

Bachelor Thesis

**The Relationship between Appearance-focused Instagram Content and Body  
Dissatisfaction in Young Adults: The mediating Role of Self-esteem**

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### **Abstract**

Instagram's popularity has strongly increased due to the integration of smart algorithms. The constant exposure to perfect appearances caused by the use of editing tools and filters was found to have an impact on the body image of young adults. Therefore, the first goal of this study was to investigate the relationship between exposure to appearance-focused Instagram content and body dissatisfaction in young adults aged 18-39 years. Moreover, social media use is likely to not be directly linked to body dissatisfaction. Self-esteem was found to be a strong predictor of body dissatisfaction but its role in relation to social media is still under debate. Thus, the second goal of this study was to find out whether the aforementioned relationship is mediated by levels of self-esteem. The research was conducted using a cross-sectional design. The online survey measured participants' body dissatisfaction with the Body Shape Questionnaire (BSQ-8) and their self-esteem with the Rosenberg Self-esteem scale (RSES). In addition, a self-developed questionnaire measured the amount to which participants are exposed to appearance-focused Instagram content. No significant relationship was found between exposure to appearance-focused Instagram content and body dissatisfaction. Besides, there was no mediating effect of self-esteem. However, self-esteem had a significant effect on levels of body dissatisfaction. Particularly, as levels of self-esteem in an individual increase, body dissatisfaction decreases. In this study, items were created to assess a user's real-life exposure to appearance-focused Instagram content. However, a validated scale to investigate the effects of different Instagram contents is needed to enhance future research. Nevertheless, self-esteem could be used as a target factor in the prevention of body dissatisfaction.

*Keywords:* Body dissatisfaction, appearance-focused Instagram content, self-esteem, young adults, mediation analysis

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## **Introduction**

With the ever-increasing popularity of social media over the past years, it has become an important topic of research. According to Kemp (2021), the number of people on social media has increased by over 13 percent throughout the past year, resulting in a total of 4.2 billion social media users worldwide. Mingoia et al. (2019) claim that young adults spend on average over three hours per day on social media. Thus, social media takes over a big part of our daily lives which highlights the importance of further research on the impact it has on its users. Several studies found a direct link between social media usage and emotional well-being and mental health, including body dissatisfaction (Lowe-Calverley & Grieve, 2021; O'Reilly et al., 2018). Therefore, this research investigated the relationship between appearance-focused Instagram use and body dissatisfaction in young adults.

### **Instagram**

Currently, Instagram is the most used social media platform (McLachlan, 2022). Despite its huge success, Instagram has not received much academic attention in the debate concerning its influence on well-being (Kleemans et al., 2018). Instead, Facebook was the predominant platform of investigation (Holland & Tiggemann, 2016). Instagram's success was increased by the integration of smart algorithms into the platform to engage its users for longer periods of time (Cotter, 2019). These algorithms analyze every click on the platform and personalize the user's newsfeed according to what they want to see. Specifically, Instagram considers the likes and comments a user gives, the time spent on specific posts, how often certain posts are saved, and the types of profiles visited by a user (Cotter, 2019). Thus, every user is exposed to individualized content and different accounts.

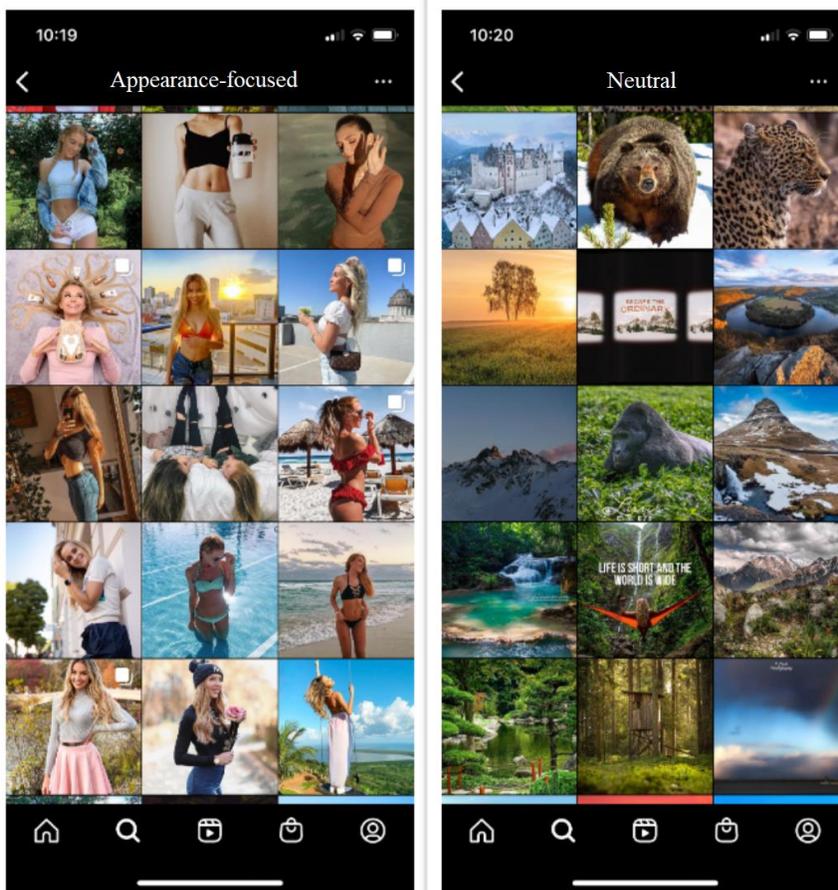
Instagram differs from other platforms in that it is an image-based platform only (Kleemans et al., 2018). The content a user is exposed to can range from travel images and nature scenery, to sports, nutrition, or self-portraits. Yet, Instagram is most often used as a means of online self-presentation (Kleemans et al., 2018). Specifically, many users share pictures focusing on their faces and whole bodies. Here, the platform offers the opportunity of using filters to cover flaws and put individuals in the most favorable light (Holland & Tiggemann, 2016). In turn, other users are constantly exposed to images focused on physical appearance, which will be referred to as 'appearance-focused' content in the remainder of this study. Appearance-focused content in this context refers to all images that display human bodies or

faces, whereas neutral pictures include content focusing on objects or text, such as vehicles, quotes, or nature. A visualization of Instagram accounts representing the two types of content can be found in Figure 1.

Especially young adults who are in a critical stage of development, characterized by identity development and overcoming insecurities, may internalize these perfect appearances and compare themselves to people they see in those pictures (Kleemans et al., 2018). This constant exposure to pictures on social media was also found to be associated with disturbed body images and body dissatisfaction (Meier & Gray, 2014). Generally speaking, body dissatisfaction refers to “a negative self-evaluation of one’s body shape and weight” (Cash & Pruzinski, 1990, as cited in Wojtowicz & Von Ranson, 2012, p. 20). This can in turn lead to the onset of eating disorders which makes body dissatisfaction a primary risk factor for developing such severe psychological disorders (Wojtowicz & Von Ranson, 2012).

**Figure 1**

*Instagram account exposed to appearance-focused content vs. neutral content*



### **Instagram Content and Body Dissatisfaction**

Previous research investigating the effect of social media on body dissatisfaction, however, focused on overall media consumption, rather than appearance-focused content (Best et al., 2014; Pedalino & Camerini, 2022). Similarly, other research has shown that it is not the time spent on social media that predicts body dissatisfaction, but rather how individuals use such platforms, such as the kind of content that is consumed (Berryman et al., 2018). Given the wide variety of content that is shown on Instagram, it is important to investigate which specific contents influence body dissatisfaction as the Instagram algorithm results in highly personalized user accounts. It was found that young adults who spent more time looking at appearance-focused images, as opposed to neutral images, report higher levels of body dissatisfaction (Williamson & Karazsia, 2018). This was further strengthened by a study of Lowe-Calverley and Grieve (2021) which has found that Instagram users experiences a slight decrease in body dissatisfaction after having seen images of a nature scenery as opposed to imagery showing attractive women. Yet, previous studies were executed using an experimental design where individuals were exposed to different images that display either neutral, or appearance-focused content (Lowe-Calverley & Grieve, 2021; Williamson & Karazsia, 2018). Contrasting, this study's aim is to investigate the user's real-life exposure to the different contents on Instagram by getting an insight into the actual following metrics.

Additionally, most previous research on the relation between Instagram content and body dissatisfaction has primarily focused on females. Moreover, the few studies taking males into account, show inconsistencies in their results (Holland & Tiggemann, 2016). This might be due to the fact that females are said to be more strongly affected by body dissatisfaction (Van Den Berg et al., 2010). However, arguments in favour of these findings have recently been weakened. Over the past years, body dissatisfaction has increased in males as well. A shift in society has put men under pressure of being muscular and slim (Grogan, 2022). Thus, body dissatisfaction seems to be a prominent issue in both genders. While females are primarily concerned with losing weight, males aim to achieve the opposite by gaining muscles (Ata et al., 2007). Especially in Western cultures, muscular body types are regarded as the ideal for men, while women usually strive towards thinness (Shepeliak, 2006).

### **The Role of Self-esteem**

Past research also suggests that social media use is possibly not directly linked to body dissatisfaction (Pedalino & Camerini, 2022). So far, many psychological constructs and personality factors have been investigated in this context. However, self-esteem has rarely been considered (Casale et al., 2021). Self-esteem was defined as the attitude an individual holds towards the self. This can be either positive, indicating a high level of self-esteem, or negative, resulting in low levels of self-esteem (Rosenberg, 1979). Previous research has found clear evidence for a relationship between body dissatisfaction and levels of self-esteem. Wojtowicz and Von Ranson (2012) argued that individuals with low levels of self-esteem tend to regard most of themselves as negative, including their bodies. Consequently, low levels of self-esteem are often associated with higher levels of body dissatisfaction, especially in young adults (Duchesne et al., 2016). However, the impact of social media use on an individual's level of self-esteem is still under debate (Best et al., 2014; Jan et al., 2017).

On the one side, prolonged social media use is said to trigger social comparisons to others who are perceived as superior, as users are constantly confronted with profiles of other people who they envy. A study by Jan et al. (2017), has found that approximately 88 percent of Facebook users engage in social comparisons. As a result of these comparisons, the users' levels of self-esteem are lowered due to a negative evaluation of the self. On the other side, research has shown positive links of social media use and self-esteem. Specifically, increased social media use was found to promote social networking opportunities which in turn leads to higher levels of belongingness and a boost in self-esteem (Best et al., 2014).

Based on these findings, it can be expected that self-esteem might have a mediating effect on the relationship between appearance-focused Instagram content and body dissatisfaction. Higher exposure to appearance-focused Instagram content, along with low levels of self-esteem are expected to be linked to higher levels of body dissatisfaction. Contrary, high levels of self-esteem might have a buffering effect on the relationship, therefore being linked to lower levels of body dissatisfaction.

### **Present Study**

This study examined the relationship between Instagram content and body dissatisfaction. In particular, the study investigated (1) the link between appearance-focused Instagram content and levels of body dissatisfaction and (2) the role of self-esteem as potential mediator (Figure 2).

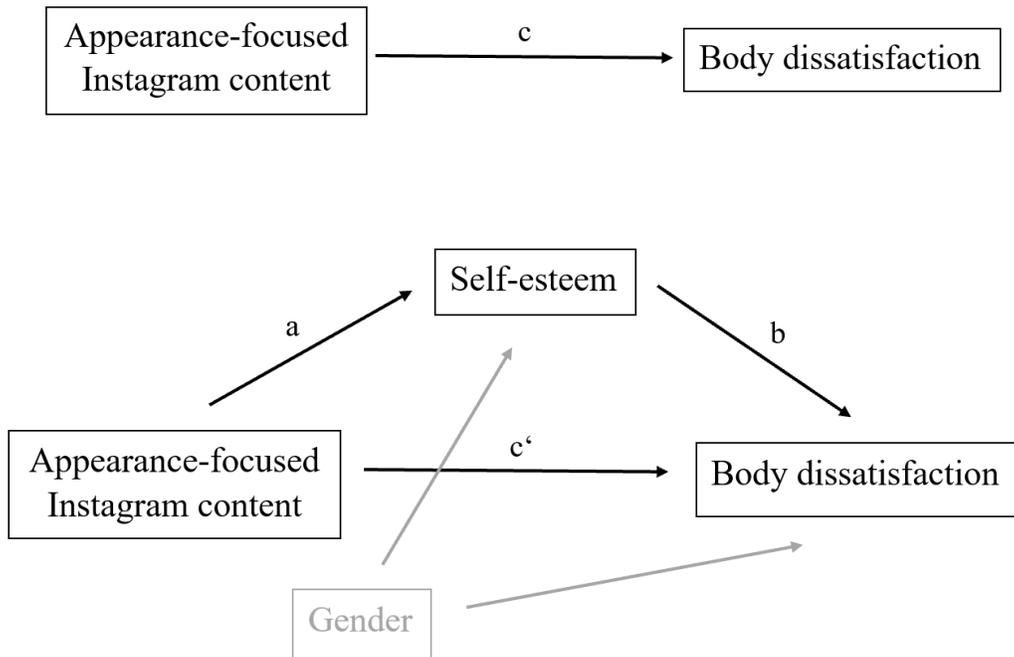
It was hypothesized that higher exposure to appearance-focused content would be positively linked to higher levels of body dissatisfaction. To contribute to the previous work, which has primarily focused on Facebook, this study will contribute to closing a gap of research by focusing on the platform Instagram. Moreover, gender will be used as a covariate to account for any gender differences in levels of body dissatisfaction.

Following this line of reasoning, four hypotheses emerged:

- (1) *Exposure to appearance-focused Instagram content correlates with the level of body dissatisfaction in young adults.*
- (2) *Exposure to appearance-focused Instagram content correlates with levels of self-esteem.*
- (3) *Levels of self-esteem correlate with levels of body dissatisfaction*
- (4) *The relationship between exposure to appearance-focused Instagram content and body dissatisfaction is mediated by levels of self-esteem.*

**Figure 2**

*Model of hypothesized relationships*



**Methods**

**Design**

This study employed a quantitative cross-sectional design. Data was gathered by means of an online survey.

**Participants**

To participate in this study, four inclusion criteria had to be met. All individuals had to be above the age of 18, possess a sufficient knowledge of English, own a smartphone, and be registered on Instagram. It is important to note that this study was part of a larger study ( $N = 250$ ) which investigated the relation between general social media use and various personality traits and other psychological variables. Therefore, all respondents who did not meet the inclusion criteria for this study, as well as those who did not pass an attention check, were excluded. Ultimately, a final sample of  $N = 88$  participants was used in the present study. According to the G\*power analysis (Version 3.1), a minimum sample size of 74 participants was required to reach a good statistical power (Faul et al., 2007). The sample consisted of 53 (60.2%) females and 32 (36.4%) males. Three participants (3.4%) preferred not to indicate their gender. The age of participants ranged from 18 to 39 years ( $M = 22.88, SD = 3.31$ ). Additionally, 61 (69.3%) participants were Germans and 6 (6.8%) Dutch. 21 (23.9%) indicated to come from another country (Table 1).

To increase the number of responses, convenience sampling was used. On the one hand, students at the University of Twente were reached via the university’s online application SONA systems. In return, students were able to obtain 0.25 credits. On the other hand, participants were recruited via the researcher’s private social media accounts. Here, recruitment messages with an invitation link to the survey were shared.

**Table 1**

*Demographic characteristics of the participants (N = 88)*

Characteristics	Frequency (N)	%	<i>M(SD)</i>
Gender			
Female	53	60.2	
Male	32	36.4	
Prefer not to say	3	3.4	

Age	88	22.88 (3.31)
Nationality		
German	61	69.3
Dutch	6	6.8
Other	21	23.9

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*Note.* *M* = Mean; *SD* = Standard Deviation

**Materials**

The survey was generated on the platform Qualtrics. Overall, the survey consisted of four parts. First, the participants were introduced to the study with an information sheet, asked for their informed consent, and provided with demographic questions (Appendix A). Afterwards, three scales followed to measure the variables of interest (appearance-focused Instagram content, self-esteem, and body dissatisfaction).

***Instagram Content***

For the purpose of this study, a questionnaire was developed to assess a user’s real-life exposure to appearance-focused Instagram content. First, a list of possible types of Instagram contents was established. A preliminary list of eight possible image contents was taken from the study of Hu et al. (2014), consisting of friends, food, gadgets, captioned photos, pets, activity, selfie, and fashion. To revise the list, ten individuals from the researcher’s social environment that match the characteristics of the target population were asked about the specific Instagram content they are exposed to when entering the platform. This was done with an open question which was distributed via text message. Based on the responses and the input from the preliminary list, a final list of possible Instagram contents emerged. This included friends, fitness, music, animals, beauty, food, fashion, architecture/home, travel, sports, education/news, finance, vehicles/ cars and inspirational quotes. To cover all features of Instagram, the participants were asked for each item to indicate the number of accounts followed, the number of images shown on the Instagram home feed, and the explore page. Thus, each item was displayed to the participants a total of three times. Answers were given on a 5-point Likert scale ranging from ‘*Never*’ (1) to ‘*Very often*’ (5) (Appendix B).

The categories which typically display human bodies and faces were considered as appearance-focused. These included: Friends, fitness, beauty, sports, and fashion. For the purpose of the present study, only these categories will be used to answer the hypotheses. Scores

for the amount of appearance-focused Instagram content could range from 15 to 75, as each of the five categories were presented three times. The other categories, namely, music, animals, food, architecture/home design, travel, education/news, finance, vehicles/cars, and inspirational quotes, were considered as neutral content. These categories were only used for the descriptive statistics to get a better overview of the characteristics of the current sample. Here, scores could range from 27 to 135. The internal consistency of the current sample was found to be good ( $\alpha = .89$ ).

### ***Rosenberg Self-Esteem Scale***

To assess the respondent's level of self-esteem, the Rosenberg Self-Esteem Scale (RSES) was used (Rosenberg, 1979). The RSES consisted of ten items answered on a 4-point Likert scale ranging from '*strongly disagree*' (1) to '*strongly agree*' (4) (Appendix C). Items 2, 5, 6, 8, and 9 were worded negatively and thus, scored inversely. To illustrate, one positively formulated item was 'I feel that I have a number of good qualities' (Item 3). Contrary, one negatively item was 'I feel I do not have much to be proud of' (Item 5). Scores ranged between 10 and 40 points, with a higher score indicating a higher level of self-esteem. Overall, the RSES showed high internal consistency ( $\alpha = .81$ ), as well as good test-retest reliability with a correlation of .85 (Schmitt & Allik, 2005). The current sample showed good internal consistency ( $\alpha = .91$ ).

### ***Body Shape Questionnaire***

To measure levels of body dissatisfaction, the Body Shape Questionnaire (BSQ) was used (Cooper et al., 1987). Originally, the questionnaire consisted of 34 items to which respondents were asked to indicate the frequency of the statement over the past four weeks on a 6-point Likert scale ranging from '*never*' (1) to '*always*' (6) (Appendix D). As noted above, this study was part of a larger study investigating various psychological constructs which resulted in a survey of many different scales. To avoid respondent fatigue and keep the survey short, it was decided to use a short version of the BSQ (BSQ-8). Evans and Dolan (1993) created an 8-item version which has been examined and validated, showing a high correlation to the original scale with a Pearson correlation between .92 and .94. Additionally, the BSQ-8 indicated high internal consistency with Cronbach's alpha ranging between .82 and .94 (Wade, 2017). The scores ranged between 8 and 48, with higher scores indicating higher levels of body dissatisfaction. An exemplary item was 'Have you felt ashamed of your body?' (Cooper et al., 1987). In the present study, the sample showed good internal consistency ( $\alpha = .91$ ).

## **Procedure**

The different scales of all researchers were combined and inserted into one survey in Qualtrics. Once the study was approved by the ethics committee of the University of Twente (Approval Nr.: 220244), a link was distributed on WhatsApp and Instagram, leading the participants directly to Qualtrics.com. The survey was also published on the website SONA systems. Before the start of the survey, participants were informed about the study's details, including the purpose, duration, anonymity, confidentiality, and their rights as participants. At the end, they were provided with the researcher's contact details in case of questions. After giving their consent, the respondents were forwarded to the remainder of the survey. This entailed questions about their demographics, including age, gender, and nationality, followed by different questions concerning their social media use, their well-being, and various personality traits. Halfway through the survey, the attention check appeared. It stated: "If you are paying attention, please select *strongly disagree*". Upon completion of the survey, respondents were thanked for participating.

## **Data Analysis**

The data analysis was performed using the statistical software IBM SPSS Statistics Version 26. First of all, the data was checked for outliers by using graphs. Assumptions of normality, linearity, multicollinearity, and homoscedasticity were tested. The normality of the data was checked by using the Shapiro-Wilk test and the Q-Q plots. The reliability was checked using Cronbach's alpha. Subsequently, the descriptive statistics were calculated for the sample. To answer the first three hypotheses, a Pearson correlation was computed to see whether there is a correlation between exposure to appearance-focused Instagram content, levels of body dissatisfaction, and levels of self-esteem. To assess whether self-esteem acts as a mediator in this relationship, a multiple regression analysis was performed. Specifically, the PROCESS macro extension for mediation models in SPSS was used (Preacher & Hayes, 2004). Here, gender was included as a covariate.

## **Results**

### **Data Preparation and Descriptive Statistics**

A total of  $N = 88$  participants were included in the final data set. No significant outliers were detected. The Shapiro-Wilk test as well as the inspection of the Q-Q plots revealed that the

data followed a normal distribution for the RSES,  $W(88) = .980$ ,  $p = .181$ , and appearance-focused Instagram content,  $W(88) = .986$ ,  $p = .451$  (Shapiro & Wilk, 1965). However, the results from the BSQ indicated a significant deviance from normality,  $W(88) = .905$ ,  $p < .001$ . Transforming the data of the BSQ scores did not lead to a normal distribution. Besides, the Q-Q plots of the BSQ scores indicated an approximately normal distribution (Appendix E). Therefore, assuming that the central limit theorem holds true, parametric tests were employed in the further analyses. Specifically, the central limit theorem states that any sample larger than 30 approximates a normal distribution which makes parametric tests preferable over non-parametric tests (Kwak & Kim, 2017). Moreover, plotting the residuals revealed that the assumption of homoscedasticity was met. This was also true for linearity and multicollinearity. The descriptive statistics for the variables Instagram content, body dissatisfaction, and self-esteem can be found in Table 2.

**Table 2**

*Descriptive Statistics for Instagram content, body dissatisfaction, and self-esteem*

Variable	<i>M</i>	<i>SD</i>	Min	Max	Confidence Interval	
					Lower	Upper
<b>Instagram content</b>						
Appearance-focused	41.93	9.26	15	63	39.97	43.89
Neutral	66.49	14.48	27	99	63.42	69.56
<b>Body dissatisfaction</b>	18.53	9.29	8	44	16.48	20.41
<b>Self-esteem</b>	30.05	5.56	15	40	28.87	31.22

*Note.* *M* = Mean; *SD* = Standard Deviation; Min = Minimum score; Max = Maximum score.

**Correlation Appearance-focused Instagram Content and Body Dissatisfaction**

To investigate the first hypothesis, a Pearson correlation was run to assess the relationship between appearance-focused Instagram content and body dissatisfaction. The relation was found to be non-significant,  $r(88) = .09$ ,  $p = .384$ . Thus, hypothesis one was rejected.

### **Correlation Appearance-focused Instagram Content and Self-Esteem**

Similarly, a Pearson correlation was conducted to assess whether appearance-focused Instagram correlates with levels of self-esteem. Again, the results indicated a non-significant relationship,  $r(88) = -.03, p = .805$ . Consequently, hypothesis two was also rejected.

### **Correlation Self-Esteem and Body Dissatisfaction**

Lastly, the Pearson correlation coefficient for self-esteem and body dissatisfaction showed a moderate negative correlation,  $r(88) = -.48, p < .001$ . Thus, hypothesis three was accepted.

### **Mediation Analysis**

To investigate whether the relationship between appearance-focused Instagram content and body dissatisfaction is mediated by self-esteem, a mediation analysis was performed using PROCESS macro. The predictor variable for the analysis was exposure to appearance-focused Instagram content, whereas the outcome variable was body dissatisfaction. Self-esteem was the mediator. Additionally, gender was included as a covariate as it has an effect on levels of body dissatisfaction and self-esteem.

The first step of the mediation analysis, appearance-focused Instagram content predicting body dissatisfaction, ignoring self-esteem, showed that path c was not significant,  $b = .06, t(85) = 0.53, p = .592$ . The regression of appearance-focused Instagram content on self-esteem, revealed that path a of the mediation model (Figure 2), when controlling for gender, was also non-significant,  $b = .01, t(85) = -0.15, p = .882$ . Self-esteem predicting body dissatisfaction showed that path b is significant,  $b = -.79, t(84) = 4.93, p < .001$ . When controlling for self-esteem, appearance-focused Instagram content was not a significant predictor of body dissatisfaction, holding gender constant,  $b = .07, t(84) = 0.69, p = .494$ . The 95% confidence intervals CI [-.12, 0.11] included 0, therefore no mediation was found in the model. Concludingly, hypothesis four was rejected.

## **Discussion**

Today, Instagram is the most used social media platform among young adults. Integrated algorithms ensure that every user is exposed to content that they are interested in. Moreover, the use of filters and editing tools expose individuals to content that displays idealized images of other users. In turn, a detrimental effect on levels of body dissatisfaction in young adults was

expected. Thus, the purpose of this study was to investigate the effect of appearance-focused Instagram content on levels of body dissatisfaction. Moreover, this study investigated a possible mediating effect of self-esteem in this relationship.

The first hypothesis predicting that the exposure to appearance-focused Instagram content correlates with levels of body dissatisfaction was rejected. One possible explanation for this finding is that the continuous exposure to such content only correlates with certain aspects of body dissatisfaction but not all of them. More specifically, a study by Cohen et al. (2017) has found, that following appearance-focused accounts on Instagram and Facebook was associated with greater thin-idealization and body surveillance. It is likely that not all aspects of body dissatisfaction are covered by the BSQ-8 and thus, were not considered in this study. Additionally, data on body dissatisfaction, as measured by the BSQ-8, was based on self-reports of the participants. A strong floor effect was found in the data, indicating that all participants scored low on body dissatisfaction. Generally, individuals tend to be affected by the social desirability effect when giving self-reported responses which might be a possible reason for the low scores (Heider et al., 2018).

Subsequently, the second hypothesis was rejected as well, meaning that there is no correlation between appearance-focused Instagram content and levels of self-esteem. Currently, there are many inconsistencies in the existing literature regarding the role of self-esteem. While some researchers have found no correlation at all, others have found strong correlations. To illustrate, a literature review by Best et al. (2014) has revealed that social media use can lead to enhanced well-being and an increase in self-esteem. This might be due to positive feedback that individuals receive when entering the platform in form of likes or comments. Opposed to this, Jan et al. (2017) reported that higher social media use leads to lower levels of self-esteem because people tend to compare themselves to others who they envy. Thus, the role of self-esteem in the online environment might require more research to see how an individual's self-esteem is affected by different platforms, features, or contents.

In the present study, only the third hypothesis was confirmed. A moderate negative relation between levels of self-esteem and body dissatisfaction was found. Thus, as levels of self-esteem in an individual increase, body dissatisfaction decreases. This is also consistent with other studies, where low self-esteem was found to be a predictive factor for the onset of body dissatisfaction (Wojtowicz & Von Ranson, 2012). This is, irrespective of the other findings, still

an important insight. Levels of self-esteem often vary during childhood and adolescence as an individual's personality is still maturing. Moreover, during puberty, adolescents and young adults have to deal with physical changes of their body which makes them especially prone to the onset of body dissatisfaction (Duchesne et al., 2016). Thus, self-esteem could be used as a target factor in the prevention of body dissatisfaction.

Particularly, the development of a positive self-image was found to help adolescents to be less affected by the unrealistic body images portrayed in the media (O'Dea, 2004). To illustrate, the Everybody's Different program by O'Dea (2007) adopted a new self-esteem approach to improve the body image in young adolescents. The goal of this program was to improve the sense of self-worth and body image in young adolescents by increasing their levels of self-esteem. Exemplary activities included positive self-evaluations, giving and receiving positive feedback, and relaxation exercises (O'Dea, 2004). Even if social media was not as widespread back then, many practices and insights are still applicable today. In addition, instructions on a deliberate and safe social media use could be given to adjust the program to today's society.

Lastly, the fourth hypothesis, stating that self-esteem acts as a mediator in the relationship between appearance-focused Instagram content and body dissatisfaction, was rejected. This is also in line with the findings of the first two hypotheses. A possible explanation, that can also be related to the other hypotheses, is that the questionnaire to measure the amount of exposure to appearance-focused Instagram content was developed for the purpose of this study. Thus, it is not a validated scale. Possibly, the questions which intended to measure appearance-focused Instagram content did not cover all features and contents of the platform. Vandebosch et al. (2021) investigated different features of social media in relation to body dissatisfaction. It was found that, for example, taking and editing selfies, but not posting them, correlates with body dissatisfaction. Moreover, the amount of likes and comments underneath pictures displaying other individuals seems to influence this relationship. Specifically, pictures with comments complementing the shown appearance were found to increase body dissatisfaction while the same picture without such comments did not. In conclusion, this study only investigated the type of content a user is exposed to. However, the use of social media is much broader than this.

### **Strength and Limitations**

The results of the current study can be accounted for by some limitations. Nonetheless, the study also has strengths. So far, research investigating the effect of Instagram on a person's well-being is scarce compared to other platforms such as Facebook. This study contributed to filling this gap of research by creating specific items that aim to assess the content a user is exposed to on Instagram. This is important, as most of previous research has assessed the effect of the time spent on certain social media platforms on levels of body dissatisfaction. And yet others have investigated the influence of social media content on body dissatisfaction in experimental conditions where pictures of different contents were shown to the participants. The created items might constitute the first step towards the development of a new scale that aims to assess a user's real-life Instagram content exposure.

Relatedly, there is no validated scale that assesses how Instagram is used by individuals. Thus, a possible limitation of the current study is how this use of Instagram was measured. Due to time constraints, it was not feasible to engage in extensive social media research methods within the scope of this study. Hence, a list of possible Instagram contents was taken from Hu et al. (2014). Next to that, this study was part of a larger collaborative study between different researchers. Thus, the survey was composed of different scales that were not all used in the present study. When analyzing the results, it was observed that many participants did not complete the whole survey. Thus, the length of the survey might have been too long. As a result, only the data from 88 out of 250 participants was used. The number of participants was still sufficient to reach good statistical power, but what is important to note is that the sample turned out not to be very diverse. Overall, around 60 percent of all participants were females from Germany. With a larger sample, more diversity could have been achieved which would make the results of this study more generalizable. So far, this study is not representative for other nationalities.

Lastly, this study was limited to participants aged 18-39 years due to the ease of recruitment. However, previous research indicated that the onset of body dissatisfaction starts much earlier. To illustrate, a study by Dion et al. (2016) revealed that the prevalence of body dissatisfaction in girls between 9 and 14 years is already slightly above 50 percent.

### **Recommendations for Future Research**

Based on the limitations of this study, some recommendations for future research can be given. First, the scales to assess the concepts of investigation should be chosen with caution. Future research would benefit from a validated scale that measures the exposure to different Instagram contents. To get a more accurate overview of the Instagram contents that users are exposed to on a daily basis, trace interviewing is a promising technique. Here, users are asked to comment on a visualization of their digital records (Sloan & Quan-Haase, 2016). This data could then be used to arrive at a more extensive and accurate list. This approach is much more user-centered and provides additional context to the posts which strengthens its validity (Sloan & Quan-Haase, 2016).

Moreover, future studies would benefit from including younger individuals in the sample. The early onset of body dissatisfaction in children increases the importance of such research and could contribute to the development of better prevention interventions. Lastly, the current study applied a correlational design. The data was gathered at one point in time. However, it is likely that individuals experience different levels of body dissatisfaction on different days. Thus, future research would benefit from more longitudinal studies to assess the relationship between Instagram content and body dissatisfaction. Insights from longitudinal research could give more insight into the causal direction of a possible relationship. Moreover, other factors than self-esteem could be worth investigating for a better understanding of potential mechanisms underlying this relationship.

### **Conclusion**

Based on the results of the current study, three out of four hypotheses were rejected. No correlation between exposure to appearance-focused Instagram content and body dissatisfaction was found. Additionally, self-esteem did not have a mediating effect in this relation. Yet, a correlation was found between levels of self-esteem and body dissatisfaction. This insight can be used to advance future interventions concerning body dissatisfaction and levels of self-esteem might be useful to investigate in order to see which individuals are more prone for the onset of body dissatisfaction.

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## **Appendix A: Information Sheet, Informed Consent, and Demographic Questions**

### **Information Sheet**

Dear participant,

Thank you for taking part in this study. Please read the following information carefully.

### **Purpose of this study**

The purpose of this study is to examine the relationship between social media platforms and user's mental health and/or well-being. This survey will take approximately 15-25 minutes to complete. To take part in this study, you have to be above the age of 18.

### **Study content**

This study is part of the bachelor's theses of a group of psychology students from the University of Twente. As the focus of each thesis differs slightly, the questions will be divided into several sections. First, you will be asked to answer some demographic questions. This will be followed by questions that concern your daily social media consumption, including topics such as your average screen time and your intention of social media use. Lastly, you will be asked to answer some sets of questions concerning your personality and other psychological factors. Please note, that there are no right or wrong answers as this survey intends to measure your own experiences. Please read the questions carefully and answer them honestly.

### **Data acquisition**

Your participation in this study is voluntary. You have the right to withdraw at any time without giving any reason. Your response will be anonymous and cannot be traced back to you. Your data will be treated as confidential and only used for academic purposes. There are no known risks expected from the participation in this study.

### **Contact**

If you have any questions or concerns, please contact one of the following:

Louisa Albermann, l.albermann@student.utwente.nl (researcher)

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Karla Duarte, k.d.duarte@utwente.nl (supervisor)

For questions about the ethical approval and your rights as a participant, you can reach any of the researchers or the ethicscommittee-bms@utwente.nl. This study is approved by the ethical committee of the Behavioural, Management and Social Sciences (BMS) of the University of Twente.

### **Informed Consent**

I have read and understood the study information.

Yes

No

I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and withdraw from the study at any time, without having to give a reason.

Yes

No

I understand that participating in this study involves filling out an online questionnaire and involves questions about my demographics, social media usage, mental health and other psychological factors.

Yes

No

I understand that my responses will be used for academic purposes and are part of the bachelor theses at the University of Twente.

Yes

No

I understand that the collected information cannot be traced back to my identity and is not shared with people outside the study team.

Yes

No

I give permission for the anonymized answers to be archived in the University of Twente Research repository so it can be used for future research and learning.

Yes

No

I understand that there are no known risks expected from participating in this study and that the survey was approved by the ethics committee of the University of Twente.

Yes

No

I hereby declare that I am at least 18 years old and voluntarily participate in this study.

Yes

No

### **Demographic Questions**

What is your nationality?

German

Dutch

Other \_\_\_\_\_

How old are you? How old are you? (Please enter only the number)

\_\_\_\_\_

With which gender do you identify most?

Female

Male

Diverse

Intersex

Transgender

Non-binary

Other \_\_\_\_\_

Prefer not to say

**Appendix B: Instagram Content Questionnaire**

Please consider all **accounts that you currently follow** on **Instagram** and indicate below how often accounts from each of the listed categories appear in your following list.

	Never	Rarely	Sometimes	Often	Very Often
Friends	<input type="radio"/>				
Fitness	<input type="radio"/>				
Music	<input type="radio"/>				
Animals	<input type="radio"/>				
Beauty	<input type="radio"/>				
Food	<input type="radio"/>				
Fashion	<input type="radio"/>				
Architecture/ Home design	<input type="radio"/>				
Travel	<input type="radio"/>				
Sports	<input type="radio"/>				
Education/ News	<input type="radio"/>				
Finance	<input type="radio"/>				

Vehicles/  
Cars

Inspirational  
quotes

Please consider the kind of **posts** you usually see in your **Instagram feed**. Indicate below how often you see posts from each of the listed categories.

	Never	Rarely	Sometimes	Often	Very often
Friends	<input type="radio"/>				
Fitness	<input type="radio"/>				
Music	<input type="radio"/>				
Animals	<input type="radio"/>				
Beauty	<input type="radio"/>				
Food	<input type="radio"/>				
Fashion	<input type="radio"/>				
Architecture/ Home design	<input type="radio"/>				
Travel	<input type="radio"/>				
Sports	<input type="radio"/>				
Education/ News	<input type="radio"/>				

Finance	<input type="radio"/>				
Vehicles/ Cars	<input type="radio"/>				
Inspirational quotes	<input type="radio"/>				

Please consider the kind of **posts** you usually see on your **explore page** on **Instagram** and indicate below how often you see posts from each of the listed categories.

	Never	Rarely	Sometimes	Often	Very often
Friends	<input type="radio"/>				
Fitness	<input type="radio"/>				
Music	<input type="radio"/>				
Animals	<input type="radio"/>				
Beauty	<input type="radio"/>				
Food	<input type="radio"/>				
Fashion	<input type="radio"/>				
Architecture/ Home design	<input type="radio"/>				

Travel	<input type="radio"/>				
Sports	<input type="radio"/>				
Education/ News	<input type="radio"/>				
Finance	<input type="radio"/>				
Vehicles/ Cars	<input type="radio"/>				
Inspirational quotes	<input type="radio"/>				

**Appendix C: Rosenberg’s Self-Esteem Scale**

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

	Strongly agree	Agree	Disagree	Strongly disagree
On the whole, I am satisfied with myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times I think I am no good at all.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have a number of good qualities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to do things as well as most other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I do not have much to be proud of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I certainly feel useless at times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I’m a person of worth, at least on an equal plane with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish I could have more respect for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All in all, I am inclined to feel that I am a failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take a positive attitude toward myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Appendix E: Q-Q plot of BSQ scores

