surveillance on greater engagement in selfie-related activities on SNSs, especially for young women. Lamp et al. (2019) reported that body surveillance highly affected selfie-frequency and photo manipulation among women. Finally, Boursier et al. (2020) evidenced the mediating

effect of body image control in photos on the relationship between body appearance control beliefs and SNS problematic use in girls.

1.4. The present study

Previous literature has demonstrated an association between narcissism and body image concerns, body-objectification and SNS use, narcissism and selfie-posting behavior, and more recently between body surveillance and selfie-posting. Moreover, different findings suggested addressing attention on gender differences when focusing on body objectification and selfie-behavior. However, no previous studies have explored the combined effect of narcissism, objectified body consciousness, and expectancies toward selfies upon individual's selfie-behavior, comparing the influence of these three factors. In light of this, the present study evaluated the predictive role of these components on young women's and men's selfie-engagement, hypothesizing that higher selfie-engagement could be predicted by higher (grandiose/vulnerable) narcissism, objectified body consciousness and positive expectations toward selfies. Moreover, considering men's and women's different engagement in selfie-sharing and body objectification, the role of these components was explored among different male and female samples, expecting different patterns. Indeed, consistent with female's typical involvement in body appearance concerns and related activities, it has been expected that narcissistic traits (particularly vulnerable narcissism), combined with higher body surveillance and positive expectancies of self-improvement through selfie-sharing could predict selfie-engagement, especially in women. Additionally, due to the interest recently addressed concerning male body objectification, the predictive role of these components was also explored specifically on men's selfie-engagement.

2. Methods

2.1. Participants and procedure

Data were collected via an online survey. Participant recruitment was carried out by advertisements placed on Italian university web communities visited by many undergraduate students. The call for participation in the online study contained a website link that participants had to click on to complete the questionnaire. A total of 570 participants (mean age = 24.4 years, SD = 3.60), comprising 189 males (33.2%) and 381 females (66.8%) took part in an online survey study. Before filling out the online questionnaire, all participants were informed about the nature of the research and the measures to be used in generating the data. General information about the aim of the study was also declared before starting the survey. Participation was voluntary, confidentiality and anonymity were assured, and all participants were informed that they could withdraw from the study at any time. No course credits or remunerative rewards were given. The study was approved by the research team's University Research Ethics Committees and was conducted according to the ethical guidelines for psychological research laid down by the Italian Psychological Association (AIP).

2.2. Measures

2.2.1. Pathological Narcissism Inventory (PNI)

The Italian version of the PNI (Fossati, Feeney, Pincus, Borroni, & Maffei, 2015; original English version by Pincus, 2013; Pincus et al., 2009) was used to assess overt and covert characteristics of grandiose and vulnerable narcissism. The PNI is a 52-item scale rated on a six-point Likert scale ranging from 1 (*not at all like me*) to 6 (*very much like me*). The PNI consists of seven first-order scales labeled: contingent self-esteem (e.g., *"It's hard to feel good about myself unless I know other people admire me"*), exploitativeness (e.g., *"I find it easy to manipulate people"*), self-sacrificing self-enhancement (e.g., *"I try to show what a good person I am through my sacrifices"*), hiding the self (e.g., *"I often hide my needs for*

fear that others will see me as needy and dependent"*), grandiose fantasy (e.g., *"I often fantasize about performing heroic deeds"*), devaluing (e.g., *"Sometimes I avoid people because I'm concerned that they'll disappoint me"*), and entitlement rage (e.g., *"I typically get very angry when I'm unable to get what I want from others"*). Moreover, the PNI yields two second-order scales: narcissistic vulnerability (obtained from the average score of contingent self-esteem, hiding the self, devaluing, and entitlement rage) and narcissistic grandiosity (obtained from the average score of exploitativeness, self-sacrificing self-enhancement, and grandiose fantasy). In the present study, Cronbach's alpha values of the first-order scales were very good and ranged from 0.76 (exploitativeness) to 0.92 (contingent self-esteem). The Cronbach's alphas for grandiose narcissism and vulnerable narcissism were 0.66 and 0.83 respectively.

2.2.2. Objectified Body Consciousness Scale (OBCS)

The 24-item Italian version of the OBCS (Dakanalis et al., 2015; original English version by McKinley & Hyde, 1996) was used. This scale comprises three eight-item subscales that assess body surveillance (e.g., *"I often worry about whether the clothes I am wearing make me look good"*), body shame (e.g., *"I feel ashamed of myself when I haven't made the effort to look my best"*), and appearance control beliefs (e.g., *"I think a person can look pretty much how they want to if they are willing to work at it"*). Participants reported their agreement with items on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Appropriate items were reverse-coded. In the present study, Cronbach's alpha values were 0.76 for body surveillance, 0.85 for body shame, and 0.75 for appearance control beliefs.

2.2.3. Selfie-Expectancies Scale (SES)

The 23-item SES (Boursier & Manna, 2018) assesses positive and negative expectancies concerning selfie-behavior. The scale comprises seven different factors: relational worries (e.g., *"How much selfie-taking might damage your reputation?"*), internet-related anxieties (e.g., *"How much selfie-taking might worry you because your photos/identity could be stolen?"*), sexual desire (e.g., *"How much selfie-taking improves your sexual fantasies?"*), ordinary practice (e.g., *"How much selfie-taking is a habit?"*), self-confidence (e.g., *"How much selfie-taking improves your self-esteem?"*), self-presentation (e.g., *"How much selfie-taking is a way to show to the others the best part of you?"*), and generalized risks (e.g., *"How much selfie-taking might cause you problems in the future?"*). Each item is answered on a five-point Likert scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). In the present study, the Cronbach's α values for each SES subscale ranged from 0.65 (sexual desire) to 0.91 (internet-related anxieties).

2.2.4. Selfie engagement

According to earlier studies and matters arising from focus groups on selfie-taking and selfie-sharing behaviors, previously conducted in different contexts (Boursier & Manna, 2018), a measure was developed to assess practices of sharing selfies. Participants were asked to respond to five self-report items, directed to assess their selfie-engagement, in terms of concern and time spent for posting and choosing selfies to share on SNSs. More specifically, two items were adapted from the Selfie Frequency Scale (Boursier & Manna, 2018; Manna & Boursier, 2017) and assessed the frequency to which participants share selfies on their SNS profile (*"How many selfies do you share on social networking sites?"*) or send them via chat (*"How many selfies do you share in chats (for example in WhatsApp chat-rooms or Instagram Direct)?"*), rated from 1 (*less than once a month*) to 8 (*more than twice a day*). Considering the pivotal role of self-presentation and positive feedback (such as "likes") in selfie practice (Boursier & Manna, 2018), two items explored how often participants used a selfie as SNS profile image (*"How often your profile pictures on social networking sites are selfies?"*) and how often they used a selfie that gets many "likes" as their SNS profile image (*"How often do you use a selfie that received many likes as profile pictures on social*

networking sites are selfies?"). Finally, considering the pivotal role of selfie-related behaviors before sharing photos on SNSs (Boursier & Manna, 2019; de Vaate et al., 2018; McLean et al., 2015), one item evaluated how often participants took multiple selfies to share the best one on SNSs ("*How often do you take more selfies to choose the best one to share on social networking sites?*"). These three items were rated from 1 (*never*) to 5 (*always*). Standardized measures were used. The measure was observed to have adequate internal consistency in the present study ($\alpha = 0.70$).

2.3. Statistical analysis

Descriptive statistics and Pearson's correlations between the study variables were performed. Independent *t*-tests were used to assess gender differences, and the magnitudes of the differences were evaluated utilizing effect sizes (Cohen's *d*). Hierarchical regression analyses were performed to explore the predictive effect of narcissistic vulnerability, narcissistic grandiosity, objectified body consciousness, and selfie-expectancies dimensions on selfie-engagement, for each gender. All statistical analyses were performed using the Statistical Package for Social Sciences SPSS (Version 23 for Windows).

3. Results

Descriptive analyses were performed, and gender differences with related effect sizes were calculated (Table 1). As shown in Table 1, compared to males, females reported statistically significant higher scores in OBC body surveillance, OBC body shame, SES internet-related anxieties, SES self-presentation, and in selfie engagement. Males had higher scores on narcissistic grandiosity. Zero-order correlations of the study variables are shown in Table 2.

Before running the hierarchical regressions, multicollinearity was checked. There was no indication of multicollinearity (Table 3), as tolerance statistics were above 0.2 and variance influence factors were well below 10 (Bowerman & O'Connell, 1990). The hierarchical regressions for both men and women are shown in Table 3. In the female sample, both narcissistic vulnerability and narcissistic grandiosity were significant in the first step. After adding OBCS, body surveillance appeared a significant predictor of selfie-engagement, narcissistic vulnerability did not remain a significant predictor, and narcissistic grandiosity was still a significant predictor. In the third step, adding SES, sexual desire, self-confidence, self-presentation, and generalized risks were significant predictors. Body surveillance was still a significant predictor, but narcissistic grandiosity did not remain a significant predictor. The final model accounted for 33.2% of the variance ($F_{(7,368)} = 16.447$; $p < .001$). For the male sample, in the first step, narcissistic vulnerability and narcissistic grandiosity were not

significant. In the second step, body surveillance was a significant predictor. Finally, adding SES in the third step, only self-presentation was significant, and body surveillance remained a significant predictor. The final model accounted for 27.7% of the variance in males' selfie engagement ($F_{(7,176)} = 4.811$; $p < .001$).

4. Discussion

The present study surveyed a specific sample of Italian young women and men and tested a hierarchical regression model to explore the predictive role of vulnerable/grandiose narcissism, objectified body consciousness, and expectancies toward selfies on males' and females' selfie-engagement. Consistent with literature, results showed that women are more involved in selfie-posting behavior (Albury, 2015; Dhir et al., 2016). Moreover, results aligned with the female's involvement in experiences of body-objectification, even though the small difference between males' and females' body surveillance and body shame scores highlighted increasing self-objectification processes among males (Vandenbosch & Eggermont, 2013). Finally, partially in line with previous studies on Italian samples, the present findings showed higher male overt narcissism and inclination for grandiosity, but not a higher female covert predisposition (Casale et al., 2016a; Casale, Fioravanti, Rugai, Flett, & Hewitt, 2016b). This study's findings showed a high correlation among the variables considered. In particular, the experience of body shame and body surveillance, due to the interiorization of an observer's point of view, and appeared to be related to narcissistic personality traits, especially in hypersensitive women. This result is clearly in line with the description of individuals with vulnerable narcissistic traits, characterized by low self-esteem, shame, and hypersensitivity to evaluation by others (Dickinson & Pincus, 2003; Pincus & Roche, 2011). Furthermore, a strong correlation appeared between narcissism and "positive" expectancies toward selfies (self-confidence, self-presentation, sexual desire) in both males and females. In other words, men and women with vulnerable/grandiose narcissistic traits seem to share their body images through selfie-posting and expect an improvement in their self-confidence. Finally, in the present study, males' and females' selfie-engagement results particularly related to positive expectations (an increase of self-confidence and self-presentation via selfie-posting), thus confirming the role performed by the expectancies in this practice (Boursier & Manna, 2018).

Concerning the regression model, findings partially confirmed the hypothesis. Body surveillance and positive selfie-expectancies have been evidenced as clear and consistent selfie predictors. On the contrary, pathological narcissism had no predictive effect on selfie-engagement, when compared to expectations underlying selfie activities, and objectified body consciousness. Moreover, in terms of gender, no great differences were found. Men's and women's selfie-engagement

Table 1
Means, standard deviations (SD), *t*-test, and effects sizes (Cohen's *d*) for both genders.

	Total sample	Males	Females	t	d
PNI narcissistic vulnerability	3.158 (0.878)	3.149 (0.921)	3.162 (0.857)	.165[n.s.]	0.01
PNI narcissistic grandiosity	3.574 (0.790)	3.689 (0.852)	3.518 (0.753)	2.443*	0.22
OBCS body surveillance	4.311 (1.037)	4.085 (1.097)	4.422 (0.988)	3.693***	0.33
OBCS body shame	3.57 (1.369)	3.309 (1.270)	3.699 (1.398)	3.229**	0.29
OBCS appearance control beliefs	4.951 (0.967)	5.044 (0.987)	4.905 (0.956)	1.615[n.s.]	0.14
SES relational worries	2.282 (1.077)	2.299 (1.128)	2.273 (1.052)	.271[n.s.]	0.02
SES web-related anxieties	3.308 (1.312)	3.019 (1.371)	3.451 (1.259)	3.743***	0.33
SES sexual desire	1.604 (0.638)	1.661 (0.662)	1.576 (0.625)	1.511[n.s.]	0.13
SES ordinary practice	3.751 (0.921)	3.665 (0.967)	3.794 (0.896)	1.571[n.s.]	0.14
SES self-confidence	2.186 (1.017)	2.073 (0.997)	2.242 (1.024)	1.868[n.s.]	0.17
SES self-presentation	2.801 (0.951)	2.63 (0.964)	2.885 (0.934)	3.045**	0.27
SES generalized risks	2.664 (0.902)	2.568 (0.903)	2.711 (0.898)	1.791[n.s.]	0.16
Selfie engagement	0.000 (0.667)	-0.217 (0.624)	0.107 (0.663)	5.599***	0.50

Note. PNI: Pathological Narcissism Inventory; OBCS: Objectified Body Consciousness Scale; SES: Selfie Expectancies Scale.
*$p < .05$; **$p < .01$; ***$p < .001$; [n.s.] = non-significant.

Table 2

Bivariate correlations between all variables (partial correlations appear in parentheses near zero-order correlations). Males' data below the diagonal, females' data above the diagonal.

	1	2	3	4	5	6	7	8	9	10	11	12	13	
1 PNI narcissistic vulnerability	–	0.628**	0.310**	0.521**	−0.367**	0.271**	0.144**	0.278**	0.151**	0.408**	0.270**	0.106*	0.252**	(0.012)[a]
2 PNI narcissistic grandiosity	0.685**	–	0.195**	0.331**	−0.224**	0.169**	0.146**	0.243**	0.085	0.369**	0.275**	0.120**	0.246**	(0.057)[a]
3 OBCS body surveillance	0.209**	0.193**	–	0.564**	−0.131*	0.142**	0.047	0.124*	0.017	0.196**	0.153**	−0.027	0.281**	(0.185)[a]
4 OBCS body shame	0.515**	0.286**	0.415**	–	−0.383**	0.185**	0.066	0.164**	0.065	0.270**	0.202**	0.041	0.198**	(−0.046)[a]
5 OBCS appearance control beliefs	−0.346**	−0.107	0.006	−0.354**	–	−0.200**	−0.004	−0.093	−0.088	−0.215**	−0.068	−0.046	−0.061	(0.039)[a]
6 SES relational worries	0.407**	0.247**	0.143**	0.298**	−0.218**	–	0.346**	0.196**	0.161**	0.218**	0.282**	0.467**	0.107*	(0.041)[a]
7 SES web-related anxieties	0.340**	0.222**	−0.042	0.201**	−0.226**	0.448**	–	0.026	0.020	0.125**	0.526**	0.415**	0.088	(−0.019)[a]
8 SES sexual desire	0.266**	0.201**	0.120	0.182**	−0.038	0.313**	0.192**	–	0.249**	0.389**	0.278**	0.094	0.332**	(0.185)[a]
9 SES ordinary practice	0.114	0.101	0.149**	0.102	0.032	0.168*	0.104	0.374**	–	0.264**	0.171**	0.099	0.082	(−0.058)[a]
10 SES self-confidence	0.334**	0.311**	0.206**	0.165**	−0.069	0.221**	0.148**	0.410**	0.335**	–	0.596**	0.072	0.450**	(0.179)[a]
11 SES self-presentation	0.366**	0.287**	0.032	0.169**	−0.190**	0.407**	0.599**	0.450**	0.344**	0.530**	–	0.225**	0.407**	(0.195)[a]
12 SES generalized risks	0.106	−0.025	−0.091	0.033	−0.155*	0.525**	0.489**	0.096	−0.001	−0.032	0.207**	–	−0.105*	(−0.197)[a]
13 Selfie engagement	0.221**	0.252**	0.303**	0.215**	0.013	0.213**	0.129	0.331**	0.238**	0.389**	0.357**	−0.007	–	
	(−0.056)[a]	(0.094)[a]	(0.196)[a]	(0.069)[a]	(0.079)[a]	(0.045)[a]	(−0.041)[a]	(0.115)[a]	(0.021)[a]	(0.138)[a]	(0.158)[a]	(−0.020)[a]		

Note. PNI: Pathological Narcissism Inventory; OBCS: Objectified Body Consciousness Scale; SES: Selfie Expectancies Scale.

** p = .01; * p = .05; [a] Partial correlation controlling for Selfie engagement.

was similarly predicted by body surveillance and positive selfie-expectancies. However, as hypothesized, higher selfie-engagement was predicted by higher body surveillance and positive expectations toward self-improvement via selfie-sharing, particularly among women. On the contrary, no influence was evidenced for pathological vulnerable narcissistic traits as it was expected in the female sample. Furthermore, paying attention to gender peculiarities, specific women's expectancies that predicted selfie-engagement have been evidenced and discussed.

These results contribute to the ongoing controversial debate on whether and how personality traits influence selfie-posting (Etgar & Amichai-Hamburger, 2017; Wu et al., 2019), also supporting the analysis of the interconnection among different aspects (Arpaci, 2018; Wang et al., 2018). Among the explored factors, the role of body image appeared to be extremely significant, together with people's expectations, highlighting the implication of the photographer's personal agency in selfie-related behaviors.

According to recent findings (Veldhuis et al., 2018; Lamp et al., 2019; Zheng et al., 2019), the internalization of an observer's view on body appearance (i.e., body surveillance) might play a pivotal and arguable role especially in women's selfie-engagement, but not exclusively on them. This finding confirms the expected greater women's involvement in appearance concerns and body-image related practices, even though men's results deserve attention. Indeed, in the present study, men also appeared to feel pressure on their body appearance. Interestingly, males' body surveillance alone accounted for 13.8% of the variance in predicting selfie-engagement. According to recent findings (Daniel & Bridges, 2010; Karsay et al., 2018; Manago et al., 2015; Moradi, 2010; Vandenbosch & Eggermont, 2013), social and cultural stereotypes concerning beautiful and performing bodies, globally shared and reinforced through social media content creation, influenced heavily both females' and males' online behavior.

Finally, the role of positive outcome expectancies in addressing and reinforcing individuals' behavior (Patrick & Maggs, 2009) appears to be in line with literature on internet-related practices (Brand, Laier, & Young, 2014), and with previous studies concerning expectancies underlying selfie-behavior (Boursier & Manna, 2018). Believing that selfie-posting could be a useful tool for self-presentation likely leads people to online, more or less authentic, self-disclosure (Christoforakos & Diefenbach, 2016; Nguyen & Barbour, 2017; Warfield, 2014; Williamson, Stohlman, & Polinsky, 2017). Similarly, a potentially large audience can be ready to approve (or dislike) individual's images shared online, and this belief could reinforce the expectation of self-confidence promotion via selfie-engagement (Taylor, Hinck, & Lim, 2017).

According to Boursier and Manna (2018), self-presentation and self-confidence are viewed as basic expectations that frequently lead boys and girls to selfie-posting. Selfies are used as self-presentation tools, despite the potentially generalized risks related to online photo-sharing, which exclusively characterized girl's worries. This contradictory behavior remains a controversial issue, and previously discussed in relation to the "privacy paradox" (Barnes, 2006) specifically observed in females, whereby despite declared privacy concerns, women do not decrease their selfie-sharing activities (Dhir, Torsheim, Pallesen, & Andreassen, 2017). The present study findings seemed to confirm this paradox, because women's selfie-engagement was predicted by positive expectations, notwithstanding the perceived potential risk due to self-images sharing. Moreover, differently from previous results on adolescents (Boursier & Manna, 2018), in the present study, the expectation of increasing self-confidence and sexual desire characterized only women's selfie-engagement. This result seems to entail and reinforce females' predisposition to body-objectification (i.e., women's body as an object of desire), need for appearance reassurance, and searching for "likes" (Bell et al., 2018). However, selfie-sharing activities seem to promote women's expectation of increasing personal excitement and sexual fantasies, also showing the women's desire dimension (i.e. subject, not only object, of sexual desire) which deserves attention and

Table 3
Hierarchical regression analyses and collinearity statistics by gender.

														Collinearity Statistics	
Females		B	SE	B	t	Sign.	R^2	AdjR^2	SE	R^2 Change	$F_{(dfn,dfd)}$	p		Tolerance	VIF
Step 1	PNI narcissistic vulnerability	0.124	0.049	0.160	2.521	< 0.05	0.076	0.071	0.639	0.076	15.560$_{(2,378)}$	< 0.001		0.605	1.652
	PNI narcissistic grandiosity	0.128	0.056	0.145	2.288	< 0.05								0.605	1.652
Step 2	PNI narcissistic vulnerability	0.089	0.054	0.115	1.651	0.100	0.124	0.112	0.625	0.047	6.773$_{(3,375)}$	< 0.001		0.478	2.092
	PNI narcissistic grandiosity	0.128	0.055	0.145	2.334	< 0.05								0.605	1.652
	OBCS body surveillance	0.161	0.040	0.240	4.064	< 0.001								0.672	1.488
	OBCS body shame	−0.016	0.032	−0.033	−0.483	0.629								0.510	1.960
	OBCS appearance control beliefs	0.023	0.037	0.033	0.614	0.540								0.803	1.245
Step 3	PNI narcissistic vulnerability	0.011	0.049	0.014	0.221	0.825	0.332	0.311	0.55	0.209	16.447$_{(7,368)}$	< 0.001		0.449	2.227
	PNI narcissistic grandiosity	0.054	0.049	0.061	1.093	0.275								0.580	1.724
	OBCS body surveillance	0.127	0.035	0.189	3.605	< 0.001								0.660	1.514
	OBCS body shame	−0.025	0.028	−0.053	−0.893	0.372								0.508	1.970
	OBCS appearance control beliefs	0.025	0.934	0.036	0.740	0.460								0.776	1.289
	SES relational worries	0.025	0.033	0.040	0.778	0.437								0.673	1.486
	SES web-related anxieties	−0.011	0.030	−0.021	−0.368	0.713								0.560	1.785
	SES sexual desire	0.184	0.051	0.174	3.618	< 0.001								0.789	1.268
	SES ordinary practice	−0.037	0.033	−0.050	−1.106	0.270								0.887	1.127
	SES self-confidence	0.138	0.040	0.213	3.483	< 0.01								0.486	2.057
	SES self-presentation	0.176	0.046	0.248	3.813	< 0.001								0.428	2.339
	SES generalized risks	−0.146	0.038	−0.197	−3.859	< 0.001								0.693	1.443

														Collinearity Statistics	
Males		B	SE	β	t	Sign.	R^2	AdjR^2	SE	R^2 Change	$F_{(dfn,dfd)}$	p		Tolerance	VIF
Step 1	PNI narcissistic vulnerability	0.063	0.066	0.092	0.951	0.343	0.068	0.058	0.606	0.068	6.777$_{(2,186)}$	< 0.01		0.531	1.884
	PNI narcissistic grandiosity	0.138	0.071	0.189	1.940	0.054								0.531	1.884
Step2	PNI narcissistic vulnerability	0.035	0.075	0.052	0.475	0.636	0.138	0.115	0.587	0.070	4.965$_{(3,183)}$	< 0.01		0.390	2.565
	PNI narcissistic grandiosity	0.116	0.071	0.159	1.642	0.102								0.505	1.979
	OBCS body surveillance	0.131	0.044	0.231	3.000	< 0.01								0.794	1.259
	OBCS body shame	0.036	0.044	0.073	0.810	0.419								0.584	1.713
	OBCS appearance control beliefs	0.046	0.049	0.072	0.936	0.351								0.791	1.264
Step 3	PNI narcissistic vulnerability	−0.054	0.073	−0.080	−0.742	0.459	0.277	0.227	0.549	0.138	4.811$_{(7,176)}$	< 0.001		0.356	2.810
	PNI narcissistic grandiosity	0.084	0.067	0.115	1.259	0.210								0.491	2.035
	OBCS body surveillance	0.112	0.042	0.197	2.652	< 0.01								0.747	1.338
	OBCS body shame	0.038	0.042	0.078	0.918	0.360								0.567	1.763
	OBCS appearance control beliefs	0.048	0.046	0.077	1.047	0.297								0.767	1.304
	SES relational worries	0.029	0.049	0.053	0.599	0.550								0.531	1.884
	SES web-related anxieties	−0.024	0.044	−0.052	−0.549	0.584								0.449	2.225
	SES sexual desire	0.113	0.073	0.119	1.540	0.125								0.684	1.461
	SES ordinary practice	0.013	0.047	0.020	0.281	0.779								0.783	1.277
	SES self-confidence	0.097	0.052	0.154	1.848	0.066								0.588	1.701
	SES self-presentation	0.143	0.067	0.220	2.127	< 0.05								0.383	2.614
	SES generalized risks	−0.015	0.059	−0.022	−0.262	0.794								0.563	1.775

Note. PNI: Pathological Narcissism Inventory; OBCS: Objectified Body Consciousness Scale; SES: Selfie Expectancies Scale.

further exploration.

These findings, reinforced by the coexistent role of body surveillance, appear to strengthen the pervasive influence of body objectification on this internet-related practice. Nevertheless, it remains a critical issue relating to self-image sharing on SNSs, whether individuals can share perfect body images, potentially manipulated in order to achieve approval and popularity, promoting their need for narcissistic admiration (Casale et al., 2016b; Casale, Rugai, Fioravanti, & Puccetti, 2018; Chae, 2017).

In conclusion, the present study's findings provided some novel observations. Overall, they highlighted the pivotal influence of self-objectification on women's and men's social media use, and specifically on self-image sharing via selfie-posting behavior. This result supports the need to take into account the widespread (global) diffusion and internalization of a body image web-culture among young women and men. However, a specific interest should be addressed in the male population, whose behavior has been traditionally less studied on this topic. Further research could examine male populations to delineate whether and which risky factors are displayed and associated with body surveillance and social media use.

The present study's findings demonstrated new insights into individuals' selfie-behavior contributing to the ongoing debate concerning the psychological and psychopathological facets of internet-related practices. Therefore, the specific key role played by individuals'

body appearance and body images-sharing via social media – a main role compared to personality traits, as this study evidenced – deserves further empirical attention. Indeed, as stated previously, visual content on SNS platforms could potentially have stronger effects on body image concerns due to their central focus on image sharing (Fardouly & Vartanian, 2016). Moreover, the great visual attention directed towards body appearance might trigger behaviors such as body image control and selfie-marketing, potentially related to self-objectification (McLean et al., 2019) and maladaptive use of digital tools (Giordano et al., 2019). In this regard, selfie-behavior might be considered dysfunctional when related to an objectified use of body images via social media, which could reinforce individuals' body concerns and lead to a problematic social media use (Boursier et al., 2020). For instance, people's expectancies underlying selfie behavior and people's higher engagement in selfie-taking, selfie-editing (i.e., photo-manipulation), and selfie-sharing might involve women and men in a dysfunctional use of social platforms (Wang, Xie, Fardouly, Vartanian, & Lei, 2019), reinforcing an (appearance-related) *behavior-reward feedback loop* (Hawk et al., 2019). Preliminary results on this issue have been previously discussed (Boursier & Gioia, 2019a; 2019b). However, further research on this interesting topic is needed. Therefore, in this regard, these findings might contribute to the debate on which specific psychological processes underlining people's activities allow to differentiate between common and dysfunctional (eventually excessive) behaviors (Billieux et al., 2015; Kardefelt-Winther et al., 2017).

Finally, the present study partially contributes to the need for discussing self-presentational concerns in models of narcissistic personality (Casale et al., 2016b).

Some limitations of the present study also need to be addressed when interpreting the findings. Firstly, the study used a self-report survey and its potential biases are well-known. Secondly, the cross-sectional nature of the study and specific geographic area of the sample limit the ability to formally test causality of the data. Furthermore, the participants were not gender-balanced (with significantly more females participating). Finally, other aspects could have been explored alongside the variables investigated here. For example, additional investigations are needed to evaluate the specific role of photo-manipulation practices in body objectification, body satisfaction, and selfie-engagement, in male as well as in female samples. Additionally, personal agency entailing the photographer's consciousness in selfie-marketing for self-promotion (Chang et al., 2019; Lim, 2016) deserves great attention because it leads to the potential risk of self-falsification. Moreover, within the whole complexity of selfie-behavior, it would be interesting to more deeply explore psychological and psychopathological factors associated with specific typologies of selfies (Barry et al., 2017). Furthermore, different selfie usages should be identified, in order to distinguish between common internet-related practices and problematic/addictive behaviors. Finally, the findings have clinical implications because they clearly show the need for a broader focus on body concerns, since the use of body images appear to be pivotal in social media-related practices and content, among women as well among men The aforementioned dangerous opportunity of self-falsification, by manipulating personal images in order to achieve others' approval, shows potential risks for males' and females' identity construction in young adulthood.

CRediT authorship contribution statement

Valentina Boursier: Conceptualization, Methodology, Investigation, Writing - original draft preparation, Project administration. **Francesca Gioia:** Investigation, Formal analysis. **Mark D. Griffiths:** Validation, Writing - review & editing.

Declaration of Competing Interest

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