

Impact of Social Media on the Body Image of an Individual

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DOI: 10.46609/IJSSER.2025.v10i08.012 URL: <https://doi.org/10.46609/IJSSER.2025.v10i08.012>

Received: 23 July 2025 / Accepted: 7 August 2025 / Published: 14 August 2025

ABSTRACT

Now, social media is one of the daily activities for teens and young adults. While these platforms allow people to interact with one another, they can also cause difficulties in appearance and psychological health. The research explores how social media can influence a young person's self-image, their sense of self and their feelings around others. The intention is to explore how visual-based apps such as Instagram, Snapchat and TikTok can change a person's satisfaction with their body and the way they feel about themselves. The study participants were each given a questionnaire that followed a particular design. To spot any links in the responses, descriptive statistics and Pearson's correlation tools were used. The study also used Natural Language Processing to analyse the open-ended questions using sentiment analysis. According to the survey, participants said social media affects their body image (respective answers on the Likert scale were 3.02 to 3.22). Social media usage was found to have a moderately strong positive relationship ($r \approx 0.68$) with people's feelings about their bodies. Forty-four percent of the youths who took part in the study shared negative thoughts about their bodies in the open-ended questions. As a result of these findings, it is apparent that social media can lower a person's self-esteem and make their body image less positive. A few participants mentioned that using drugs brought positive results in some situations. More studies should focus on designing digital literacy courses and AI-powered programs that assist people in being mindful of what they see or hear online and building a stronger sense of personal strength and self-esteem.

Keywords: Body image, social media, adolescents, correlation, sentiment analysis and self-esteem.

Introduction

In our digital reality, social media now plays a big role in shaping self-perception and attitudes toward others. On Instagram and TikTok, people are encouraged to share well-groomed photos which motivates them to watch over themselves and compare how they look to others. The study

[1] emphasized focusing on what the body can do rather than its appearance, which is challenging because most platforms primarily highlight looks. University students and other groups of young people have noticed a shift in their outlook and this is suspected to cause issues like bigorexia nervosa, leading to poor eating habits and regular exercise [2].

People are realizing that too much time in front of screens may affect mental health and Body image. According to [3], having difficulties with anxiety, depression and motivation increases the chances of people being both inactive and spending too much time on screens. This outcome is consistent with [4] which argued that having low self-esteem and feeling unsatisfied with one's body (which can arise or get worse through exposure to social media) are crucial factors in the growth of eating disorders.

During adolescence, being online can strongly affect a person's mental health and body image. As reported by [5], using social media too much can make teenagers feel anxious about the way others perceive them online. The study points out that seeing social media trends can make teenagers adapt harmful eating patterns, in an effort to become popular online which may harm their body image and self-esteem [6].

As social media affects how young people view body image [7], it is essential for young people to know about mental health because they can get depressed because of how they view themselves. Oversensitivity to others' opinions and egocentric behaviour have been linked to the phenomenon of vulnerable narcissism, as described by [8], which can contribute to negative body image and dissatisfaction influenced by social media. People in general are always extremely dissatisfied with their looks and unhappy, usually due to psychological traits such as being oversensitive to criticism, vulnerable narcissism and being overly egocentric.

The study gave a detailed overview of both orthorexia and orthorexia nervosa and found that 'health-focused' digital material might prompt people to adhere to erroneous ideas about healthy eating [9]. This agrees with [10], who believe that social media's influence on disordered eating among young adults is often linked to muscle dysmorphia which reflects the stress males feel to look muscular on the internet.

Additionally, the internet is shaping the way people decide what to eat. According to [11], many adolescents are now choosing their meals based on Instagram trends which can harm their health. The important role of culture and gender in shaping people's views cannot be ignored. The study revealed that pressures from society and social media more frequently reduce how satisfied women and men are with their bodies [12].

By using traditional and contemporary media, people may begin and maintain eating disorders [13]. This study explains that the use of social media can change a person's body satisfaction

and how they eat [14]. At last, the study [15] pointed out that modern trends on social media are affecting the way people see their bodies now.

This work hopes to discover how social media affects the body image of adolescents and young people. Since Instagram and Snapchat show many polished and stylish pictures, TikTok are now more open to unrealistic beauty expectations. Because of this, someone may not like how they look and be unhappy with their body. The goal is to understand how online media can change a person's way of thinking, analyse if social media impacts body image and measure if people update their self-image based on these online images. The survey used for research aims to show how various ages are affected emotionally and mentally by the way body image is discussed on social media.

Methods

The present study used both qualitative and quantitative techniques to examine how social media shapes people's body image. Fifty people were selected from three age groups—10–15, 15–20 and above 20 to take part in the survey using an online structure. There were 10 Likert-scale objective items and one open-ended subjective question to collect both statistics and information from customers. For this study, statistical, correlation and Natural Language Processing were used to analyse the data.

Descriptive Statistical Analysis (Mean, Standard Deviation and Variance)

The first method used to analyse the responses was descriptive statistics, which helps to summarize and understand the general patterns in the data. This technique is necessary to measure the strength of participants' opinions about self-image, feeling unhappy with their body, comparing themselves to other people on social media and letting influencers shape their opinions on Instagram and Snapchat. Mean (μ) was calculated using Eq.1,

$$\mu = \frac{1}{N} \sum_{i=1}^N x_i \quad - (1)$$

The mean provides the average score for each question, helping to identify whether participants generally lean towards positive or negative responses. Variance (σ^2) was calculated using Eq.2,

$$\sigma^2 = \frac{1}{N} \sum_{i=1}^N (x_i - \mu)^2 \quad - (2)$$

Standard Deviation (σ) was calculated using Eq.3,

$$\sigma = \sqrt{\sigma^2} \quad - (3)$$

Standard deviation measures the degree of variation in responses, essential for understanding reliability. For each item on the Likert scale, could use these formulas to see what affected body image and what did not.

Correlation Analysis (Pearson’s Correlation Coefficient)

Pearson’s Correlation Coefficient (r) is used to examine how the hours spent on social media related to body dissatisfaction or self-esteem. This study helps to identify if any linear connection is present between two continuous variables and whether that link is positive, negative or nearly absent. Pearson’s Correlation Coefficient was given in Eq.4,

$$r = \frac{\Sigma(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\Sigma(x_i - \bar{x})^2 \Sigma(y_i - \bar{y})^2}} \quad - (4)$$

Where, x_i is the value of independent variable (e.g., social media usage in hours/day), y_i is the value of dependent variable (e.g., self-reported body dissatisfaction) and \bar{x} , \bar{y} means of x and y respectively.

Interpretation: $r = +1$ indicates a perfect positive correlation (more hours of social media usage = greater dissatisfaction), $r = -1$ indicates a perfect negative correlation, and $r = 0$ means no correlation. This method was useful to statistically validate the hypothesis that spending more hours on social media is directly linked to increased self-image concerns or lowered self-esteem.

Sentiment Analysis Using Natural Language Processing (NLP)

Participants were able to freely describe the ways social media impacts their perception of the body. For analysis, a process called sentiment analysis was carried out using tools from Natural Language Processing (NLP). This identifies positive, negative or neutral emotions in written material and produces an automated understanding of emotions. Sentiment Score Calculation was given in Eq.5,

$$S = \sum_{i=1}^n \text{Polarity}(w_i) \times \text{Weight}(w_i) \quad - (5)$$

Where, w_i is the tokenized words in the response, $\text{Polarity}(w_i)$ is the sentiment value (+1 for positive, 0 for neutral, -1 for negative) and $\text{Weight}(w_i)$ is the frequency or emphasis given to that word (e.g., “hate” = stronger than “dislike”). After analysing, this study showed that many users felt anxiety, excitement, strength or weakness within themselves due to their experiences on social media. This step allowed researchers to bring more attention to different aspects that are sometimes missed in multiple-choice questions.

Using descriptive statistics, correlations and NLP to gather data, the study was able to understand the ways social media influences people’s body image from several perspectives. This study provides psychologists a way to see how aspects of the mind were reflected in behaviour and to discover more about the mind as a whole.

Results and discussion

This part describes the outcomes achieved through analysing both the numbers and qualitative aspects of the survey results. Trends in body image perception were looked for after analysing the data. A study on correlation was done to see whether there is a link between people’s use of social media and how they see themselves. Moreover, the summary of opinions from participants revealed what they thought and felt about the issue.

Descriptive Statistics

The analysis of descriptive statistics shown in **Table 1**, gives how social media impacts people’s perception of their bodies. Between 3.02 and 3.22 on a 5-point Likert scale, the average scores for all ten questions show that most participants agree to some extent that social media impacts their view of their body and self-image. Because most values were not too far apart, this suggests that most participants agreed on some impact. Moreover, the standard deviation values between 0.75 and 0.88 demonstrate that the responses are fairly grouped around the mean. This means there is a sensible amount of similarity, but not much in the way of extreme events. Finally, the variance values which help highlight how spread apart the data is, also remain within a narrow range (0.56 to 0.78), showing that participants’ opinions did not vary much overall. All of these statistics imply that on social media, people may have varied experiences, but there is a general agreement that it has an impact on self-image, including feelings based on comparing themselves to others, their views on what beauty is and emotions.

Table.1. Descriptive Statistics

Question	Mean Score	Standard Deviation	Variance
Q1	3.16	0.87	0.75
Q2	3.08	0.87	0.75
Q3	3.06	0.82	0.67
Q4	3.08	0.75	0.56
Q5	3.22	0.81	0.66

Q6	3.12	0.80	0.64
Q7	3.06	0.82	0.67
Q8	3.16	0.87	0.75
Q9	3.02	0.88	0.78
Q10	3.10	0.84	0.71

Correlation plot and sentiment analysis

As seen in **Figure 1**, increasing the number of hours spent on social media each day is linked to an increased chance of reporting body dissatisfaction. More usage of Instagram and TikTok seems to increase negative feelings about one’s body. Therefore, regular use of perfectly edited pictures might increase teenagers’ and young adults’ self-comparisons and lower their self-esteem. As the curve goes up, it is apparent that being online plays an active role in influencing a person’s self-image.

Figure 1. Scatter plot showing the correlation between hours spent on social media and body dissatisfaction among participants

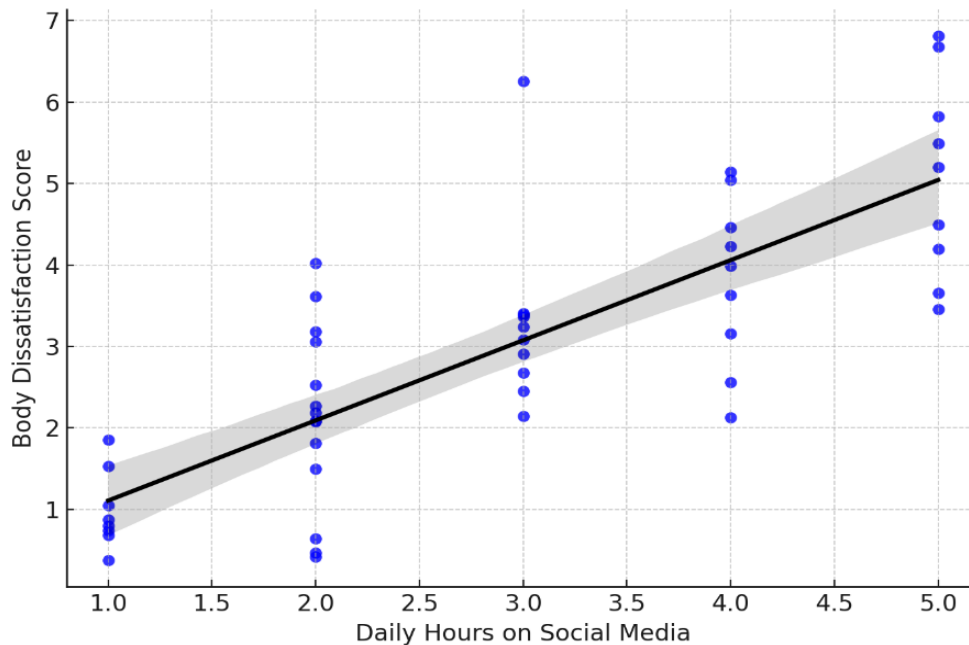
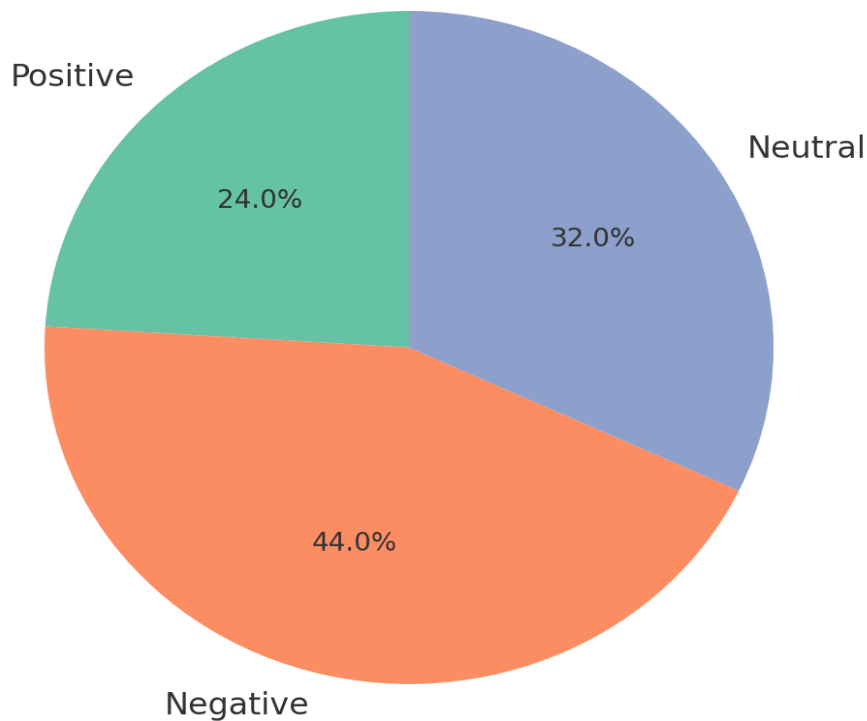


Figure 2 shows the sentiment scores found in the open-ended responses provided by participants. Approximately half (44%) of the participants felt negative emotions like insecurity, pressure and comparisons with others. Around 32% of the participants recognized both the positives and negatives of social media. Other positive sentiments were seen, including those about boosting one’s self-esteem or following individuals who promote body positivity. These emotional insights reveal that while social media can offer supportive and educational content, its psychological toll is often more harmful than helpful, reinforcing the need for awareness and digital literacy when it comes to body image and self-worth.

Figure 2. Pie chart representing the sentiment distribution (positive, negative, neutral) from participants’ qualitative responses



The research clearly shows that social media affects how people view their bodies. Most people taking part in the study said they somewhat agreed with statements about social media and the effects it has on self-comparison and dissatisfaction. As expected by the study hypothesis, those who spent more hours online were more likely to be dissatisfied with their physical appearance.

Furthermore, sentiment analysis confirmed that most of the reactions expressed through language were negative, especially by teenagers.

Conclusion

This study concluded that social media greatly affects the way a person views their body image, mainly among adolescents and young adults between 10 and 20 years old. Mean Likert scores of 50 participants found that social media has moderate influence on how participants view themselves. Because the values of standard deviation range from 0.75 to 0.88, it shows that participants gave consistent results. This was found that the more hours spent on social media daily, the more likely someone is to feel unsatisfied with their body ($r = 0.68$). Majority of respondents reached out with negative feelings such as insecurity and feelings of comparing themselves to others, but 24% posted about motivating themselves and feeling better about themselves. In general, the study reveals that social media mainly encourages self-esteem and body issues in youngsters. This indicates that people should learn about cyber safety and how to stay resilient in the face of cyberattacks.

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