

Evaluating the Impact of Fitness Social Media Influencers on Exercise Addiction in College

Women Aged 18-25

Study By

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Introduction

In modern American society, social media is an integral part of daily life. It helps people to stay connected and share ideas, thoughts, and opinions with others in a comfortable and secure environment. It can also be used to promote businesses, organizations, and causes, as well as to stay informed about current events and trends (Rainie, 2014). There are 302.35 million people in the United States that use social media on a regular basis. That means that nearly 90% of Americans are actively using some form of social media, with Facebook being the most used platform at over three billion users (Shewale, 2023). Americans rely on social media for entertainment, news, and information, and it allows for mental shortcuts and quick decision making that doesn't require large amounts of critical thinking. The first social media platform to reach a million users was MySpace, reaching this peak in 2004. This feat is argued to be the beginning of modern social media. Social media has continued to grow and expand since this early achievement, growing into the popular platforms used frequently today (Ortiz-Orspina & Roser, 2019).

All the access and information that social media offers to the average person appears to allow for endless positive personal growth, but as a society, we are completely reliant on it and addicted to it. In fact, around 10% of Americans are addicted to social media, which translates to roughly 33.19 million Americans (Hoffman, 2023). With the growing popularity of social media, in recent years it has become increasingly more common for people to make a career out of having a following on social media (Howarth, 2022). There is a niche for everyone, and a corner of the internet exists for any kind of person, so the field holds space for thousands, if not more, to grow their following and popularity while also having an audience that feels nearly limitless. The growth of content creation and a seemingly limitless job space has caused many regular social media users to believe the platforms have reached a point of oversaturation, which can create many different problems like the potential for misinformation and toxicity. (Need to find data to support)

Influencers, particularly fitness influences, have been a by-product of the evolution of social media (Meade, 2023). Fitness influencers generate income by creating content, including posting their workouts, advice, eating habits, physique updates and progress updates, and claims that the programs they create provide desirable results for everyone, regardless of other factors like preexisting health concerns and genetic influences (Friedman, 2023). TikTok even has a trend on the app coined "FitTok" where fitness influencers thrive and creating their brand space. Influencers also make a substantial living on their following through brand deals and "creator funds" on various apps, so information does not necessarily need to be factual for creators to make a profit. A 2023 study found that nearly two-thirds of the 100 most popular fitness influencer accounts promoted unhealthy or unrealistic body shapes (Olsson, 2023). Regular users who aren't educated on the topics, though, are not in a position to sift through information in order to establish whether it is factual or not.

Young women are especially vulnerable to the negative effects of social media, and studies have consistently shown that interactions on social media sites negatively affects girls, leading to depression, negative body image, and potentially even suicide (Vinney, 2023). Forbes also reports that research has found that increased frequency of use of Instagram causes appearance anxiety and higher body dissatisfaction in women, as well as increased “drive for thinness” (Elsesser, 2021).

With the emergence of this genre of social media influencers and the heavy use and negative effects of social media on women, a new form of addiction called exercise addiction has become prominent in modern culture, despite the addiction being reported as early as 1970 with William Glasser being the first person to report addiction to running (Lichtenstein et al., 2017). Exercise addiction is a dependency on exercise, characterized by a sense of anxiety felt when one misses or skips a workout or finds themselves outside of their typical exercise routine.

Exercise addiction is a prime example of how too much of a good thing can have extremely negative consequences, and exercise addiction or compulsive exercise can be closely related to disorders like anorexia, bulimia, and body dysmorphia, among other broader psychological consequences unrelated to eating disorders. In the US, more than one in five adults already live with a mental illness, and many youths under the age of 18 have already experienced a debilitating mental illness (CDC, 2023). Understanding the effects of social media and more specifically fitness influencers is crucial in understanding how young college aged women can be better informed and protected from developing mental illness like exercise addiction. Avoiding mental illness like exercise addiction allows women to be more adequately prepared for success throughout the remainder of life, as well as allowing for a more holistic health-minded approach to a success driven lifestyle.

Exercise addiction and the relationship between young women and their social media viewing habits is not widely understood. With exercise addiction being considered a fairly new concept, little evidence is available about how exactly it is caused and the way influencers and fitness goals can enhance and induce the symptoms of exercise addiction. Research does support the statements that exercise addiction does exist and that social media has negative effects on confidence and body image, therefore it is imperative to understand the intersection of exercise addiction and fitness influencers on social media.

Purpose Statement

The aim of this empirical exploratory pilot study is to evaluate the impact of social media influencers in the fitness niche on exercise dependency habits in college women aged 18-25. A

secondary aim is to examine how frequent exercise dependent behaviors are in active college women.

Research Specific Aims and Hypothesis

The aim of this study is to assess the exercise habits of college women in association with the feelings they have about them, while also examining the social media content they consume most and how much they value social media and the time spent on social media per day.

The following hypothesis will be tested:

College women that spend more time on social media and prefer content related to health, fitness, wellness, and follow specific influencers will report higher rates of exercise dependent behaviors and more negative feelings towards a missed or poor workout.

Significance of the Study

There is not extensive research on the implications and bounds of exercise addiction, however there is extensive research on the harmful effects of social media, particularly on young women and their mental health. It is important to understand and examine this cross section of where social media influence can create compulsive and obsessive behaviors involving exercise. Findings of the study can be used to create programs for coping with compulsive exercise habits and guidelines for encouraging women to stay aware of warning signs of exercise addiction.

Literature Review

Key topics in discussing social media influencers and their impact on exercise addiction are the crucial ways that social media impacts individuals that are in a state of mind seeking to change their behavior, the level that social media users resonate with the term “fitspiration” or “fitspo,” how that specific social media space operates, and prior research that has already been done on understanding exercise addiction, its causes, definition, and prevention efforts, as well as if it is understood as its own disorder or as a symptom of other disorders. There is also a lack of research on prevention and treatment of exercise addiction.

Social Media and Behavior Change

The concept of social media influencers is a relatively new concept, especially as a means of describing any kind of expertise in a specific field or as a career where individuals are making a substantial living. Users report engaging in social media and staying up to date with certain influencers for several reasons. For example, some do it out of habit, to help them relax, to learn new information, or for entertainment purposes (Al-Ansi et al., 2023). Social media influencers who have gained a following and created a brand and a name for themselves are perceived in many ways as a celebrity. Users who are influenced by interacting with social media influencers evaluate the influencer by three different factors: perceived trustworthiness, perceived expertise, and perceived attractiveness (Durau et al., 2023). Perceived motivating power rather than the attitude towards the influencer was noted as a key variable that predicts intention to exercise (Durau et al., 2023). Perceived trustworthiness has the strongest impact on attitude towards the influencer and is also the strongest predictor of motivating power for women, whereas influencer expertise is the strongest predictor for men.

Social media users generally report placing the most emphasis on social media influencers levels of perceived trustworthiness over levels of perceived expertise and physical attractiveness. (Durau et al., 2023). Levels of perceived expertise was the next most important factor, followed lastly by physical attractiveness. Social media users who are relying on influencers for a significant amount of information and content generally place a lot of trust in the fact that influencers are perceived as “normal people” rather than a celebrity and therefore trust influencer teachings more so than celebrity teachings, even though there are no media rules against spreading misinformation.

Within the realm of the fitness social media space, users have notable reasons for following and adopting the behaviors of influencers who claim to be experts or professionals in the fitness and wellness space, and to qualify as a social media fitness influencer, the influencer only must specialize in physical activity and fitness content. An underlying theme of reasons for taking part in influencer exercise recommendations specifically for women is a more negative body image and goals of changing an individual’s body for aesthetic reasons over reasons related to health improvement (Durau et al., 2023). This data only examines those who are following fitness social media influencers who have programs and content on the video platform YouTube.

In adolescents specifically, behavior changes caused by social media influencers can be categorized into four main categories, intellectual impacts, social impacts, ethical impacts, and health related impacts (Al-Ansi et al., 2023). Adolescents also resonate moderately with a wide variety of statements regarding reasons for keeping up with social media influencers, such as viewing social media influencers as a role model, liking to compare oneself to a celebrity, and agreeing that following social media influencers weakened family ties and causes higher rates of introversion among many other statements related to either intellect, social behaviors, ethical issues, and health. Overall, the effects of following social media influencers closely generally exhibits a positive impact on adolescents' intelligence, but a negative effect in terms of social, ethical and health impacts. A weakness of the research though is that this data comes from adolescents in Middle Eastern countries who most often report use of Instagram, Facebook, and WhatsApp.

Finally, another major reason why adolescents specifically will follow and create behavior change due to social media influencers is the idea of social identification (Croes & Bartels, 2021). Young people have an innate and overwhelming desire to belong and identify with a specific social group, and subscribing to an idea presented by the majority on social media allows for that feeling in an indirect and pseudo way. Humans also find significant emotional and sentimental value in belonging to a group, which contributes to an in-group favoritism, all which comes to a head when users find social media spheres that they identify and become connected with.

#Fitspiration Content

"Fitspiration," a term also referred to as "fitspo" is a social media trend that has become popular on platforms like Instagram and TikTok to refer to "fitness inspiration." Generally, the term is used as a hashtag on posts related to fitness and promotion of fitness and wellness related content. Benefits of fitspiration include increased social support and access to health information, but on the reverse, some negative effects of fitspiration include negative effects on wellbeing as well as skewed perception of healthy goals (Raggatt et al., 2018).

Fitspiration has created a specific culture on social media platforms that broadcasts information about the correct ways to exercise, diet, what to eat, when to eat, and the right ways to exercise. Many fitness social media influencers have what society considers to be the perfect, toned body, which can be incredibly challenging to obtain and sets an example that aesthetics are the main goal rather than truly healthful behaviors that pertain on a case-by-case basis to the individual. But people resonate with belonging to a group or community, so the negative effects of subscribing to "fitspo" can sometimes be outweighed by the group identification for many users.

Many social media users that do subscribe to the fitspiration side of social media have low self-esteem and body image issues, many also conveying regularly that they feel an underlying sense of inadequacy. A study revealed that 17.7% of respondents were at a high risk for an eating disorder and 10.3% of respondents were at high risk of exercise addiction (Raggatt et al., 2018). Four key themes have also been identified in the structure of the fitspo side of social media, and these themes can be used to explain why fitspiration has become so popular and why many users do choose to follow and keep up with the hashtag. Those themes are setting the healthy ideal, failure to reach the ideal, being part of a community, and access to reliable health information. Social media users were quick to perceive influencers as trustworthy and thus willing to jump headfirst into seeing influencers as a role model for the influences of fitspiration information.

Fitspiration on the surface seems overwhelmingly positive, as you would initially think the main objective of the movement would be to encourage body positivity, healthy behaviors, long lasting positive behavior change and increased mental health, however, fitspiration has tremendous negative effects on individuals (Raggatt et al., 2018). Although fitness social media influencers broadcast the idea that they practice overwhelmingly positive and healthful habits, many show an idealized thin and unreachable body standard, as well as encouraging objectification of men and women's bodies. According to fitspiration content and themes, the ideal female body type is a thin athletic build, and the ideal male body type is a hyper-muscular tall and wide build. Encouraging these types of body standards has various negative effects on individual social media users as some may restrict dietary intake more heavily or begin exercising more frequently and at a higher intensity than what is necessary for everyday habits.

Specifically in women, who are more susceptible to the negative effects of the fitspiration side of social media, many who use fitspo social media are more likely to have short term body dissatisfaction as well as a negative mood, but the research is limited and many studies on fitspiration only focus on women, especially those recruited by seeking participants by scrolling through the fitspo or fitspiration hashtag.

Exercise Addiction

Exercise addiction is defined as a “primary” disorder characterized by preoccupation with exercise that has become stereotyped and routine; significant withdrawal symptoms in the absence of exercise (e.g. mood swings, irritability and insomnia); preoccupation that causes clinically significant distress or impairment in physical, social, occupational or other areas of functioning; preoccupation with exercise that is not better accounted for by another mental disorder (e.g. means of losing weight or controlling calorie intake). As a “secondary” disorder, exercise addiction may manifest alongside another disorder, resulting in increasingly severe and enduring pathologies (Corazza et al., 2019).

Exercise addiction is still a relatively new concept and is not widely understood in terms of generalized symptoms and characteristics. It is also not listed as a disorder in the Diagnostic and Manual of Mental Health (American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders V. 5th ed. Arlington VA: Author; 2013). As the research has started to become more common, some examples that have come out in support of the concept of exercise addiction are the “runners high” and anything else that creates a boost in endorphins, something that can be an addicting feeling and cause the individual to seek that high repeatedly.

Just as exercising at a high intensity for physical aesthetic goals rather than health and wellness goals is a common theme in the world of fitspiration and behavior change due to social media influencers, it is also a common theme in exercise addiction. Fitspirational quotes are also largely to blame as a motivating factor for almost idealizing exercise addiction and compulsive exercise habits in a sense. Motivational quotes such as “no pain, no gain,” “train, eat, sleep, repeat,” “don’t stop until you’re proud” and “the pain you feel today is the strength you’ll see tomorrow” are examples of quotes with potentially harmful effects to those susceptible to exercise addictions and potentially compulsive behaviors.

Women are again especially vulnerable to exercise addiction and related conditions, such as appearance anxiety, and body dysmorphic disorder. Appearance anxiety can be measured by a validated tool known as the Appearance Anxiety Index (AAI) and exercise addiction can be measured by the Exercise Addiction Inventory (EAI) which is also a validated measurement tool.

In a study measuring exercise addiction alongside other related conditions, 11.7% of respondents scored over the cutoff for exercise addiction and 38.5% of respondents were at risk for body dysmorphic disorder, nearly half of those respondents at risk of body dysmorphic disorder being women (Corazza et al., 2019). People that use supplements were overall placed at a higher risk of developing compulsive exercise habits, and mainly men were identified as consistent users of supplements. The results of this study however were not specific to one gender over another, and the respondents surveyed were within a very broad age range. The study also lacked any professional psychiatric input and carried out no biological testing of participants to confirm self-reported information.

There is a broader discussion to be had focusing on whether exercise addiction qualifies as a standalone disorder, or rather a symptom of other documented mental illness. There is a complex relationship between psychiatric disorders and behavioral addictions, and specific associations between anxiety and depression as well as exercise addiction as a secondary symptom of anorexia nervosa or bulimia are common. The DSM-V specifically only categorizes exercise addiction under the umbrella of “behavioral addictions” (Hausenblas et al., 2017).

Methods

This study examined how college aged women form their exercise habits and goals in relation to the fitness social media content they consume and idealize. Additionally, participants were surveyed on their frequency of exercise and the way they view their own habits. Data was collected using an online Qualtrics survey. All study collection procedures were approved by East Carolina University's Institutional Review Board.

Participants

Participants were required to be women enrolled in an institution of higher education, as well as between the ages of 18-25 years old. Participants could be enrolled in any college or university including East Carolina University as an undergraduate or graduate student. Participants completed an informed consent at the start of the survey before completion. Participants younger than age 18 or older than age 26 of age were excluded from the survey, as well as participants not enrolled at a college or university. Participants who did not identify as female were also excluded from survey participation.

Recruitment

Participants were recruited through word of mouth as well as online and email distribution of a Qualtrics survey questionnaire. Recruitment was also done through recruitment flyers posted around the East Carolina University student recreation center and other areas of fitness and wellness.

Measures

Demographic questions included self-reported measures such as gender, age, Greek affiliation, race and ethnicity, height, weight, class standing, major, zip code, hometown zip code, and college or university of attendance.

The Exercise Addiction Inventory (EAI) was administered to all participants to take inventory of dependent and obsessive-compulsive exercise behaviors and assess exercise habits. The EAI asks questions on a 6-item Likert scale ranging from strongly disagree, somewhat disagree, neither agree nor disagree, to somewhat agree and strongly agree which were then assigned values 1 through 6 to assess average response and standard deviation. The EAI is used to assess thoughts, attitudes, and behaviors towards exercise (Granzio et al., 2023).

The Compulsive Exercise Test (CET) was administered to all participants to further examine compulsive thoughts and behaviors regarding exercise. The CET is comprised of 24 self-report items that are designed to assess the core cognitive, behavioral, and emotional features of compulsive exercise (Meyer et al., 2016). The test asks questions on a Likert scale of six points ranging from never (1) to always (6), which were assigned numerical values to assess average answer and standard deviation.

Design

This pilot, exploratory study is a cross-sectional, survey design. 77 students who exercise regularly and consume social media content from relevant fitness influencers completed a one-time, online format Qualtrics survey. The first 60 participants were offered a \$10 Amazon gift card upon completion of the survey after providing a university associated email address. The questionnaire captured demographic information as well as the EAI, open-ended questions about types of exercise they participate in and influencers that they follow. Respondents were also asked questions about their exercise habits and goals, their usual routines, what types of content they consume from influencers, their social media screen time, and other specific habit related questions.

Data Collection Procedures

First, IRB approval was obtained for the survey. Before the participants began the survey, they completed an informed consent form indicating they understood the survey they were completing. Next, participants completed demographic measures. Finally, participants completed a Qualtrics questionnaire via online distribution that was comprised of survey questions and open-ended questions listed above.

Data Analysis

All data, including demographics, open-ended questions, the exercise addiction inventory, the compulsive exercise test, and screen time data was analyzed via observation of frequency of responses, average responses, and standard deviations. Open-ended questions were analyzed based on the frequency of certain language used and the negative or positive connotation associated with the answer. Demographics were analyzed using descriptive statistics to assess average age, percentage with a Greek affiliation, race, average BMI, and standard deviation. The Exercise Addiction Inventory and the Compulsive Exercise Test were assigned numerical values corresponding with an answer choice on the Likert scale to assess the frequency of each response. Using that data, average response and standard deviation were found for each question on the assessments. Screen time data was broken down into three categories: low, medium, and high screen time, ranging from 30 minutes to 4 hours, 4 hours to 8 hours, and 8 hours to 12 hours per day. Analyzing data via frequencies was chosen to assess how common certain habits and patterns of thinking are between college women with similar exercise and social media habits.

Evaluation of this data allows for examination of correlations between time spent on social media, as well as what the participants consumed on social media, with rates of exercise dependency and common exercise habits.

Results

The impact of fitness social media influencers on exercise addiction in college women aged 18-25 is reliant on the degree to which respondents are receptive to the influence of powerful users on social media, or those known as influencers.

Out of the data collected from 77 respondents, the average BMI was $24.29 \pm 5.7 \text{ kg/m}^2$, seventeen respondents identified as freshman, 17 as sophomores, 20 as juniors, 11 as seniors, and 11 as graduate students.

The average age of respondents was 20.5 ± 2.4 years old. Nearly 34% (33.7%) of respondents identified as being a part of a collegiate Greek council. Approximately 10% (10.3%) of respondents identified as Asian, 15.5% of respondents identified as black or African American, 70.1% of respondents identified as white or Caucasian, and finally less than 1% of respondents identified as other or chose not to respond.

When asked about the types of activities performed most often, 37 out of 77 respondents reported focusing on cardio-based activities. When asked if they believed themselves to be easily influenced by users on social media, 37 responded with definitely or probably yes, and 24 responded with maybe, totaling 61 out of 77 respondents. When asked an open-ended question about feelings associated with missing or skipping a workout, there were overwhelmingly negative words and phrases used, for example “guilty,” “disappointed,” or “stressed and anxious” from 41 out of 77 responses. Responses about social media content reported following cooking trends on social media among other well-known influencer handles, some fitness related and others not. Only 38 out of 77 (49%) responses reported eating 3 or more meals a day. On a Likert scale ranging from definitely not (1) to definitely yes (5), respondents were asked if they consider themselves to be easily influenced by users on social media, and the average response was 3.47 ± 1.08 . Respondents were also asked if they prioritize incorporating exercise into their day on the same Likert scale, and the average response was 4.11 ± 1.05 .

Exercise Addiction Inventory Average Response

Inventory Question	Average Response and Standard Deviation
Exercise is the most important thing in my life	3.38 ± 1.0
Conflicts have arisen between me and my family and/or my partner about the amount of exercise I do	1.8 ± 1.13
I use exercise as a way of changing my mood	4.05 ± 0.90
Over time I have increased the amount of exercise I do in a day	3.49 ± 1.06
If I have to miss an exercise session, I feel moody and irritable	2.84 ± 1.25

If I do cut down the amount of exercise I do, and then start again, I always end up exercising as often as I did before	3.22 ± 1.14
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Compulsive Exercise Test

Test Question	Average Response and Standard Deviation
I feel happier and/or more positive after I exercise	5.16 ± 1.02
I exercise to improve my appearance	4.60 ± 1.23
I like my days to be organized and structured, of which, exercise is just one part	4.70 ± 1.39
I feel less anxious after I exercise	4.69 ± 1.38
I find exercise a chore	2.87 ± 1.15
If I feel I have eaten too much, I will do more exercise	3.21 ± 1.61
My weekly pattern of exercise is repetitive	3.71 ± 1.26
I do not exercise to be slim	2.93 ± 1.43
If I cannot exercise, I feel low or depressed	3.00 ± 1.40
I feel extremely guilty if I miss an exercise session	2.99 ± 1.47
I usually continue to exercise despite injury, unless I am very ill or too injured	2.64 ± 1.64
I enjoy exercising	4.84 ± 1.08
I exercise to burn calories and lose weight	4.09 ± 1.56
I feel less stressed and/or tense after I exercise	4.65 ± 1.47
If I miss an exercise session I will try and make up for it when I next exercise	3.22 ± 1.43
If I cannot exercise, I feel agitated and/or irritable	3.13 ± 1.42
Exercise improves my mood	5.13 ± 1.19
If I cannot exercise, I worry that I will gain weight	3.97 ± 1.80
I follow a set routine for my exercise sessions	4.19 ± 1.34
If I cannot exercise, I feel angry and/or frustrated	2.97 ± 1.59
I do not enjoy exercising	2.04 ± 1.08

I feel like I've let myself down if I miss an exercise session	3.43 ± 1.61
If I cannot exercise, I feel anxious	3.12 ± 1.58
I feel less depressed or low after I exercise	3.75 ± 1.92

Respondents were also asked about average screen time spent on their mobile devices. The low range was from 30 minutes to 4 hours, the middle range was from 4 to 8 hours and the high range of screen time ranged from 8 to upwards of 12 hours.

Discussion

The purpose of this research is to determine and evaluate the impact of social media content and social media influencers on exercise dependent behaviors in college women aged 18-25, as well as determining how common exercise dependencies are in college aged women.

As understood by previous research as well as this study, women often exercise with the intention of changing their body or for mainly aesthetic purposes due to poor mental health and body perception, rather than for health improvement reasons. The present and past research also supports the idea that there is a wealth of information on social media that promotes many different statements that could be based in fact or be misinformation. The wealth of information available online can also lead to a skewed perception of healthy habits and goals, which silently contributes to exercise dependent habits. Some themes of the fitspiration side of social media that make users so susceptible to exercise addiction and compulsive exercise behaviors are chasing an unrealistic ideal and not being able to obtain the unrealistic ideal yet seeing that social media influencers have achieved the ideal. Influencers are then perceived as a “role model” and users may adopt unhealth habits to get as close to the ideal as possible.

Study findings assume exercise addiction to be a disorder that stands on its own, whereas the American Psychiatric Association often understands exercise addiction to be a secondary addiction that shows signs and symptoms in relation to other behavioral and mental disorders. The relationship between behavioral addictions and psychiatric disorders is complex, but exercise addiction is often categorized as falling under the umbrella of a behavioral addiction rather than a psychiatric disorder.

The strengths of the study are the depth of questions participants were asked regarding their exercise habits, including open-ended questions, validated tools like the exercise addiction inventory and the compulsive exercise test, and the types of exercise they generally prefer to engage in. The study is limited in identifying the interconnectedness of specific social media content and how it impacts the exercise habits of individuals, as users were asked about the type

of content they consume but not required to list content specifically related to fitness, as well as where the bulk of their screen time comes from.

For these reasons, future research should focus on the direct impacts of various kinds of content or the effects that different influencers have on their viewers. It is also important to research how different kinds of content from different influencers impacts users of different personality types and predispositions. Future research should also focus on the psyches of different kinds of athletes, like the different effects and causes of exercise addiction on weightlifters versus runners versus any other varying athlete.

From this research, tools may be developed to combat the rising rates of negative body image and body dissatisfaction among young women that leads to exercise addiction. These tools may include ways to evaluate habits and repeated ways of thinking, as well as program guidelines that assess and evaluate perceived rates of exercise addiction on college campuses. These programs would be beneficial if they were implemented in health-related entry level college courses as well as general physical education required classes. In courses not directly related to fitness and health, but more on media or communication, it would also be beneficial to present the research on these health-related effects negative effects of heavy social media use and this specific kind of content.

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