Breaking the Mirror

The Impact of Exposure to Instagram Body Positive Image Content versus Ideal Body Image Content on Social Comparison behaviors and Self-Esteem levels among Young Adults

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July 1, 2024

Acknowledgements

This thesis would have not been possible to carry out without the support of several people who were integral to my journey and writing process throughout my university years.

First, I would like to thank my supervisor, Sara de Ruyter, who provided continuous guidance from the start to the end of this thesis. Her availability wherever I needed assistance was crucial in completing this work.

I also want to express my gratitude to my family, mamma Paola, papà Max, Fede, and Connie. Despite the distance, their support over the past three years and during the months of writing this thesis was invaluable. I thank them for giving me the opportunity to study at this university and for letting me live this experience.

A special thanks goes to Brent, who has been one of the most important people in my life over the past three years. His constant support and guidance were essential not only during the thesis writing process but also throughout my entire university journey. He taught me the importance of perseverance, patience, and time in achieving success.

I am grateful to my friends, both those I have met over the past three years and those who have been by my side even longer. They know who they are, their support has been invaluable. Together, we successfully reached the end of this challenging but exciting journey.

Lastly, I want to thank myself for preserving my university journey. For not giving up and overcoming challenges. For carrying out this thesis and achieving my goals. I am proud of how far I have come.

Thank you,

Chiara

Abstract

Background: Social media platforms like Instagram often showcase idealized body images, increasing social comparison and decreasing self-esteem among individuals aged 18 to 35. The body positivity movement on Instagram encourages acceptance of diverse appearances to counter unrealistic beauty standards. *Objective:* This study examines the effects of exposure to body positive versus ideal body image content on Instagram on social comparison behaviors and self-esteem levels of young adults. *Methods:* The study used a quantitative research design and collected 179 responses from participants aged 18 and 35 years (M_{age} = 22.04, SD = 3.29). Participants were randomly assigned to one of two groups: one viewed 20 posts with ideal body image content (n = 88), and the other viewed 20 posts with body positive image content (n = 91). They completed questionnaires on social comparison behaviors and self-esteem before and after exposure. Statistical analyses were conducted using R. *Results:* No significant differences in appearance comparison were found between pre- and post-exposure in both groups. However, significant differences were observed in self-evaluation and self-esteem levels. *Conclusions***:** Exposure to body positive images on Instagram increased appearance comparison but also boosted self-esteem and positive self-evaluation. Ideal body image content did not significantly affect self-esteem and did not lead to a considerable increase in appearance comparison. *Practical implications:* These findings are relevant for mental health professionals and social media platforms to enhance users' body image and self-esteem. The body positivity movement should focus on reducing comparison behaviors and promoting self-esteem. Future research should include larger, culturally diverse samples and assess participants' pre-existing attitudes toward body image.

Keywords: Social media; Instagram; Body image; Body positivity; Idealized body image; Social comparison; Self-esteem; Young adults.

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1. Introduction

In our rapidly evolving digital society, the realm of communication and media platforms is experiencing a notable increase in growth and diversification. Social media stands as a transformative phenomenon, reshaping global communication patterns, expanding its utility across various fields, over the past two decades and at a fast pace (Mergel, 2012). Among the multitude of communication channels available, social media holds a prominent position (Öztürk, 2014), attracting a significant portion of the global population. The term "social media" refers to "websites and computer programs that allow people to communicate and share information, opinions, pictures, video on the internet, especially social networking websites" (Cambridge Dictionary, n.d.). According to Statista (2024), the age groups 18-24 and 25-34 years old are the most active ones on social media. Instagram, "a social-networking service that allows users to share photographs and videos" (Collins Dictionary, 2024), revolutionized the use of social media (Green et al., 2018). As the world becomes increasingly reliant on digitalization (Hanna et al. 2011), social media is making the internet not just a source of information, but also a source of influence, relying on communicators, receivers, and contextual scenarios (Cheung & Thadani, 2012).

The rise of social media enables individuals to curate and present seemingly perfect images of themselves, fostering an environment where people are more inclined to compare themselves to others (Midgley et al., 2021). This comparison can lead to thin-ideal internalization, which refers to how much an individual adopts "socially defined ideals of attractiveness and engages in behaviors designed to produce an approximation of these ideals" (Thompson & Stice, 2001, p. 181). The thin-ideal stands for those beauty standards that individuals, women in majority, recognise as an acceptable body (McCarthy, 1990). Appearance-related stereotypes are one method used to communicate body ideals to society (Poorani, 2012). Nevertheless, race, ethnicity, nationality, media and social factors are major

determinants of defining an ideal body (Poorani, 2012). A consequence to being exposed to ideal body content is body image dissatisfaction, as individuals strive for the thin body that the media tend to idealize (Patzer, 2008). According to Tiggemann and Pickering (1996), body image dissatisfaction arises when individuals hold negative perceptions of their self-image and perceive differences between their actual and desired body. Specifically, thin-ideal internalization is considered to directly foster body dissatisfaction because of its unattainability (Thompson et al. 1999). Consequently, the constant stream of image-based posts tends to promote self-objectification (Harper & Tiggemann, 2008), developing unrealistic expectations among people (Slater et al., 2017).

Not all online content that displays people's bodies necessarily has a negative impact on individuals' bodies and well-being. In recent years, there has been a notable increase in the appreciation of body images and body positivity (Cohen et al., 2020), thanks to the advent of the body positivity movement on Instagram (Cwyra-Horta, 2016). The pervasive influence of idealized body pictures on Instagram, combined with the negative consequences of increased social media use, emphasizes the significance of encouraging body positivity and critical media literacy among users.

Moreover, exposure to body image content online influences numerous psychological aspects; however, due to variety and complexity, this research focuses on two key aspects: social comparison and self-esteem. Social comparison and self-esteem are frequently presented together in discussions regarding exposure to body-related images on social media platforms like Instagram. Although many studies highlight the negative influence of body image-related content viewed on social media (Brown & Tiggemann, 2016; Casale et al., 2021; Hendrickse et al., 2017; Prichard et al., 2020), the positive influence of such content has not been thoroughly examined.

Therefore, this research aims to answer the research question "How does exposure to body positive image content versus ideal body image content on Instagram influence social comparison behaviors and self-esteem levels among young adults?". To address the research question, the study employs a quantitative research design involving a pre-test, exposure to ideal body image content or body positive image content, and a post-test survey. Data was collected from 207 individuals of any gender, aged between 18 and 35, who understand English, are familiar and regularly engage with Instagram. Starting with the framework, the variables and potential relationships are outlined, leading to the presentation of the research question and hypotheses. The methods section then details the participant sample, instruments, and research procedure, followed by analyses and descriptive statistics. Next, the results section presents the findings, which are interpreted in the discussion, considering their implications and limitations. Finally, the paper concludes with a summary of the study and practical suggestions for future research.

2. Theoretical framework

Firstly, this research is going to enhance comprehension of how being exposed to body content online significantly impacts the psychological feelings of young adults. Each variable is introduced and explained thoroughly. Moreover, the research question and hypotheses formulated for this study are presented.

2.1 Social media

Social media, as defined by Bayer et al. (2020) and Kaplan and Haenlein (2010), are computer-mediated communication channels enabling social interaction and user-generated content exchange. These technologies accommodate individuals' preferences, interests, and age groups through diverse types of platforms. Examples include Instagram, Facebook, X (formerly Twitter), YouTube, and more, with content seamlessly transitioning across these

platforms (Millers et al., 2016). Each platform presents distinct features for sharing information and for usability, ranging from photo and video to text and audio content, attracting diverse audiences based on users' demographics. According to the Datareportal global overview (2024), 62.3% of the global population uses social platforms, with adults spending an average of 2.5 hours per day on them (Kemp, 2020). Instagram, in particular, is one of the top social networking platforms (Mortensen, 2024).

2.1.1 Instagram

Instagram, a photo and video-sharing social media application launched in 2010 by Kevin Systrom (Okunev, 2023), has experienced exponential growth, highlighting 400 million active users (Lister, 2024). It has gained popularity among both individual users and businesses (Saeidi & Baradari, 2023). According to Statista (2024), as of early 2024, 31.8% of the total Instagram users are aged 18-24, while 30.6% are aged 25-34, indicating these age groups represent the largest portion of users. Instagram features various content-sharing options including feed posts, reels, stories, and live broadcasts (Park, 2023).

The feed page of an Instagram account displays posts from accounts that have been followed, sponsored posts, and recommended content that could capture the user's interest (Instagram, n.d.). Moreover, according to the platform, the search and explore page show suggested and viral content without any restriction on quantity. On Instagram, algorithms play a defining role in what is presented on people's feed, with the purpose of improving the user experience on the app. Once an individual clicks on a specific type of content, it can drastically alter the content that is shown from then on (Chiat, 2021). With the vast number of active users on Instagram, the volume of shared content is equally significant. Data report the sharing of an average of 95 million of photos and videos per day on Instagram (Lister, 2024), highlighting the extensive breadth and diversity of content available on the platform.

Instagram, similar to other social media platforms, is also renowned for its rapidity in spreading information and accessibility to a vast range of content, readily available whenever desired. Research on the type of Instagram content shared by users has not been extensively explored, leaving a significant gap in existing literature when it comes to defining the specific types of content that users tend to share on the platform. However, Hu et al. (2016) conducted a study that classified Instagram content into eight macro categories, with self-portraits, photos with friends, and activities as the most popular ones. Certainly, the content to which each user is exposed to varies depending on algorithms and individual preferences.

The evolution of social media led to create a popular way for self-expression (Hawi & Samaha, 2016); it is argued that individuals engage with social platforms due to the unique experiences they offer, not available through other means (Güneç, 2022), and to satisfy the need of belonging and self-presentation (Casale et al., 2016). According to Hu et al. (2016), a significant portion of the content shared on Instagram belongs to the category of self-portraits. Posting self-portraits entails sharing aspects of oneself, including one's appearance, with other users online.

According to Syahputra et al. (2019), excessive use of social media can have a damaging impact on mental and social well-being (Sagita et al., 2019). One consequence of excessive social media usage is the risk to confuse real life and the ideal self-image created online, leading to perfectionism (Griffiths & Balakrishnan, 2018). To give a comprehensive definition, Flett and Hewitt (2002, p. 256) define perfectionism as the "adherence to established exaggerated and excessively high standards", coupled with an passionate desire for flawless execution; it represents the pursuit of excellence. Individuals exhibiting perfectionistic inclinations often tend to put pressure on themselves believing that they should be able to achieve the impossible. However, in recent years, there has been a notable shift in perceptions of ideal body image, with increased acceptance and reduced criticism compared

to previous decades. This evolution in attitudes toward body image sets the context for exploring the dynamics of body-related content on Instagram.

2.2 Ideal body image content and body positive image content

In the past decades, research has consistently demonstrated a negative correlation between social media usage and body image, referring to individuals' perceptions, thoughts, and feelings regarding their bodies (Graham et al., 2023). Hence, multiple studies have indicated that Instagram's focus on photos may pose particular risks to body image (de Vries et al., 2016; Saiphoo & Vahedi, 2019). Sociocultural theories highlight the impact of photo-based platforms (Jung et al., 2022), which often display unrealistic images prompting appearance ideals, leading to significant social pressures (McLean at al., 2015). According to Fardouly et al. (2018) and Brown and Tiggemann (2016), individuals who frequently use Instagram tend to experience a stronger desire for thinness, engage in self-objectification, have negative mood states, and feel dissatisfied with their bodies. Social norms often portray idealized body images, particularly emphasizing the 'thin ideal' (Slater et al., 2019). Fitness-related content reinforces this by promoting individuals with very thin or athletic bodies, often in minimal clothing and sensual poses (Tiggemann & Zaccardo, 2018). This alignment with appearance ideals (Rodgers & Nowicki, 2024) negatively affects individuals' perception of their own appearance (Tsawaab, 2023), suggesting they should strive to meet societal standards. Consequently, internalization and appearance comparison mechanisms contribute to the development of body dissatisfaction (Holland & Tiggemann, 2016), which is intensified through comparisons with unrealistic portrayals in media (Thompson et al., 1999).

In contrast, with the widespread acknowledgement that visually oriented platforms have a negative impact on body image (Graham et al., 2023), the rise of body positivity and its movement become evident over recent years, when perceptions of the ideal body image

have evolved. Body positivity is broadly defined as having a positive appreciation for one's appearance and fighting repressive appearance stereotypes (Lazuka et al., 2020). The impact on users varies depending on whether body traits that diverge from these standards are included or excluded in discussions (Rodgers, et al., 2022). Next to this, the body positivity movement aims to challenge unrealistic beauty standards and the pursuit of unreachable ideals by promoting and embracing diverse body sizes and appearances (Harringer et al., 2023). In recent years, social media platforms such as Instagram are being used as advertising platforms for the movement (Humann, 2024), increasing its prominence (Darwin & Miller, 2021), and showing more acceptance and less criticism, compared to how body image was judged in the past. It emphasizes acceptance and appreciation of one's body appearance, as well as the functionality of the body recognizing and celebrating what it can do (Tylka & Wood-Barcalow, 2015).

The overarching goals of the body positive movement closely align with the idea of positive body image. Rodgers et al. (2023) found that body positive social media content is more beneficial to body image than mainstream idealized pictures. Moreover, body positivity involves embracing diverse notions of beauty, for instance, prioritizing self-care, nurturing inner positivity, effectively reframing negative appearance-related information in a constructive way (Tylka, 2018). In this context, images are deliberately chosen to foster positivity and encourage the appreciation of diverse body types among used, challenging conventional ideals (Darwin & Miller, 2021).

Moreover, there is a noticeable shift within fashion, beauty and other industries in recent years regarding how they present their products and apparel in modeling. From originally displaying unrealistic beauty and body standards by mainly employing attractive, thin, and tall models that promote the ideal body image in culture (Tsawaab, 2023), industries are increasingly opting to change and move forward, by adapting more to today's society

body imagery (Feng, 2019). Companies choose to display body positive imagery as a means to assert body standards (Clayton et al., 2017), embracing a variety of body types, and promoting inclusivity and diversity (Halliwell & Ditter, 2005).

Finally, it was proven that the prevalence of highly visual social media has been linked to adverse effects on body image (de Valle et al., 2021). This is primarily attributed to the abundance of idealized images, which prompt individuals to make unfavorable comparisons regarding their own appearance (Rodgers et al., 2022). Other types of content on Instagram may positively influence body image. Research suggests that viewing body positive images online can impact individuals' psychological well-being (Swami et al., 2017), particularly how they perceive societal ideals and personal standards.

2.3 Influence on psychological aspects

Many psychological aspects, for instance well-being, can be readily influenced by external factors; even as little as 30 minutes of daily exposure to content online has been considered influential (Humann, 2024). Individuals may be easily influenced by the direct message conveyed in a post, or by subtle messages that may not be immediately apparent but still impact them psychologically (Grace et al., 2015). While the degree of influence depends on how individuals assimilate information and respond to external stimuli (Wyer et al., 1999), well-being encompasses a multitude of factors, and alterations in these factors can lead to experiencing varying emotions (Altuwairiqui et al., 2019).

Since social media sites primarily involve interactions with peers, there is a great possibility of engaging in social comparison with attractive peers, and consequently, this can lead to poor self-perception (Perloff, 2014). As social media continues to evolve with updates of features (Millers et al., 2016), they provide a stream of information about others' lives aspects, such as abilities, accomplishments, emotions, and personal traits (Gerson et al.,

2016). According to Zeeni et al. (2024), there is evidence demonstrating how exposure to diverse images and videos on social media can affect both physical and mental wellbeing. Moreover, according to Ruggieri et al. (2021), this exposure to others' life's aspects contribute to a breeding ground for social comparison to occur. Furthermore, Ozimek and Bierhoff (2016) demonstrated that involvement in social comparison is frequently linked to the use of social media and exposure to online content. It is argued that the visually-oriented aspects of social media facilitate comparisons not only with strangers, but also with acquaintances (Chae, 2017). These comparisons are associated with the internalization of appearance ideals and heightened concerns about body image, potentially leading to behaviors aimed at changing one's appearance (Schaefer & Thompson, 2018). Within the framework established regarding the relationships between the variables of exposure to positive body image content and ideal body image on Instagram, social comparison behaviors, and self-esteem, this research aims to address the following question:

RQ: How does exposure to body positive image content versus ideal body image content on Instagram influence social comparison behaviors and self-esteem levels among young adults?

2.3.1 Social comparison

According to Festinger's theory, social comparison is a form of sociological self-esteem, referring to how individuals evaluate themselves by comparing their abilities and opinions with those of others (Festinger, 1954). Based on other studies, social comparison often occurs in domains of achievement, health, and interpersonal relationships (Ozimek & Bierhoff, 2016), by also prompting effects on self-assessment (Collins, 2016). Moreover, social comparison leads individuals to view themselves as the starting point of (self-) judgment (Gouveia-Pereira et al., 2017). It is, then, interesting to analyze the different forms of social

comparison that can happen among individuals.

Based on previous studies, comparisons on social media generally take the form of upward comparisons and downward comparisons. Upward comparisons involve individuals evaluating themselves against those perceived as more privileged, which frequently leads to feelings of dislike and inadequacy (Ellison et al., 2017; Gerber et al., 2018). Whereas, downward comparisons involve users comparing themselves to who is not successful (Wills, 1981). Furthermore, the direction of comparison is usually determined by a person's goals, which can be both self-enhancement or self-improvement (Collins, 1996; Wood, 1989). Festinger (1954) argued that individuals tend to compare themselves to those who are less capable, which in turn can boost their self-confidence. On the other hand, when making upward social comparisons, self-esteem can decrease, especially on social media. Many people on social media tend to portray an idealized version of the self, leading to more comparisons that are likely to be upward (Samra et al, 2022).

Focusing on the exposure to idealized body image, it is studied that when media highlights the functional aspects of the body through images of super models, viewers tend to experience heightened body dissatisfaction (Mulgrew & Tiggemann, 2018). This is believed to occur because such portrayals trigger comparisons based on functionality among viewers, and, according to Fardouly et al. (2017), body dissatisfaction elevated following appearance comparisons. Moreover, self-evaluation, a motive influencing judgements about one's abilities or status, is a prominent behavior of social comparison. Research indicates that self-evaluation encourages social comparisons with models, often leading to harmful effects from upward comparisons (Halliwell & Dittmar, 2005).

Members in the positivity movement utilize the notions of upward and downward social comparison to improve negative self-image thoughts (Chiat, 2021). The body positive movement aims to interfere with the internalization of unrealistic appearance ideals and

prevent comparisons by changing the online visual environment (Rodgers et al., 2022), emphasizing that ordinary internet information is an inappropriate foundation for social comparison owing to its unrealistic nature. Thus, within the realm of Instagram content, the body positive movement should strive to reduce or eliminate the prevalence of social comparison. This entails fostering an environment where individuals feel empowered and confident, rather than pressured to compare themselves unfavorably with others.

Given the relationships between the exposure to different types of body content and social comparison behaviors, it is hypothesized that exposure to body positive content on Instagram is expected to reduce or eliminate social comparison behaviors. In contrast, exposure to ideal body image content is anticipated to lead to high levels of body dissatisfaction and increased comparison.

Hypothesis 1: Exposure to body positive content on Instagram will result in a reduction or elimination of social comparison behaviors. Whereas, exposure to ideal body image content will result in high levels of body dissatisfaction and comparison.

2.3.2 Self-esteem

Self-esteem refers to an individual's subjective assessment of self-worth (Dhandra, 2020) and studies reported that people with higher self-esteem tend to experience greater satisfaction with their lives compared to those with lower levels of self-esteem (Chang et al., 2022). There are various aspects included in the term 'self-esteem', such as self-confidence, sense of belonging, identity, and feelings of competence (Cherry, 2023). A different term to identify self-esteem is body esteem. Body esteem refers to the assessment of one's own body or physical appearance (Mendelson et al., 2001). According to Mendelson et al. (1996), general conclusions of studies over body esteem on young individuals lead to unhappiness related to low self-esteem and poor body esteem.

Exposure to body image-related content on social media and participation in social comparison have been recognized as key factors impacting people's self-esteem. According to Niu et al. (2018), exposure to overwhelming content on social media can have an impact on self-esteem via social comparison processes. Negative psychological consequences like decreased self-esteem have been associated with upward comparisons on social media (Andreassen et al., 2017).

On the other hand, individuals may use downward comparison to attempt an improvement of their own self-esteem (Neff, 2003). Moreover, Ormsby et al. (2019) developed a hypothesis that increased intensity and use of social media would be associated with lower body self-esteem. Furthermore, Hussain et al. (2020) found a consistent link between higher social media use and worse self-esteem scores. Finally, longer exposure to idealized body images and continuous comparison with others on social media can cause chronic stress and a drop in self-esteem (Samra et al., 2022).

Because of the prevalence of thin-ideal beauty standards on visually-driven social media platforms, frequent exposure to and interaction with such content is likely to lead to comparing one's appearance to these standards, resulting in increased dissatisfaction and lower body esteem. This may be extremely damaging to those who have poor self-esteem or are striving to gain trust in how they look and feel (Chiat, 2021).

On the other hand, research has examined how the body positive movement, by fostering a positive body image, might lead to increased self-esteem levels (Cohen et al., 2019). Studies demonstrated that body positivity messages and images online improve mood, self-esteem, and social well-being (Stevens & Griffiths, 2020; Cohen et al., 2019). However, more research is needed to understand its positive influence on young adults' self-esteem.

Given the established correlation between negative body image and low self-esteem (Tsawaab, 2023) and between positive body image and high self-esteem, it is hypothesized

that the exposure to body positive content on Instagram produces a positive influence on self-esteem levels, while the exposure to ideal body image content produces a negative influence on self-esteem levels.

 Hypothesis 2: Exposure to body positive image content on Instagram positively influences self-esteem levels. Whereas, exposure to ideal body image content negatively influences self-esteem levels.
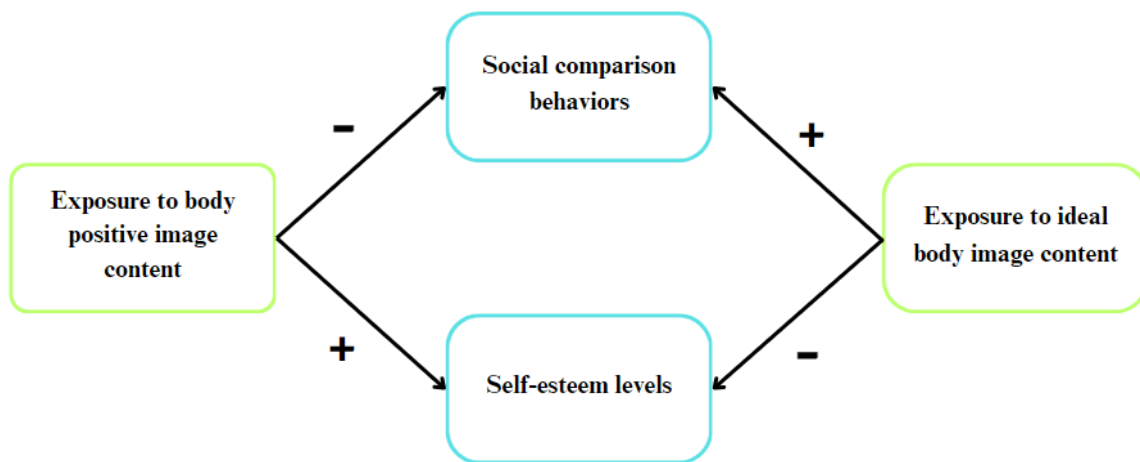
Figure 1. Conceptual model

The model represents the hypothesized relationships between the two independent variables and the two dependent variables.

3. Methods

3.1 Research design and measurements

The research design employed in this study was an online quantitative survey created on Qualtrics (see Appendix A). The first slide was the consent form, with a description and purposes of the study, possible risks, anonymity and safe data storage, plus researcher and supervisor contact details. Then, demographic questions, such as gender, exact age, familiarity with and usage of Instagram, were asked. The study was structured into three main

sections: a pre-test characterized by questionnaires, the exposure to content, which was randomized among the participants, and a post-test characterized by a post-exposure question and the same questionnaires of the pre-test. The questionnaires focused on the current feelings of the participants at the time of the study and were characterized by scales to measure social comparison and self-esteem. This comprehensive structure allowed for a detailed examination of participants' perceptions and reactions to the content presented, facilitating a clear understanding of the results. The complete survey took no longer than 10 minutes to be completed.

3.2 Instruments: scale construction

The first scale used in the study was the "State Appearance Comparison Scale" developed by Herbozo and Thompson (2010) chosen to measure participants' appearance comparison. The scale was characterized by three items measured on a 7-point Likert scale, and was presented to each participant twice: once during the pre-test and once during the post-test (see Appendix B). To evaluate the reliability of the scale, Cronbach's alpha was calculated for both the pre-test and post-test. For the pre-test, Cronbach's alpha was found to be 0.52, while for the post-test, it was 0.40. Although Cronbach's alpha coefficient above 0.7 is generally considered acceptable for indicating reliability (Cronbach, 1951), the obtained values suggested lower reliability in this case. According to Cronbach's levels of reliability (Cronbach, 1951), the scale was considered reliable enough. This scale was already validated by Herbozo and Thompson (2010).

The second scale considered was the "Social Comparison Scale" developed by Allan and Gilbert (1995), chosen to measure participants' self-evaluation. This 10-point Likert scale was originally composed of 11 items (see Appendix B). In the construction of the pre-test of the survey, there was a deviation from the original version of the scale due to the omission of

one item. Specifically, item 11 *("an insider" - "an outsider")* was omitted. The omission occurred due to a mistake during the design phase. To ensure the validity of the reduced scale, a factor analysis was conducted. The results indicated that the 10 retained items adequately captured the underlying construct, supported by their strong loadings on extracted factors and good model fit indices. This justifies the use of 10 items and reinforces the validity of the reduced scale. In the post-test version of the scale, all the items of the scale were considered as in the original version. Another detail about the scale was the adjustment of item 8 for the purpose of easier understanding (the term *"unconfident"* as presented in the original scale was changed to *"insecure"*). To ensure reliability of the scale, the reliability of the "Social Comparison Scale" used first in the pre-test and secondly used in the post-test was assessed. The analysis showed that Cronbach's alpha ($\alpha > 0.7$) in the pre-test was equal to 0.93, while in the post-test it was equal to 0.92. According to Cronbach's alpha reliability levels (Cronbach, 1951), the scales were considered very reliable, therefore all the items were kept. This scale was already validated by Allan and Gilbert (1995).

The third and last scale used was the "Rosenberg Self-Esteem Scale" (Rosenberg, 1965), chosen to measure participants' self-esteem. This originally 4-point Likert scale was composed of 10 items (see Appendix B). Some adjustments for better comprehension were done. In both the pre-test and the post-test, an additional point (*neutral*) was incorporated into the original scale. This adjustment aligns with the common practice of utilizing 5-point Likert scales in research (Sullivan & Artino, 2013). Item 2 and item 6 in the post-test scale were adapted to the study . The reliability of the "Rosenberg Self-Esteem Scale" used first in the pre-test and secondly in the post-test was assessed. The analysis showed that Cronbach's alpha ($\alpha > 0.7$) in the pre-test was equal to 0.64, while in the post-test it was equal to 0.75. According to Cronbach's alpha reliability levels (Cronbach, 1951), the scales were considered reliable. This scale was already validated by previous studies (e.g., Muslih & Chung, 2024).

3.3 Instruments: visual stimuli

The second section involved exposure to content. Two sets of visual stimuli (ideal body image content and body positive image content) were used in this study, and participants were randomly exposed to one of them during the data collection. Each set contained 20 Instagram posts (see Appendix C) from various Instagram profiles. All posts came from public Instagram accounts (see table 1). On the one hand, the "ideal body image" visual set consisted of Instagram posts openly published by Instagram supermodels and fashion firms. The variety of profiles was chosen to reflect the different kinds of posts commonly published by fashion icons and brands. The photographs featured people posing for a fashion magazine photoshoot, with both slim and elongated models, as well as athletic bodies with fit physiques. In contrast, the "body positive image" visual set, including Instagram posts openly shared by Instagram influencers, included a variety of accounts as well, chosen to represent the different types of posts typically found on body positive accounts. The images displayed different body sizes, disabilities, physical imperfections, such as skin conditions and other scars. The individuals in the "ideal body image" and "body positive image" posts were of familiar age to the participants.

In the survey, participants were asked to scroll through the posts as they were using their personal Instagram and scrolling on the homepage. They had no time limit and could scroll until they were satisfied and wanted to continue with the survey. The assignment of a set to each participant was random. The randomization was applied through the randomizer function on Qualtrics. After identifying only the complete answers given by the participants, 88 participants were assigned to set 1, while 91 were assigned to set 2. The timing feature was applied to this section to collect an overview of the exposure time of each participant. Time was measured from the moment participants landed on the page with the Instagram content, to the moment that they would move to the next section of the survey.

Table 1

Visual Stimuli Instagram Profiles: Ideal Body Image (Set 1) vs Body Positive Image (Set 2)

Visual Stimuli	Body Type Description	Instagram Profiles
Ideal Body Image (Set 1)	*Slender models' bodies and athletic physiques. No disabilities or imperfections.*	@adam.cstl07, @angelinakendall_, @baijingting, @carlosbelcast, @dibaamati, @gigihadid, @hansenandgretel, @inaperlas.magazine, @irinashayk, @kendalljennner, @liuwenlw, @lolibahiaa, @luckybsmith, @poloralphlauren, @theprincediamond, @versace
Body Positive Image (Set 2)	*Different body sizes. Disabilities. Physical imperfections, such as skin conditions and other scars.*	@angelic4silva, @ashleygraham, @bebe_vio, @dylamalcott, @effyourbeautystandards, @emeraldxbeauty, @herlanlly_rg, @izzierodgers, @jessicarose.newman, @kai_wes, @katewas_, @manwithacne, @mikzazon, @minagerges, @mypaleskinblog, @tishalenon, @winnieharlow, @yourdaywon, @zachmiko, @300poundsandrunning

3.4 Procedures

Prior to commencing the data collection procedure, ethical approval was obtained on May 6, 2024, from the ethics committee of the BMS/domain humanity and social sciences of the University of Twente. Following, the data collection started on May 10, 2024, and lasted a period of 15 days. Before starting the actual data collection, a pilot test was conducted with 5 individuals. The purpose was to test the survey design, questions and methodology, and to be timed to predict an average time to complete the survey, which resulted in around 10 minutes.

Then the data collection started. Participants completed a first set of questionnaires, as a pre-test aimed to ensure the validity of the research. This set of questionnaires also served to analyze the participants' levels of social comparison and self-esteem before being exposed to the study content, providing insight into potential influencing factors on the study results. Participants had to give an answer based on how they were feeling at that exact moment. Then, participants were randomly assigned to one of the sets of images, displaying Instagram content. Participants had the chance to scroll through the page for as long as they liked, to be able to view all the posts. Once they were done with observing, they could proceed with the survey. Then, a second set of questionnaires was proposed and participants had to give an answer based on how they were feeling at that exact moment. At the end of the second set of questionnaires, the survey concluded and the data of each participant were recorded. Participants were provided with the research contact details once more in case of any questions or concerns.

3.5 Methodological comparison

The design and methodology of the study were similar to those used by Cohen et al. (2019), who also investigated the influences of body positive content exposure on body image. Both studies utilized a comparable experimental setup, where participants were exposed to specific

types of content and their subsequent emotional responses were measured. While Cohen et al. (2019) used three visual stimuli, the structure of this study included only two visaul stimuli.

3.6 Participants

A total of 207 individuals participated in this study. The recruitment process was conducted by sharing of the online survey link via platforms such as Instagram, WhatsApp and LinkedIn. Moreover, people were kindly asked to share the link with others who met the requirements to participate. Only 179 respondents filled the survey completely (135 females, 39 males, 4 non-binary/third gender, 1 preferred not to say; M_{age} = 22.04, SD = 3.29). Inclusion criteria require participants to understand English, and to be aged between 18 and 35 years as this demographic represents the most active age group on Instagram (Statista, 2024). Additionally, participants had to possess familiarity with Instagram (being familiar with Instagram meant knowing how to use the main features of the application, such as scrolling on the home page, interacting with others' content, sharing personal content), and had to regularly use the application (for regularly, a minimum of once a month was intended). To uphold participant confidentiality all data was anonymous.

3.7 Descriptive statistics

Descriptive statistics for each group and a total of all participants were reported in table 2. Both groups exhibited similar statistics in age, gender, familiarity with Instagram, and frequency of use. Females constituted the majority in both groups. Additionally, a significant majority in both groups reported being very or extremely familiar with Instagram. Furthermore, an equivalent percentage in both groups indicated using Instagram multiple times a day. These similarities ensured a consistent starting point and distribution of participants, thereby minimizing any potential imbalances between the groups.

Table 2

Descriptive statistics

	Ideal Body (88)	Body Positive (91)	Total (179)
Age = mean (SD)	22.15 (3.29)	21.97 (3.30)	22.04 (3.29)
Gender			
Female	73.86% (65)	76.92% (70)	75.49% (135)
Male	21.59% (19)	21.98% (20)	21.79% (39)
Non-binary/third gender	3.41% (3)	1.10% (1)	2.23% (4)
Prefer not to say	1.14% (1)		0.56% (1)
Familiarity			
Slightly familiar	1.14% (2)	3.30% (3)	2.79% (5)
Moderately familiar	12.50% (11)	13.19% (12)	12.85% (23)
Very familiar	36.36% (32)	40.66% (37)	38.55% (69)
Extremely familiar	50.00% (44)	42.86% (39)	46.37% (83)
Frequency			
A few times a month	2.27% (2)		1.18% (2)

Once a week	2.27% (2)	2.20% (2)	2.23% (4)
A few times a week	4.55% (4)	7.69% (7)	6.15% (11)
Once a day	11.36% (10)	10.99% (10)	11.17% (20)
Multiple times a day	79.55% (70)	79.12% (72)	79.33% (142)

Note. Participants could choose "Not familiar at all" for familiarity and "Never" or "Once a month" for frequency, but these answers would have not met the requirements to participate in the survey. Therefore, it was expected to obtain no values for these sections and they were not included in the table.

3.8 Analyses

Analyses were performed on the statistical software R. Once the dataset was uploaded, the cleaning process started. The raw data included 209 observations and 72 variables. Data was converted into numeric values or factors to perform analyses. After deleting unnecessary missing values, assigning an id number to each observation, and adding an extra column to indicate the group to which each observation belonged, the clean data resulted in 179 observations, four demographic questions, time average, a post-exposure question, and three scales, each represented twice. The first group, exposed to ideal body image content, had 88 observations, while the second group, exposed to body positive image content, had 91 observations. To ensure comparability between the two groups and provide a fairer assessment, descriptive analyses were conducted to observe the demographic characteristics of the participants in each group. Quantitative analyses were conducted to analyze the scales data obtained after the collection. In specific, paired *t*-tests were run to find possible significant differences between the pre-test and post-test scores of each scale of both groups. Two-sample *t*-tests were run to find possible significance between the two groups.

4. Results

In the results section, the main effects of the study were presented after the analyses were performed. The data were interpreted with a significance level of $P < 0.05$.

4.1 Time of exposure to content

To measure the difference of exposure time to the content of each participant in each group a two-sample *t*-test was conducted. Table 3 reported the results, showing a significant difference between the two groups.

Table 3

Results of Two-Sample t-Test Between The Two Groups

Group	Mean (SD)	*t*-test	(df)	P
Ideal Body	52.553 (27.83)	*-2.49*	177	**0.014***
Body Positive	66.839 (46.339)			

*p-value < 0.05

Note. The mean and standard deviation (SD) were reported in seconds.

4.2 Post-exposure question

The comparison of item levels in the post-exposure question between the two groups was illustrated using a side-by-side bar chart, as shown in Figure 2. To measure participants' immediate feelings, a two sample *t*-test was conducted between the two groups, and the

results were reported in table 4. The obtained *p*-value demonstrated a significant difference between the two groups.

Figure 2

Side-by-Side Bar Chart of Post-Exposure Question Levels Between Groups
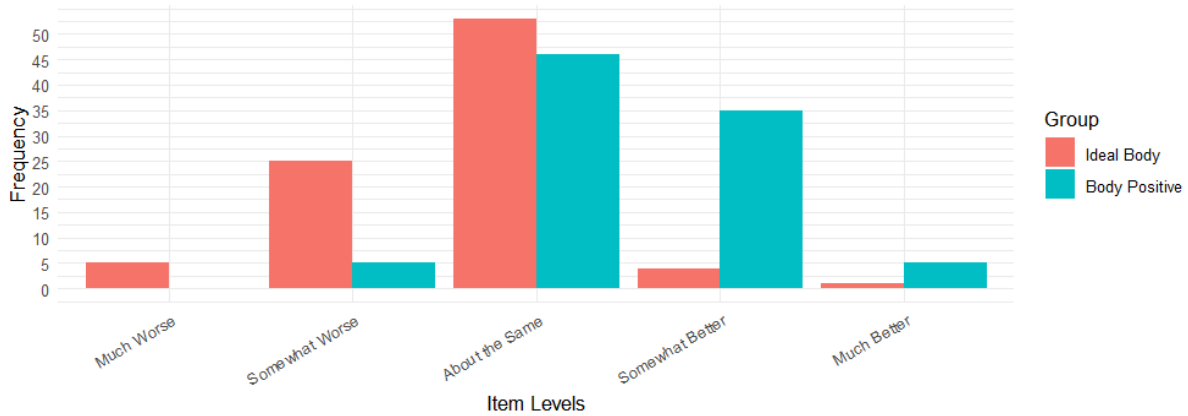
Table 4

Results of Two Sample t-Test Between Groups on Post-Exposure Question

Group	Mean (SD)	*t*-test	(df)	P
Ideal Body	2.67	-7.382	176.31	**< 0.001***
Body Positive	3.44			

*p-value < 0.05

4.3 Main effects

Analyses were performed on each scale used for the data collection to measure the dependent variables. Data was interpreted at a significant level of $P < 0.05$. Paired-*t*-tests were used to analyze differences between pre-test and post-test within each group. To compare differences between the two groups, two-sample *t*-tests were conducted.

4.3.1 Effects on social comparison

Both groups resulted in nearly identical pre-test scores on both scales used to measure social comparison: the first scale measured appearance comparison, while the second measured self–evaluation.

"State Appearance Comparison Scale"

The results of the paired *t*-tests on each group were reported in table 5. The social comparison level was slightly lower for the body positive content group but showed a significant increase in the post-test compared to the ideal body content group, whose scores did not increase substantially. For the first group, the mean difference between the pre- and post-test scores was -0.16. The results of the *p*-value concluded that the null hypothesis was not rejected. Instead, for the second group, the mean difference between the pre-test and the post-test was -0.385. The results of the *p*-value concluded that the null hypothesis was not rejected. The results of the test performed showed that both in the ideal body group and the body positive group there was no significant difference between the pre-test and the post-test scores.

Lastly, the results of a two-sample t-test between mean differences of the two groups were reported in table 6. The results of the *p*-value concluded that there was no significant difference between the ideal body group and the body positive group.

Table 5

Results of Paired t-Tests on State Appearance Comparison Scale

	Mean	(SD)	*t*-test	(df)	P
Ideal Body					
Pre-test	10.341	(5.186)	-0.201	(87)	0.757

Post-test	10.500	(5.300)			

Body Positive

Pre-test	9.703	(4.661)	-0.795	(90)	0.429
Post-test	10.088	(4.062)			

Table 6

Resulted of Two-Sample t-Test between Groups on State Appearance Comparison Scale

Group	Mean difference	*t*-test	(df)	P
Ideal Body	0.159	-0.320	175.99	0.749
Body Positive	0.385			

"Social Comparison Scale"

The test statistic results were reported in table 7. For the body ideal group, the mean difference between pre- and post-test was 0.21. Scores increased significantly from pre-test to post-test. Within the body positive group, there was a significant decrease in scores from the pre-test to the post-test, with a mean of difference -0.26. Both differences were found to be significant, therefore, both null hypotheses were rejected.

Lastly, the results of the two-sample *t*-test between mean differences of the two groups were reported in table 10. The results exhibited variation, with a notable difference between the two groups and a significant *p*-value. In conclusion, participants assigned higher values to themselves on the scale, which assessed self-perception between two terms, as higher scores denote a more positive self-perception.

Table 7

Results of Paired t-Tests on Social Comparison Scale

	Mean	(SD)	*t*-test	(df)	P
Ideal Body					
Pre-test	5.785	(1.313)	2.266	(87)	**0.026***
Post-test	5.575	(1.454)			
Body Positive					
Pre-test	5.855	(1.233)	-3.608	(90)	**< 0.001***
Post-test	6.118	(1.351)			

*p-value < 0.05

Table 8

Results of Two-Sample t-Test between Groups on Social Comparison Scale

Group	Mean difference	*t*-test	(df)	P
Ideal Body	-0.21	-4.01	166.57	**< 0.001***
Body Positive	0.263			

*p-value < 0.05

4.3.2 Effects on self-esteem

"Rosenberg Self-Esteem Scale"

The results of the paired *t*-tests for each group were reported in table 9. The body positive group showed increased post-test scores, indicating higher self-esteem levels among participants. In contrast, the ideal body group exhibited an insignificant difference. In the ideal body group, the *p*-value indicated that the null hypothesis was not rejected. Instead, in the body positive group, the *p*-value indicated strong evidence against the null hypothesis, which was rejected.

Lastly, the results of the two-sample *t*-test between the two groups were reported in table 11. The *p*-value demonstrated a significant difference between the two groups. Therefore, the null hypothesis was rejected.

Table 9

Results of Paired t-Tests on Rosenberg Self-Esteem Scale

	Mean	(SD)	*t*-test	(df)	P
Ideal Body					
Pre-test	33.534	(6.814)	-0.953	(87)	0.343
Post-test	33.898	(7.366)			
Body Positive					
Pre-test	33.143	(6.953)	-3.914	(90)	**< 0.001***
Post-test	34.549	(7.451)			

*p-value < 0.05

Table 13

Results of Two-Sample t-Test between Groups on Rosenberg Self-Esteem Scale

Group	Mean difference	t-test	(df)	P
Ideal Body	0.364	-1.99	175.97	**0.048***
Body Positive	1.407			

*p-value < 0.05

5. Discussion

In this section, the findings of the research are discussed to place them within the theoretical context of the past literature that originally motivated this study. Practical implications and limitations are also presented.

5.1 Answering the research question (RQ)

The study investigates the effects of different content exposure on Instagram on the social comparison behaviors and self-esteem levels of young adults. This section addresses the research question: "How does exposure to body positive image content versus ideal body image content on Instagram influence social comparison behaviors and self-esteem levels among young adults?". The previously formulated hypotheses are analyzed to provide a comprehensive answer. With the aim of answering the research question, a quantitative study was conducted to investigate how different types of content would influence people's social comparison behaviors and self-esteem. This study compared participants' status before and after exposure to the content. After collecting and analyzing the data, significant outcomes are revealed.

5.1.1 Social comparison behaviors

The first hypothesis asserts that exposure to body positive image content would lead to a reduction or elimination of social comparison behaviors, whereas exposure to ideal body image content would result in higher levels of body dissatisfaction and comparison. Contrary to expectations, results show a slight increase in appearance and body comparison scores for participants in both groups after the exposure, indicating that participants compared their appearance and bodies more to others post-exposure.

However, significant differences are observed in self-evaluation scores between the groups. Participants exposed to body positive content reported a significant increase in positive self-evaluation scores, suggesting a more favorable comparison with others. Conversely, those exposed to ideal body content experienced a significant decrease in positive self-evaluation scores, indicating a lower self-assessment after exposure.

These findings indicate that while both types of content led to increased social comparison behaviors, body positive content had a beneficial effect on self-evaluation, whereas ideal body content had a damaging effect. Therefore, the hypothesis is partially supported: body positive content does not reduce or eliminate social comparison but enhances positive self-evaluation, while ideal body content increases social comparison and decreases self-evaluation.

Consistent with previous findings (eg., Fardouly et al., 2017; Jung, 2022), the study found that exposure to ideal body image content led to increased appearance comparison among young adults. However, the lack of a significant increase between pre- and post-test suggests that the amount of exposure time might be a contributing factor. As noted by Hawkins et al. (2004), repeated exposure to the thin ideal in media serves as a constant reminder of one's perceived inadequacy, potentially triggering various negative emotional states. Since participants in this experiment were exposed to content only once, the limited

exposure to ideal body image content may have influenced the levels of body comparison and dissatisfaction.

The findings about appearance comparison within those exposed to body positive content do not align with previous research (eg., Cohen et al., 2019). The results indicate an increase in body comparison post-exposure to body positive content. While the increase is not extreme, it contradicts the hypothesized outcome. According to Rodgers et al. (2021), viewing body positive image content should lower appearance comparison with others. However, the study reveals that even when exposed to body positive content, people still compare themselves. This appearance comparison can be also seen as positive (Politte-Corn & Fardouly, 2020), as individuals may compare themselves to similar others and appreciate what they see. This positive appearance comparison can foster body acceptance and satisfaction, but still not a protection from idealized and stereotyped body images online (Mulgrew et al., 2017).

In conclusion, body positive content may promote positive self-evalualtion but does not completely eliminate comparison behaviors, suggesting an interaction between content type and individuals' self-perceptions.

5.1.2 Self-esteem levels

The second hypothesis argues that exposure to body positive image content on Instagram would positively influence self-esteem levels, whereas exposure to ideal body image content would negatively influence self-esteem levels. Exposure to body positive contentled to higher levels of self-esteem among participants, but exposure to ideal body content did not result in a significant decrease in self-esteem; instead a small, not significant, increase was observed.

These findings partially align with previous research (eg., Hawi & Samaha, 2016). According to the researchers, self-esteem levels are expected to decrease when individuals are

exposed to only idealized body imagery. Although self-esteem levels did not decline after viewing ideal body content, the positive impact on self-esteem is more evident following exposure to body positive content. Therefore, the hypothesis is partially supported: body positive content significantly influences self-esteem levels in positive, while ideal body content does not significantly lower them.

A study by Chiat (2021) demonstrated that regardless of the type of content, whether thin ideal or body positive, exposure affected participants' self-esteem. This paper discusses how social appearance comparison influences people's view of themselves and their sense of self-worth, affecting their self-esteem and their interpretation of their identity. According to Convertino et al. (2016), lower levels of self-esteem and mood are associated with high levels of appearance comparison.

However, the findings show that the exposure to ideal body content did not lead to a significant decrease in self–esteem but rather a slight increase. These findings suggest limitations that must be considered applying the results for alternative purposes and future research.

5.1.3 Other findings

The amount of time individuals are exposed to content is a significant factor in the final outcomes. While most participants reported using Instagram multiple times a day, this study only allowed individuals to be exposed to content once. According to Chiat (2021), a person's self-esteem and social comparison is directly impacted by the amount of investment and time put into the content on social media platforms. Additionally, the average time spent viewing body positive content is higher than the average time spent viewing body ideal content. The current generation of 18 to 35-year-old is highly engaged with the body positivity movement (Rupp & McCoy, 2023), showing strong support and curiosity. This likely explains why

participants spent more time viewing body positive content compared to ideal body content.

Immediately after exposure, participants' average feelings remained about the same as their pre-exposure state. However, a significant difference emerged between the two groups. Individuals exposed to body positive images report better feelings after viewing the content (Gillen, 2015), whereas those exposed to ideal body image content feel worse than before the exposure (Aparicio-Martinez et al., 2019), tending to select more negative responses.

5.2 Practical implications

The findings of this study provide valuable insights that can be applied in real-world settings, in particular concerning the impact of body positive image and ideal body image content on social comparison behaviors and self-esteem levels among young adults.

This study reveals that exposure to body positive content on social media still leads to social comparisons among individuals. Therefore, Instagram creators of the body positivity movement campaigns should refine strategies to minimize comparison behaviors. This could include promoting a variety of body types that people can relate to and highlighting self-compassion and acceptance rather than comparison. Moreover, social media platforms, in particular Instagram, can use this research to inform policies and content algorithms. By promoting a wider range of body types and reducing the emphasis on idealized body images, platforms can help to improve the overall body image and self-esteem of users. Furthermore, mental health professionals can use these findings to develop programs that educate young adults about the nuances of body positivity, as well as of self-esteem.

Finally, the study, conducted within a European context but involving international students, highlights the global relevance of these findings. While the exact cultural background of the participants was not determined, the results are significant for an average

young adult international group. These insights can be beneficial across diverse cultural backgrounds, contributing to a broader understanding of body image ideals in the digital age.

5.3 Limitations and future research directions

Acknowledging the limitations of this study is fundamental to understanding the results and identifying what can be improved in future research. Starting with the sample size, the number of participants recruited is sufficient for the scope of this study. However, a larger size is recommended to have if more time is available, as it would enhance the strength of the findings (Dattalo, 2008). Despite this, the current sample size still allows for generalization to a broader population because it represents a diverse cross-section of the target demographic.

Another limitation is the random division of sample groups. While randomization helps avoid biases, it is necessary to notice that individuals in each group might have had pre-existing attitudes toward body positivity or ideal body image, which could influence their responses to the questionnaires. A more refined approach could involve pre-testing individuals on their feelings about body positivity and ideal body images before randomly assigning them to groups. This method would likely produce more specific and clear results. Nevertheless, randomization remains an effective method to distribute these pre-existing attitudes evenly across groups (Berger & Weinstein, 2004), thus maintaining the study's validity.

Moreover, cultural background significantly influences perceptions of body positivity and body standards (Spurgas, 2005). Since nationality was not included in the demographic questions, knowing participants' nationalities would have provided valuable context for interpreting the results. Future research should consider focusing on a specific country or culture to obtain results that are informed by cultural ideals. However, the absence of nationality data does not entirely weaken the findings. The diversity of the participant pool

can still offer a generalizable understanding of body positivity and body standards across various cultural backgrounds.

Lastly, based on the findings regarding participants' feelings after content exposure, future research could investigate why some individuals felt better after being exposed to ideal body image content, while others felt worse after viewing body positive image content. Understanding these nuances could provide deeper insights into the complex effects of different types of body image content on social media. Despite the limitations, the current results still provide valuable insights into the general trends and impacts of body image content.

5.4 Conclusion

The present study investigates the effects of exposure to body positive image content versus ideal body image content on Instagram on social comparison behaviors and self-esteem levels among young adults. This research does not produce results that were completely in line with the hypothesized influence; however, some findings are consistent with the expected outcomes. Social comparison behaviors do not decrease after exposure to body positive image content, while self-esteem levels increase after exposure to ideal body image content. This partial alignment may be attributed to the limitations identified in this study.

This study suggests that body positive image content alone is not sufficient to reduce social comparisons. Researchers and developers of social media should explore additional methods to support positive self-evaluation. Future studies could investigate how to enhance the effectiveness of body positive image content in various cultural contexts. Lastly, the results of this study may only be applicable to this specific target group and not to young adults in general. Future research should address these limitations to provide more comprehensive insights.

       In conclusion, this study uncovered the diverse effects of different types of body image content on Instagram and how they influence individuals' perception of body acceptance and self-esteem. The ultimate goal is to call for action, making social media a more inclusive and welcoming space where everyone feels comfortable and accepted regardless of their appearance. Fostering a positive online environment that enhances self-esteem can contribute to the well-being of young adults in the digital society.

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7. Appendix A

The complete survey

Start of Block: Consent form

Dear participant,

you are invited to participate in the study titled "Breaking the Mirror: the Effects of Exposure to Instagram Positive Body Image Content on Social Comparison and Self-Esteem among Young Adults". This study is conducted by a third year Communication Science student at the University of Twente in the Netherlands, as a thesis and graduation project. The purpose of this study is to observe how the exposure to positive body image content influences the social comparison and self-esteem levels among young adults.

The requirements to participate in this study are to be between 18 and 35 years old, to possess a proficient level of understanding of English, to be familiar with and regularly use Instagram.

This survey should take no longer than 10 minutes to complete. The data will be used for research and educational purposes only. Participation is entirely anonymous, this means that you don't have to disclose identity information and your IP address is not recorded. Your answers are only visible for the researcher and supervisor.

Your participation in this study is entirely voluntary and you can withdraw at any time. We believe that there are no major physical risks associated with this study, however, there might be psychological risks, seeing the delicate topics that are discussed (body image, body appreciation, self-esteem, social comparison). Therefore, voluntary participation allows you to decide whether or not to participate. All data will be stored securely on university servers. Raw data will be deleted as soon as the study is completed.

If you have any questions or concerns, you can contact the researcher at:

c.gambelli@student.utwente.nl

Thank you for your effort.

Kind regards,

Bachelor thesis researcher: C. Gambelli (c.gambelli@student.utwente.nl)

Supervisor: S.F.F. de Ruyter (s.f.f.deruyter@utwente.nl)

o Yes, I do give consent to participate to this study

o No, I do not give consent to participate to this study

End of Block: Consent form

……………………………………………………………………………………………..

Start of Block: Demographics

Before you begin, we kindly ask you to provide some demographic information. This will help us ensure that you meet all the necessary requirements to participate in the study.

What is your gender?

o Male

o Female

o Non-binary / third gender

o Prefer not to say

………………………………………………………………………………………………..

Are you at least 18 years old and no older than 35?

o Yes, I am.

o No, I am not

What is your age? (In numbers)

_____

…………………………………………………………………………………………..

How familiar are you with Instagram? Note: being familiar with the application refers to knowing how to use its main features, such as scrolling on homepage, interacting with others' content, and sharing personal content.

o Not familiar at all

o Slightly familiar

o Moderately familiar

o Very familiar

o Extremely familiar

…………………………………………………………………………………………..

How often do you use Instagram?

o Never

o Rarely (less than once a month)

o Once a month

o A few times a month

o Once a week

o A few times a week

o Once a day

o Multiple times a day

End of Block: Demographics

……………………………………………………………………………………....

Start of Block: Pre-test

The study is structured into three large sections. The first section functions as a pre-test, where you are asked to fill out a series of questionnaires about how you feel about social comparison to others and self-esteem. This section is characterized by different scales. Please read the instructions and questions carefully before filling them out. Note: keep in mind to answer the questionnaires based on your current feelings, on how you honestly feel at the moment you read the question.

……………………………………………………………………………………………..

Following is the "State Appearance Comparison Scale" (Herbozo & Thompson, 2010). For the next statements, indicate one answer based on how you are currently feeling.

In the past few minutes, to what extent did you think about your appearance?

o No thought about my appearance

o Rarely thought about my appearance

o Occasionally thought about my appearance

o Sometimes thought about my appearance

o Often thought about my appearance

o Frequently thought about my appearance

o A lot of thought about my appearance

In the past few minutes, to what extent did you compare your overall appearance to that of individuals around you?

o No comparison

o Very little comparison

o Some comparison

o Moderate amount of comparison

o Considerable amount of comparison

o Significant amount of comparison

o A lot of comparison

In the past few minutes, to what extent did you compare your specific body parts to those of individuals around you?

o No comparison

o Very little comparison

o Some comparison

o Moderate amount of comparison

o Considerable amount of comparison

o Significant amount of comparison

o A lot of comparison

…………………………………………………………………………………………..

Following is the "Social Comparison Scale" developed by Allan and Gilbert (1995). Please read the spectrum given in each row carefully. Afterwards, indicate a number from 1 to 10 that best describes the way in which you currently see yourself in comparison to others. Example question: Rate yourself on a scale from 1 to 10: Short (1) - Tall (10): 1 2 3 4 5 6 7 8 9 10 If you select 3 this means that you see yourself as shorter than other individuals; if you select 5 (middle) about average; and if you select 7 somewhat taller. If you understand the

above instructions please proceed. Indicate one number on each line according to how you currently see yourself in comparison to others.

In relation to others, I currently feel...

	1	2	3	4	5	6	7	8	9	10
Inferior (1) - Superior (10)	o	o	o	o	o	o	o	o	o	o
Incompetent (1) - More competent (10)	o	o	o	o	o	o	o	o	o	o
Unlikeable (1) - More likeable (10)	o	o	o	o	o	o	o	o	o	o
Left out (1) - Accepted (10)	o	o	o	o	o	o	o	o	o	o
Different (1) - Same (10)	o	o	o	o	o	o	o	o	o	o
Untalented (1) - More talented (10)	o	o	o	o	o	o	o	o	o	o
Weaker (1) - Stronger (10)	o	o	o	o	o	o	o	o	o	o
Insecure (1) - Confident (10)	o	o	o	o	o	o	o	o	o	o
Undesirable (1) - More desirable (10)	o	o	o	o	o	o	o	o	o	o

Unattractive (1) - More attractive (10)	o	o	o	o	o	o	o	o	o	o

…………………………………………………………………………………………………..

Following is the "Rosenberg Self-esteem" scale (Rosenberg, 1965). For the next 10 items, indicate to what extent you (1) disagree or (5) agree based on how you are feeling right now.

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

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
On the whole, I am satisfied with myself	o	o	o	o	o
At times I think I am not good at all	o	o	o	o	o
I feel that I have a number of good qualities	o	o	o	o	o
I am able to do things as well as most other people	o	o	o	o	o
I feel I do not have much to be proud of	o	o	o	o	o
I certainly feel useless at times	o	o	o	o	o

I feel that I'm a person of worth, at least on an equal plane with others	o	o	o	o	o
I wish I could have more respect for myself	o	o	o	o	o
All in all, I am inclined to feel that I am a failure	o	o	o	o	o
I take a positive attitude toward myself	o	o	o	o	o

End of Block: Pre-test

……………………………………………………………………………………………..

Start of Bock: Content exposure (Set 1)

The second section of the survey consists of the exposure to content. In particular, you will be exposed to 20 Instagram posts. Imagine this to be your Instagram homepage and you are scrolling through the posts. You are able to scroll up and down and view the images for as long as you want. Identify yourself as if you are actually/naturally scrolling on the homepage of your Instagram. Once you are ready to continue you can go forward with the survey.

End of Block: Content exposure (SET 1)

……………………………………………………………………………………………..

Start of Block: Content exposure (SET 2)

The second section of the survey consists of the exposure to content. In particular, you will be exposed to 20 Instagram posts. Imagine this to be your Instagram homepage and you are scrolling through the posts. You are able to scroll up and down and view the images for as long as you want. Identify yourself as if you are actually/naturally scrolling on the homepage of your Instagram. Once you are ready to continue you can go forward with the survey.

End of Block: Content exposure (SET 2)

………………………………………………………………………………………………..

Start of Block: Post-test

The third and last section functions as a post-test, where you are asked to fill out a series of questionnaires about how you feel about social comparison to others and self-esteem, after being exposed to Instagram content. This section is characterized by different scales. Please read the instructions and questions carefully before filling them out. Note: keep in mind to answer the questionnaires based on your current feelings, on how you honestly feel at the moment you read the question.

How did you feel about your body while scrolling through the Instagram posts?

o Much worse

o Somewhat worse

o About the same

o Somewhat better

o Much better

………………………………………………………………………………………………..

Following is the "State Appearance Comparison Scale" (Herbozo & Thompson, 2010). For the next statements, indicate one answer based on what you experienced in the past minutes.

In the past few minutes, to what extent did you think about your appearance?

o No thought about my appearance

o Rarely thought about my appearance

o Occasionally thought about my appearance

o Sometimes thought about my appearance

o Often thought about my appearance

o Frequently thought about my appearance

o A lot of thought about my appearance

In the past few minutes, to what extent did you compare your overall appearance to that of individuals around you?

o No comparison

o Very little comparison

o Some comparison

o Moderate amount of comparison

o Considerable amount of comparison

o Significant amount of comparison

o A lot of comparison

In the past few minutes, to what extent did you compare your specific body parts to those of individuals around you?

o No comparison

o Very little comparison

o Some comparison

o Moderate amount of comparison

o Considerable comparison

o Significant amount of comparison

o A lot of comparison

…………………………………………………………………………………………..

Following is the "Social Comparison Scale" developed by Allan and Gilbert (1995). Please read the spectrum given in each row carefully. Afterwards, indicate a number from 1 to 10 that best describes the way in which you currently see yourself in comparison to others. Example question: Rate yourself on a scale from 1 to 10 Short (1) - Tall (10): 1 2 3 4 5 6 7 8 9 10 If you select 3 this means that you see yourself as shorter than other individuals; if you select 5 (middle) about average; and if you select 7 somewhat taller. If you understand the above instructions please proceed. Indicate one number on each line according to how you currently see yourself in comparison to others.

In relation to others, I currently feel...

	1	2	3	4	5	6	7	8	9	10
Inferior (1) - Superior (10)	o	o	o	o	o	o	o	o	o	o
Incompetent (1) - More competent (10)	o	o	o	o	o	o	o	o	o	o

Unlikeable (1) - More likeable (10)	o	o	o	o	o	o	o	o	o	o
Left out (1) - Accepted (10)	o	o	o	o	o	o	o	o	o	o
DIfferent (1) - Same (10)	o	o	o	o	o	o	o	o	o	o
Untalented (1) - More talented (10)	o	o	o	o	o	o	o	o	o	o
Weaker (1) - Stronger (10)	o	o	o	o	o	o	o	o	o	o
Unconfident (1) - More confident (10)	o	o	o	o	o	o	o	o	o	o
Undesirable (1) - Desirable (10)	o	o	o	o	o	o	o	o	o	o
Unattractive (1) - More attractive (10)	o	o	o	o	o	o	o	o	o	o
An insider (1) - An outsider (10)	o	o	o	o	o	o	o	o	o	o

…………………………………………………………………………………………………..

Following is the "Rosenberg Self-esteem" scale (Rosenberg, 1965). For the next 10 items,

indicate to what extent you (1) disagree or (5) agree based on how you are feeling right now.

Below is a list of statements dealing with your general feelings about yourself right now.

Please indicate how strongly you agree or disagree with each statement.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
On the whole, I am satisfied with myself	o	o	o	o	o
At the moment, I think I am not good at all	o	o	o	o	o
I feel that I have a number of good qualities	o	o	o	o	o
I am able to do things as well as most other people	o	o	o	o	o
I feel I do not have much to be proud of	o	o	o	o	o
I certainly feel useless at the moment	o	o	o	o	o
I feel that I'm a person of worth, at least on an equal plane with others	o	o	o	o	o

I wish I could have more respect for myself	o	o	o	o	o
All in all, I am inclined to feel that I am a failure	o	o	o	o	o
I take a positive attitude toward myself	o	o	o	o	o

8. Appendix B

Scales items

<u>Social Comparison</u> → "State Appearance Scale"

1. In the past few minutes, to what extent did you think about your appearance?

2. In the past few minutes, to what extent did you compare your overall appearance to that of individuals around you?

3. In the past few minutes, to what extent did you compare your specific body parts to those of individuals around you?

<u>Social Comparison</u> → "Social Comparison Scale"

Inferior (1) - Superior (10)

Incompetent (1) - Mre Competent (10)

Unlikeable (1) - More Likeable (10)

Left Out (1) - Accepted (10)

Different (1) - Same (10)

Untalented (1) - Talented (10)

Weaker (1) - Stronger (10)

Insecure (1) - Confident (10)

Undesirable (1) - More Desirable (10)

Unattractive (1) - More attractive (10)

Self-Esteem → "Rosenberg Self-Esteem Scale"

1. On the whole, I am satisfied with myself.

2. At times, I think I am not good at all.

3. I feel that I have a number of good qualities.

4. I am able to do things as well as most other people.

5. I feel I do not have much to be proud of.

6. I certainly feel useless at times.

7. I feel that I am a person of worth, at least on an equal plane with others.

8. I wish I could have more respect for myself.

9. All in all, I am inclined to feel that I am a failure.

10. I take a positive attitude toward myself.

Note: Items 2, 5, 6, 8, 9 are reverse scored.
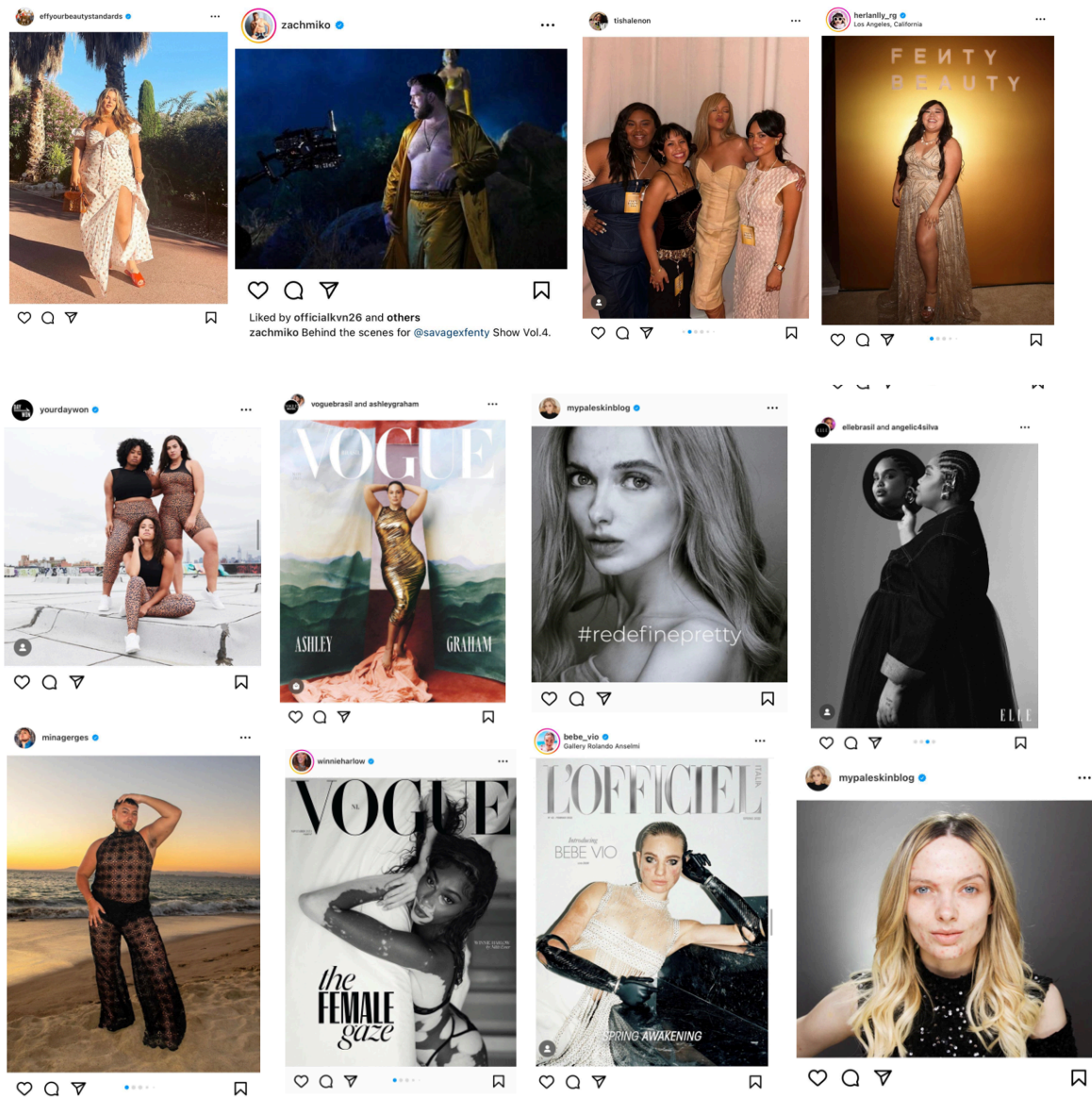
9. Appendix C

Instagram posts
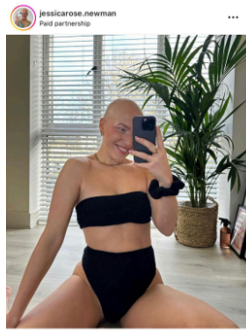
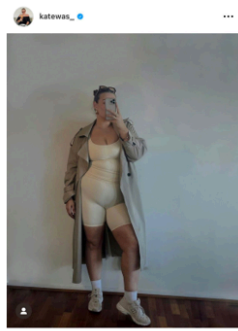<u>Set 1</u> → Ideal body images
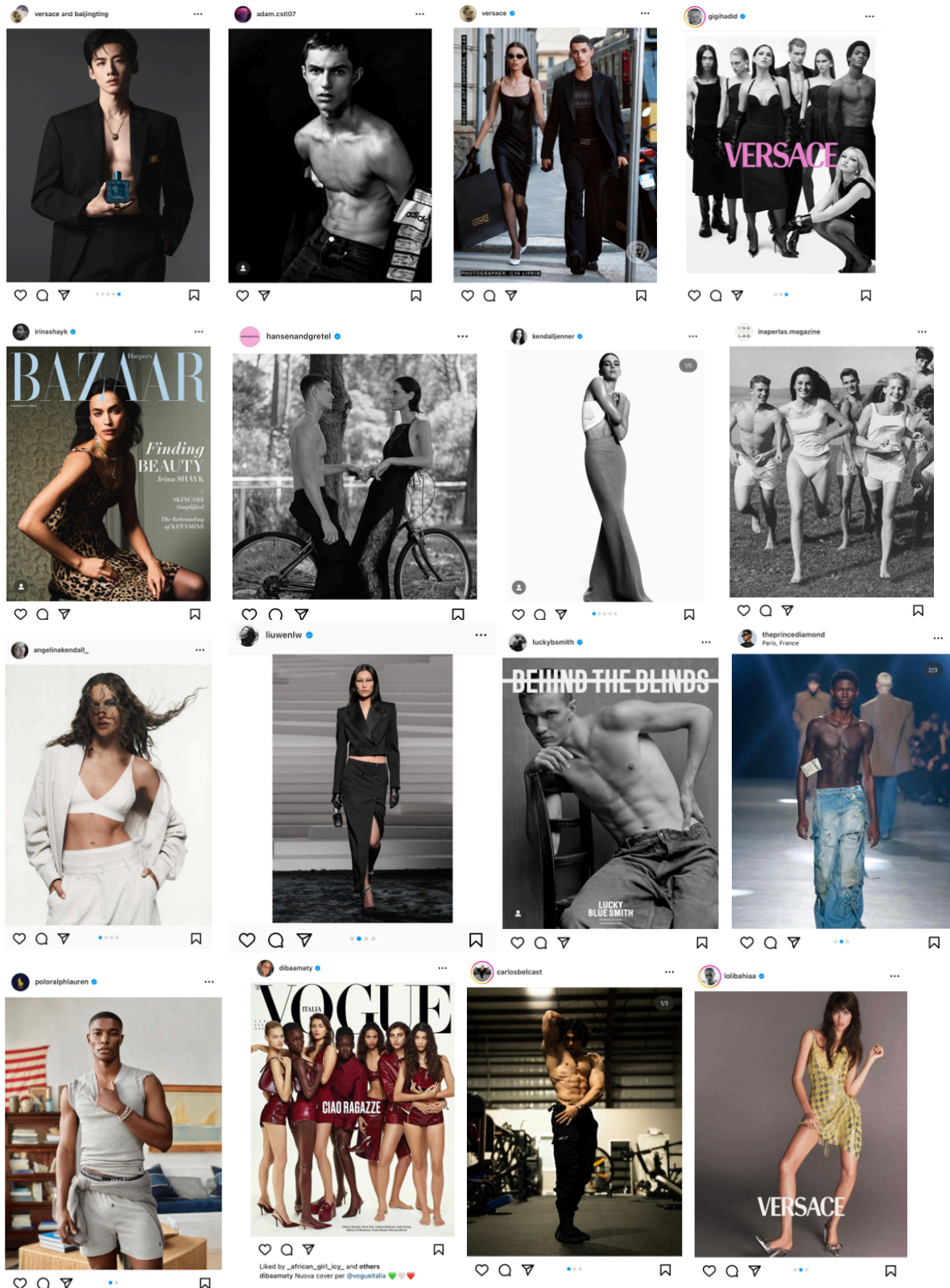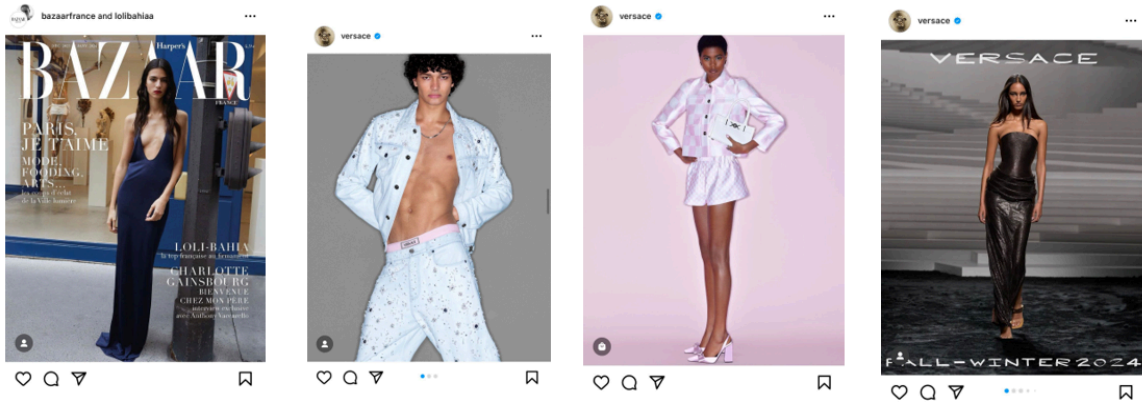
Set 2 → Body positive images
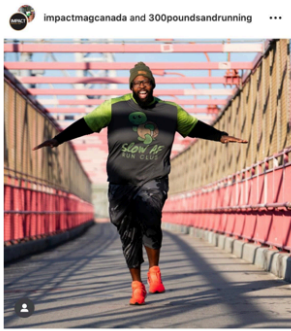
10. Appendix D

Disclosed use of AI

During the preparation of this research, the author used *Grammarly* and *ChatGPT* to check the English grammar and sentence flow, as English is not the author's native language. Additionally, the paraphrasing tool *Quillbot* was used to assist in paraphrasing referenced content. After using these tools, the author reviewed and edited the content as needed and took full responsibility for the final work.

11. Appendix E

Systematic literature study log

Date	Database	Search String	Total results	Remarks
16/03/2024	JSTOR	(((high standards) OR (perfectionism)) NAD (social media)) >2019, sorted by relevance	8,227	
17/03/2024	FindUT	(high esteem) AND (social media)	176	Most of the results refer to adolescents, which is not my target group.
17/03/2024	FindUT	(high esteem) AND (social media) NOT (adolescents)	2,200	
18/03/2024	FindUT	((Gender differences) AND ((male) AND (female))) AND (social media usage) NOT (teenagers)	1,700	
18/03/2024	Google Scholar	(Gender differences) AND (social media usage) NOT (teenagers) 2018, sorted by relevance	16,900	
18/03/2024	JSTOR	((((Societal expectations) AND (social expectations)) AND (social media)) AND (gender difference))	6,011	
18/03/2024	Google Scholar	(social media usage) (measurement scale)	1M +	Trying to change the word measurement with measur*
18/03/2024	Google Scholar	(social media usage) (measur* scales)	22,500	
25/03/2024	Science	Perfectionism	9,000	

	Direct	2021-2023 - research articles		
25/03/2024	Science Direct	(perfectionism) AND (social media)	4,397	
25/03/2024	Science Direct	(social media content watched) perfectionism	604	
25/03/2024	Science Direct	(social media measurement)	115K	Broad research but obtained relevant results
11/04/2024	Oxford Academy	Social media AND content exposure	-	
11/04/2024	Science Direct	Body image AND content AND social media	39K	Found very interesting and up-to-date sources with direct interest to my research
11/04/2024	Science Direct	Self-comparison AND social media	-	
11/04/2024	Science Direct	Self-esteem AND social comparison AND social media	12K	