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More Than a Picture: The Effects of Educated Social Media Use on People with Eating Disorders

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ABSTRACT

Background: As social media becomes increasingly popular; more people are exposed to thin ideals related to body image. This exposure can affect one's body image and create unhealthy eating habits. Those who have been previously diagnosed with eating disorders are especially more vulnerable and could have a greater chance of relapsing. **Purpose:** The purpose of this review was to explore how people with eating disorders are viewing social media and to explore the relationships between social media, body image, and eating disorders. **Method:** This was a review of 20 studies ranked in the top four tiers of the evidence-based practice (EBP) hierarchy. These studies were found from the following databases: APA PsycInfo, MEDLINE with Full Text, and PubMed. The patient, intervention, comparison, outcome, and time (PICOT) question was: For people with eating disorders, does educated social media use, reduce the future risk of relapse compared with people uneducated on social media use? **Findings:** The following findings among the studies were identified: (1) increased social media exposure leading to decreased body satisfaction, (2) presentation of thin-ideal celebrities and peers having negative effects on perceived self-image, and (3) increased health models in the media leading to maladaptive eating. **Conclusion:** Social media increases the chance of being exposed to thin ideals, possibly distorting one's body image. Education on social media use and warnings of the thin ideals can improve a person's body image, but it might not be the sole solution in preventing a person with an eating disorder from relapsing.



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INTRODUCTION

Eating disorders are known to be taking an increasing toll on victims worldwide [1]. The impact of these conditions has a wide-ranging effect, the least of which is not the devastation caused in the lives of people themselves. Nearly everyone knows a friend or family member, if not a personal experience, with eating disorders' traumatizing and damaging impact.

Be it the extremes of anorexia nervosa or bulimia, or lesser behaviors such as avoidance or binge eating, food-related dysfunctions proliferate the media. The many direct and indirect effects of eating disorders have nearly incalculable consequences on their victims. Were these the only results of problem eating, it would be enough. After all, at an exclusively human level, the emotional pain and physical carnage suffered by other people are disturbing. Yet this becomes even more acutely personal when eating disorders inflict suffering on those known to us in the health professions [2].

If the human toll of eating disorders was related to personal behavioral struggles, it would be a matter of great personal interest. This is not the case. Instead, problem eating has far-reaching effects. A major crisis of interest to those in the medical field and throughout the insurance industry relates to the health system costs directly or indirectly related to eating disorders (EDs).

In a Harvard study, Deloitte Access Economics [2] indicates that from 2018 to 2019, EDs were estimated to have a \$4.6Bn price tag in health system costs alone. When costs outside the health system are added, the financial impact of eating disorders balloons to nearly \$65Bn, resulting in a personal cost of nearly \$12,000 per person suffering from these disorders.

To identify the causes or contributing factors of eating disorders, medical researchers have sought to identify behaviors that may relate to the proliferation of problem eating [1]. One factor strongly believed to be exacerbating the problem of eating disorders is the potential impact of social media use and its effect on body image. The current study focused on whether education on social media use may mitigate the onset of users' poor body image and the development of serious or even life-threatening EDs. The question addressed in this study was: For people with eating disorders, does educated social media use reduce the future risk of relapse compared with people uneducated on social media use?

BACKGROUND

The use of traditional media such as print and television and its negative effect on eating disorders has been researched and documented in detail over the last two decades [3]. As new research is conducted, however, a connection between social media and negative effects on eating disorders has been discovered. By the year 2022, the average person was spending nearly 2 ½ hours on social media per day [4]. During those 2 ½ hours a day, adding up to 75 hours of exposure per month, social media users view innumerable celebrities and peer images. These often wreak havoc on many women's body image. Repeated exposure to these forms of social media increases the negative mood of users, while also increasing body dissatisfaction [5].

These outcomes are not accidental. Through machine learning, social media companies shrewdly target audiences having an interest in their content [6]. While positive interactions and self-expression through social media are beneficial, predatory advertisements ruin the positive impacts through employing "thinspiration" and detox programs which reinforce the perception of idealized lives from social media influences. In addition, the faces behind cyberbullying heartlessly seek to cultivate unhealthy self-comparison, resulting in negative outcomes which include increased depression, anxiety, disordered eating, and even suicidal thoughts, among other maladies [7].

Saul *et al.* [8] discovered that algorithms saturate users' feeds with appearance and diet advertisements. Meanwhile, social media users may be unaware that such photos are highly edited and carefully curated to represent an ideal, if not unattainable, standard. These can drive users of social media into further eating disorders.

A negative association between social media and eating disorders may largely be related to the lack of education about the truth behind social media and the dangers that lurk behind the screen. This review will seek to evaluate these claims to discover actions that may be taken to minimize the personal and medical effects of improper social media use.

METHODS

The method of research for this study was a review of the literature on how social media impacts people with eating disorders. The databases used to discover relevant studies were APA

PsycINFO, MEDLINE with Full Text, and PubMed. Keywords used to find studies included *social media, body image, eating disorders, and education*. The goal was to have the most recent studies published between 2019-2022, but three older studies were used because they provided experimental studies that explain the relationship between social media and body dissatisfaction. The studies that were excluded did not meet the following criteria: peer-reviewed, published between 2016-2022, and ranked within the top four tiers of the nursing hierarchy of evidence [9]. The strategy for searching for studies is described in Table 1.

Table 1

Database Search Strategy: Social Media Use and Eating Disorders

Database Search	Search Strategy and Limitations	Number of Studies Found	Number of Studies Used	Number of Studies Addressing Specific Intervention Types
APA PsycInfo	Keywords: social media, body image, eating disorder, education Limitations: published 2016-2022, peer-reviewed	301	8	2
MEDLINE with Full Text	Keywords: social media, body image, eating disorder, education Limitations: published 2016-2022, peer-reviewed	333	11	6
PubMed	Keywords: social media, body image, eating disorder, education Limitations: published 2016-2022, peer-reviewed	168	1	0

Figure 1As shown in Figure 1, all studies ranked within the top four tiers of the nursing EBP hierarchy of evidence [9]. The data included in this review were synopses, meta-analyses, systematic reviews of experiments, randomized controlled trials, cohort studies, and quantitative findings from mixed methods studies. Level 1 is the highest and level VII is the lowest in the hierarchy of evidence.

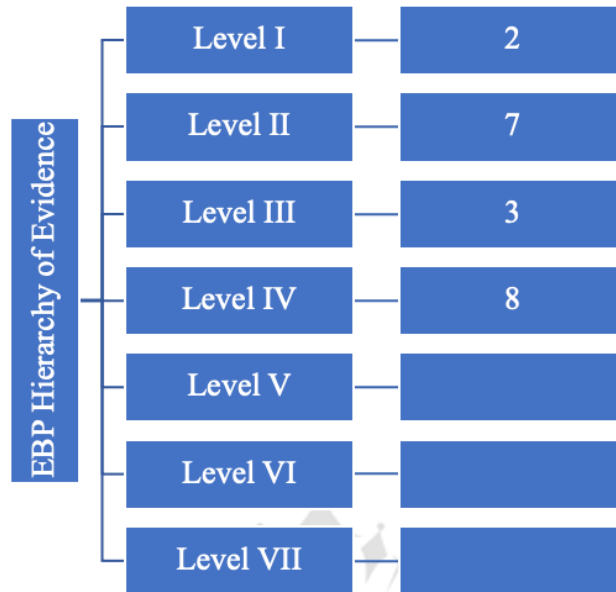


Figure 1 EBP Hierarchy of Evidence: Social Media Use and Eating Disorders

Definitions of Key Terms

Key terms in the literature search were *social media*, *thin-ideals*, *body image*, *eating disorder*, and *education*. Social media involves websites that people use to interact and share information. Thin-ideals is a term referenced across literature that includes a certain preferable body type [10]. In this literature review, most studies address that social media enables people to view pictures and conversations of certain body types. Body image is how a person thinks his or her own body looks [11]. An eating disorder is a psychological illness that causes a person to eat abnormally [12]. Education is teaching information to a person. It does not mean that those educated on social media use will follow the right advice.

LITERATURE REVIEW

During the initial search and review of the literature, an attempt was made to find similarities in the ideas and theories. It was from these similarities that the findings were developed. Those findings of the study are described here: (1) increased social media exposure leading to decreased body satisfaction, (2) presentation of thin-ideal celebrities and peers having negative effects on perceived self-image, and (3) increased health models in the media leading to maladaptive eating. These findings are described below.

Social Media Exposure and Body Satisfaction

When analyzing the findings, we sought to evaluate the relationship between social media exposure and body satisfaction. Because the PICOT question was seeking to find a relationship between educated social media use and uneducated social media use, we wanted to first identify a negative relationship clearly between social media use and body satisfaction. One thing we found repeatedly during research was the review of the types of websites visited and used. Many people used a single social media site such as Facebook or Instagram. Using a higher number of sites is a better predictor of potential body dissatisfaction [13, 14]. Increased time on social media sites was also a predictor of negative effects [15]. As shown in Figure 2, more websites visited and an increased duration of time on those websites created an emotional dependence on social media sites, generating more dissatisfaction and more emotional negativity [16].

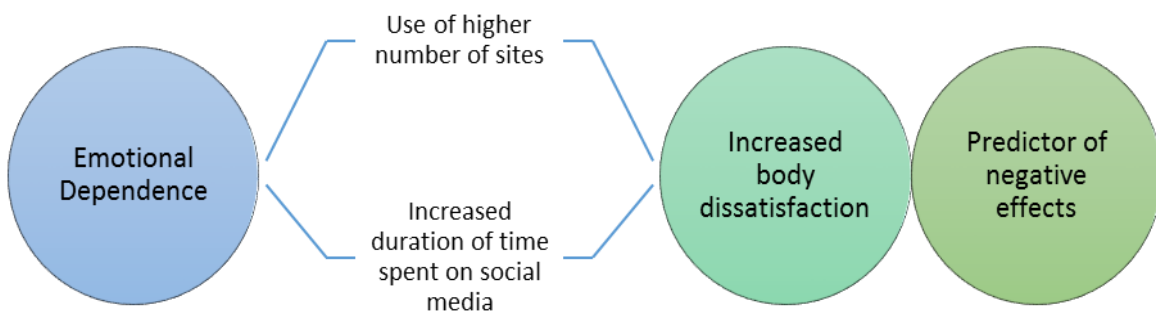


Figure 2 Website Visits and Duration of Time Factors

While body dissatisfaction on its own does not always lead to an eating disorder, it does play a role in creating one [17]. Figure 3 illustrates a three-way relationship between perfectionism, body dissatisfaction, and self-esteem that is negative can create an eating disorder because perfectionism, body dissatisfaction, and poor self-esteem often lead to maladaptive behaviors, especially when trying to control weight. Body dissatisfaction fueled by social media use can often cause heightened symptoms of distress, which will also lead to maladaptive behaviors [18].

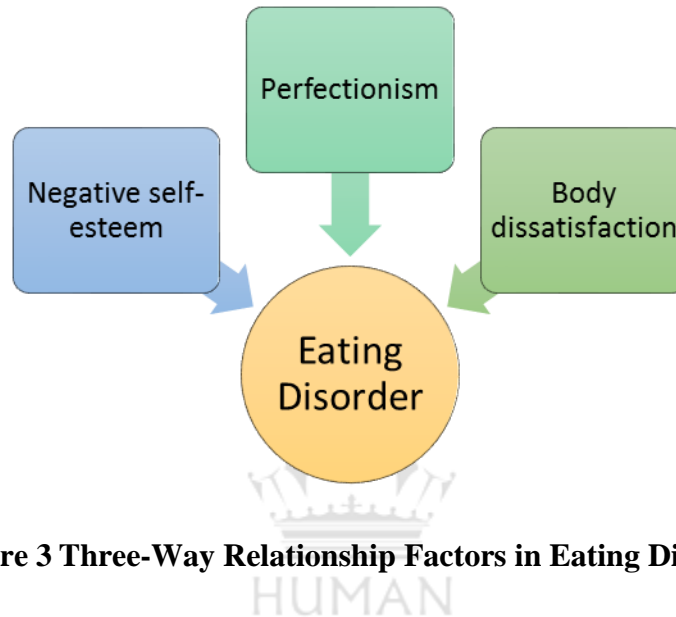


Figure 3 Three-Way Relationship Factors in Eating Disorder

While social media plays a role in worsening body satisfaction, it also has effects on existing eating disorders. Bohrer *et al.* [11] identified eating disorders as a process and acknowledged recovery from it as a journey. While the use of group therapies and interventions can be helpful in the treatment of an eating disorder, recovery tends to be more of a journey. Many patients identified as being "in recovery" as opposed to "recovered" regarding their eating disorder. Patients who identified as being "in recovery" found support when utilizing social media forums, such as Reddit, properly. When these forums were used by patients in recovery to support and get support from others in their situation, they felt more support in aspects of their recovery, such as body image and body satisfaction.

Thin-Ideal Celebrities and the Effects on Self-Image

After learning that social media was leading to decreased body satisfaction, it seemed natural to seek a better understanding of what aspects of social media people were associating with this

decreased satisfaction. One term observed in many of these reviews was "thin-ideal." Thin-ideal is defined as the ideally slim body, typically observed as female, with a slender physique, a small waist, and little body fat [10]. These thin ideals are seen highlighted in the media often, and they can have effects on many people. Danthinne *et al.* [19] broke down separate aspects of the thin-ideal, stating that the thin-ideal is unrealistic and largely unachievable. One facial plastic surgeon highlighted getting requests for specific body parts, such as Kim Kardashian's nose and Justin Bieber's jawline, two celebrities highly featured in many forms of social media [5].

One of the leading causes of eating disorders is body dysmorphia [12]. Body dysmorphia is a mental illness involving an obsessive focus on flaws in appearance. Body dysmorphia specifically was mentioned as a subclinical eating disorder symptom [20]. Manning and Greenfield [12] highlighted specifically the image of a super thin girl looking into a mirror and seeing a bigger reflection, highlighting the thin-ideal. Body dysmorphia is a complex illness oftentimes leading to complex eating disorders. Body dysmorphia can also lead people to experience perceived appearance-related discrimination from peers both online and in person [21]. Eating disorders take an average of 91 weeks to diagnose, and it takes an average additional 58 weeks to get treatment for them, with stigma and decreased mental health literacy being the primary causes.

The thin-ideal concept was mentioned again by Shen *et al.* [22] in the Tripartite Influence Model. This model positions that internalizing the thin-ideal and comparing appearances leads to body dissatisfaction, potentially causing anorexia and bulimia, both leading to psychological distress. This psychological distress combined with an existing eating disorder has potentially fatal effects. Anorexia was identified to have the highest mortality rate of any psychiatric condition with less than 20% seeking treatment for an active eating disorder [23].

Health Models in the Media and Maladaptive Eating

When considering the primary indication of an eating disorder, we wanted to look specifically at what was leading to disordered eating of any form. Two primary distinctions were made regarding the source of disordered, or maladaptive, eating: (1) people wanting to lose weight and (2) people not wanting to gain weight [24]. While social media largely features the thin-ideal, it can also focus on health models, or those people in the media promoting healthy foods. While

these models can be helpful, such as those demonstrating recipes or meals for people with food allergies or medical alterations, they can also lead to restricted eating and unhealthy food practices [8].

When looking at food practices, Fitzsimmons-Craft *et al.* [6] explored further the behaviors of people with diagnosable eating disorders and their relationship with food. They looked at food relationships as diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the authoritative guide and diagnostic tool published by the American Psychiatric Association (APA) and found that people might experience an affinity for a health-related quality of life associated with disordered eating. As it relates to disordered eating, patients with eating disorders might mentally excuse what disordered eating is as a health practice or something they are doing to promote better health.

Another finding associated with inappropriate health practices is health and fitness applications. Guo *et al.* [25] studied many applications such as MyFitnessPal and FitPlan and found that while they can help track exercise, eating, and water intake, they often promote unhealthy and unsafe eating practices. Combined with health models in the media, health and fitness applications can lead people to think that being not fat and being slim is an indicator of health. This causes people to adjust their calorie intake and exercise behaviors to achieve the desired look, regardless of whether that desired look is an appropriate or achievable model for them. Huang *et al.* [26] also highlighted excessive exercise because of health models featured in social media and health and fitness applications. Excessive exercise habits can be just as unsafe as disordered and restrictive eating, causing complications such as muscular overuse injuries, hormonal dysfunction, poor immunity, impaired metabolism, and increased cardiovascular stress [23]. All the aforementioned reviews supported the analyzed findings, and all reviews are mentioned.

Summary of Findings

The purpose of this review was to determine whether social media use occurring without proper education affects viewers' body image and the development of eating disorders. In the inquiry, 20 peer-reviewed studies, all conducted and published between 2016 to 2022, were reviewed. The research team evaluated each study against a rigid hierarchy of evidence and selected only those studies which met all the criteria and that fell in the highest tiers of the level of evidence

within the nursing hierarchy. The studies in the references of the current review are identified in Figure 4. The review established that the effects of maladaptive eating were experienced with the findings discovered in the literature review.

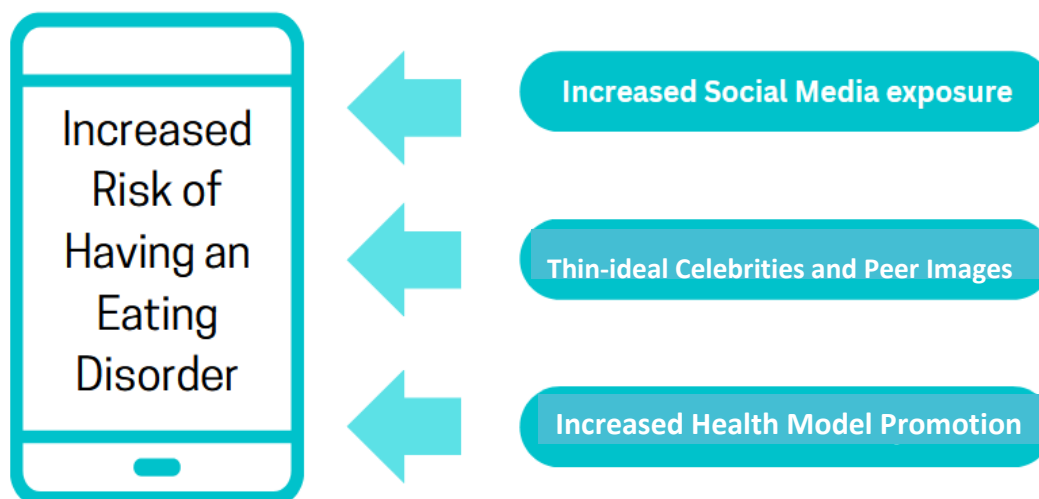


Figure 4 Three Major Findings in Increased Risk of Eating Disorders

The PICOT question asked, "For people with eating disorders, does educated social media use, reduce the future risk of relapse compared with people uneducated on social media use?" Findings in the selected literature reveal that social media use occurring without coordinated educational efforts contributed to increased risks of both body dissatisfaction and eating disorders.

Regarding social media, factors such as the amount of time viewing social media and the number of social media sources were predictors of potential body dissatisfaction that led to negative effects on users' emotional health and dependence [16]. Though body dissatisfaction was not found to be causative, it plays a role in creating eating disorders. In these cases, when dissatisfaction with one's physical appearance is joined with failing to achieve body perfection and negative self-esteem, maladaptive behaviors develop [17].

In these instances, when various forms of education and peer support were introduced, patients consistently launched into a journey toward recovery [11]. Notable factors providing positive assistance in recovery included group therapies and interventions involving the informed use of social media forums devoted to that purpose [18].

Multiple studies in the literature review revealed specific aspects of social media that contribute to negative body image and eating habits. Repetitive exposure to thin-ideal forms of media led to unrealistic and often unachievable goals in physical appearance [10]. Due to the extended period required to properly identify eating disorders (an average of 91 weeks) and treat them (58 weeks on average), early intervention is key to treating patients and minimizing social media's negative impacts [23].

Finally, it can be established that indications of disordered eating were related to an individual's desire to lose weight or intention of not gaining additional weight [24]. While social media content depicting healthy forms of food and eating was found, variables related to recipes, food allergies, and other factors complicate treatment and recovery efforts [6]. Indeed, many available fitness devices, smartphone applications, and even health-focused social media resources aim at positive solutions but often have a combination of both positive and negative outcomes, however counterintuitive and unintended.

DISCUSSION

After reviewing the selected literature and summarizing the findings, the primary intervention was to educate people with eating disorders on the proper use of social media both during and after recovery. Bohrer *et al.* [11] further explored the line between proper and improper use of social media. They discovered that through the appropriate use of sites such as Reddit, people with eating disorders can find a community of people like themselves where they can encourage one another. While online forums like this can be helpful, to avoid a potentially dependent relationship with social media, limiting use is the best practice [16]. Education on social media use and support from others who are in similar eating disorder situations may lead to decreased risk of relapse (see Figure 5).



Figure 5 Effects of Education on Social Media Use

The primary strength of this review was the depth of research and the level of evidence in the literature. All 20 sources used were in the top four tiers of the Hierarchy of Evidence [9] and they were taken from multiple databases. All sources were also relevant in the time frame, with all but one source published from 2016 to 2022.

The primary recommendation would be to conduct further research on more applications. This review focused specifically on Instagram and Facebook [8,10,13,16,18,22] for social media, Reddit [11] for online forums, and MyFitnessPal and FitPlan [25] for health and fitness applications. Specific popular social media sites not included, for no particular reason, were Twitter, Snapchat, TikTok, and Pinterest. The inclusion of various social media sites, online forums, and health and fitness applications would generate more varied research findings.

CONCLUSION

Social media affects body image and can negatively impact a person with an eating disorder. The main findings in the literature were (1) increased social media exposure leads to decreased body satisfaction, (2) the presentation of thin celebrities and peers has negative effects on perceived self-image, and (3) increased health models in the media lead to maladaptive eating. As social media use continues to increase, education is an important intervention that allows awareness of different body types. Educating the vulnerable population can improve body image and decrease the risk of an eating disorder relapse. More research should be conducted to better understand if education on social media use is the best intervention to prevent eating disorder relapse. While education might not be the exclusive resolution to a patient's eating disorder, it can gradually improve one's perception of body image.

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