Issues related to the Use of Visual Social Networks and Perceived Usefulness of Social Media Literacy during the Recovery: Qualitative Research among Girls with Eating Disorders.

Elena Faccio, Margherita Reggiani, Michele Rocelli, Sabrina Cipolletta

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Abstract

Background: The patient-centred approach has been identified as essential for quality health care and patient safety. Knowledge of the service user's view of the maintenance factors involved in the health problem is necessary for successful treatment, particularly with patients who tend not to recognise their condition as clinically relevant or worrying.

Objective: This research examines how young women in recovery from eating disorders (EDs) perceive the health risks and potentialities associated with visual social networks (i.e. Instagram and Snapchat), which the literature has found to be detrimental for online body comparisons. Although the heavy use of visual social media has been associated with body dissatisfaction and EDs, too little is known about the meanings that users associate with posts of or searches for edited photos and the strategies they use to protect themselves from digital risks during treatment.

Methods: Thirty semi-structured interviews were conducted with adolescent girls aged 14–17 at the end of their treatment for EDs. Content analysis was applied.

Results: Seven main themes emerged: active or passive role in social network (SN) use, the impact of online interactions on a person's relationship with their body, investment in appearing photographic effects on the self, perceived risks, self-protection strategies such as critical thinking, avoidance of sensitive content and increased SN control. There was a strong awareness of the processes that trigger confrontations with the body and create insecurity. All the topics mentioned were considered fundamental.

Conclusions: The results highlight the need to address this issue during hospitalisation so as to develop skills and critical thinking for the purpose of modifying the small habits that prolong the problem in everyday life. The limitations inherent in established service practices, which do not focus on the person's needs and have no impact on their post-treatment life, must also be rethought.

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Literacy during the Recovery:

Qualitative Research among Girls with Eating Disorders.

Abstract

Background
The patient-centred approach has been identified as essential for quality health care and patient safety. Knowledge of the service user's view of the maintenance factors involved in the health problem is necessary for successful treatment, particularly with patients who tend not to recognise their condition as clinically relevant or worrying. Despite intensive use of visual social media has been associated with body dissatisfaction and eating disorders, too little is still known about the meanings users give to posting or searching for edited photos and their use of strategies to protect themselves from digital risks.

Objective
This research examines how young women in recovery from eating disorders (EDs) in North Italy perceive the health risks and potentialities associated with visual social networks (VSNs i.e. Instagram and Snapchat), which the literature has found to be detrimental for online body comparisons.

It also explores the perceived usefulness, the willingness and personal interest to co-construct social media literacy programmes together with girls recovering from eating disorders.

Methods
Thirty semi-structured interviews were conducted with adolescent girls aged 14–17 at the end of their treatment for Eating Disorders. The following areas of research were addressed:

(1) the meanings associated with the use of Instagram and Snapchat; (2) the investment in the photographic dimension and in the feedback; (3) the impact of VSNs on the body experiences; (4) the potential and the risk glimpsed in their use; (5) the importance of accompanying girls undergoing treatment for EDs in SN's use and (6) the usefulness and willingness to co-design SN's literacy programmes. Content analysis was applied.

Results
Seven main contents emerged: active or passive role in using Social Networks, online interactions' impact on body relationship, investment on photographic dimension, effects on self-representation, perceived risks, self-protective strategies and potentials. The findings highlight a strong awareness of the processes that activate the comparison between bodies in the virtual context, which create insecurity and lead to a worsening in the relationship with oneself. Among the self-protective behaviours emerged: the development of critical thinking, the avoidance of sensitive content, increased SNS control, but also a certain skepticism regarding the development of antagonistic ideologies. All the topics mentioned were considered fundamental.

Conclusions
The findings provide important insight for supporting health professionals working with youth population at preparing media literacy programs for reducing potential risks and amplify the positive effects of online resources. They highlight the need to address this issue during hospitalisation to develop skills and critical thinking for the purpose of modifying the small habits that prolong the problem in everyday life. The limitations inherent in established service practices, which do not focus on the person's needs and have no impact on their post-treatment life, must also be rethought.

Keywords: Visual social networks, body image, eating disorders, risks, potentials

Introduction

Background

Although intensive use of visual social media and online body comparisons have been heavily associated with body dissatisfaction and eating disorders (EDs), [1,2] the literature has only partially considered the potential contribution of competence development in the conscious use of social media during hospitalisation for EDs [3].

Recent research on the topic has mainly been divided into two main strands: that devoted to the study of specific modes of social media use by people suffering from EDs [4,5] and that interested in investigating the online environment as a possible 'place' for therapy [6,7]. There are no examples of collaborative projects – those involving mental health professionals and service users during recovery from EDs – aimed at jointly examining visual social media in new ways and co-constructing new awareness about their use.

The idea that the process of care is a joint journey that includes various stakeholders – researchers, health care providers and service users – is a principle that features heavily in official healthcare documents [8] but not so much in practice [9]. It implies that patients are 'real experts' and that embodied knowledge can be the foundation of the co-production of the care pathway. It presupposes that care programme design takes place where people are situated, in their discourses around the body, the way they may experience it, and the context in which they socialise about the idea of desirable bodies (i.e. social media), not where physicians are located [9] hence the inescapable importance of entering the user's world and languages.

During hospitalisation for ED treatment, girls are usually not allowed to use mobile phones, or they may use them only in restricted time slots. If the use of social network sites (SNSs) is not discussed and explicitly addressed, the return home may restore the patient's prior use and SNS meanings, and the effects of treatment may be short-lived. Social media literacy programmes to improve body image-related outcomes should be implemented not only in the context of ED

prevention but also in relation to rehabilitation [3]. According to Fitzsimmons-Craft [10] only 20%

of therapists have asked ED patients about the perceived impact of social media on their body image

experience. Knowing the meanings and ways in which girls use SNSs is an essential source of

knowledge for setting up educational/rehabilitation pathways aimed at building self- and body

perception based on criteria that differ from those that led to the development of the ED [11,12].

Our research represents the first step in the drafting of a collaborative project among

researchers, health professionals and service users, with the aim of identifying the most salient and

relevant issues of social media use from the perspective of girls undergoing treatment.

SNs use and body image concern: what psychological processes come into play?

Social media is an important source of sociocultural pressure on appearance and influences

the relationships adolescents have with others and their own bodies. The commitment in actions

related to the photography dimension on SNs has been demonstrated to be a factor of onset and

maintenance of concerns related to body image and food intake [13,14]: publishing photographs,

seeing photographs of others, commenting or liking and receiving feedback are activities that, if

compared with the generic or passive use of SN platforms, are more insidious in introducing

dynamics of comparison and challenge between bodies, thus made accessible on the showcase of

social judgment [15,16,17].

A consistent and direct link between the posting of edited photos and risk factors for EDs has

been confirmed by a variety of research [18]: Indeed, social media usage is a plausible risk factor for

the development of eating disorders. Research from Asia suggests that the association is not unique

to traditionally western cultures [18B].

Intensive use of SNS was found to be related to the internalisation of the ideal of thinness, self-

objectification and body dissatisfaction [19,20,21]. The literature defines the internalisation of the

ideal of thinness as the extent to which an individual cognitively 'buys into' socially defined ideals of

attractiveness and engages in behaviours designed to produce an approximation of these ideals [19][1].

It generates body dissatisfaction and subsequent disordered eating, as individuals strive for an ideal

physique that is often unattainable. It may persist during recovery from eating disorders and predicts

an increased risk of relapse. In addition to this, the habit of perceiving bodies as if they were objects

socialises girls to engage in self-objectification as a result of internalising an external spectator's

perspective of their bodies. This encourages habitual monitoring of one's physical appearance (self-

surveillance). The person may experience anxiety, reduced body awareness with respect to one's own

internal states, body shame, and fear of the internalised judgement of others. Another element that

might mediate/moderate the relationship between exposure to SNSs and the onset of EDs is the

importance attached to feedback obtained via social media: it has been evidenced that the breadth of

the network measured by the number of 'friends'[22] could even predict a greater propensity to seek

thinness. Facebook use is a prospective predictor of increased EDs symptoms [13]; it has also been

shown that high 'appearance exposure' through Facebook, but not overall Facebook use, is positively

correlated with increased body image disorder among adolescent girls [14].

Visual SNs and the risk of developing EDs

Regular sharing of images of oneself on social media, particularly on Facebook but also

Instagram or Snapchat, and active engagement in manipulating one's images before sharing them

appear to be associated with increased overestimation of shape and weight, body dissatisfaction and

dietary restriction[23]. Facebook users are generally older than Instagram users, and maybe for this,

the youngest and Instagram users seem to be at greater risk of developing EDs and appear to be more

concerned about the effects of sharing their images on SNs [4]. The analysis of fitness content to

inspire individuals to exercise and have healthy habits posted on Instagram by using specific

hashtags (e.g., #fitspiration, #fitspo, #thinspiration) showed that most images portrayed women with

two main characteristics: thin but also with visibly toned, muscular bodies, thus reinforcing the idea

that only the thin body can look fit [24]. The pairing of thinness with muscle affects as many as two-

thirds of the photos posted by influencers [19] which have a stronger effect on body image concerns than photos posted by celebrities or models [24].

Another social networking site that focuses on the visual dimension and whose use has risen rapidly is Snapchat. At present, there is still little research dedicated to investigating the effects of this SN. Its peculiarity is that users can apply filters to change their appearance before sharing photos. Also, the network is more private, and it preserves ephemerality, as content is usually automatically deleted shortly after being opened [25].

Comparative research has revealed that the correlation between photo manipulation with specific editing tools (filters) and body image concerns appears to be stronger on Snapchat than on Instagram [26]. Those who frequently use Snapchat's lenses to beautify their photos appear to be more dissatisfied with themselves and thus more frequently seek out a highly appearance-oriented and appearance-enhancing environment. Posts on Instagram are more challenging, and it seems to take longer for the teenager to prepare to choose the 'right' content prior to taking the photo, rather than to process it once it is taken [27]. The investment of pre-photo time and energy may be strongly related to concerns about body image versus retouching [28,29]. Moreover, while Snapchat is used to connect with close others, users may be less mindful of their physical appearance when taking pictures. Conversely, a larger Instagram audience may be more influential on body image concerns.

Methods

Research Aims

In the face of this, one wonders in what specific ways adolescent girls in treatment for EDs may use SNs. What meanings do they attach to their use of SNs? Do they distinguish manipulated images from unretouched ones? What strategies do they know and implement to protect themselves from the influence of the material they post or consult? Are they aware of what modes of use may contribute to the development of clinically meaningful outcomes?

Our interest is in investigating the use of platforms of a purely photographic nature: Instagram

and Snapchat, the most insidious as to the challenge between bodies on the network [26,27,28,29]. We are interested in investigating the different feelings participants experience when publishing their own photos in a private setting among friends in an intimate and private network, as is the case with Snapchat [26], or in front of a larger audience, as is the case with Instagram [29].

A further domain we are interested in investigating concerns the meanings attributed to the permanence or short duration of the content created and received. In fact, while the contents published or shared on Instagram are permanent, on Snapchat, it is the user himself who establishes the life span of the content, at the end of which it is automatically deleted [26].

Still, we are interested in understanding whether girls use strategies to 'limit the damage' of the potential influence deriving from exposure to certain images, if they know how to recognise the modified photos from the unmodified ones and if they protect themselves from the indiscriminate acceptance of messages deriving from the SNs. The literature [28] has shown that visual social media may also be used during the recovery process from an ED to promote health messages and well-being. Paradoxically, in fact, the use of SNs that include the transformation of one's own photos has also been shown to be an important tool, in a favourable sense [25]. Thus, it is not the photo itself but the way it is used that makes it an 'exit' or 'entry' tool in eating control behaviours.

Being able to transform one's images also has both positive and negative implications. Anyone can alter their images, without excessive cost and in a very democratic way. This fosters a sense of personal empowerment, however, making it easier to alter one's digital appearance increases the number of manipulated portraits that people consult and are confronted with. This, in turn, may increase dissatisfaction with one's physical appearance and amplify the pressure to change it.

In conclusion, we also wanted to know whether the participants thought that the proposed topics were relevant and what other topics they would consider in a collaboratively designed programme on the critical use of social networks to be proposed to potential users in the recovery path.

Sampling and recruitment

After sharing the objectives and content of the research with healthcare staff, we notified the users of the local health unit for the treatment of EDs of the National Healthcare Service, in Eastern Veneto (the Casa delle Farfalle Residential Protected Therapeutic Community for Children).

Healthcare staff presented the research to the girls, collected their consent, asked their parents for authorisation and informed consent and organised the appointment schedule. All the girls to whom the proposal was made adhered. No girl declined the invitation to participate. The participants and their families were informed of their right to withdraw at any time. They signed a written informed consent form regarding their participation in the research and its publication.

Thirty adolescent girls with a mean age of 15 years (range 14–17) expressed an interest in participating. The inclusion criteria were as follows: an ED diagnosis, being at the beginning of the treatment and having been hospitalised for at least 15 days, having a current Instagram and Snapchat profile that was activated for at least six months before admission and the willingness to be interviewed.

We extended the invitation to participants who were at the beginning of their journey because we had a preference for people who had not yet been influenced by the discourses available between users and operators during the period of hospitalisation.

The interview was conducted by MRe (one of the authors of this study). Once the availability had been gathered, she got to know the girls in a few preliminary meetings aimed at getting to know them better and at furthering the presentation of the study's objectives and implications. The interview took place in a room on the ward where the research assistant met the girls one by one.

Ethical Considerations

The Ethical Committee of the School of Padova, at the University of Padova approved the research protocol (Approval n° 2018/2745-10/7). Before the starting of the interviews, the participants and

their parents were asked if they agreed to participate in the research voluntarily and without any

compensation. The original informed consent they signed included the permission for conducting

secondary analysis without additional consent. The final data set is anonymized, without any

identifiable private information connected to participants.

Data collection and analysis

A semi-structured interview consisting of nine open-ended questions was construed specifically for

the research. It addressed the following areas of research: (1) the meanings associated with the use of

Instagram and Snapchat; (2) the investment in the photographic dimension and in the interactivity

generated around it in terms of feedback; (3) the perceived impact that the use of Instagram and

Snapchat can play on the body experiences; (4) the potential and the risk glimpsed in the use of SNs;

(5) the importance of accompanying girls undergoing treatment for EDs in SN's use and (6) the

Willingness to participate and co-design SN's literacy programmes.

[Table 1 near here]

*Table 1: The research examines how thirty young women in recovery from eating disorders (EDs) in
the North of Italy in 2021 perceive the health risks and potentialities associated with visual social
networks (VSNs i.e. Instagram and Snapchat), The table presents the structure of the semi structured
Interview and the open questions composing it.*

Areas of research addressed by the semi-structured interview:	Open questions which compose the Interview:
(1) the meanings associated to the use of Instagram and Snapchat;	1) How do you consider virtual reality compared to the real world? 2) What is your main use of Instagram and Snapchat?
(2) the investment in the photographic dimension and in the interactivity generated around it in terms of feedback;	3) Have you ever received comments on the photos or stories you posted? How did you experience them? 4) To what end do you publish photos or stories? under what circumstances do you usually edit them before publishing them? In what way? What aspects do you focus on?
(3) the perceived impact that the use of Instagram and Snapchat can play on the body experiences;	5) When you look at your account (Instagram or Snapchat), do you feel represented by the resulting image of you?

	6a) Would you like to recount a positive and a negative experience you have had with regard to Instagram and/or Snapchat? 6b) Have you ever compared your published photos of others? What aspects did you focus the comparison on? 6c) Do you think that the information you received from the pages and the activities related to the photographic dimension had an influence on your and others' ideas of your body?
(4) the potential and the risk glimpsed in the use of SNSs.	7) Which use of the platform do you associate with an improvement in your relationship with your body and which with a worsening? How could you protect yourself with regard to use and content that could be critical in your relationship with your body? 8) What potential and what risks do you see in the use of visual social networks?
(5) Importance of accompanying girls undergoing treatment for EDs in SN's use (6) Willingness to participate and co-design SN's literacy programmes	9) What goals should these projects on the conscious use of social media have? 10) Would you be willing, once your treatment is over, to organise together with the operators and act as a testimonial during these courses for other girls, who will be hospitalised later on?

The questions were formulated by the researchers according to the research objectives. In a first phase, the questions were about twice as many, then they were reduced in favour of the most understandable ones. The first interviews were useful to further reshape those questions that still seemed to leave misunderstandings.

Finally, the girls were asked about the relevance of the suggested themes in the formation of programmes on critical thinking in the use of SNs during hospitalisation. They were also invited to supplement the reflections with any topics they deemed useful. The interviews were conducted between June and July 2021. Each interview lasted about 45 minutes and was audio-recorded and transcribed verbatim.

Content analysis was performed following the guidelines described by Creswell.[29] The content of the participants' answers was read and coded, whereby meaning units were created and

categorised. This process led to the creation of a codebook, which was applied to all the responses. A triangulation of analyses by three researchers (M.R., E.F. and S.C.) involved sharing one researcher's initial coding to critically discuss the first coding pattern of analysis and later reach a form of agreement on the overall interpretation of data. In this light, the researchers acted to provide a process in which interpretations could be confronted, developed and then mutually agreed upon.

Moving from the macro-categories (more general) to the micro-categories (particular), there is a progressive specification and detail in the coding of the answers, which, from a more anonymous and generative level of commentary, is progressively specified with respect to the self and the emotional repercussions in one's personal life. For example, the macro-category 'virtual world configuration (VW)' is divided into two categories: 'VW as an offshoot of reality' and 'VW as a world separate and unrelated to real life'. The two categories represent the extremes of a continuum that specifies how the participants qualify the relationship between the virtual world and the real world. The category "virtual world as an offshoot of reality" is further specified in the sub-category (referring to the self) "the virtual world has a real impact on the idea of self". Respondents who think this, considered the virtual world relevant, seeing it as an "inspiration for the choices they make in real life" (micro-category, fourth level of analysis). Vice versa, those who perceive the virtual world as "separate and apart from the real world" (category - second level of analysis), specified that the virtual world "does not affect their idea of themselves" (sub-category - third level of analysis), and that they "consider it ephemeral" (micro-category, fourth level of analysis). Another example of the categorization system and codebook created may be done for describing the SNS's use: we coded as "Active Use" everything that had to do with actively seeking contacts and interactions, getting involved, telling about oneself, editing photos and stories. On the opposite, we coded as 'Passive Use' those actions oriented to reading and consulting what was made available by others, without personal involvement, thus in the position of spectators, and not as protagonists of the virtual scene.

The second step was quantitative: all categories were given a code of one or zero according to

their presence or absence. As a reference point, we considered the number of respondents who evoked a certain category rather than the number of times a certain category was evoked. This allowed us to offer an overview of the girls' attitude towards the investigated issue, as it seemed particularly important to us to get a general idea of the impact of specific types of experiences and their diffusion as well as enter the personal meanings the girls attributed to the theme in a more qualitative setting.

After the analysis, all authors of the paper met to discuss the results and make any necessary changes. The draft of the main results summary paper was also shared during the co-analysis and co-writing phases.

Results

An overview of the results and of the codebook emerged during the analysis can be found in Table 2.

Table 2: Overview of the results and the codebook of analysis. The four categories' levels are indicated from the general (macro-categories and categories) to the particular (sub-categories and micro-categories). The number in brackets refers to the number of respondents who evoked the relevant category upon the thirty involved. The categories were not always subdivided further; in some cases, in fact, no details were added during the interview. Interviews with young women in recovery from eating disorders (EDs) were held in North Italy in 2021.

Macro-categories	Categories	Sub-categories	Micro-categories
1) Virtual word's (VW) configuration (30)	VW as a reality's offshoot (28)	The Virtual world has a concrete impact on the idea of self (28)	The virtual world is relevant (13) It inspires real life (15)
	VW as apart from real life (2)	VW and exchanges as not important to define the idea of oneself (2)	The virtual world is ephemeral (2)
2) SNS's use (30)	From an Active use	Relevance of the Relational interactions with users (5)	To keep Contact with others (3) To share personal information (2)
		Self-disclosure (11) Edit photos (3) Edit stories (3)	
	to a more Passive Use	Information seeking (23)	Inspiration & Curiosity (13) Interest updating (2) Project body (16)
		Use aimed at consulting the material posted by others (21)	Spectatorship (18) Entertainment (6)
3) Online interactions' impact (30)	Relevant for Social validation & approval (20)	(Referred to Instagram) It confirms the Sense of personal value (8)	I received encouragement (5) I received support (3)
		(Referred to Instagram) Consideration & disconfirmation (12)	Anxiety (5) Gratification (7) Content Rethinking and deleting (6)

			Disconfirm when likes are few (10) I think I'm unpopular (6)
	Not relevant, No interest in the feedback (10)	Awareness of the fact that it is normal not to please everyone (6)	Personal discretion (4) Being appreciated is a pleasure (4)
		Feedback is considered false (4)	Insincerity (2) Lack of consideration (2)
		(Referred to Snapchat) Content is deleted by default and the environment is more restricted – this makes it live with more lightness and irony what is shared (19)	Humor (5) Carelessness (11)
4) Investment on the photographic dimension (30)	Involvement & Investment (24)	Self-promotion (20)	Show/be seen (11) Show what one thinks to be the self-best version (7) Better understanding of oneself (9)
		Celebration or graduation events (4)	
		Strong impact of exposure (7) Choice to delete photos (3)	The need to look perfect (6) Concern (7) Refinement of pictures (10)
	Disinvestment: do not value on the photographic dimension and do not invest in it (6)	Embarrassment (3)	
		Discomfort to publish photos of oneself (4)	
5) Self-representation (27)	(Referred to Instagram) Correspondence between real and virtual: one feels represented by the photo he/she posts on Instagram or snapchat (17)	Others can get to know you better than yourself (3) Self disclosure (5)	
		"True" image: the photos correspond to the way you see yourself Promotion of real self (8)	Gratification (5)
		Awareness of not being thinner as in the photos (2)	Regret (2)
		The photo as a testimony of the path they are doing, lived with congruence ("that was a me of the past and I can integrate it") (3)	Congruity (3)
	Discrepancy between what I am and what I show (10)	Enhance a self-image in which one does not recognize oneself (2) Feeling that you have falsified it (1) Virtual world false image (8)	Not-correspondence (6)
		Each photo is different "and you do not understand well who and how you are, in each photo you are different" (1)	
		Sense of precariousness of the virtual world (1)	
		I see myself so small in some photos (2)	Shame (1)
6) Perceived Risks (30)	Promotion of a single body prototype (21)	Thinnes, muscularity and perfection (17)	Ideal achievement Escalation: from seeing the photos to the

			ideal achievement (11)
		Unrealistic contents (11)	Feeling deceived by the ideal body (8)
	Body relationship worsening (24)	Concerns' encouragement (11)	To move on to contents that goes in "Pro-Ana" direction (5) Feeling wrong (2) Body dissatisfaction (8)
		Focus on the Physical appearance (6)	Excessive attention to body size (2) Editing (2)
		Image construction linked to the sense of falsity and mystification of the ideal self (7)	
	Comparisons with others (19)	Other users look better than themselves (7)	Frustration (7)
		Relevance of the aesthetical dimension (7)	Body surveillance (3)
		Relevance of Thinness (14)	Envy (9) Inferiority (4)
		Relevance of Aspect appearance (3)	Forgetting "the real" self (3)
		Lifestyle personality, and artistic skills, everything is lived in comparison with others and perceived with a sense of inferiority and discomfort (5)	
	Negative Interactivity (13)	Vicious circle and negative social imitation: e.g. a model publishes a photo that receives many likes which reinforces the publication of other similar contents (1)	Insecurity linked to one's own image (11) Underestimation and lightness with respect to the impact and influence that published content can have on people's lives (5)
		Social judgment (6)	Conformism (2)
		Thinnes, muscularity and perfection (17)	Ideal achievement Escalation: from seeing the photos to the ideal achievement (11)
7) Self-protective strategies (30)	Subjective critical capacity (15)	Difficulty in discriminating between modified and unmodified contents (4)	Confusion (3)
		Increased critical reflexivity on oneself (11)	Each body as different (4)
		Beware of the Instagram signal that warns that the content has been changed (4) Ensure training programmes in the use of social (8)	
	Active avoidance (8)	Avoid posting photos that are too personal (in swimmwear) (1)	
		Avoidance of Self-exposure (2)	
		Avoidance of SNS' use (1) Avoidance of sensitive contents (4)	
	Instagram restrictions (11)	Controls not to publish sensitive photos (2)	
		Content removal (2)	
	Skepticisms (8)	Difficulty deleting or refraining from not searching for certain	Helplessness (4)

		content (4)	
		Difficulty in eradicating the ideal of the body promoted in social media (5)	Inescapability (5)
		Parental Control (1)	
		Sharing of experiences and contents (3)	
	Greater awareness of content and its influence by the publisher (2)		
	Parental control (1)		
8) Potentials (28)	SNS's have great potential for promoting content that reflects a certain body ideal (10)	Spontaneity (4)	Protection against the possibility of receiving negative comments (2)
		Naturalness in proposing contents (4)	
		Social Support in the group (4)	Force of the group (2)
		Source of personal expression (9)	Being oneselves (5)
		Possibility of reflecting an external vision of oneself (3)	
		Search for contents perceived as a supportive with respect to the moment of difficulty faced and overcame (3)	Support (6)
			Encouragement (2)
		To follow people who have faced moments similar (3)	
	Knowledge of artists and virtual venues promoting alternative bodies (9)	Authenticity (6)	Skepticism towards finding non-deceptive body ideals (2)
		Carelessness of the ideal body (5)	
	Active content proposal (10)		
	Connection network (6)	Possibility to bet on something else, counterbalance the body centrality (3)	
	Connection network (6)		
9) Importance of accompanying girls undergoing treatment for EDs in SN's use	Very important (30)		
10) What goals should these projects on the conscious use of social media have?	Literacy programmes as a place where have courage and express themselves (28)	expressing oneself with humour and lightness is the best antidote (15)	not to fall into the trap of trusting too much in camouflaged images (20)
	inspired by individual choices (20).	it requires self-confidence and disavowal of the sacredness of the value entrusted in one's image (15).	
11) would you be willing, once your treatment is over, to organise together with the operators and act as a testimonial during these courses for other girls, who will be hospitalised later	Yes (28)	to help other people (15)	
		to tell many things (7)	
		to hear from other people the struggles they went through to come out of the eating disorders (8)	
		to meet others like you (7)	
	No (2)	out of shyness (1)	
		out of insecurity (1)	

on?			

Virtual word's configuration

The thematic coding of the text collected in reference to the first answer emerged in two main categories: the first, elicited 28 times, depicts the virtual world as an offshoot of everyday life's reality and the online activities have a concrete impact on the ideas respondents have of themselves. The second, on the contrary, evoked just twice, recognised the virtual world as an inconsistent and caducei world where an ideal self-image is projected, thus perceiving the impact of online activities as having less relevance than the ones in 'real' life, considered separate and more concrete.

SNs'active or passive ways of use

Regarding the mode of SN use, two main polarities emerged, ranging from more active to more passive use. Between the proactive: entering into relationships with others (5), telling about herself and (11) posting personal photos or stories (3), searching for information (23). In the passive pole: consulting material posted by others (21). Regarding the proactive use, Instagram was found to foster a positive emotional experience of contact and exchange with other users (3), while Snapchat was considered useful for sharing daily life and disclosing personal information (2). The most nominated activity, active information seeking through SNs, was best described as a source of stimulation and inspiration and to express curiosity (13), to reinforce and update interests (2) and also as information seeking focused on body issues (16):

'As for the eating disorder, I used it a lot to watch food videos, videos of people cooking or even people doing particular sports, gym, like, I don't know, all those fitness posts. That was the main use'. [Participant Two]

Finally, use aimed at photoediting functions was named. Passive use of Instagram and Snapchat refers to the passive reception of content generated by other users with an entertainment function.

Online interactions' impact

The impact attributed to SNs use is translated in terms of 'social confirmation', they are considered important because they allow a channel of self-recognition (20) that includes both approval and disapproval (12). This results in emotions of personal gratification (7), support (3) and encouragement (5) but also anxiety related to fear of judgment (5) and disconfirmation when few likes are received (10).

'Back then, I thought that if more people commented on my content, that meant more people liked me. The more likes I received, the more others liked me [...]'. [Participant 6].

The impact of online interactions was described differently based on the specific use of Instagram or Snapchat (20): Instagram is perceived as more concrete and 'real' than the 'offline' impact of Snapchat (18). Feedback collected on the Instagram platform is considered more important, so much so that some respondents even considered it a parameter for establishing their personal value (8). It emerged also a certain mistrust of feedback collected via SNs (10), by consequence, it is not important to receive likes and comments because of a lack of trust in the authenticity of posts. Some respondents rarely received likes and comments because they felt unpopular (6) and disregarded on SNS, as well as in everyday life.

Regarding Snapchat, the default deletion of content, along with the fact that the composition of the network is narrow, seems to favour the prevalence of a playful, humorous (5) and creative atmosphere, which moderates the impact of the feedback received (11).

Investment in the photographic dimension

It shifts from total involvement (24) to total disinvestment (6). Photographs are not only aimed at self-promotion (20), accomplishing the desire to be seen (11) and presenting the best version of the self (7), but also at enhancing a better understanding of themselves (9), as well as at the celebration of particular events (4). An active involvement in the photographic dimension was specifically referred to Instagram, due to the major degree of exposure of self-image (16). SNs are depicted as places where users always publish only the best part of themselves to look perfect (7). It is especially

the use of Instagram that creates second thoughts and inhibitions with respect to the publication of

photos (10), as the high degree of exposure encourages a tendency to hyper-control the quality of

photographs, generates worries about the perfection of one's images, and encourages people to see

and rework photos.

'When I was going to use Instagram, I never published photos […] because many

more people can see it there, even two hundred, three hundred people can see it […]'

[Participant three].

The 'disinvestment' contents (6) were mainly attributed to the embarrassment (3) and the

discomfort (4) felt. With respect to Snapchat, the ephemerality and frivolity (3, 2) of the contents

shown therein make it a platform dominated by the carefreeness related to the self-image conveyed

by shared content, expressing a disinvestment on the photographic dimension.

Self-representation

The collected texts seem to be polarised: they recount a correspondence between the body

represented online and the body perceived in the real world (17); but they deny this congruence (10)

in favour of a dominance of the real. Users merely talked about self-representation on Instagram

because of the ephemerality characterising Snapchat. Sharing photographs of themselves is seen as a

way to convey their ways of being and interacting with others and with the world (5), as well as a

way to promote deeper personal knowledge (3). Much attention was paid to trying to convey a 'true'

image of the selves (8). In some cases, it seems possible to accept photos of the past, those in which

the body was thinner, along with the idea of the current body (2). In other cases, it seems

excruciating to confront images of oneself that are considered better as they reveal a slimmer body

(3). This is expressed with a sense of regret. Ten (10) texts express a feeling of mismatch between the

body perceived as real and the body represented online, which is attributed to the attempt to present

oneself better than one is, even enhancing defects or covering them up (2), resulting in the feeling of

providing a false self-image (8) with respect to the subjective image that one has of oneself. The

possibility of having photos that are so different from each other also creates a sense of dispersion in the self-image (1).

SNs' risks

All collected texts considered the risks related to SNs' use and, in particular, to the photographic dimension's activities (30). Content available on Instagram, as well as related interactive activities, are perceived as able to powerfully influence the body's ideas and self-representations (21). This influence is manifested through the proposal of a single-body prototype marked by thinness, perfection and muscularity (17). Seeing the photos of others is considered the first step to achieve this ideal, and although it is subjectively felt as deceptive (8), unrealistic contents shared on Instagram are aimed at reinforcing it through dysfunctional behaviours (11) and moving on to images that go in the 'Pro-Ana' direction (5).

Many texts (24) highlighted the risk of worsening the relationship with one's own body through a focus on the physical appearance and an accentuation of attention on the body dimension. They recognised the role of encouragement with respect to the concerns about weight and body shape played by the information available on Instagram (11), in particular, by pages where people give tips about EDs (10). The improvement of concerns leads to the perception of feeling 'wrong' (2) and to body dissatisfaction (8). The theme of the comparison with the images posted online dominates (19), where the physical dimension, namely thinness, is the most cited comparison criterion, experienced with a feeling of envy (4) and inferiority (9).

A sort of 'vicious circle' of negative influence through imitation has been described:
'A famous girl puts up a picture then maybe she sees that the picture has many comments from girls who say, "You're so thin, you're so beautiful", and all this, and then she continues to put up pictures of that type, and the girls obsess more and more'. [Participant Four]

In relation to the interactive dimension, risks are linked to social judgment in the direction of

conformism (2). Finally, a risk is identified in the underestimation and lightness by which users use SNs with respect to the impact and influence that published content can have on people's lives (5).

Regarding Snapchat, again the texts showed a more self-deprecating attitude towards sharing content and less anxiety about sharing images, which makes this platform freer of worries about the physical dimension and confrontation.

Self-protective strategies while using SNs

As far as self-protective strategies are concerned, the main defence to empower the use of SNs that does not involve any negative experience towards one's own corporeity is the subjective critical capacity (17). It decreases in being able to recognise and discriminate the true contents from the edited ones (4) and in the awareness that each person has his or her own corporeity (11). Useful strategies to promote this critical capacity could be put into place by the Instagram platform itself (4). A form of defence consists of actively avoiding sensitive content (7), self-exposure (2) or SN use (1). In this regard, some participants highlighted the difficulty of putting this strategy into practice due to the strong curiosity that one can feel with respect to seeing some content. The Instagram platform itself should develop some protection modalities with respect to the generation of certain content, which can take the form of content control (2) or content removal (2).

From the text analysis, scepticism emerged (8) with a sense of helplessness (4) related to the lack of control over the content available online and a sense of inescapability (5), referring to the inevitable accessibility of certain content on Instagram's home page, even when not voluntarily sought. Finally, other defence strategies should involve parental control (1) and the sharing of experiences and contents (3).

SNs' potentials

Several potentials were identified in relation to SNs' uses and specifically to the photographic dimension. They are linked to the possibility of improving the relationship with one's own body through emphasis on the spontaneity and naturalness in proposing content (4), which is also seen as

protection against the possibility of receiving negative comments (2). The search for content is perceived as supportive with respect to the moment of difficulty faced (3), as well as the possibility of following people who have faced moments similar to their own and who, having overcome them, represent a source of support (2) and encouragement (1). Personal expression is also possible by an online platform such as Instagram (9), as well as by the possibility of taking an external point of view (3). Discovering things that otherwise one would not have had the chance to know is another resource. This includes profiles of influencers and artists who promote different ideas of the body and who can encourage exploring values in contrast to the trend.

Another potential is related to the possibility of actively proposing content that, rather than being focused on the physical aspect and showing oneself always and only in the best way, can transmit authenticity (6) and carefreeness (5) regarding the body dimension. The active content proposal in this direction can limit the spread of deceptive bodily ideals, thus reducing the circulation of ideal and unreal representations of the body (3). However, this aspiration is accompanied by a certain scepticism about the actual impact that sharing 'realistic' content could have and towards finding non-deceptive body ideals. Finally, some texts highlight the potential raised by the possibility of connection with other people (6).

With respect to the importance of accompanying girls undergoing treatment for EDs to reflect on the topic, the consensus was unanimous (30) and confirmed all the proposed topics as relevant. Had the project been activated, the girls would have joined it and would have been highly motivated to participate in the group. Indeed, the group was perceived as a place where they could have courage and express themselves (28), inspired by individual choices (20). To propose content other than that related to the perfection of the body, one needs to witness the behaviour in other (15). Although expressing oneself with humour and lightness is the best antidote (15), it requires self-confidence and disavowal of the sacredness of the value entrusted in one's image (15).

The interest and willingness was confirmed both with respect to participating in person to listen to

other girls all undergoing rehabilitation (30) and discuss these issues on an equal footing (all

undergoing rehabilitation), and with respect to the possibility, once the therapy course was over, of

participating as a testimonial to set a good example on the conscious use of social media, starting

from one's own life experience (28). This could make it possible: to help other people (15) to have

the space to tell many things and reflect about oneself (7), to hear from other people the struggles

they went through to come out of the eating disorders (8), to meet others like you (7).

Discussion

Principal Results and Comparison with Prior Works

This research examined how young women in recovery from eating disorders (EDs) perceive

the health risks and potentialities associated with visual social networks (VSNs i.e. Instagram and

Snapchat), which the literature has found to be detrimental for online body comparisons. It also

explored the willingness and interest to co-construct social media literacy programmes together with

girls recovering from eating disorders.

The findings highlight a strong awareness of the processes that activate the comparison between

bodies in the virtual context, which create insecurity and lead to a worsening in the relationship with

oneself. Girls do not always seem to be able to use this knowledge to their advantage. Among the

self-protective behaviours emerged: the development of critical thinking, the avoidance of sensitive

content, increased SNS control, but also a certain skepticism regarding the development of

antagonistic ideologies. All the topics mentioned were considered fundamental.

For the young people participating in the study, there were three main modes of using

Instagram and Snapchat. The first was marked by the relational dimension, connoted by affective

experiences of contact and exchange, which diminished the sense of loneliness and increased the

perception of social support. The second mode of use was aimed at self-presentation and self-

disclosure, especially in relation to Instagram. The third mode of use concerned active information

seeking, that is, the search for stimuli, inspiration, curiosity and updates related to one's passions and interests or information on appearance and eating behaviours.

The topics emerging from the data confirm findings in the literature about the problematic use of SNs and the development of EDs among pre-clinical samples. Following appearance-focused accounts on Instagram and engaging in photo-based activities, such as selfie posting or liking and commenting, were related to poorer body image outcomes[27,30,31,14] Use characterised by role passivity, that is, the passive reception of the content generated by other users for entertainment or spectatorship purposes, has been associated with a decrease in subjective well-being through social comparison [33]. Among our participants, even the passive mode of social media use – related to simply opening food- and body-related videos – was signified by the girls as clearly reinforcing problematic behaviours from a symptomological point of view (dieting, exercise obsession).

One of the most alarming elements emerging from our research was the large disproportion between discourses in which the online environment was considered to be a continuation of reality and responses in which there was an awareness of the inconsistencies between the two domains (28 vs 2). Users who saw the virtual world as an offshoot of reality tended to perceive the impact of the feedback received as highly relevant with respect to the idea that one has of oneself and one's feeling of self-worth. The relevance was linked to the meaning of validation embodied in the feedback, signifying approval or disapproval. Nevertheless, for a few of the other respondents, SNs had little credibility in terms of authenticity, as the images and content presented were deemed misleading. This led to the perception of the impact of online feedback as less relevant compared to the feedback obtained in real life [34,35].

This result could be a crucial point for a project concerned with training, confronting and reflecting on the subject: Emphasising the difference between people who believe in the 'truth' of the online environment and those who are more sceptical is the first step towards allowing distance and a greater awareness of one's own way of living life online.

Self-promotion was found to be one of the reasons behind the investment in appearing photographic on SNs. This involved the users presenting their best selves and seeking more favourable acknowledgement from others, which is consistent with findings in the literature [36,37]. The other motivations were the celebration of moments or events and the intent of being seen by others [33], enhanced by the exposition and amplification features of Instagram. Conversely, the users' disinvestment was mainly due to the embarrassment and discomfort experienced from exposing their own images and the ephemerality and frivolity characterising the content shared, specifically on Snapchat [38].

All participants claimed to use criteria to select the photographs to be published, specifically on Instagram. Those who perceived a discrepancy between their online self-presentation and their real selves highlighted the awareness that the virtual world maintains an aura of falsehood as it only allows one to see the most desirable image of oneself. Concerning the risks with respect to photo-related activities, Instagram was perceived as a highly visual social media platform, being primarily photo-based, with a strong emphasis on aesthetic content and a prevalence of edited photos that represented unhealthy, unrealistic and deceptive body ideals [39]. These body ideals are perceived as highly influential in terms of the direction of the promotion and achievement of perfection and the thin ideal [28]. The media's depiction of this ideal, despite often being perceived as unreachable, leads women to see it as normative and central to attractiveness as well as internalise socially constructed appearance ideals [40,41]. This internalisation and ensuing comparison lead to decreased satisfaction with one's own body, the ability to manage one's own appearance to reach this ideal and increased body image concerns. Social upward comparisons tend to elicit envy [42] and a feeling of inferiority not only with respect to the body dimension but also in relation to the personality and lifestyle of the people belonging to one's network. Moreover, the participants emphasised the risk implied in the interactivity made possible by SNs. The literature refers to this argument as body talk, that is, interpersonal interactions that draw attention to bodies and physical appearance [43]. Body

talk reinforces the value and importance of appearance and promotes the construction of appearance ideals [44]. Previous studies have shown body talk to be positively associated with body surveillance, body shame and the perceived pressure to be thin [43].

In relation to the potential of SNSs, the participants attached great importance to being able to generate, freely choose and share content. The promotion of the active proposal and sharing of naturalistic and unedited content characterised by authenticity and spontaneity was perceived as a possible way to improve the relationship with their own bodies as well as for personal self-expression [45]. The improvement of the relationship with their own bodies was also seen as potentially helpful in finding support from people who have lived the same experience of suffering. Finally, the users highlighted the potential of SNs to stabilise and enhance peer relationships with previously inaccessible groups [46] and the possibility of discovering things that might be difficult to encounter in everyday life offline. Our participants also highlighted the difficulty of self-discipline and avoiding potentially harmful online content. For this reason, it could be useful, in view of social use literacy programmes, to be able to create spaces for girls to 'find' the courage to block the use of social media in such situations, which they also suggested.

Regarding the defence strategies with respect to the influence of content published on SNSs, the users mainly proposed the empowerment of subjective critical capacity. They suggested the development and enhancement of social media awareness and a critical approach to viewing and scrutinising images and posts, including thoughts relating to the realism of the image and intentions of the poster. They also suggested strengthening the control that the platforms themselves could exercise over the type and quality of images and content posted online, leading, if necessary, to the automatic deletion of content that may be risky for users' body image. According to other users who expressed scepticism and perplexity about the actual possibility and legitimacy of such a control, the best strategy was to avoid content perceived as subjectively risky for their body image and that risked the exposure of their own image.

It should be mentioned, however, that according to recent literature, enhancing critical thinking about the media may not be the sole or main mechanism of change for effective media literacy interventions. Indeed, it is not clear whether literacy programmes to reduce the risk of an eating disorder also acted on critical thinking about the media. Future research will have to clarify this ambiguity [47].

What emerged from our research as a whole was that girls often possess risk awareness but do not know how to use it for their benefit. They know how to recognise edited photos but simultaneously perceive them as real. Only a few response texts revealed that 'distrust' as a strategy can divert from perceived influence. the results of the present study, suggest that enhancing critical thinking about the media may not be the sole or main mechanism of change for effective media literacy interventions.

However, we did not investigate the influence of context, particularly the role of parents and the school environment, in moderating social media use and coping with body dissatisfaction. Among the very little qualitative research available on the meanings associated with social media use, Burnette's [48] shines a spotlight on this. She found that among adolescent girls in general (not necessarily among those in treatment for AD), parental control devices for social media and schools may be particularly effective in helping adolescents to enhance their strategies for filtering the most dangerous messages and to consider a broader conception of beauty, acting as protective factors against the risks associated with social media use.

Practical implications

Given the complexity of the relationship between the use of SNs and the impact on mental health [46], it is necessary to explore this phenomenon by valuing the personal perspectives of those who actually live the experiences of discomfort and suffering related to SN use. Health professionals should integrate discussions about SN use into their treatment of body dissatisfaction and disordered eating[2]. Much of the content emerging from the research delved into the meanings of SNS use

according to new valences compared to what is available in the literature. These include the three basic modes of use; the rare wisdom to be able to recognise the difference between the real and the online environment and to behave accordingly or give in to the temptations of hyper-control of the body and food suggested by videos or photos; the emotional detachment strategies suggested; the implications deriving from interacting with apps whose visual material is permanent and that have a great number of followers and those based on the temporary availability of photos and the intimacy of networks, their suggestions about how to increase the potential for favourable use of social media through peer-to-peer support and how to limit risk (some borne by the user, others by the social media providers).

Considering the failure of efforts to prohibit adolescents' use of SNs, it could be useful to help the youth understand how to safely navigate these environments rather than restricting them from using technologies [49]. It could be possible to use existing SNs to implement and deliver targeted interventions [50] exploiting anonymous access to information provided on the Internet, which makes SNs attractive for young people seeking health information.

We believe that, where there is a problem, there is also its solution: in other words, starting from where young people are - that is, from their need to influence and contaminate themselves in the ways and meanings of using social networks - we can create credible and interested testimonials (girls with eating disorders) to influence others also with respect to the conscious use of self-protective SN's strategies. The most effective way of expressing this influence is precisely to have them participate as influencers and to build literacy programmes together with them, within the treatment pathways. This research offers new ideas and points to the need to focus on the most sensitive issues to plan and deliver more effective and accurate educational programmes calibrated to the individual healthcare customer [46].

Limitations

Multiple study limitations should be noted, they include the small sample size and the fact that all

participants had undertaken a path of treatment at a centre specialising in the treatment of eating

disorders. They therefore had some awareness of the problem. Further research could extend the

survey to a wider range of people, including those in the pre-clinical phase. This would enable

professionals to promote knowledge and skills in the management of possible histories, forms of

distress and health promotion strategies, guiding the development of pre-clinical signs of distress.

Self-selection is another limitation that characterises the composition of the group of participants. In

fact, after having been invited by the health care staff, they have voluntarily chosen to participate in

this research rather than being randomly selected. This may lead to a biased and unrepresentative

sample of the population, as those who choose to participate may differ and have specific

characteristics that make them different from the rest of the population. On the other hand, the

research does not claim to reflect the population as a whole, but, as qualitative, to explore the

meanings of the lived experiences of the actual participants.

        Another limitation is related to the fact that within the eating disorder treatment services

considered the participants were not allowed to use the telephone, so the answers collected referred

to the memory of use and not to the here and now. A third limitation, which could be resolved by

follow-up research, concerns the possibility of verifying, after X time, the permanence of knowledge

about the risks and potentialities of use and their implementation.

        Conclusion

        While the previous literature contains a great deal of studies on the risks associated with the

use of SNs and prevention programmes, the present study offers many ideas about how to deal with

the topic with young people during therapy for EDs by involving them as Experts by Experience. It

makes it possible to map out the most significant themes that may emerge, allowing health

professionals to introduce them into the discourse and share the self-protection strategies reported.

There is a need to promote the use of SNSs that exploit the potential offered by these platforms, e.g.

user-generated content and interactivity, to promote ideals of beauty that deviate from the dominant model, as well as light-heartedness as opposed to content focused on appearance. However, the most significant point of the research concerns not only what to propose, but how to propose it. The enrolment of girls as co-participants in the programmes represents, from our point of view, the real breakthrough.

Being able to bring their own experience and offer the telling of their story as a possible source of new inspiration and peer influence. This means co-constructing the care pathways, leaving space and negotiating ideas with those who agree to accept the new role, i.e. that of a patient who, at the end or after the end of the care pathway, makes themselves available to help other people at the beginning of the pathway. Co-design requires flexibility and great willingness on the part of all participants. It is not based on fixed contents, but requires that meetings and people decide together on the objectives to be given to each other.

Author contribution

The first author contributed substantially to the conception and design of the work, while the second author created the structure and collected the data. Together, both drafted the work and revised it critically for important intellectual content. All authors participated in the analysis and interpretation of the data.

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Data availability statement

The datasets generated and/or analysed in the course of this study are not publicly available due to privacy restrictions. Indeed, they contain information that could compromise the privacy of research participants. They are available from the corresponding author upon reasonable request.

Conflict of Interest Statement

The authors declare no conflict of interest.

Abbreviations

EDs: eating disorders

SNs: social networks

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Supplementary Files

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