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WEIGHT-RELATED PHOTOS ON THE INSTAGRAM AND FEMALE WELL-BEING – AN EYE-TRACKING APPROACH

This study investigates the role of eye tracking in detecting bias in body image studies, focusing on Instagram. Combining eye tracking with a questionnaire, it hypothesized a partial discrepancy between declarations and eye tracking, which is confirmed by the obtained results. Psychometric scales assessing well-being were additionally employed, uncovering correlations solely with eye tracking variables rather than declarations regarding body shape preferences. The eye-tracking data offered fresh insights into participants' avoidance strategies and attention to subjectively unattractive areas when viewing very slim silhouettes. Furthermore, they tend to reveal lower self-esteem among individuals potentially internalizing societal beauty ideals. The exploratory study implies that weight-related Instagram content might affect participants' psychological well-being, with eye tracking potentially uncovering biased attention to attention-capturing body areas. This paper may provide valuable insights for further research on body image, well-being, and the influence of social media on it.

Keywords: well-being, women studies, body image, social media, Instagram

INTRODUCTION

Body image refers to an individual's perception and evaluation of their own body, encompassing both physical attributes and subjective feelings about one's appearance. Possessing a positive or negative body image can be linked to various psychological and emotional outcomes, influencing self-esteem, mood, and overall well-being. The cultural context plays a significant role in shaping body image ideals and expectations, with societal standards often dictating what is considered attractive or desirable. Social media platforms, particularly Instagram, exert considerable influence over body image perceptions by showcasing curated images that promote certain beauty standards. The prevalence of edited and filtered photos on these platforms can contribute to unrealistic body ideals and lead to feelings of inadequacy or dissatisfaction among users.

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Body image is a subjective multidimensional construct comprising the perception of the body, thoughts and feelings towards it, and body-related behaviors (Voges et al., 2019). Western sociocultural norms for body image promote thinness and beauty as greatly valued in society (Mischner et al., 2013). The woman's worth and a happy, successful life are depicted as strongly related to thin, beauty-ideal silhouettes. Internalization of such stringent social norms may lead to increased pressure and setting too high expectations of oneself. In order to assess their relative attractiveness, women compare themselves to the thin-ideal photos of social media influencers. Because the these often present ideals that are almost unrealistic to be achieved, such comparisons can lead to body concerns, increased body dissatisfaction, and an intensified drive for thinness (Hewig et al., 2008; Mischner et al., 2013; Voges et al., 2019).

Although social comparisons made on social media may decrease women's self-evaluation, not all women are equally affected but only those who are classified as vulnerable (Mischner et al., 2013). Studies have shown that particularly women with eating disorders (von Wietersheim et al., 2012), judge their own body as being less attractive, spending more time looking at their body areas that they considered to be their problem areas (Jansen et al., 2005) or, on the contrary, creating cognitive avoidance patterns by not looking at these body parts (Janelle et al., 2003). Simultaneous excessive focus on unattractive body areas of oneself and attractive body areas of others has also been reported among women with high body dissatisfaction (Bauer et al., 2017; Glashouwer et al., 2016). Hartmann et al. (2020) has found an attentional bias to one's own subjectively unattractive body parts among women with anorexia nervosa, especially while confronting with an obese stimulus. Similar finding was made concerning participants scoring high the drive for thinness (Hewig et al., 2008). An increased focus on the waist has also been reported in individuals with obesity, while females with anorexia nervosa aimed attention at the abdomen and legs (Hewig et al., 2008). Body-related judgment distortions, cognitive biases seem to be at the core of the negative body image and disturbance (Hartmann et al., 2020; von Wietersheim et al., 2012).

As body image is subject to various cognitive distortions, the human perception of the silhouette is inherently burdened with the subjective view of the individual. Negative body image, body concerns, and other conscious or subconscious disturbances can cause research participants to give distorted responses. One of the biggest limitations of questionnaire surveys is the respondent bias, that respondents will declare in the questionnaire pictures of the body (or parts of it) other than those that actually attract their attention. For this reason, body image research based solely on questionnaire feedback may generate incomplete or distorted results. Eye tracking can be a tool that reduces these distortions and shows the real preferences of the respondents. Thus, I conducted a study on the perception of the female figure using both methods. The declarations from the questionnaires were verified with the eye tracking measurement. Additionally, a self-reported, psychological trait data were collected in order to look for the relationship between them and the perception of the female body. So, as research on body image perception often encounters challenges related to the subjective nature of respondents' self-reports, individuals may provide biased or inaccurate information about their body image perceptions due to social desirability bias or internalized societal norms.

To address these challenges, eye-tracking devices have emerged as valuable tools for studying body image perception. By tracking the gaze patterns of individuals viewing images

of female bodies on Instagram, researchers can gain insights into what aspects of these images capture the most attention. This technology enables a more objective assessment of body image perceptions and can help identify discrepancies between self-reported perceptions and actual viewing behaviors.

Eye tracking is a biometric technique that registers the visual attention of subjects based on their ocular movements (Mañas-Viniegra et al., 2020) and is a valid measure for attention to body image, providing information about the frequency and duration of eye contact with specific body regions (Hewig et al., 2008). This technology is used to study scanning patterns and changes in visual information intake and has been proved to be a useful tool for assessing body related attention (Jiang and Vartanian 2018; Porras-Garcia et al., 2019; Schienle et al., 2016). By assessing an individual's viewing patterns while confronted with body stimuli, eye tracking has been repeatedly used to evaluate body-related attentional bias (Hartmann et al., 2020), and is presented as a possible method of evaluating one's self by comparing one's self to others to fill the need for self-evaluation in social comparison studies (Hewig et al., 2008). Similar to my intentions, some eye tracking research includes the emotional and psychological context. Schienle and others (2016) explored viewing of disgust-inducing images, Kaspar et al. (2013) investigated the influence of the current emotional context on viewing behavior under natural conditions, Lindholm, Carlson, and Högväg (2021) studied shaping trait impressions basing on different settings of depicting politicians. Lea and her team (2018) used faces with different emotions as visual stimuli and study conducted by Bradley and others (2011) used pleasant and unpleasant scenes. Recent studies have used measurements of eye movements to assess the attentional processes of body image viewing, including assessing body image disturbances shown by patients with anorexia nervosa (von Wietersheim et al., 2012), gender differences in attentional bias toward specific weight- or non-weight-related body parts (Porras-Garcia et al., 2019), attentional bias toward body regions that are associated with assessing changes in weight among individuals with elevated scores on the drive for thinness (Hewig et al., 2008), body-related visual attention during mirror exposure (Naumann et al., 2019), and curvy girl influencers posts on Instagram (Mañas-Viniegra et al., 2019).

Eye tracking is a possible remedy for limitations of self-report measures and may thus yield valuable insights into more implicit social comparison studies than accessible by subjective respondents declarations (Blechert et al., 2009). Many factors contribute to respondent bias in questionnaire studies. This term refers to the various (intentional or accidental) conditions and biases that can influence survey responses and increase their inaccuracy. Observed findings may be influenced by a variety of factors such as respondents being influenced simply by being part of the study (demand bias), adjusting their judgements to particular sociocultural norms (social desirability bias), responding in agreement (acquiescence bias) or disagreement (dissent bias) with all questions within the survey, providing extreme responses or, on the contrary, marking only neutral ones. Participants may also react according to experimentally induced goals and motivations, issues of (perceived) anonymity or driven by feelings of shame (especially when a sensitive topic is concerned) too embarrassed to report their actual opinions or private details (Chan, 2021; ; Gemming et al., 2014; Stojcic et al., 2020; Uher et al., 2013). Comparing to self-reported measures, eye tracking provide a more rigorous paradigm whereby attention can be directly and continuously measured (Lea et al., 2018; Waechter et al., 2014) and thus reduce these biases.

The literature reviewed above confirms the positive influence of eye tracking method on body-related research. It would be even more interesting to determine if eye tracking may help to reduce respondent bias in body image studies. On the basis of the papers described above, in this exploratory analysis, I tested the following hypothesis: the respondents' questionnaire statements, which emphasize figures and body parts that draw attention in weight-related photos, may be at least partially inconsistent with their viewing patterns as measured by eye-tracking data. For the purpose of achieving the study's objective, the relationships between gaze duration on figures and body parts and age, BMI, and psychological variables will be analyzed. The previous literature does not allow any directional hypothesis here, but I assume that questionnaire data may be more biased by showing less significant relations to analysed psychological and physical traits. To the best of my knowledge, eye tracking has not been used before to evaluate respondent bias in body image studies. To understand this in detail, I also included a number of psychological scales as well as weight and physical activity data in the study. The exploratory nature of our study aims to indicate new, likely directions for the use of eye tracking method in body image research, which should then be further investigated in in-depth studies.

This research is based on graphical content from Instagram. Akin to traditional media, social media usage is associated with internalization of the thin ideal and culture of thinness (Lazuka et al., 2020). Especially Instagram, a highly visual social media, has an audience that shares lifestyles related to their interest in beauty and fashion that has resulted in the convergence of a given body image (Couture Bue, 2020; Mañas-Viniegra et al., 2020). Instagram users engage with the content by posting photos and videos, commenting and receiving comments or sharing others materials on their stories. Although Instagram has been recently related to a movement for the acceptance of physical appearance (Mañas-Viniegra et al., 2019), available research mainly identifies such activities as particularly problematic for body image and be linked to body dissatisfaction and disordered eating, specifically among women (Cohen et al., 2018; Fardouly et al., 2017; Holland and Tiggemann 2016; Lazuka et al., 2020; Lonergan et al., 2019; Tiggemann and Velissaris, 2020).

METHODS

SAMPLE AND PARTICIPANTS

In the present study, I examined eye gaze behaviour of a non-clinical sample of 32 women while they were looking at weight-related pictures of female Instagram influencers. A review of the scientific literature related to body image eye tracking studies recognized the number required for a valid study sample between 15 and 50 participants (Bradley et al., 2011; Glashouwer et al., 2016; Hartmann et al., 2020; Kaspar et al., 2013; Mañas-Viniegra et al., 2019; Pannasch et al., 2008; Porras-Garcia et al., 2020a; 2020b; Schienle et al., 2016; von Wietersheim et al., 2012). All females had normal or corrected-to-normal visual acuity and were naive to the purpose of the study. The sample had been restricted to women because they are more vulnerable to negative effects of social comparisons as described in the previous

section. The study was approved by the ethics committee of the University of *blinded for review purposes*.

Detailed information on participants age, height, weight, BMI, and psychological scales scores can be found in Table 1.

Table 1. Participants' characteristics regarding basic body and psychological traits scores.

Parameter	Mean (Standard Deviation) $N = 32$
Age	29.78 (13.04)
Weight [kg]	65.91 (13.01)
Height [cm]	166 (5.92)
Body Mass Index (BMI)	23.99 (5.03)
Self-esteem	4.94 (1.16)
Anxiety	3.83 (1.61)
Depression	2.56 (.88)
Life satisfaction	4.29 (1.33)
Mindful Attention Awareness	4.24 (1.03)
Body Appreciation	4.72 (1.44)
Instagram Intensity Scale	3.85 (1.33)
– Persistence	3.70 (1.28)
– Boredom	4.18 (1.67)
– Overuse	3.76 (1.28)
– Self-expression	3.81 (1.49)
Social comparison on Instagram	2.58 (1.05)
– Upward comparison	2.71 (1.28)
– Downward comparison	2.45 (1.07)

Note: All psychological scales values ranging between 1–5.

PROCEDURE

All 32 women underwent one session during which they passively viewed a set of five pictures while their eye movements were recorded, followed by a question about which photo from the presented collection caught their attention the most. This procedure was performed twice for each participant on two different sets of photos. The photographs were taken and published on Instagram by their respective authors, popular users of the platform. All individuals depicted were clothed, however, the clothing and composition of the photographs were not standardized. Participants in the study were not asked whether they were familiar with the profiles of these individuals beforehand. Each set of images reflected the same silhouette

shapes that means that both collections included photographs tagged with hashtags describing the following body types: #proana, #thinspiration, #fitspiration, #plussize, and #fatspiration. These hashtags respectively represent silhouettes depicting: anorexic, thin, fit, overweight, and obese figures. My approach was intended to increase the objectivity of the measurement in case a photo attracted attention for reasons other than the silhouette. This is an important point, as the photos came from Instagram public profiles, so they did not have standardized body exposure. After finishing eye tracking-based part, each participant filled a questionnaire consisting of psychological scales and basic body information.

EYE TRACKING APPARATUS, DATA ACQUISITION AND DATA REDUCTION

The two-dimensional eye movements were recorded with an Eyetracker Tobii T60XL. Using a head-mounted system with a head movement compensation mechanism that uses two infrared cameras, eye tracker monitor the eyes at a sampling rate of 250 Hz. Each respondent was introduced the measurement personally, telling about the device, procedure and the fact that eye tracker records where the person is looking, but does not record the face. The participants were informed that the object of the study was the displayed images, not the test subject. Participants were seated in a dimmed room in front of the monitor with a viewing distance of approximately 50 cm. A software platform for the recording and analysis of eye gaze data was Tobii Studio version 3.4.5. Before an eye tracking recording started, each participant was taken through the calibration procedure. During this procedure, the eye tracker measured characteristics of the eyes and uses them together with an internal, physiological 3D eye model that included information about shapes, light refraction and reflection properties of the different parts of the eyes to calculate gaze data. During calibration, the participant was asked to look at specific points on the screen (calibration dots), while several images of the eyes were collected. After analysis, this information was integrated with the eye model and the gaze point for each image sample was calculated. The default calibration process in Tobii Studio consisted of a presentation of five red calibration dots on a white background. They were presented successively and the participant had to focus her visual attention on the centre of the dots.

The images sourced from Instagram were displayed in two rounds of five each, allowing the respondent to view five silhouettes simultaneously on a static page format, without any time limit. For the purpose of the eye-tracking study, respondents were asked to indicate the picture that captured their attention the most for two sets of images representing five body types defined by the authors of these images using hashtags on Instagram: #proana, #thinspiration, #fitspiration, #plussize, and #fatspiration. The images were intended to represent authentic content posted on this platform, hence the hashtags chosen by the authors of the images were used for their retrieval. The authenticity of the images was a necessary requirement for the success of the study, yet it also served as a limitation since these images were not standardized.

For each photo in both sets I analysed firstly the visit duration (in seconds). The shortest single visit duration recorded in the raw data set was 0 seconds, while the longest was 6.45 seconds (see: supplemental files). This metric measures the duration of each individual visit within a photo. A visit is defined as the interval of time between the first fixation on the photo and the next fixation outside it. The visit duration serves a crucial role in eye-tracking

research focusing on viewing images of female silhouettes associated with varying weights. It measures the duration of each individual visit within a photo, providing valuable insights into participants' attention allocation and engagement with different aspects of the images. By analyzing visit duration, researchers can determine how long participants spend observing specific parts of the images, such as different body shapes or features, and whether there are differences in attention allocation based on weight-related cues. This information helps elucidate participants' visual preferences, biases, and perceptual processing patterns regarding body weight, contributing to a deeper understanding of body image perception and its potential implications needed for this study.

Then images with the longest and the shortest visit durations for each participant were specified. Another eye tracking collected variable was a gaze area: legs, abdomen, arms, and face. For each participant, I calculated the area of the body on which she looked most often and least frequently. Calculations regarding viewing (gaze) were conducted based on an eye tracker variable called fixation count, which measures the number of times the participant fixates on an area of interest, in this case one of the four body areas mentioned above. Hence, the two variables differ in their units: visit duration utilizes seconds, whereas fixation count represents the number of occurrences.

The participants were aware of the study's purpose, except for the information that their declarations would be compared with the results of eye-tracking. Providing this explanation at the data collection stage would have disrupted the entire process, as there was a risk that participants would consciously focus on a particular photo for a longer duration and select the same photo in their declarations, thus distorting the results significantly. In accordance with respondent bias theory, participants dislike appearing inconsistent or dishonest in surveys. However, it is essential to emphasize that when it comes to viewing the photos, they had a clear task: to indicate which one caught their attention the most. The eye-tracking variables used were intended to serve the same purpose: through measuring gaze duration and fixation count, they aimed to identify the photo that captured their attention the most.

EYE TRACKING STIMULUS EXPOSURE

There has been a limitation within the body image bias eye tracking research area as relatively little research has investigated the exposure to overweight, fat media images which is not to be neglected (Gao et al., 2014; Papies and Nicolaije 2012). Also, participants in other studies usually haven't been provided with opportunities to shift their attention away from body shape to a competing theme. This study addresses the above limitations of photo homogeneity and body types. The visual stimuli in this formal experiment consisted of five categories of pictures taken from the public Instagram profiles. The silhouettes were, thus, presented in a neutral, diversified setting. The five categories were defined by weight-related hashtags, including: #proana, #thinspiration, #fitspiration, #plussize, and #fatspiration.

The hashtag #proana refers to proanorexia and allows Instagramers to post and view content that is supportive of drive for extreme thinness lifestyle. Engaging in #proana communities may exacerbate eating disorders risk factors, lowering one's body image perception and learning unhealthy weight loss habits (Arseniev-Koehler et al., 2016). #Thinspiration is a similar

term, characterized by images of excessively thin bodies and glorification of thinness-oriented attitudes. Both, #proana and #thinspiration, are consistent with behaviors leading to eating psychopathologies, but also with the western body ideal silhouette (Griffiths et al., 2018). This content not only promotes bodily thinness, but demonizes body fat and gaining weight as well (Griffiths and Stefanovski, 2019). #Fitspiration focuses on thin, lean bodies, but with visible muscularity, so it tends to promote the strict fitness regime. Despite its health-related aspects, exposure to such content may decrease body satisfaction and exacerbate eating disorders (Griffiths and Stefanovski, 2019). As the widespread of muscularity in women has intensified over the recent years, fit body is perceived as attractive, desirable western ideal (Griffiths et al., 2018). Social media has also recently experienced an advent of a culture of acceptance of female large bodies (Robinovich et al., 2021). Plus size (#plussize) content along with #fatspiration movements have gathered heightened visibility within the mainstream culture (Webb et al., 2017). Created in response to drive for thinness and the emaciated, muscular western ideals of the female figure, they promote full, curvy body shapes and acceptance of all body sizes. Taken as a positive change in cultural patterns, they are also seen as promoting an unhealthy lifestyle and obesity at the same time. These trends are relatively less studied than those referring to thinness.

PSYCHOLOGICAL SCALES

The participants were further asked to complete the following psychometric questionnaires: body appreciation, self-esteem, anxiety, depression, mindful attention awareness, life satisfaction, social comparison on Instagram, and Instagram intensity scale. The aim of this part of the study was to enhance its exploratory value by attempting to identify potential relationships between inconsistencies in respondents' declarations and eye tracking patterns with selected psychometric variables related to well-being. Considering the limited sample size underlying the eye-tracking study, it is essential to remember that this is strictly an exploratory approach, and its results cannot be generalized. However, they can serve as inspiration and a starting point for future research in the area of the impact of graphic content related to the female silhouette and methods of its measurement on women's well-being.

To make it easier for the respondents to fill in the questionnaire, all scales have been standardized to the 5-point, symmetric Likert scale (from strongly agree to strongly disagree). Likert scales are very effective as respondents are familiar with such questions and collected data set can be further statistically treated with Pearsons' correlation coefficient, ANOVA, and regression analysis (Joshi et al., 2015).

Body dissatisfaction has been reported to comprise negative attitude towards own body, it may trigger avoidance body checking strategies, and is one of the crucial risk factors for the development and maintenance of eating disorders, as well as the drive for thinness (Hewig et al., 2008; Porras-Garcia et al., 2019). Women dissatisfied with their bodies are also classified as more vulnerable to the negative effects of the sociocultural norms appearance (Mischner et al., 2013). Although numerous studies have focused on the scale measuring body dissatisfaction, I decided to use the Body Acceptance Scale with a more positive overtone. Contrary to the dissatisfaction measures, appreciation of one's own body can reduce drive for thinness and

the amount of attention paid to thin-ideal media images (Tobin et al., 2019; Withnell et al., 2019). The Body Appreciation Scale (BAS-2) assesses attitudes of acceptance and respect for the body using 10 questions, with higher scores indicating higher body appreciation. This measure has been found to have high internal consistency of the sample (Cronbach's alpha was .88) and this result was coherent with the work of Tylka and Wood-Barcalow (2015).

The 10-item Rosenberg Self-Esteem Scale was used to measure trait self-esteem (Rosenberg, 1965), with higher scores indicating higher self-esteem. For the present sample, Cronbach's alpha was .86. Women with lower self-esteem may be very attentive to body images portrayed in the social media, more likely to be concerned about fitting the sociocultural norms of appearance, and to internalize societal beauty ideals, also comparing more to media models (Mischner et al., 2013).

A disturbed body image may lead to negative outcomes, such as anxiety disorders (Voges et al., 2019) and depression (Gao et al., 2014). They were assessed using the 14-item Hospital Anxiety and Depression Scale (HADS), a frequently used self-rating scale, developed to assess psychological distress in non-psychiatric patients (Zigmond and Snaith, 1983). It is known as a rapid, efficient estimate in both clinical, and non-clinical samples (Boxley et al., 2016, Djukanovic et al., 2017, Gale et al., 2010). The internal consistency in studied sample was high: .82 for depression and .84 for anxiety.

Mindfulness lowers likelihood of inflexibly attaching to negative body-related thoughts and perceptions and respond effectively to sociocultural body-oriented norms (Lavender et al., 2012). This trait had been measured using the 15-item Mindful Attention Awareness Scale (MAAS), assessing the tendency to be preoccupied and inattentive to the present moment, and to complete tasks or engage in behaviours with minimal awareness (Brown and Ryan, 2003; Lavender et al., 2012). Evidence for the reliability and construct validity of the MAAS has been provided within a variety of studies (Brown and Ryan, 2003; Lavender et al., 2012, MacKillop and Anderson, 2007). In this sample MAAS has been found to have high internal consistency (Cronbach's alpha was .85).

People who are more satisfied with their bodies reported greater satisfaction with life (Frederick et al., 2016). Also other studies showed that feelings about own's body have an impact on overall quality of life (Cash & Fleming, 2002; Peplau et al., 2009). This construct was measured using Satisfaction with Life Scale (Diener et al., 1985), a 5-item scale designed to measure global cognitive judgments of one's life satisfaction (Cronbach alpha .87).

The idea of social comparison to anyone else's body is an important one in everyday society (Hewig et al., 2008). People seem to relate their own situation to the situation of others (Van der Zee et al., 2000). The frequent social comparison is necessary to control if the motivating drive for thinness is satisfied in order to achieve the western ideal of being thin (Hewig et al., 2008). In the traditional idea of socially comparing, individuals contrast their situation against those of others in an upward or downward manner. Upward comparison leads to the feelings of discouragement and threatening conclusion that one is doing worse. It happens when individuals allocate more attention to the thin-ideal body images and to their own body unattractive parts (Gao et al., 2014). Downward comparison instead gives comforting conclusion that one is better off, providing reassurance that the individual is doing well (Couture Bue, 2020; Van der Zee et al., 2000). Because social media models are

almost always perceived as thinner, social comparison with such thin-ideal bodies are usually upward so potentially detrimental (Blechert et al., 2009; Voges et al., 2019). In this study, a 12-item social comparison scale developed by Van der Zee and others (2000) was used in order to measure identification and contrast with upward and downward comparison others and adopted it to the Instagram. The internal consistency was: .87.

Finally, I used Instagram Intensity Scale, an adopted Facebook scale, that was designed to measure the intensity in terms of Facebook attitudes which go beyond simple aspects like: time passed on it, the number of friends / followers, and some basic activities. The original Multidimensional Facebook Intensity Scale measures the most important facets of its use. It's short and with good psychometric properties in terms of validity, internal consistency, and temporal stability (Orosz et al., 2016). This adopted version had the internal consistency of .84.

STATISTICAL ANALYSIS

All statistical analyses were carried out with the statistics program Statistica 13.3.0 (Tibco Software Inc., Palo Alto, USA). A preceding data exploration showed that there were no missing or extreme values in the data set. Variables were checked for homogeneity of variance with the Levene's test and for normality with the Shapiro-Wilk (S-W) test. I conducted a series of one-way analyses of variance (ANOVAs) with post-hoc Tukey's honestly significant difference (HSD). As Tukey's HSD procedure assumes equal size of all compared groups, a modified Tukey-Kramer minimum significant difference (MSD) method was applied for comparisons of unequal-sized groups. Tukey's HSD procedure provides the simplest way to control family-wise type I error rate and is considered as highly preferable method (Kim, 2015). In the case of violations of homogeneity of variance the Welch's ANOVA (W-test) was carried out as, when the assumption of equal variances is violated, the W-test clearly outperforms the F-test (Delacre et al., 2019). When the assumption of normality failed, non-parametric Kruskal-Wallis tests were performed with effect analysis was carried out by multiple rank mean comparisons. The Kruskal-Wallis test is a nonparametric technique with which to analyze the variance and have been reported to be just as efficient as parametric methods (Nahm, 2016). Because this is an exploratory study, I did not do Bonferroni-adjusted post hoc tests, despite the large number of statistical tests, following the approach made by von Wietersheim and others (2012). Eye tracking variables (longest visit duration, shortest visit duration, longest gaze, and shortest gaze) and respondents' declarations (about choosing the photo that caught their attention the most) were the independent variables. BMI and psychological traits (body appreciation, self-esteem, anxiety, depression, mindful attention awareness, life satisfaction, social comparison on Instagram, and Instagram intensity usage) were the dependent variables. Subsequently, Pearson's Chi square, Cramér's V, and Spearman's rank correlation coefficient (ρ) were calculated between participants' photo declaration and the eye tracking variables to measure whether there is a statistically significant relationship between the respondents' declarations and the eye tracking variables illustrating their true visual behaviour patterns. Assigning participants to one of the five groups based on their preference for a particular body silhouette type was done either using declarative data from

the questionnaire or based on eye-tracking variables (visit duration and gaze). All analyses were with the level of significance set at $p < .050$.

In the presented results, the number $n = 64$ refers to the total observations resulting from two rounds of eye-tracking measurements. The sample size under investigation comprised 32 individuals.

RESULTS

CORRELATIONS BETWEEN RESPONDENTS' DECLARATIONS AND EYE TRACKING DATA

The respondents' declarations regarding the photo that caught their attention the most reached statistical significance only in the case of one eyetracking variable: longest visit duration ($\chi(16) = 104.550$, $p = .00453$, $\rho = -0.350381$, Table 2). The summary two way table with frequencies observed shows some dependencies between the declaration and looking at the same types of figures for the longest time. These results suggest that only a portion of the declarations aligned with the actual patterns of eye behavior.

Table 2. Frequencies observed for the eye tracking variable and declarations.

Declarations	Eye tracking (Fat-spiration)	Eye tracking (Thin-spiration)	Eye tracking (Fit-spiration)	Eye tracking Duration (Plus size)	Eye tracking (Proana)	Row (Total)
Fatspiration	8	0	0	1	0	9
% column	**61.54%**	.00%	.00%	4.17%	.00%	–
Thinspiration	0	4	0	1	1	6
% column	.00%	**44.44%**	.00%	4.17%	25.00%	–
Fitspiration	1	2	13	2	1	19
% column	7.69%	22.22%	**92.86%**	8.33%	25.00%	–
Plus size	4	2	1	20	0	27
% column	30.77%	22.22%	7.14%	**83.33%**	.00%	–
Proana	0	1	0	0	2	3
% column	.00%	11.11%	.00%	.00%	**50.00%**	–
Total	13	9	14	24	4	64
Total %	100%	100%	100%	100%	100%	100%

Note:The highest frequencies observed are marked bold.

Eye tracking (Longest Visit Duration).

IMAGE DECLARATION DATA

Detailed data on participants' age, BMI, and psychological grouped by the five body shapes respondents' declarations of preferred body type are shown in Table 3. During procedure, the photos were not signed with the analysed hashtags, so the respondents could only be guided by the content of the photo. During the preparation of the database for analysis, the choices of respondents were assigned labels corresponding to the types of silhouettes presented in individual photos. Interestingly, no significant differences in age, BMI, and analysed traits were found.

EYE TRACKING DATA

The visit duration (Tables 4 and 5) indicated that selected psychological traits differed between the five subgroups of preferred body shape in terms of the shortest time span. Upward comparison, depression, and mindful attention awareness reached statistical significance ($H = 12.76$, $p = .013$; $F = 2.90$, $p = .029$; $H = 11.15$, $p = .025$, accordingly). Further post-hoc tests indicated differences in upward comparison distinguishing supporters of thinspiration and fatspiration content, depression levels, and mindful attention awareness between the fitspiration and plus-size groups, where the former exhibited the highest and the latter the lowest levels.

The duration of gaze patterns on body areas showed significant findings. The preferred body areas for the longest gaze and BMI revealed a significant group effect ($H = 8.61$, $p = .014$). Respondents with the highest BMI were notably interested in the abdomen, while those with the lowest focused more on the legs ($z = 2.928$, $p = .010$, see Table 6). Longest gaze durations on body parts (see Table 7) also demonstrated dependencies related to age ($H = 8.06$, $p = .045$), BMI ($H = 16.53$, $p = .001$), self-esteem ($F = 3.47$, $p = .021$), and life satisfaction ($H = 12.39$, $p = .006$). Regarding age, the mean for legs was significantly higher compared to face ($z = 2.651$, $p = .048$) and arms ($z = 2.679$, $p = .044$). A similar trend was observed for BMI, with the highest mean significantly differing from abdomen ($z = 2.787$, $p = 032$), face ($z = 3.296$, $p = 006$), and arms ($z = 4.028$, $p = .000$). The mean self-esteem scores significantly differed between legs and face, being higher for the former ($p = .013$). Lastly, regarding life satisfaction, there was a significant difference in means between legs and arms, with the former attaining a higher mean ($p = .019$).

DISCUSSION

This study aimed to explore the possible role of eye tracking measurements in detecting respondents' bias in body image studies on the example of the Instagram. To do so, I designed a research combining eye tracking measurement with a questionnaire examining selected physical (age, BMI) and psychological characteristics (body appreciation, self-esteem, anxiety, depression, mindful attention awareness, life satisfaction, social comparison on Instagram, and Instagram intensity scale) among women.

Table 3. Respondents' declarations regarding preferred body shape, psychological traits, and BMI

Declarations regarding preferred body shape	Proana		Thinspiration		Fitspiration		Plus size		Fatspiration		Group comparisons				
	n = 3		*n* = 6		*n* = 19		*n* = 27		*n* = 9						
	M	SD	M	SD	M	SD	M	SD	M	SD	F/H	df	p	S-W	Levene
Age	27.67	14.15	37.17	22.84	3.21	11.57	27.48	11.10	31.56	13.22	1.99	4	.738	**.000**	.013
BMI	24.07	7.37	22.50	3.54	22.38	5.07	24.21	4.72	27.67	4.65	8.25	4	.083	**.008**	.653
Instagram Intensity Scale	4.51	1.58	3.19	1.02	3.83	1.33	3.95	1.22	3.80	1.79	3.29	4	.511	**.021**	.362
– Persistence	4.75	1.32	3.17	.79	3.82	1.20	3.64	1.18	3.61	1.84	3.78	4	.437	**.040**	.077
– Boredom	4.78	2.46	3.56	1.61	4.02	1.58	4.37	1.53	4.15	2.12	2.23	4	.693	**.002**	.356
– Overuse	4.67	1.45	3.11	.69	3.74	1.31	3.83	1.16	3.74	1.76	4.15	4	.386	**.024**	.269
– Self-expression	3.78	1.35	2.94	1.34	3.77	1.56	4.05	1.40	3.78	1.73	2.85	4	.584	**.013**	.608
Social comparison on Instagram	3.22	.73	2.32	1.01	2.79	.97	2.53	1.09	2.24	1.15	4.00	4	.406	**.013**	.783
– Upward comparison	3.94	.59	2.31	1.36	2.75	1.21	2.68	1.29	2.57	1.43	4.56	4	.335	**.003**	.660
– Downward comparison	2.50	.88	2.33	.70	2.84	1.00	2.38	1.15	1.91	1.04	5.82	4	.213	**.000**	.418
Self-esteem	5.03	1.71	5.00	1.00	4.91	1.08	4.81	1.22	5.32	1.20	.33	4	.854	.098	.532
Anxiety	4.86	1.08	4.12	1.91	3.89	1.35	3.78	1.76	3.32	1.58	.59	4	.671	.053	.305
Depression	3.05	.08	2.43	.81	2.47	.99	2.61	.91	2.52	.79	.33	4	.857	.101	.343
Life satisfaction	4.20	1.06	4.33	1.28	4.66	1.46	4.15	1.35	3.91	1.03	.64	4	.638	.181	.729
Mindful Attention Awareness	3.62	1.35	3.89	1.50	4.52	1.06	4.21	.96	4.19	.74	2.02	4	.732	**.013**	.343
Body Appreciation	5.13	.67	4.60	1.40	4.92	1.62	4.56	1.42	4.76	1.40	1.17	4	.883	**.008**	.306

One-way ANOVAs (F-test) with post-hoc Tukey's HSD tests for equal size of all compared groups and Tukey-Kramer MSD for comparisons of unequal-sized groups were conducted. In cases of violations of homogeneity of variance (Levene's test: $p < .05$) the Welch's ANOVA (W-test) was carried out. In cases of violations of normality, non-parametric Kruskal-Wallis tests (H statistic) were performed with effect analysis carried out by multiple rank mean comparisons. $N = 64$ refers to data from both eye tracking measurements. Values <.05 are marked bold. BMI = Body Mass Index.

Table 4. Respondents' eye-tracking patterns regarding preferred body shape, psychological traits, and BMI (longest visit duration).

Body shape with a longest visit duration	Proana		Thinspiration		Fitspiration		Plus size		Fatspiration		Group comparisons				
	n = 3		*n* = 6		*n* = 19		*n* = 27		*n* = 9						
	M	SD	M	SD	M	SD	M	SD	M	SD	F/H	df	p	S-W	Levene
Age	32.75	15.39	38.44	20.41	28.43	10.75	26.50	10.00	30.38	11.87	2.07	4	.723	**.000**	**.001**
BMI	22.03	7.01	23.44	5.45	22.44	5.18	23.85	3.52	26.89	5.70	7.38	4	.117	**.008**	.257
Instagram Intensity Scale	3.88	2.03	3.15	1.51	4.18	.89	3.94	1.23	3.79	1.54	2.60	4	.628	**.021**	.075
– Persistence	3.94	1.95	3.22	1.44	4.05	.62	3.65	1.26	3.65	1.52	3.04	4	.552	**.040**	**.008**
– Boredom	4.25	2.50	3.22	1.78	4.52	1.15	4.36	1.60	4.10	1.85	3.35	4	.502	**.002**	.094
– Overuse	3.83	2.15	3.11	1.42	4.02	.93	3.88	1.03	3.69	1.61	2.87	4	.580	**.024**	**.029**
– Self-expression	3.50	1.73	3.04	1.73	4.14	1.30	3.99	1.42	3.77	1.55	2.71	4	.607	**.013**	.848
Social comparison on Instagram	2.40	1.02	2.10	.97	2.96	.79	2.70	1.19	2.33	.96	5.30	4	.258	**.013**	.160
– Upward comparison	2.79	1.29	1.94	1.21	2.86	1.16	2.93	1.37	2.64	1.21	4.28	4	.370	**.003**	.830
– Downward comparison	2.00	.89	2.26	.83	3.07	.82	2.48	1.22	2.01	.94	9.05	4	.060	**.000**	**.044**
Self-esteem	5.65	1.29	5.01	1.02	4.68	1.18	4.77	1.23	5.26	1.03	.95	4	.441	.098	.600
Anxiety	3.43	1.11	4.19	1.66	4.27	1.58	3.77	1.77	3.34	1.36	.74	4	.568	.053	.336
Depression	2.07	1.08	2.44	.80	2.76	.93	2.61	.93	2.47	.77	.56	4	.692	.101	.871
Life satisfaction	4.95	1.57	4.29	1.20	4.17	1.51	4.41	1.32	3.98	1.19	.49	4	.745	.181	.811
Mindful Attention Awareness	4.82	1.22	4.29	1.45	4.11	1.17	4.23	.96	4.19	.63	1.58	4	.813	**.013**	.300
Body Appreciation	5.90	1.27	4.64	1.38	4.62	1.49	4.52	1.46	4.89	1.40	2.73	4	.604	**.008**	.866

One-way ANOVAs (F-test) with post-hoc Tukey's HSD tests for equal size of all compared groups and Tukey-Kramer MSD for comparisons of unequal-sized groups were conducted. In cases of violations of homogeneity of variance (Levene's test: $p < .05$) the Welch's ANOVA (W-test) was carried out. In cases of violations of normality, non-parametric Kruskal-Wallis tests (H statistic) were performed with effect analysis carried out by multiple rank mean comparisons. $N = 64$ refers to data from both eye tracking measurements. Values <.05 are marked bold. BMI = Body Mass Index.

Table 5. Respondents' eye-tracking patterns regarding preferred body shape, psychological traits, and BMI (shortest visit duration)

Body shape with a shortest visit duration	Proana		Thinspiration		Fitspiration		Plus size		Fatspiration		Group comparisons				
	n = 3		*n* = 6		*n* = 19		*n* = 27		*n* = 9						
	M	SD	M	SD	M	SD	M	SD	M	SD	F/H	df	p	S-W	Levene
Age	30.16	14.90	30.38	8.71	26.00	8.93	31.11	14.66	30.62	15.86	1.15	4	.887	**.000**	.089
BMI	23.87	4.46	26.98	5.98	23.56	4.40	21.77	5.30	23.03	4.18	5.55	4	.236	**.008**	.637
Instagram Intensity Scale	3.98	1.31	4.22	1.44	3.96	1.14	3.19	1.54	3.66	1.20	3.71	4	.447	**.021**	.631
– Persistence	3.61	1.24	4.15	1.38	3.90	1.16	3.14	1.36	3.60	1.21	3.65	4	.456	**.040**	.902
– Boredom	4.39	1.60	4.49	1.78	4.50	1.63	3.56	2.07	3.74	1.32	4.25	4	.374	**.002**	.474
– Overuse	3.86	1.23	4.26	1.34	3.77	1.24	3.04	1.50	3.62	1.05	4.13	4	.389	**.024**	.552
– Self-expression	4.18	1.52	4.03	1.59	3.70	1.20	3.04	1.42	3.69	1.52	4.01	4	.405	**.013**	.759
Social comparison on Instagram	2.59	1.28	3.10	.98	2.69	.75	2.33	.87	2.14	.88	6.08	4	.193	**.013**	**.010**
– Upward comparison	2.63	1.44	**3.54e**	1.21	3.08	.73	2.37	1.06	**1.94b**	1.05	12.76	4	**.013**	**.003**	.173
– Downward comparison	2.54	1.29	2.65	1.15	2.30	1.00	2.30	.75	2.35	.91	1.04	4	.903	**.000**	**.041**
Self-esteem	4.93	1.40	4.87	1.03	4.57	1.28	5.59	.83	4.85	.92	5.13	4	.274	.098	.118
Anxiety	3.78	2.00	3.76	1.27	4.63	1.45	2.95	1.18	3.97	1.43	1.88	4	.253	.053	**.014**
Depression	2.59	1.02	2.85	.67	**2.94d**	.63	**1.79c**	.72	2.46	.86	2.90	4	**.029**	.101	.187
Life satisfaction	4.26	1.53	3.83	1.05	3.92	1.03	4.69	1.33	4.78	1.32	1.29	4	.286	.181	.408
Mindful Attention Awareness	4.16	1.13	4.21	.59	**3.56d**	.89	**4.89c**	.68	4.46	1.27	11.15	4	**.025**	**.013**	.387
Body Appreciation	4.58	1.55	4.35	1.18	4.54	1.18	5.69	1.18	4.78	1.67	5.97	4	.202	**.008**	.270

One-way ANOVAs (F-test) with post-hoc Tukey's HSD tests for equal size of all compared groups and Tukey-Kramer MSD for comparisons of unequal-sized groups were conducted. In cases of violations of homogeneity of variance (Levene's test: $p < .05$) the Welch's ANOVA (W-test) was carried out. In cases of violations of normality, non-parametric Kruskal-Wallis tests (H statistic) were performed with effect analysis carried out by multiple rank mean comparisons. $N = 64$ refers to data from both eye tracking measurements. Values <.05 are marked bold. BMI = Body Mass Index.

b – Differs significantly from thinspiration ($p < .05$); c – Differs significantly from fitspiration ($p < .05$); d – Differs significantly from plus size ($p < .05$); e – Differs significantly from fatspiration ($p < .05$)

Table 6. Respondents' eye-tracking patterns regarding preferred body shape, psychological traits, and BMI (shortest gaze)

Body shape with a shortest gaze	Legs		Abdomen		Face		Group comparisons				
	n = 14		*n* = 46		*n* = 4						
	M	SD	M	SD	M	SD	F/H	df	p	S-W	Levene
Age	27.14	10.85	29.83	12.92	38.50	19.05	1.85	2	.396	**.000**	.165
BMI	**20.51b**	3.00	**25.07a**	5.20	23.75	2.25	8.61	2	**.014**	**.008**	.066
Instagram Intensity Scale	3.73	1.43	3.84	1.35	4.35	.40	.47	2	.791	**.021**	.077
– Persistence	3.68	1.21	3.66	1.35	4.13	.14	.61	2	.736	**.040**	**.013**
– Boredom	4.24	1.92	4.10	1.63	4.83	.96	.72	2	.697	**.002**	.225
– Overuse	3.29	1.45	3.88	1.26	4.00	.00	1.78	2	.412	**.024**	**.030**
– Self-expression	3.71	1.58	3.78	1.51	4.50	.58	.80	2	.671	**.013**	.119
Social comparison on Instagram	2.56	.98	2.61	1.03	2.33	1.54	.39	2	.824	**.013**	.204
– Upward comparison	2.71	1.05	2.75	1.34	2.17	1.35	.71	2	.703	**.003**	.526
– Downward comparison	2.40	.99	2.46	1.04	2.50	1.73	.11	2	.947	**.000**	.060
Self-esteem	4.70	.94	4.93	1.23	5.80	.23	12.68	2	.246	.098	**.035**
Anxiety	4.04	1.25	3.84	1.73	2.93	.41	5.73	2	.441	.473	**.013**
Depression	2.35	.91	2.63	.90	2.43	.00	2.02	2	.364	.101	**.024**
Life satisfaction	4.63	1.24	4.10	1.34	5.20	.69	1.94	2	.153	.181	.318
Mindful Attention Awareness	4.54	.89	4.14	1.10	4.30	.19	.20	2	.903	**.013**	**.036**
Body Appreciation	5.10	1.55	4.51	1.40	5.80	.46	3.61	2	.164	**.008**	.099

One-way ANOVAs (F-test) with post-hoc Tukey's HSD tests for equal size of all compared groups and Tukey-Kramer MSD for comparisons of unequal-sized groups were conducted. In cases of violations of homogeneity of variance (Levene's test: $p < .05$) the Welch's ANOVA (W-test) was carried out. In cases of violations of normality, non-parametric Kruskal-Wallis tests (H statistic) were performed with effect analysis carried out by multiple rank mean comparisons. $N = 64$ refers to data from both eye tracking measurements. Values <.05 are marked bold. BMI = Body Mass Index. The difference in the number of columns (body areas) between Tables 5 and 6 differs as it only presents the areas that respondents looked at. In Table 5, there were no gazes on the arms area.

a – Differs significantly from legs ($p < .05$); b – Differs significantly from abdomen ($p < .05$)

Table 7. Respondents' eye-tracking patterns regarding preferred body shape, psychological traits, and BMI (longest gaze)

Body shape with a longest gaze	Legs		Abdomen		Face		Arms		Group comparisons				
	n = 6		*n* = 4		*n* = 16		*n* = 38						
	M	SD	M	SD	M	SD	M	SD	F/H	df	p	S-W	Levene
Age	**44.00cd**	9.84	37.00	20.78	**28.00a**	11.88	**27.53a**	11.59	8.06	3	**.045**	.000	.075
BMI	**34.00bcd**	2.25	**22.30a**	3.93	**24.01a**	5.08	**22.57a**	3.39	16.53	3	**.001**	**.008**	.126
Instagram Intensity Scale	3.87	1.77	4.77	.89	3.69	1.76	3.81	1.07	2.25	3	.522	**.021**	.013
– Persistence	3.83	1.93	4.63	.72	3.38	1.61	3.71	1.00	2.83	3	.419	**.040**	.001
– Boredom	3.89	2.03	5.33	1.54	4.08	2.00	4.14	1.46	2.00	3	.571	**.002**	.345
– Overuse	4.11	1.92	4.67	.77	3.63	1.78	3.67	.90	4.30	3	.231	**.024**	.002
– Self-expression	3.67	1.37	4.50	.58	3.79	1.89	3.77	1.39	.92	3	.821	**.013**	.085
Social comparison on Instagram	2.14	.31	3.54	.14	2.39	1.37	2.63	.96	4.98	3	.173	**.013**	**.001**
– Upward comparison	2.61	1.12	3.67	.38	2.46	1.52	2.73	1.22	4.38	3	.223	**.003**	.096
– Downward comparison	1.67	.54	3.42	.67	2.31	1.34	2.54	.94	7.30	3	.063	**.000**	**.010**
Self-esteem	**6.03c**	1.13	4.75	.98	**4.39a**	1.32	5.02	.99	3.47	3	.021	.098	.109
Anxiety	3.29	1.00	4.00	.82	4.38	1.95	3.67	1.55	3.10	3	.376	.053	**.038**
Depression	2.67	.75	2.71	.33	2.75	1.01	2.44	.88	.53	3	.662	.101	.177
Life satisfaction	**3.07d**	.37	4.20	.46	3.80	1.42	**4.69a**	1.26	13.88	3	.009	.181	**.017**
Mindful Attention Awareness	4.16	.59	4.77	.35	3.81	1.56	4.38	.79	4.08	3	.253	**.013**	**.001**
Body Appreciation	4.67	1.14	5.30	1.04	4.33	1.80	4.84	1.33	2.10	3	.552	**.008**	.222

One-way ANOVAs (F-test) with post-hoc Tukey's HSD tests for equal size of all compared groups and Tukey-Kramer MSD for comparisons of unequal-sized groups were conducted. In cases of violations of homogeneity of variance (Levene's test: $p < .05$) the Welch's ANOVA (W-test) was carried out. In cases of violations of normality, non-parametric Kruskal-Wallis tests (H statistic) were performed with effect analysis carried out by multiple rank mean comparisons. $N = 64$ refers to data from both eye tracking measurements. Values < .05 are marked bold. BMI = Body Mass Index. The difference in the number of columns (body areas) between Tables 5 and 6 differs as it only presents the areas that respondents looked at. In Table 5, there were no gazes on the arms area.

a – Differs significantly from legs ($p < .05$); b – Differs significantly from abdomen ($p < .05$); c – Differs significantly from face ($p < .05$); d – Differs significantly from arms ($p < .05$)

Drawing from the literature, the following research hypothesis was put forward: the respondents' questionnaire statements, which emphasize figures and body parts that draw attention in weight-related photos, may be at least partially inconsistent with their viewing patterns as measured by eye-tracking data. I was further interested in whether this relation would depend on psychological scales described in similar studies. In line with the hypothesis, the results indicate that there are discrepancies between the claim of the photo that caught the most attention and the eye tracking data. Only one variable, the longest visit duration, illustrating the types of silhouettes that the respondents looked at for the longest time, was to some extent correlated with the declarations. The remaining eye tracking variables, concerning the shortest glance (avoiding certain content) and looking at specific areas of the body, were not correlated at all with those declarations. Noteworthy, not one of analysed psychological and physical features turned out to be correlated with the respondents' declarations. Such relationships occurred only for the eye tracking variables. Regarding visit duration, it is worth noting that only in terms of the shortest look, so avoiding specific content, there were relationships with the analysed traits with $p < .05$. This points to the possibility of developing an avoidance strategy among the respondents mentioned by Janelle and others (2003). Participants avoiding thinspiration content showed the strongest tendency to make upward comparisons, while the focus on content presenting obesity was shown among those that had the weakest tendency to such comparisons. Avoiding fitspiration content was associated with higher levels of depression and lower mindful awareness, while those who refrain from gazing at plus size content showed the opposite tendency.

In the case of looking patterns on body parts, the highest mean BMI occurred in the group of female respondents who looked at abdomen for the longest time, while the lowest among those who focused on legs. These results seem to be partially consistent with the work of Hartmann et al. (2020) on the concentration on subjectively unattractive body parts. This is also perfectly in line with a study by Hewig and others (2008) on increased focus on the waist that has also been reported in individuals with obesity, while thin females aimed attention at the abdomen and legs. This may be due to the fact that on the Instagram, among women with low weight, photos of very slim legs with a visible gap between the thighs are highly promoted. In the case of obese females, such an area is the abdomen as the strongest representative of overweight or obesity. Also, the group with the highest average BMI exhibited behaviours to avoid looking at leg area. The same tendency appeared among the oldest respondents, while the youngest' glances on the face were the shortest, preferring to look longer at other areas of the more weight-related body parts. The present results also complement findings reported by Mischner et al. (2013) that women with lower self-esteem may be very attentive to body images portrayed in the social media, and to internalize societal weigh-related beauty ideals. In this case, females with higher mean self-esteem avoided looking at legs, while those with the lowest at face, similarly as in the case of age – preferring more weigh-related content. Concerning life satisfaction, the highest level was recorded for the group avoiding looking at arms and the lowest for legs. Noteworthy, though several studies has proven that fat body stimuli can draw increased attention in the body-dissatisfied individuals (Gao et al., 2014; Lea et al., 2018; Mischner et al., 2013) my results haven't proven any such relation to the body acceptance level.

The selection of specific body parts or silhouettes may be influenced by individual psychological traits, as corroborated by the literature cited in the study. The concentration of attention on a particular body part may indicate its significance to the respondent, but the underlying motive remains unexplored in this study; thus, it cannot be inferred whether the respondent is viewing an area they find particularly attractive or the opposite, only that it captures their attention. The exploratory nature of the study aims to demonstrate that eye tracking can help identify body areas and types of silhouettes that truly capture attention, as opposed to those declared – not always sincerely. Meanwhile, the analyzed psychological variables are treated exploratorily as an adjunct to the study, indicating the rationale for further research in this area, as it can be inferred that the observation of the female silhouette may indeed influence women's well-being.

I used an exploratory approach to find out whether there are relations within the groups between respondents' declarations and eye tracking gaze measuring data as well as selected psychological traits, age, and BMI factor. I had suspected that the respondents' declarations regarding weight-related images that caught their attention the most, will be at least partially inconsistent with their watching patterns provided with eye tracking measurements and that questionnaire data will be more biased by showing less significant relations to analysed psychological and physical traits. This assumption was only partially confirmed. Not all of the analysed characteristics turned out to be statistically significant. I believe that this study raises awareness that there is a biased attention to body stimuli, that, considering a work of Hartmann et al. (2020), impact the development of negative body image and even eating pathologies. Maladaptive thoughts about not fulfilling the social beauty norms, may increase the importance of female bodily appearance in their self-concept and may enhance the amount of attention that females direct at female weight-related stimuli, as our results revealed. As predicted, a higher chance of upward comparisons than downward ones was demonstrated to the participants. The possible negative effects of such comparisons should be emphasized, stressing the necessity of challenging the sociocultural norms for appearance. This can lead to increased perception of one's self and body, and reducing levels of internalization, dieting behaviours, and social comparison with media unrealistic models (Mischner et al., 2013).

In this study, the impact of weight-related images on participants' well-being, encompassing various psychological traits, was investigated. The data revealed that individuals focusing on extremely thin silhouettes exhibited higher levels of Instagram Intensity Usage Scale and Social Comparison, along with increased levels of anxiety and depression. Conversely, individuals interested in obese body types demonstrated the highest levels of self-esteem. Moreover, those interested in athletic body types showed the highest levels of life satisfaction and mindful attention awareness. These findings suggest that weight-related content on Instagram has a notable influence on the well-being of the participants in this exploratory study. The results of this exploratory study indicate that weight-related content on Instagram affects the psychological well-being of the participants. Therefore, further research in this area is warranted to deepen our understanding of the impact of such content on individuals' well-being and to explore potential avenues for intervention or support.

In conclusion, the results of this exploratory study indicate that weight-related content on Instagram may affect the psychological well-being of the participants. Therefore, further

research in this area is warranted to deepen our understanding of the impact of such content on individuals' well-being and to explore potential avenues for intervention or support.

To summarize, the current findings underscore previous research results, providing evidence of an effect of body-related images on women's self-evaluation. Moreover, for the first time, the study was extended to female respondent bias in weight-related photo exposure research. In this study, eye tracking was used atypically to confront the viewing patterns with the data declared in the questionnaire. A review of presented studies indicated the existence of biases, avoidance strategies and their impact on self-evaluation. Therefore, a logical extension of this research was to analyse these mechanisms with the eye tracking support, along with an exploratory approach to various psychological traits suggested in other studies.

The following limitations of the present study should be noted. The study employed cross-sectional assessment. It would be valuable to carry out similar research, including longitudinal studies to provide solid and causal evidence for the nature of these associations. One limitation is the fact that many parallel tests took place and that the alpha error was not corrected. Only several test results became significant and this could easily be because of chance due to small sample size. While the sample size meets the requirements of eye tracking research and qualifies for the applied statistical tests, it does not paint a picture that can be generalized to the population. Therefore, the study is exploratory in nature, and increasing the sample size in future research would shed more light on the investigated phenomena. In addition, the reliability of the stimulus material should be reviewed further. In this case, that only data from Instagram were collected, providing a real social media content which was not standardized. Finally, the visibility of the face and surroundings must be taken into consideration as it possibly could distract participants from looking at body.

Thus, in order to provide a fuller picture of how eye tracking may be used eye tracking to evaluate respondent bias in body image studies, it will be necessary for future research to include data from a wider set of users and social media services. Also, similar studies on men, as some previous but limited research, suggest that exposure to body stimuli can negatively affect men's body satisfaction and that body concerns in men are associated with dysfunctional gaze behaviour (Cordes et al., 2017; Nikkelen et al., 2012; Porras-Garcia et al., 2020b). And that justifies further eye tracking studies on the topic. Another interesting, emerging path for body image bias eye tracking studies is exploring intergenerational, mother-daughter attitudes toward body stimuli, as they can be transmitted via maternal behaviours (Bauer et al., 2017).

CONCLUSIONS

This study investigates the role of eye tracking in detecting bias in body image studies, focusing on Instagram. Combining eye tracking with a questionnaire, it hypothesized that respondents' declarations regarding weight-related photos would be inconsistent with eye tracking patterns. Results show partial inconsistency between declarations and eye tracking. Psychometric questionnaires on well-being were administered, revealing correlations only with eye tracking variables, not declarations of body shape preferences. Participants avoiding certain content demonstrated avoidance strategies. Looking patterns on body parts varied,

suggesting attention to subjectively unattractive areas, as it may be present due to promotion of very slim silhouettes on Instagram. Results indicate lower self-esteem individuals may internalize societal beauty ideals. The study suggests eye tracking can identify attention-capturing body areas, while psychological variables warrant further exploration. Weight-related Instagram content may impact participants' psychological well-being, highlighting the need for awareness of biased attention to body stimuli.

It must be remembered that this study is exploratory, not confirmatory. I began it to investigate eye tracking methods potential to evaluate respondent bias in body image studies. To my knowledge, this is the first investigation of contrasting the respondents' questionnaire declarations regarding weight-related photos with their watching patterns using an eye tracking methodology. Several limitations of previous research were addressed: confronting self-reported questionnaire data with eye tracking measurements, including various psychological scales, and different body silhouettes. This study provides an initial investigation, but it is not without limitations described above. The findings may be of value for researchers dealing with body image, social media communication and its influence on individuals as well as modern societies and cultural norms.

REFERENCES

Arseniev-Koehler, A., Lee, H., McCormick, T., Moreno, M.A. (2016). #Proana: Pro-eating disorder socialization on Twitter. *Journal of Adolescent Health*, 58(6), 659–664. http://dx.doi.org/10.1016/j.jadohealth.2016.02.012.

Bauer, A., Schneider, S., Waldorf, M., Adolph, D., Vocks, S. (2017). Familial transmission of a body-related attentional bias – An eye-tracking study in a nonclinical sample of female adolescents and their mothers. *PLOS ONE*, 12(11), e0188186. https://doi.org/10.1371/journal.pone.0188186.

Blechert, J., Nickert, T., Caffier, D., Tuschen-Caffier, B. (2009). Social comparison and its relation to body dissatisfaction in bulimia nervosa: Evidence from eye movements. *Psychosomatic Medicine*, 71(8), 907–912. https://doi.org/10.1097/PSY.0b013e3181b4434d.

Boxley, L., Flaherty, J.M., Spencer, R.J., Drag, L.L., Pangilinan, P.H., Bieliauskas, L.A. (2016). Reliability and factor structure of the Hospital Anxiety and Depression Scale in a polytrauma clinic. *Journal of Rehabilitation Research and Development*, 53(6), 873–880. https://doi.org/10.1682/JRRD.2015.05.0088.

Bradley, M.M., Houbova, P., Miccoli, L., Costa, V.D., Lang, P.J. (2011). Scan patterns when viewing natural scenes: Emotion, complexity, and repetition. *Psychophysiology*, 48, 1543–1552. https://doi.org/10.1111/j.1469-8986.2011.01223.x.

Brown, K.W., Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84, 822–848. https://doi.org/10.1037/0022-3514.84.4.822.

Cash, T.F., Fleming, E.C. (2002). The impact of body image experiences: Development of the Body Image Quality of Life Inventory. *International Journal of Eating Disorders*, 31, 455–460. http://dx.doi.org/10.1002/eat.10033.

Chan, H.Ch. (2021). Risky sexual behavior of young adults in Hong Kong: An exploratory study of psychosocial risk factors. *Frontiers in Psychology*, 12, 727. https://doi.org/10.3389/fpsyg.2021.658179.

Cohen, R., Newton-John, T., Slater, A. (2018). 'Selfie'-objectification: The role of selfies in self-objectification and disordered eating in young women. *Computers in Human Behavior*, 79, 68–74. http://dx.doi.org/10.1016/j.chb.2017.10.027.

Cordes, M., Vocks, S., Düsing, R., Waldorf, M. (2017). Effects of the exposure to self- and other-referential bodies on state body image and negative affect in resistance-trained men. *Body Image*, 21, 57–65. https://doi.org/10.1016/j.bodyim.2017.02.007.

Couture Bue, A.C. (2020). The looking glass selfie: Instagram use frequency predicts visual attention to high-anxiety body regions in young women. *Computers in Human Behavior*, 108, 106329. https://doi.org/10.1016/j.chb.2020.106329.

Delacre, M., Leys, C., Mora, Y.L., Lakens, D. (2019). Taking parametric assumptions seriously: Arguments for the use of Welch's F-test instead of the classical F-test in one-way ANOVA. *International Review of Social Psychology*, 32(1), 13. http://doi.org/10.5334/irsp.198.

Diener, E., Emmons, R.A., Larsen, R.J., Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71–75. https://doi.org/10.1207/s15327752jpa4901_13.

Djukanovic, I., Carlsson, J., Årestedt, K. (2017). Is the Hospital Anxiety and Depression Scale (HADS) a valid measure in a general population 65–80 years old? A psychometric evaluation study. *Health and Quality of Life Outcomes*, 15, 193. https://doi.org/10.1186/s12955-017-0759-9.

Fardouly, J., Pinkus, R.T., Vartanian, L.R. (2017). The impact of appearance comparisons made through social media, traditional media, and in person in women's everyday lives. *Body Image*, 20, 31–39. http://dx.doi.org/10.1016/j.bodyim.2016.11.002.

Frederick, D.A., Sandhu, G., Morse, P.J., Swami, V. (2016). Correlates of appearance and weight satisfaction in a U.S. national sample: Personality, attachment style, television viewing, self-esteem, and life satisfaction. *Body Image*, 17, 191–203. https://doi.org/10.1016/j.bodyim.2016.04.001.

Gale, C.R., Allerhand, M., Sayer, A.A., Cooper, C., Dennison, E.M., Starr, J.M., Ben-Shlomo, Y., Gallacher, J.E., Kuh, D., Deary, I.J. (2010). The structure of the hospital anxiety and depression scale in four cohorts of community-based, healthy older people: The HALCyon program. *International Psychogeriatrics*, 22, 559–571. https://doi.org/10.1017/S1041610210000256.

Gao, X., Deng, X., Yang, J., Liang, S., Liu, J., Chen, H. (2014). Eyes on the bodies: An eye tracking study on deployment of visual attention among females with body dissatisfaction. *Eating Behaviors*, 15(4), 540–549. https://doi.org/10.1016/j.eatbeh.2014.08.001.

Gemming, L., Jiang, Y., Swinburn, B., Utter, J., Ni Mhurchu, C. (2014). Under-reporting remains a key limitation of self-reported dietary intake: An analysis of the 2008/09 New Zealand Adult Nutrition Survey. *European Journal of Clinical Nutrition*, 68, 259–264. https://doi.org/10.1038/ejcn.2013.242.

Glashouwer, K.A., Jonker, N.C., Thomassen, K., de Jong, P.J. (2016). Take a look at the bright side: Effects of positive body exposure on selective visual attention in women with high body dissatisfaction. *Behaviour Research and Therapy*, 83, 19–25. https://doi.org/10.1016/j.brat.2016.05.006.

Griffiths, S., Castle, D., Cunningham, M., Murray, S.B., Bastian, B., Barlow, F.K. (2018). How does exposure to thinspiration and fitspiration relate to symptom severity among individuals with eating disorders? Evaluation of a proposed model. *Body Image*, 27, 187–195. https://doi.org/10.1016/j.bodyim.2018.10.002.

Griffiths, S., Stefanovski, A. (2019). Thinspiration and fitspiration in everyday life: An experience sampling study. *Body Image*, 30, 135–144. https://doi.org/10.1016/j.bodyim.2019.07.002.

Hartmann, A.S., Borgers, T., Thomas, J.J., Giabbiconi, C.-M., Vocks, S. (2020). Faced with one's fear: Attentional bias in anorexia nervosa and healthy individuals upon confrontation with an obese body stimulus in an eye-tracking paradigm. *Brain and Behavior*, 10, e01834. https://doi.org/10.1002/brb3.1834.

Hewig, J., Cooper, S., Trippe, R., Hecht, H., Straube, T., Miltner, W. (2008). Drive for thinness and attention towards specific body parts in a non-clinical sample. *Psychosomatic Medicine*, 70, 729–736.

Holland, G., Tiggemann, M. (2016). A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body Image*, 17, 100–110. http://dx.doi.org/10.1016/j.bodyim.2016.02.008.

Janelle, C.M., Hausenblas, H.A., Fallon, E.A., Gardner, R.E. (2003). A visual search examination of attentional biases among individuals with high and low drive for thinness. *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity*, 8, 138–144. https://doi.org/10.1007/BF03325003.

Jansen, A., Nederkoorn, C., Mulkens, S. (2005). Selective visual attention for ugly and beautiful body parts in eating disorders. *Behaviour Research and Therapy*, 43(2), 183–196. https://doi.org/10.1016/j.brat.2004.01.003.

Jiang, M.Y., Vartanian, L.R. (2018). A review of existing measures of attentional biases in body image and eating disorders research. *Australian Journal of Psychology*, 70(1), 3–17. https://doi.org/10.1111/ajpy.12161.

Joshi, A., Kale, S., Chandel, S., Pal, D.K. (2015). Likert Scale: Explored and explained. *British Journal of Applied Science & Technology*, 7(4), 396–403. https://doi.org/10.9734/BJAST/2015/14975.

Kaspar, K., Hloucal, T.M., Kriz, J., Canzler, S., Gameiro, R.R., Krapp, V., König, P. (2013). Emotions' impact on viewing behavior under natural conditions. *PLoS One*, 8(1), e52737. https://doi.org/10.1371/journal.pone.0052737.

Kim, H.Y. (2015). Statistical notes for clinical researchers: Post-hoc multiple comparisons. *Restorative Dentistry & Endodontics*, 40(2), 172–176. https://doi.org/10.5395/rde.2015.40.2.172.

Lavender, J.M., Gratz, K.L., Anderson, D.A. (2012). Mindfulness, body image, and drive for muscularity in men. *Body Image*, 9(2), 289–292. https://doi.org/10.1016/j.bodyim.2011.12.002.

Lazuka, R.F., Wick, M.R., Keel, P.K., Harriger, J.A. (2020). Are we there yet? Progress in depicting diverse images of beauty in Instagram's body positivity movement. *Body Image*, 34, 85–93. https://doi.org/10.1016/j.bodyim.2020.05.001.

Lea, R.G., Qualter, P., Davis, S.K., Pérez-González, J.-C., Bangee, M. (2018). Trait emotional intelligence and attentional bias for positive emotion: An eye tracking study. *Personality and Individual Differences*, 128, 88–93. https://doi.org/10.1016/j.paid.2018.02.017.

Lindholm, J., Carlson, T., Högväg, J. (2021). See me, like me! Exploring viewers' visual attention to and trait perceptions of party leaders on Instagram. *The International Journal of Press/Politics*, 26(1), 167–187. https://doi.org/10.1177/1940161220937239.

Lonergan, A.R., Bussey, K., Mond, J., Brown, O., Griffiths, S., Murray, S.B., Mitchison, D. (2019). Me, my selfie, and I: The relationship between editing and posting selfies and body dissatisfaction in men and women. *Body Image*, 28, 39–43. http://dx.doi.org/10.1016/j.bodyim.2018.12.001.

MacKillop, J., Anderson, E.J. (2007). Further psychometric validation of the mindful attention awareness scale (MAAS). *Journal of Psychopathology and Behavioral Assessment*, 29, 289–293. https://doi.org/10.1007/s10862-007-9045-1.

Mañas-Viniegra, L., Núñez-Gómez, P., Tur-Viñes, V. (2020). Neuromarketing as a strategic tool for predicting how Instagramers have an influence on the personal identity of adolescents and young people in Spain. *Heliyon*, 6(3), e03578. https://doi.org/10.1016/j.heliyon.2020.e03578.

Mañas-Viniegra, L., Veloso, A.-I., Cuesta, U. (2019). Fashion promotion on Instagram with eye tracking: Curvy girl influencers versus fashion brands in Spain and Portugal. *Sustainability*, 11, 3977. https://doi.org/10.3390/su11143977.

Mischner, I.H.S., van Schie, H.T., Engels, R. (2013). Breaking the circle: Challenging Western sociocultural norms for appearance influences young women's attention to appearance-related media. *Body Image*, 10(3), 316–325. https://doi.org/10.1016/j.bodyim.2013.02.005.

Nahm, F.S. (2016). Nonparametric statistical tests for the continuous data: The basic concept and the practical use. *Korean Journal of Anesthesiology*, 69(1), 8–14. https://doi.org/10.4097/kjae.2016.69.1.8.

Naumann, E., Biehl, S., Svaldi, J. (2019). Eye-tracking study on the effects of happiness and sadness on body dissatisfaction and selective visual attention during mirror exposure in bulimia nervosa. *International Journal of Eating Disorders*, 52, 895–903. https://doi.org/10.1002/eat.23127.

Nikkelen, S.W.C., Anschutz, D.J., Ha, T., Engels, R.C.M.E. (2012). Influence of visual attention on male body dissatisfaction after idealized media exposure. *Psychology of Men & Masculinity*, 13(3), 308–323. https://doi.org/10.1037/a0024942.

Orosz, G., Tóth-Király, I., Bőthe, B. (2016). Four facets of Facebook intensity—The development of the Multidimensional Facebook Intensity Scale. *Personality and Individual Differences*, 100, 95–104. https://doi.org/10.1016/j.paid.2015.11.038.

Pannasch, S., Helmert, J.R., Roth, K., Herbold, A.-K., Walter, H. (2008). Visual fixation durations and saccadic amplitudes: Shifting relationship in a variety of conditions. *Journal of Eye Movement Research*, 2(4), 1–19. https://doi.org/10.16910/jemr.2.2.4.

Papies, E.K., Nicolaije, K.A.H. (2012). Inspiration or deflation? Feeling similar or dissimilar to slim and plus-size models affects self-evaluation of restrained eaters. *Body Image*, 9(1), 76–85. https://doi.org/10.1016/j.bodyim.2011.08.004.

Peplau, L.A., Frederick, D.A., Yee, C., Maisel, N., Lever, J., Ghavami, N. (2009). Body-image satisfaction in heterosexual, gay, and lesbian adults. *Archives of Sexual Behavior*, 38, 713–725. http://dx.doi.org/10.1007/s10508-008-9378-1.

Porras-Garcia, B., Exposito-Sanz, E., Ferrer-Garcia, M., Castillero-Mimenza, O., Gutiérrez-Maldonado, J. (2020a). Body-related attentional bias among men with high and low muscularity dissatisfaction. *Journal of Clinical Medicine*, 9, 1736. https://doi.org/10.3390/jcm9061736.

Porras-Garcia, B., Ferrer-Garcia, M., Ghita, A., Moreno, M., López-Jiménez, L., Vallvé-Romeu, A., Serrano-Troncoso, E., Gutiérrez-Maldonado, J. (2019). The influence of gender and body dissatisfaction on body-related attentional bias: An eye-tracking and virtual reality study. *International Journal of Eating Disorders*, 52, 1181–1190. https://doi.org/10.1002/eat.23136.

Porras-Garcia, B., Ferrer-Garcia, M., Yilmaz, L., Sen, Y.O., Olszewska, A., Ghita, A., Serrano-Troncoso, E., Treasure, J., Gutiérrez-Maldonado, J. (2020b). Body-related attentional bias as mediator of the relationship between body mass index and body dissatisfaction. *European Eating Disorders Review*, 28, 454–464. https://doi.org/10.1002/erv.2730.

Robinovich, J., Bosma, H., van der Borne, B., Ossa, X., Muñoz, S., Krumeich, A. (2021). Is a 'culture of plus-size women' the independent effect of neighborhood disadvantage on female BMI? A cross-sectional study in two Chilean municipalities. *Social Science & Medicine*, 280, 114019. https://doi.org/10.1016/j.socscimed.2021.114019.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Schienle, A., Gremsl, A., Übel, S., Körner, C. (2016). Testing the effects of a disgust placebo with eye tracking. *International Journal of Psychophysiology*, 101, 69–75. https://doi.org/10.1016/j.ijpsycho.2016.01.001.

Stojcic, I., Dong, X., Ren, X. (2020). Body image and sociocultural predictors of body image dissatisfaction in Croatian and Chinese women. *Frontiers in Psychology*, 11, 731. https://doi.org/10.3389/fpsyg.2020.00731.

Tiggemann, M., Velissaris, V.G. (2020). The effect of viewing challenging "reality check" Instagram comments on women's body image. *Body Image*, 33, 257–263. https://doi.org/10.1016/j.bodyim.2020.04.004.

Tobin, L.N., Barron, A.H., Sears, C.R., von Ranson, K.M. (2019). Greater body appreciation moderates the association between maladaptive attentional biases and body dissatisfaction in undergraduate women. *Journal of Experimental Psychopathology*, 10(2), 1–15. https://doi.org/10.1177/2043808719838937.

Tylka, T.L., Wood-Barcalow, N.L. (2015). The Body Appreciation Scale-2: Item refinement and psychometric evaluation. *Body Image*, 12, 53–67. https://doi.org/10.1016/j.bodyim.2014.09.006.

Uher, J., Werner, C.S., Gosselt, K. (2013). From observations of individual behaviour to social representations of personality: developmental pathways, attribution biases, and limitations

of questionnaire methods. *Journal of Research in Personality*, 47(5), 647–667. https://doi.org/10.1016/j.jrp.2013.03.006.

Van der Zee, K., Buunk, B., Sanderman, R., Botke, G., van den Bergh, F. (2000). Social comparison and coping with cancer treatment. *Personality and Individual Differences*, 28(1), 17–34. https://doi.org/10.1016/S0191-8869(99)00045-8.

Voges, M.M., Giabbiconi, C.-M., Gruber, T., Andersen, S.K., Hartmann, A.S., Vocks, S. (2019). Sustained hypervigilance for one's own body in women with weight and shape concerns: Competition effects in early visual processing investigated by steady-state visual evoked potentials (SSVEP). *Biological Psychology*, 143, 74–84. https://doi.org/10.1016/j.biopsycho.2019.02.010.

von Wietersheim, J., Kunzl, F., Hoffmann, H., Glaub, J., Rottler, E., Traue, H. (2012). Selective attention of patients with anorexia nervosa while looking at pictures of their own body and the bodies of others. *Psychosomatic Medicine*, 74(1), 107–113. https://doi.org/10.1097/PSY.0b013e31823ba787.

Waechter, S., Nelson, A.L., Wright, C., Hyatt, A., Oakman, J. (2014). Measuring attentional bias to threat: Reliability of dot probe and eye movement indices. *Cognitive Therapy and Research*, 38(3), 313–333. https://doi.org/10.1007/s10608-013-9588-2.

Webb, J.B., Vinoski, E.R., Bonar, A.S., Davies, A.E., Etzel, L. (2017). Fat is fashionable and fit: A comparative content analysis of Fatspiration and Health at Every Size® Instagram images. *Body Image*, 22, 53–64. https://doi.org/10.1016/j.bodyim.2017.05.003.

Withnell, S., Sears, C.R., von Ranson, K.M. (2019). How malleable are attentional biases in women with body dissatisfaction? Priming effects and their impact on attention to images of women's bodies. *Journal of Experimental Psychopathology*, 10(2), 1–16. https://doi.org/10.1177/2043808719837137.

Zigmond, A.S., Snaith, R.P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67(6), 361–370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x.

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S1. QUESTIONNAIRE

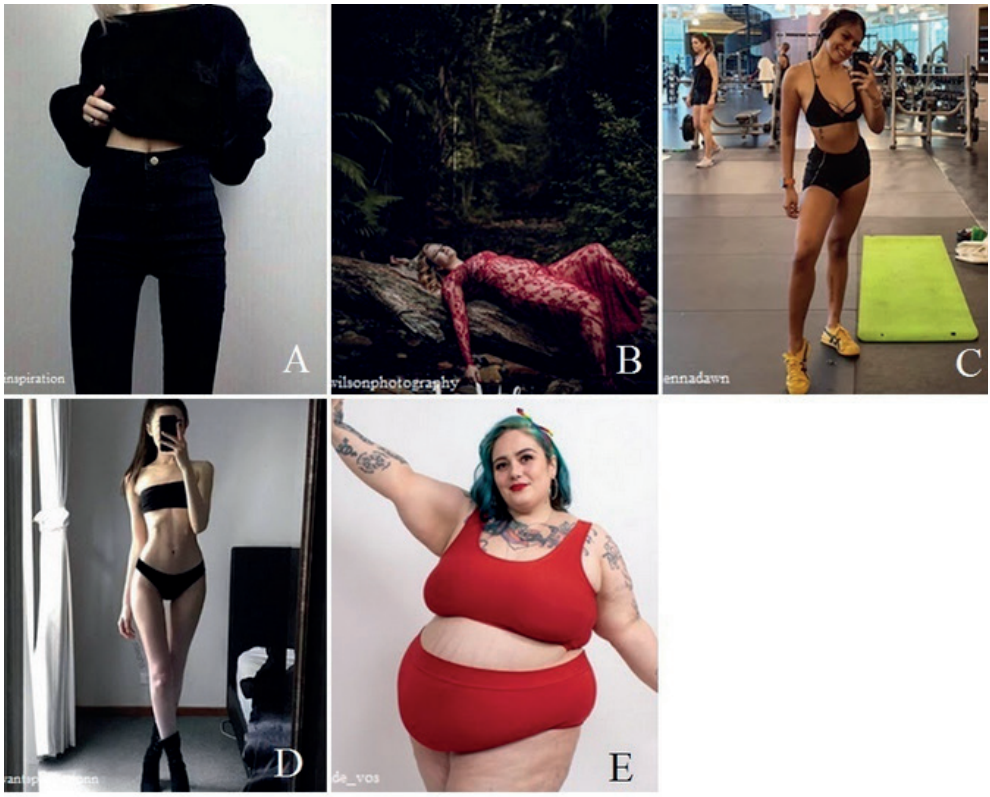
The questionnaire below is about how to use Instagram. It should take around 15 minutes to complete it.

Thank you for participating in the survey.

Participation in the study is voluntary and the collected results are anonymous.

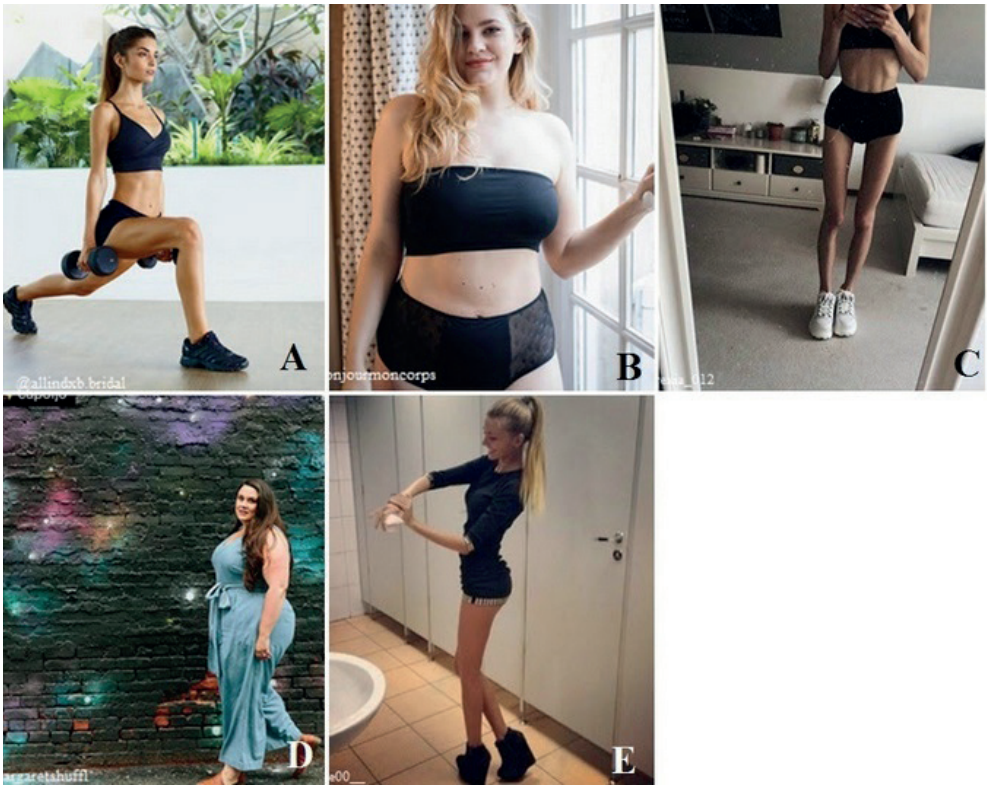
SECTION I. EYE TRACKING MEASUREMENT

1. Which of the following pictures caught your attention the most?



a) A
b) B
c) C
d) D
e) E

2. Which of the following pictures caught your attention the most?



a) A
b) B
c) C
d) D
e) E

SECTION II. SELF-REPORTED DATA

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

No.	List of statements	Strongly disagree	Disagree	Rather disagree	Neither agree nor disagree	Rather agree	Agree	Strongly agree
1	If I could only visit one site on the Internet, it would be Instagram.							
2	I feel bad if I don't check my Instagram profile daily.							
3	I search for the internet connection in order to visit Instagram.							
4	Before going to sleep, I check Instagram once more.							
5	If I'm bored, I open Instagram.							
6	When I'm bored, I often go to Instagram.							
7	Instagram posts are good to overcome boredom.							
8	I spend my time on Instagram at the expense of my other responsibilities.							
9	I spend more time on Instagram than I would like to.							
10	It happens that I use Instagram instead of sleeping.							
11	My Instagram profile is rather detailed.							
12	I like refining my Instagram profile.							
13	It is important for me to post on Instagram regularly.							
14	When I compare my Instagram profile to people who have better profiles, I feel that it is possible that one day I will reach their popularity level too.							

No.	List of statements	Strongly disagree	Disagree	Rather disagree	Neither agree nor disagree	Rather agree	Agree	Strongly agree
15	When I compare my Instagram profile to people who have better profiles, I hope my profile will improve.							
16	When I compare my Instagram profile to people who have better profiles, I am glad that my profile can also be that good.							
17	When I compare my Instagram profile to people who have better profiles, I feel frustrated by the level of my own profile.							
18	When I compare my Instagram profile to people who have better profiles, I feel anxious that my profile is not achieving the same results.							
19	When I compare my Instagram profile to people who have better profiles, I get depressed realizing that my profile is not that good.							
20	When I compare my Instagram profile to people who have weaker profiles, I am afraid that my profile will worsen.							
21	When I compare my Instagram profile to people who have weaker profiles, I fear that the future of my profile will be the same.							
22	When I compare my Instagram profile to people who have weaker profiles, I am afraid that the popularity of my profile will drop.							
23	When I compare my Instagram profile to people with weaker profiles, I feel like I'm doing well.							

No.	List of statements	Strongly disagree	Disagree	Rather disagree	Neither agree nor disagree	Rather agree	Agree	Strongly agree
24	When I compare my Instagram profile to people who have weaker profiles, I feel relieved about my own profile.							
25	When I compare my Instagram profile to people with weaker profiles, I am happy that I am doing so well.							
26	On the whole, I am satisfied with myself.							
27	At times I think I am no good at all.							
28	I feel that I have a number of good qualities.							
29	I am able to do things as well as most other people.							
30	I feel I do not have much to be proud of.							
31	I certainly feel useless at times.							
32	I feel that I'm a person of worth, at least on an equal plane with others.							
33	I wish I could have more respect for myself.							
34	All in all, I am inclined to feel that I am a failure.							
35	I take a positive attitude toward myself.							
36	I feel tense or ‚wound up'.							
37	I still enjoy the things I used to enjoy.							
38	I get a sort of frightened feeling as if something awful is about to happen.							
39	I can laugh and see the funny side of things.							
40	Worrying thoughts go through my mind.							

No.	List of statements	Strongly disagree	Disagree	Rather disagree	Neither agree nor disagree	Rather agree	Agree	Strongly agree
41	I feel cheerful.							
42	I can sit at ease and feel relaxed.							
43	I feel as if I am slowed down.							
44	I get a sort of frightened feeling like ‚butterflies' in the stomach.							
45	I have lost interest in my appearance.							
46	I feel restless as I have to be on the move.							
47	I look forward with enjoyment to things.							
48	I get sudden feelings of panic.							
49	I can enjoy a good book or radio or TV program.							
50	In most ways my life is close to my ideal.							
51	The conditions of my life are excellent.							
52	I am satisfied with my life.							
53	So far I have gotten the important things I want in life.							
54	If I could live my life over, I would change almost nothing.							
55	I could be experiencing some emotion and not be conscious of it until some time later.							
56	I break or spill things because of carelessness, not paying attention, or thinking of something else.							
57	I find it difficult to stay focused on what's happening in the present.							
58	I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.							

No.	List of statements	Strongly disagree	Disagree	Rather disagree	Neither agree nor disagree	Rather agree	Agree	Strongly agree
59	I tend not to notice feelings of physical tension or discomfort until they really grab my attention.							
60	I forget a person's name almost as soon as I've been told it for the first time.							
61	It seems I am "running on automatic," without much awareness of what I'm doing.							
62	I rush through activities without being really attentive to them.							
63	I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.							
64	I do jobs or tasks automatically, without being aware of what I'm doing.							
65	I find myself listening to someone with one ear, doing something else at the same time.							
66	I drive places on 'automatic pilot' and then wonder why I went there.							
67	I find myself preoccupied with the future or the past.							
68	I find myself doing things without paying attention.							
69	I snack without being aware that I'm eating.							
70	I respect my body.							
71	I feel good about my body.							
72	I feel that my body has at least some good qualities.							
73	I take a positive attitude towards my body.							
74	I am attentive to my body's needs.							

No.	List of statements	Strongly disagree	Disagree	Rather disagree	Neither agree nor disagree	Rather agree	Agree	Strongly agree
75	I feel love for my body.							
76	I appreciate the different and unique characteristics of my body.							
77	My behavior reveals my positive attitude toward my body; for example, I walk holding my head high and smiling.							
78	I am comfortable in my body.							
79	I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors).							

Your age:
Your weight [kg]:
Your height [m]: