Review Article

# The negative impact of social media on self-esteem and body image – A narrative review

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## ARTICLE INFO

## ABSTRACT

If there is frequent usage of social media then it will start to negatively impact self-esteem, mental health, self-worth and create risk factors for body dissatisfaction by causing disordered eating behaviours and affecting self-image.

The database search used to obtain the research papers were from PubMed, Google Scholar, My NCBI and Science Direct. These research papers were selected from 2012 to 2022 which consisted of clinical trials and randomized controlled trial articles. After comparisons between ten different articles, it was found that social media has the potential to become addictive. Especially, for individuals with behavioural problems such as gambling, gaming, mental distress, and internet overuse. As a result, this can start to cause psychological distress from increased pressures to maintain unrealistic beauty and social standards, which leads to depression and a downgrade in self-confidence.

Time spent on social media can affect an individual in a positive and/or negative way. In some negative instances, people use it as a spectrum to gauge the means of approval with their way of life, in turn, this can affect how people see themselves and lowers their self-esteem. Type or paste your abstract here as prescribed by the journal's instructions for authors. Type or paste your abstract here as prescribed by the journal's instructions for authors. Type or paste your abstract here as prescribed by the journal's instructions for authors. Type or paste your abstract here.

## 1. Introduction

Over the past few years, the use and influence of social networks has increased among the younger generation, with social media platforms such as Facebook, Snapchat and Instagram being accessible through any electronic device. It has become a primary tool that most people rely on to get information and to communicate with friends and family. (Bergagna et al., 2018).[1]

Self-esteem is defined as a person's perception of their own personal worth, self-confidence and how much they value themselves and this observation can be placed into two categories. The first type is people with high self-esteem, including people who respect themselves and consider themselves noble. The second category is people with low self-esteem who need to determine who they are and what they can do. Many theories have proposed that maintaining or raising one's self-esteem is a basic human need (Bergagna et al., 2018).[1]

A hypothetical approach that applies to the effects of social networks on self-esteem is the theory of Objective Self-Awareness, probably the earliest psychological attempt at the theory of the self (Gonzales et al., 2011).[2] This theory accepts that people experience the self as both subject and object. For instance, oneself as subject is seen in everyday encounters of life (e.g., watching TV,

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eating dinner). Participating in those everyday activities throughout life comes naturally to oneself without requiring the individual to be self-conscious. Unlike when people become the "object of [their] own awareness," they are more inclined to self-evaluate themselves, which can have both positive and adverse consequences (Gonzales et al., 2011).[2]

The media portrays thin women as having an ideal body shape, but these images circulating online are mostly unrealistic and photoshopped. Thin-ideal fashion magazine or television images have a persistent small-to-moderate negative effect on body satisfaction, especially for women who already have significant body concerns (Tiggemann et al., 2015).[3] As a result, this issue can lead to psychological distress among the younger generations of women due to increased pressure to maintain unrealistic beauty standards, leading to depression and lower self-confidence.

Instagram is one of the most popular social networking sites with 1 billion monthly users. It is a platform where viewers can share photos and videos with others. Photos and videos are a highly direct kind of online self-presentation, and they have grown in power as a social online currency. According to Metzler et al., (2017),[4] people tended to focus on self-presentation through their profile picture, as it was considered the most important tool for self-presentation. The main source of concern is the ability to manipulate Instagram pictures through filters, retouching tools and thus the potentially negative impact that these "perfect pictures" may have on the self - image of (young) Instagram users (Kleemans et al., 2016).[5]

According to the Media Psychology Association (2016), manipulated photos had a higher positive rating compared to the original untouched photos. Exposure to manipulated Instagram photos resulted in a decrease in body image. Specifically, girls who have a proclivity for social comparison and equate their own bodies with media images. Researchers found that edited pictures of ordinary Instagram users played a bigger influence than pictures edited by celebrities. This issue is most likely because both adolescent and adult males and females are more likely to compare with peers than models or celebrities for social attributes and physical attributes (Kleemans et al., 2016).[5]

The pressure of not achieving a certain number of "likes" can make a person feel depressed and question their self-worth. Additionally, time spent on technological devices reduces interpersonal communication skills and contributes to feelings of loneliness and depression (Metzler et al., 2017).[4] Hence, the focus of this research paper is to highlight and study how social media can negatively impact mental health, self- esteem in adults and adolescents, as well as the effect it has on body image.

## 2. Materials and Methods

At first, there were 40 articles looked at. After further screening only 10 articles were selected, these met the inclusion/exclusion criteria and research design.

The database search used to obtain the research papers was from PubMed, Google Scholar, My NCBI and Science Direct. To find relevant research articles, the keywords used were, "Impact of social media on self esteem," "Negative impact of social media," "Facebook and self esteem on individuals", "Body image and social media", "Appearance-related social comparison" and "Social media beauty standards".

The research papers used were well-accredited and selected from 2012 to 2022, which consisted of clinical trials and randomized controlled trial articles. Review articles were eliminated .Articles had to directly correlate with social media, body image, mental health, and self-esteem. The study participants had to have English as their primary language with a minimum education requirement of a high school student and spent a minimum of 6 hours a week on social media. Study populations had to have a sample size of more than 100 people. The age range of both male and female participants were between 13- to 40-year-old.

## 3. Results

A total of 10 studies were selected, of which 4 were randomized controlled trials (RCT), 3 were randomized clinical trials, 1 double-blind RCT, 1 RCT self-report survey and 1 randomized prospective cohort.

In a randomized control trial, by Mabe et al., (2014),[6] in first study, 960 female college students from Southeastern State University (629 students in the fall semester and 334 students in the spring semester) completed self-report surveys about eating disorders and Facebook use. Study participants in the fall term were significantly less old in years (Mean= 18.44, Standard Deviation (SD) =0.85) than the study participants in the spring term (Mean= 19.10, SD=1.11, t (958) = 10.34, p -value< .001). The ethnicity and race of study individuals did not change across each semester with 18.45% Hispanic (X2(1) = 0.03, p-value =0.87) and 86.45% white, X2(3) = 2.14, p-value =0 .54.

Mabe et al., (2014)[6] found that most women used Facebook at least weekly (97% in fall and 95.5% in spring). In the spring, the mean and standard deviation (SD) scores were 4.74(mean), 1.57 (SD) and in the fall 4.58(mean) 1.52(SD) for weekly 2-hour use of Facebook. In between semesters there was not a significant change in Facebook usage t (958) = 1.53, p=0.13 but there was a greater association between the time participants spent on Facebook and eating disorders in the fall months r (623) =0.11, p<0 .01, and r (334) =0.16, p< 0.01 in the spring months.

The second study conducted by Mabe et al., (2014)[6] recruited 84 women who used Facebook weekly from Study 1. The control groups and experimental groups used stratified randomization to make sure the levels of disordered eating matched among both groups. Results

showed individuals with disordered eating placed a higher importance on receiving likes about their status (r (83) =0 .32, p -value < 0.01), pictures (r(83) = 0.29, p-value =0 .01) and a high number of "likes" (r(83) =0.29, p value<0.01). Researchers found that participants untagged themselves more frequently if they had a higher eating pathology (p-value = < 0.01, r (83) = 0.34) and favored comparing their pictures to those of their female contacts more often (r (83) = 0.22, p-value = 0.04).

Participants in study 2 who spent 20 minutes on Facebook were more preoccupied about their weight and shape compared to the control group. Control group had post-hoc Analysis of variance (ANOVA) values of F (1, 36) = 21.29, p-value <0 .001, d = 0.42 while experimental group had values of F (1,37) = 4.34, p-value =0 .04, d = 0.13(Mabe et al., 2014).[6] These results showed there was a greater emphasis on weight and shape with the experimental group compared to the control group. Study 2 participants had a mean of 20.06 minutes with a SD of 17.7minutes per Facebook sessions, while total mean was 76.28 minutes and SD was 68.70 minutes of time per day spent on the site.

In another randomized control trial, Hayden et al., (2018)[7] assigned 220 undergraduate female students to look at a set of average body images vs thin-ideal body images, and their comparison with the number of "likes" they got on Instagram. The study had a mean age of 20.13 years with a 2.58 standard deviation and mean body mass index (BMI) was 23.40 with a standard deviation of 4.73. Participants were asked to rate the average thinness of the women in the images and to indicate how many likes the photo they were viewing had received.

Hayden et al., (2018)[7] results showed that participants rated the body images significantly thinner in the thin-ideal condition (Mean= 5.22, SD = 1.04) compared to those exposed to average body image conditions (SD=0.85, M=3.32), t (218)=18.77,p < 0.001). The next set of tests looked at how the number of likes attached to Instagram pictures affected body and facial dissatisfaction. The ANOVA scale used indicated that there was a change on image type (F (1, 215) = 16.37, $\eta p2$= .071, p <.001) whereby, body dissatisfaction in the thin-ideal image was greater than in the average image. Hayden et al., (2018)[7] also found facial dissatisfaction was more significant with a lower number of likes (F (1, 215) = 4.89, $\eta p2$= .022, p = .028). Individuals with a high number of likes had a greater tendency to be compared with thin-ideal images than those with low number of likes.

Three different types of double-blind studies done by Lee et al., (2020)[8] analyzed the effect of getting fewer positive feedback on social media and their emotional effect on adolescents. The first study had 613 adolescents (Mean = 14.3, SD= 0.70) in ninth grade attending a public urban high school were randomly assigned to receive fewer likes verses many likes by computer scripts that would dictate the number of likes the study participant generated. The researchers looked at the effect it had on the study participants sense of self-worth and feelings of rejection. The results show that, greater feelings of rejection were reported when adolescents received fewer likes compared to receiving many likes (Mean many likes= 2.05, SD many likes= 1.34; Mean few likes= 3.51, SD few likes= 1.86, p < .001, Cohen's d = 0.84) (Lee et al., 2020).[8] The analysis looked at if feelings of rejection correlated with development of depression and intense negative effect of sadness, anxiety, and feeling stressed (r=0 .52, p < .001). According to Lee et al., (2020)[8] receiving fewer likes led to negative self-referent cognitions as well as more negative thoughts about themselves (Meanmany likes= 1.61, SD many likes= 0.69; Meanfew likes= 1.94, SDfew likes= 0.97, p < .001, t(604)= 3.94, d= 0.37).

The second study had a total of 145 adolescents who already were participants in Study 1. The goal of the second study by Lee et al., (2020)[8] was to compare how fewer likes received and daily stressors were associated with depressive symptoms in teens who regularly used social media. Participants had to complete a daily diary survey of two negative events that occurred each day for 10 consecutive days. Results showed cross-level interaction correlation with daily stressors and social media feelings of rejections, with values of daily negative cognitions, b= 0.12, t (109) = 2.53, SE=0.05 p= 0.013 and negative effect, b= 0.08, SE=0.03, p value= 0.015, t (95) = 2.48. After an 8-month follow up, depressive symptoms and acute rejection feelings increased after insufficient likes using linear regression models (b= 1.12, t (122) = 2.28, Standard Error (SE)= 0.49, p-value= 0.025, β= 0.20).

Lee et al., (2020)[8] conducted a study with 579 ninth graders, Mean age = 15.3, SD age = 0.40, to understand how previous peer victimization at school made the individuals vulnerable and receiving a fewer number of likes on social media influenced them. The test results were consistent with Study 1, adolescents who randomly received a fewer number of likes reported feelings of rejection and negative affect compared to those with higher number of likes on social media (Mean few likes= 3.79, SD few likes= 1.95; t (575) = 10.50, p < .001, d= .87). Also, those allocated under fewer likes with prior peer victimization reported lower self-esteem (Mean many likes= 3.50, SD many likes= 1.15; Mean few likes= 3.15, SD few likes= 1.30; t(575)= −3.44, d= -0.29, p value < 0.001) and had more judgemental outlooks about themselves as not meant to be popular or likable (Mean few likes= 2.85, SD few likes= 1.47; Mean many likes= 2.41, SD many likes= 1.35; t(573)= 3.81, d= 0.32, p value< 0.001.)

Verrastro et al., (2020)[9] examined the relationship between Instagram use, body image anxiety, beauty standards, and compliance with these standards in a study sample of 621 high school students age ranged from 13

to 21 in Italy (Mage= 15.90, SD= 1.55; 61% women and 39% men). This study used Fear of Negative Appearance Evaluation Scale (FNAES) that assesses apprehension about appearance on a 6-point scale. In addition, the Physical Appearance State and Trait Anxiety Scale (PASTAS) - State and Trait Version (PSV/PTV) for testing body image anxiety was used. The results showed that female participants spent more time on Instagram each day (Chi-square $\chi^2$ = 52.82, p<.001) and shared selfies more often ($\chi^2$= 29.68, p<.001). While male participants spent less time scrolling and sharing photos of themselves on Instagram each day, they preferred to share photos of pets, food, and memes ($\chi^2$= 5.45, p<.05).

Compared to male participants, female teenagers in the study were more likely to use software tools to modify their personal photos (F(1,620)=4.95, p<.05) and apply filters to their photos(F(1,620)=48.43, p<.001). Another observation made was the difference between people who modify their pictures with Photoshop(Modify) apps and those who did not (Non-Modify) and its effects on body image and social pressure. The Modify group scores were higher (F (1,620) =3.71, p<.05) in the PASTAS trait version (PTV) and FNAES scale (F (1,620) =13.42, p<.001). Additionally, the Modify group felt more peer pressure to maintain the internalized beauty stereotype (S-IntGen) proposed by Instagram (F (1,620) =6.46, p<.01) and high levels of anxiety than those in the non-Modify group (F (1,620) =2.27, p<.05). Also, a hierarchical regression analysis showed that female adolescents' who spent less than 10 minutes on Instagram had a negative outlook on body dissatisfaction and had a fear of negative evaluation on body image by other peers online.

In a clinical trial conducted by Lup et al., (2015)[10] assigned 119 participants, ranging in age from 18 to 29, were observed for associations between negative social comparisons, depressive symptoms, and Instagram use, influenced by the number of strangers followed. The study participants answered online questionnaires that asked about the amount of time spent on Instagram and the number of followers. Lup et al., (2015)[10] assessed participants' depressive symptoms using the Depression Epidemiology Resource Center and the Social Comparison Rating Scale. Findings suggest a positive association with Instagram use and depressive symptoms (SE = 0.17 [95% Confidence Interval (CI) range - 0.03 to 0.64], p = 0.078) especially with people who had a high number of followers compared to those that had a low number of Instagram followers Furthermore, social comparison was found to be higher with an increased number of strangers followed but decreased at the lowest levels of strangers followed (SE = 0.05 [95% CI range - 0.01 to 0.20], p =0.066).

Henzel et al., (2021)[11] did a cross-sectional study on 2118 (1009 female, 989 male) Swedish correspondents, age ranging from 16 to 40 years, to understand the impact social media had on people with behavioral addiction problems such as gaming, drugs, gambling and how it can cause mental distress. Data was collected through a self-reported online questionnaire assessing problematic behavioral addiction problems. Results showed that the highest levels of social media addiction were with individuals that just finished high school (7.6%) while the category of 'other' education showed the lowest (1.1%). There was a positive correlation in the Gaming Addiction Scale (GAS) and Problematic and Risky Internet Use Screening Scale (PRIUSS) with participants that used the internet for gaming and gambling (GAS Odds ratio (OR) 1.45 [1.38–1.52], p<0.001) and PRIUSS (OR 1.73 [1.59-1.88], p-value< 0.001). This correlation was also noticed in a linear regression with time spent per day on instant messaging apps (OR 2.15 [1.79–2.58]) and with the Kessler Psychological Distress Scale (OR 1.11 [1.05–1.17]).

Mills et al., (2018)[12] conducted a study in 110 undergraduate female students to see if posting self taken photos, with and without filters made an impact on mood and body image. The mood classification included confidence, depression, and anxiety while body image looked at body size satisfaction, physical attractiveness, and feelings of fatness. Three separate experimental categories were placed: a control group, selfie with no filter applied to it, taking and posting a preferred and retouched selfie to social media. Study participants were between the ages of 16 and 29 (Mage = 19.00, SDage = 1.66) and had a Facebook or an Instagram account.

Participants in the retouched selfie condition and untouched selfie category experienced an increase in anxiety that was significantly greater than the control group (t(71) = 2.35, p value= 0.02). Feelings of physical attractiveness were both decreased in both the untouched photos (t(71) = 2.43, p = 0.02)and the retouched photo category (t(71) = 2.32,p = 0.02). There was also a boost in confidence with individuals who retouched their photos (t(72) = 1.92, p = 0.06) compared to those who did not.

Fardouly et al., (2015)[13] had 112 female study participants ranging between the ages of 17 and 25 years, with a mean of 20.46 and Standard Deviation (SD) of 1.71. Female participants performed a two-part study, study 1 required them to browse Facebook or a magazine site for 10 minutes while study 2 asked the participants to come back a week later and complete a survey to see if there were changes to appearance comparison scale. People who spent 10 minutes on Facebook reported feeling more negative about their mood (βeta= 0.34, t(67) = 2.51, p-value = 0.013) and individuals who were asked to browse fashion magazine websites significantly predicted differences in weight and body size (βeta = 0.28, t(99) = 2.54, p =0 .013). Women with high comparison tendencies were dissatisfied with their facial, skin and hair features after Facebook exposure.

A survey was taken by 881 American college women (Mage= 23.83 SD age = 7.26) to see if spending more time per day on Facebook led to body and weight comparison of others (Eckler et al., 2017).[14] The results showed on average participants spent 79 minutes per day on Facebook and 86% felt the need to lose weight after browsing online. The most popular activities were reading news feeds (M = 45.76%, SD = 26.11), then looking at photos (Mean = 16.83%, SD = 15.65), and finally messaging a friend (M = 10.25%, SD = 14.88). Body and weight comparisons was related to more time spent on Facebook as well as eating disorder diagnosis ($\beta$eta =0.077, t(860) = 2.257, p = 0.024). In addition, study participants also felt more negative about themselves after viewing photos/posts on Facebook, which was very significant after performing a hierarchical multiple regression analysis (R2 -value = 0.037, F(3, 793) = 7.935, p < 0.001).

Tiggemann et al., (2013)[15] aimed to investigate experimentally, if informing participants that images were digitally altered made a difference on body dissatisfaction. The subjects were Australian undergraduate students, with 120 women in the first experiment and 114 women in the second. Participants in experiment 1 ranged in age from 18 to 35 (Mage=20.9, SD=5.3) and were investigated on the effects thin attractive models in online fashion magazines without warning labels had on body dissatisfaction. Female subjects exposed to thin-ideal fashion images had higher body dissatisfaction irrespective of a warning label present (F(1, 115) = 9.05, p value = 0.003, d = 0.56). However, the women found the thin-ideal models less relevant and had a higher self-relevance when a warning label was present compared to images without warning labels t(87) = 2.65, p = 0.009, d = 0.57. Interestingly, women who appeared to have a high trait appearance comparison had higher body image dissatisfaction with images that had warning labels ($\beta$ = 1.90, p value = 0.021).

Participants in the second experiment were placed under a fixed exposure timer set at 45 seconds to see if they noticed warning labels placed in fashion magazines. Females aged between 18 and 30 (Mage= 20.0, SD age = 2.7) were specifically exposed to thin attractive models in the fashion magazine and to see if this negatively influenced state appearance comparison and body dissatisfaction. Using a hierarchical multiple model, it was found that the level of state appearance comparison was positively associated with body dissatisfaction ($\beta$= .12, p = 0.013, R2 Change = .009, F Change (1, 111) = 6.37, p = 0.013) which meant there was significant interaction between warning labels and appearance comparison (R2 Change =0.008, F Change(1, 86) = 4.98,p = 0.028.

## 4. Discussion

This review article focuses on ten different studies to test the hypothesis that frequent social media use negatively impacts self-esteem, mental health, self-worth, and body image. Studies were compared with each other to further interpret the results found.

Mabe et al., (2014)[6] found that when Facebook was incorporated, study participants had an increase in anxiety and felt more pressure to keep their weight and shape below a normal BMI. To the extent that these effects could be seen after only 20 mins of Facebook use, which raised a concern about how using Facebook throughout the day might have a bigger effect on disordered eating. Study participants found themselves making appearance comparisons in photos of their friends, and if a photo was posted that didn't appeal to them, they would not tag it. Intervention programs that raise awareness about eating disorders could target Facebook as an area of concern on how individuals make certain appearance related comments like "I wish I had your body" or "You look so slim." Also, Individuals with disordered eating placed a higher importance on receiving likes about their status and pictures.

In contrast to Mabe et al., (2014),[6] Hayden et al. (2018)[7] argue that the number of likes had no role in body dissatisfaction or appearance comparison, but rather the type of image displayed is positively correlated with facial dissatisfaction. Study participants reported higher levels of facial and body dissatisfaction when presented with thin-idealized Instagram images compared to when presented with average body images which meant that viewing thin idealized images could have a negative effect. Even though a high number of likes on another person's image played no part in body dissatisfaction, it still led to a high facial dissatisfaction on the study participants faces, which infers those participants exude some type of cognitive processes like envy. In the study by Mabe et al (2014),[6] a high number of likes could be more meaningful for adolescent girls, which would explain why body dissatisfaction associated with likes was not seen in the young adult females participants of Hayden et al., (2018)[7] study.

Studies done by Lee et al., (2020)[8] support the findings of Mabe et al., (2014),[6] that inadequate verification on social media caused adolescents to feel rejected, increase depressive symptoms over a period of 8 months and triggered emotional distress. The findings also showed that fewer likes were associated with higher levels of peer rejection, as feedback overtly indicated unpopular social status. In addition, this issue meant that adolescents are very sensitive and experience emotional distress to symbolic social status cues especially when their current social status fell short of others.

**Table 1:** Evidence table

| First Author | Publication Date | Study Design | Level of Evidence | Study Population | Exposure/ Objective | Results |
|---|---|---|---|---|---|---|
| Eckler, P[14] | February 2017 | Randomized Cohort controlled trial | Level 1 | A cross-sectional online survey of 881 U.S. college women was conducted | Self-esteem and daily usage of Facebook | More time on Facebook related to more frequent body and weight comparisons. |
| Fardouly, J[13] | March 2015 | Randomized controlled trial | Level 1 | 112 Female participants were randomly assigned to spend 10mins browsing social media sites such as Facebook | Use of Social media sites | Exposure to Facebook (relative to a control website) resulted in more negative mood. |
| Hayden, S[7] | September 2018 | Randomized controlled trial | Level 1 | Participants were 220 female undergraduate students | Female participants had to view a set body images that were thin-ideal or average | Results showed that exposure to thin-ideal images led to greater body and facial dissatisfaction than average images |
| Henzel, V[11] | April 2021 | Randomized clinical trial | Level 1 | Data from 2,118 respondents was collected through self-report questions | Social media use and addiction | Behavioral addictions (internet, gaming, and gambling) were correlated, with problematic use of social media in unadjusted analyses. |
| Lee, H[8] | November 2020 | Randomized controlled trial (double-blind) | Level 1 | 1337 adolescents, mean age 14.3 years | Looked at the negative emotional effect with reduced number of "likes" on social media | Results showed that individuals with lower number "likes" were less happy compared to individuals with higher number of "likes" |

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*Table 1 continued*

| Lup, K[10] | May 2015 | Randomized clinical trial | Level 1 | 119 participants, age range from 18–29-year-old | Participants completed online questionnaires containing demographics, frequency of Instagram use, number of strangers followed on Instagram | Instagram use was positively associated with depressive symptoms |
|---|---|---|---|---|---|---|
| Mabe, A[6] | July 2014 | Randomized controlled trial | Level 1 | First study had 960 women and second study had 84 women | First study completed self-report surveys regarding Facebook use and disordered eating. Second study were randomly assigned to use Facebook or to use an alternate internet site for 20 min. | Frequent Facebook use was associated with greater disordered eating |
| Mills, JS[12] | December 2018 | Randomized controlled trial | Level 1 | 110 Female undergraduate students were randomly assigned to experimental conditions | Take picture of oneself and upload to social media | Study shows that taking and posting selfies on social media have a negative impact on self esteem |
| Tiggemann, M[15] | January 2013 | Randomized Clinical Trial | Level 1 | Participants were 120 and 114 female undergraduate students in Study 1 and Study 2 | Participants viewed fashion magazine advertisements featuring thin attractive models | Individuals had greater body dissatisfaction after viewing fashion magazines |
| Verrastro, V[9] | May 2020 | Randomized Controlled Trial | Level 1 | A total of 621 of high school students (aged 13 to 21, 61% females) in Italy | Relationship between the use of Instagram, the social pressure of maintaining beauty standards | Study participants pressure to uphold to social media standards. |

Interestingly, the second study by Lee et al found that positive social media assessments may lead to poorer mental health in adolescence, which, as noted earlier, is a developmental period characterized by heightened sensitivity to social status at its peak. As a result of receiving fewer likes from unacquainted peers, study three participants that were previously victimized reported greater feelings of rejection, negative internalizing effects, and larger characterological self-traits (e.g., "I may not be a likable person"). These findings suggest that cyberbullying and peer harassment may be more targeted towards adolescents who already felt victimized, which further reduces self-worth and self-esteem.

Verrastro et al., (2020)[9] supported the idea of Lee et al., (2020)[8] and suggested that people who post their edited pictures were showing more anxiety and dissatisfaction towards their body appearance than those who did not. The fear of negative evaluation on appearance by others and the pressure to adhere to unrealistic beauty standards proposed by Instagram was noted as well. Also, according to the study, female adolescents edited their pictures more frequently, portrayed a higher level of body image anxiety and internalized the stereotype of beauty compared to the male participants. However, this issue did not disregard the fact that males still felt the pressure to uphold a certain image about their appearance online. This meant male adolescents were also at risk for developing eating disorders and body dysmorphia.

Findings from Lee et al., (2020)[8] and Mabe et al., (2014)[6] agree with the data of Lup et al., (2015)[10] which suggested that an increased use of Instagram was directly associated with higher depressive symptoms and a greater positive social comparison was directly associated with a lower depressive score.

Lup et al., (2015)[10] also found that at the highest levels of strangers followed, there was a direct link between increased Instagram use and greater social comparison. Compared to those participants who had friends and family as followers, those with more strangers as friends on Facebook were more likely to exhibit attribution misbehavior and paint negative social comparisons. This overemphasizes an individual's internal characteristics to explain behavior, which can lead to negative social comparisons. Those who followed people they knew rather than strangers showed a higher likelihood of engaging in positive social comparison behavior, as shown by the current results.

In a study by Henzel et al., (2021),[11] problematic internet use was significantly correlated with, time spent using instant messaging, general mental distress, and participants of a younger age. Problematic gaming, and problematic gambling were also significantly correlated with problematic social media use. The highest levels of social media addiction were with individuals that just finished high school this could be because as children grow into adolescence, they may experience increased peer pressure and a stronger desire to belong and feel important, needs that can be met by different social media platforms. These findings add to the prior research study by Lee et al., (2020)[8] that adolescence stage is a developmental period characterized by heightened sensitivity to social status at its peak. Another motivator for youths to constantly check their social media applications has been suggested to be the fear of missing out. This issue contributes to the need for constant online presence among teenagers.

Henzel et al., (2021)[11] agrees with the findings by Verrastro et al., (2020),[9] that there was no correlation between gender and problematic social media use but rather the amount of time spent on the internet and the use of photoshop tools played a bigger impact on mental health and self-esteem. The study suggested that both gaming and social networking could satisfy a person's needs for instant gratification, a sense of purpose and identity, and an opportunity to socialize and connect with others. In addition, some players were motivated to use games primarily for social fulfillment. In some study subjects, anxiety and irritability caused by withdrawal symptoms from the internet intensified mental distress. Facebook time or how often users checked for updates were not the strongest predictors of depression, but rather how much they compared their situation with that of others.

In the study by Mills et al (2018),[12] the results of the hypothesis hold true that posting a selfie on social media will worsen mood and decrease self-esteem. After taking and uploading a selfie onto social media without the option to retouch or take multiple photos, the participants felt more anxious, less confident, and less physically attractive, and these differences were significantly greater than the control group. This issue could be because social media profiles are flooded with perfected and idealized images of women, with the goal of improving their viewers' perception of them. It also showed that although women could take and edit their selfie before posting it to social media, their mood, and anxiety still suffered the same problems as those who could not retouch their photo. In the data retrieved, they noticed that selfies had a negative effect on feelings of physical attractiveness, but not on feelings of fatness or body satisfaction, perhaps because the study only analyzed the effects on facial selfies. Retouching selfies did increase the feelings of confidence among women, although they felt more confident than those who had not retouched posted selfies, the retouched selfie group felt just as confident as those who had not posted one. Though taking a selfie and retouching it to make it more flattering might make women less anxious about posting it, the process of doing so still caused them to feel self-conscious about certain aspects of their appearance.
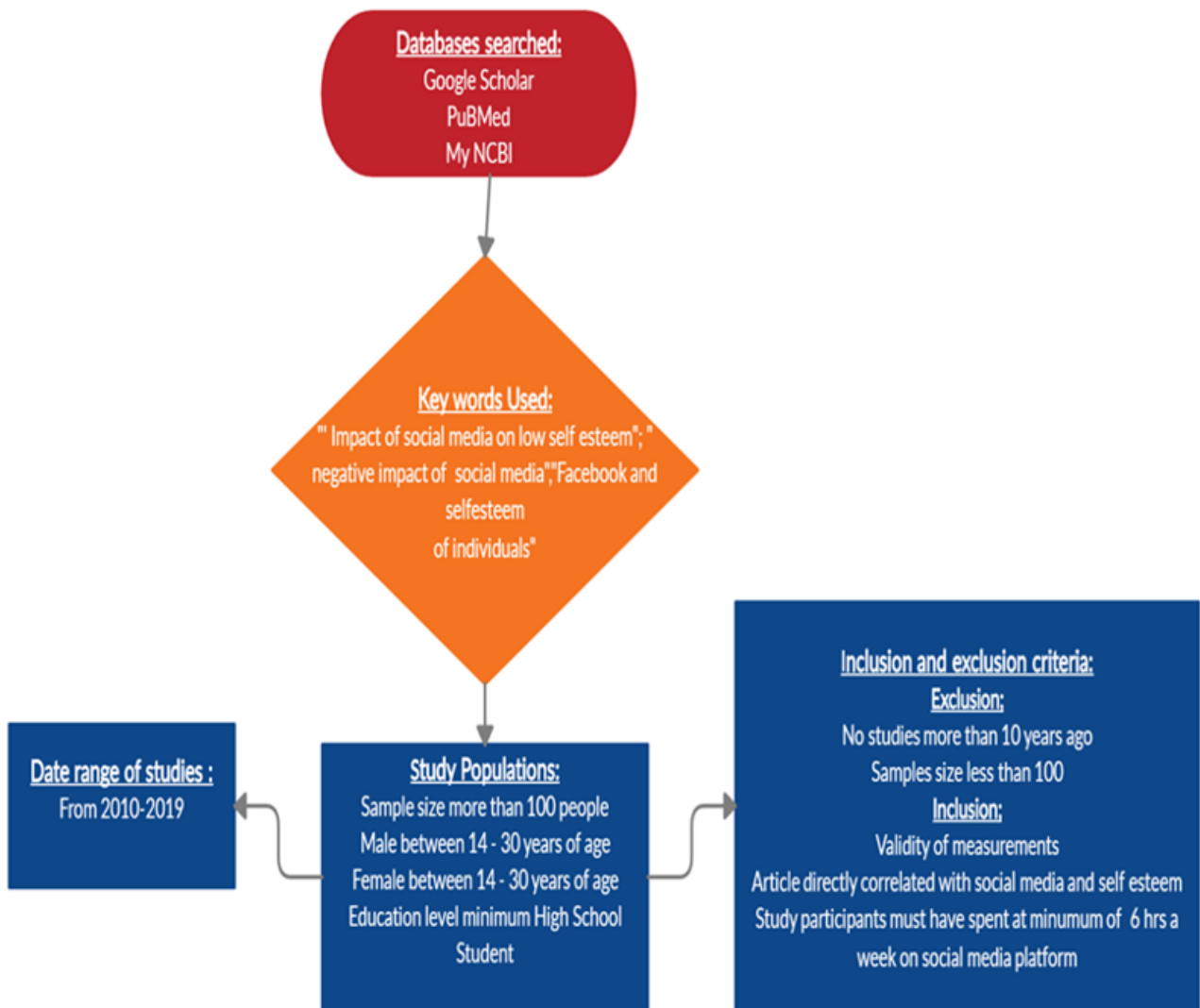
**Fig. 1:**

In study by Fardouly et al., (2015),[13] during brief exposure to Facebook, female participants reported feeling less positive in mood . These findings might be explained by the fact that Facebook may provide women with a way to compare themselves on dimensions aside from appearances, such as social status and life experiences. Similarly, Lup et al., (2015)[10] found that some participants judged other Facebook users as happier or living better lives than them, which in turn affected how they felt. Also, the desire to change hair, skin and face-related features was seen with increased Facebook use with participants that made more appearance related comparisons.

Fardouly et al., (2015)[13] found that participation in the online fashion magazine website resulted in a greater weight and shape discrepancy among women which is supported by the data by Tiggemann et al., (2013)[3] that showed female subjects exposed to ideal fashion magazine images had higher levels of body dissatisfaction with or without warning labels.

In spite of their desire to change their bodies, most participants in Eckler et al., (2017)[14] study weighed approximately 150 pounds, the same mean weight as American 19-year-olds. This suggest a disconnect between their desire to get thinner and their standard-size bodies.

Tiggemann et al., (2013)[15] conducted two experiments to see if informing participants that images were digitally altered made a difference on body dissatisfaction. Researchers found that in both experiments, the greater the number of state appearance comparisons participants reported engaging in, the greater the response in body dissatisfaction to thin ideal images, regardless of warning label condition.

Social media has proven to have a negative impact on self-esteem, self-worth, mental distress, and body image. After analyzing the results, nine out of 10 studies supported the proposed hypothesis, which demonstrated a positive correlation with time spent on Facebook and Instagram per day and their correlation with self-objectification. The study by Hayden et al. (2018)[7] did not support the proposed hypothesis and argued that the number of likes had no role in body dissatisfaction or appearance comparison, but rather the type of image displayed influenced facial dissatisfaction.

There are few limitations to this research. An improved measure of Instagram usage and factors known to affect social comparison might make social comparison easier to establish. In some studies, the content on the study participants newsfeed varied from day to day, which may have led to the feelings of positive emotions on some days (i.e., women feeling good about their body image). And it was impossible to test more causal links among the variables in some studies due to the use of cross-sectional data. Longitudinal studies would reveal possible causal effects among study variables.

It is also likely that age played a factor, some of the studies included only younger women who regularly used social media, so the results may not be applicable to older women or women who did not use social media. The study hypothesis should be tested again with a larger sample including a greater number of males. Also, most of the studies took place in a laboratory environment, which meant that participants attended to the viewed images in a way they would not normally do in more naturalistic settings even though the images were real images sourced from Instagram and presented in an ecologically valid format (on an iPad/computer screen).

This study opens many avenues for future research, allowing researchers to explore processes and reasons behind social comparison. Another avenue for research is to explore the reasons for women's downward, and upward comparisons on social media, and the impact they have on their body image. A prospective longitudinal study design would allow future research to examine the long-term effects of selfies posted to social media, including the specific changes participants make to their photos using retouching tools and longer-term effects of these alterations.

## 5. Conclusion

Young people, parents, educators, and clinicians all face unique challenges and new opportunities in the social media world. The studies in this review demonstrated and supported the hypothesis that both male and female study participants reported increased levels of poor body image, anxiety, and social pressure to maintain an unrealistic type of beauty when using Instagram or Facebook extensively. In order to anticipate, understand, and manage the negative effects of social networking, it is imperative that we continue to conduct research on these dynamics and consequences of social networking. This issue will assist teachers, parents and mental health workers who are working with children, teens, and young adults to promote positive development and growth.

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## 7. Conflict of Interest

None.

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