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The Effect of Fitspiration on Physical Self-Perception

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Abstract

The present study deals with the change in body-self-perception through social comparison processes in the media environment. It examines the effect of so-called *Fitspiration* images on physical self-perception and self-esteem. The paper is based on Festinger's social comparison theory and the special features of computer-mediated communication via social networks.

Fitspiration as a genre comprises in particular photographs of sporty people who either pursue a corresponding activity or merely pose. The aim of the pictures is to encourage viewers to achieve a stronger body image and a healthier lifestyle through exercise and healthy eating. Originally, the material was intended to oppose the idealization of a slim physical appearance postulated within mass media. However, an examination of relevant research suggests that *Fitspiration* images are quite similar to those ideals. They could therefore cause an upward comparison merely supplemented by the aspect of muscularity. The concrete results of earlier papers diverge widely in certain aspects, possibly due to the general conditions, the stimulus material and the various methodologies. Within the present study, new stimulus material was created that is largely free of interfering variables. Two preliminary studies served to identify initial trends and to evaluate the generated image material. The main study consists of a combination of a survey and an eyetracking experiment.

Taken together, the results of the present paper largely contradict previous research. It is noticeable that the changes in physical self-perception and self-confidence are positive on average – albeit with small effect sizes. In line with the social comparison theory, it can be confirmed that study participants who considered the models attractive showed a change in self-assessment. Further relevant variables regarding the question of who is influenced by the *Fitspiration* images are the BMI and the age of the test persons. Despite some limitations, the present paper delivers interesting starting points for further research.

Keywords: body image, self-esteem, Fitspiration, Instagram, social comparison, self-perception, computer-mediated communication, eyetracking

Abstract

Die vorliegende Studie befasst sich mit der Veränderung der Selbstwahrnehmung durch soziale Vergleichsprozesse im medialen Umfeld. Untersucht wird die Wirkung sogenannter *Fitspiration*-Bilder auf die physische Selbstwahrnehmung sowie das Selbstbewusstsein. Theoretisch baut die Arbeit auf der Theorie des Sozialen Vergleichs nach Festinger sowie den Besonderheiten computervermittelter Kommunikation über soziale Netzwerke auf.

Das Genre *Fitspiration* umfasst insbesondere Fotografien sportlicher Menschen, die entweder einer entsprechenden Aktivität nachgehen oder lediglich posieren. Betrachter sollen dazu angeregt werden, durch Bewegung und gesunde Ernährung ein positiveres Körperbild sowie einen vernünftigen Lebensstil zu erreichen. Ursprünglich soll das Material der Idealisierung einer schlanken physischen Erscheinung entgegenstehen. Eine Betrachtung einschlägiger Forschung legt jedoch nahe, dass die Bilder bisherigen innerhalb der Massenmedien postulierten Idealen sehr ähnlich sind. Sie könnten daher lediglich einen, um den Aspekt der Muskularität ergänzten, Aufwärtsvergleich verursachen. Die konkreten bisherigen Forschungsergebnisse gehen teilweise weit auseinander, was gegebenenfalls auf die Rahmenbedingungen, das Stimulusmaterial und die diversen Methodiken der einzelnen Studien zurückzuführen ist. Innerhalb der vorliegenden Arbeit wurde daher neues Stimulusmaterial erstellt, das weitestgehend frei von Störvariablen ist. Zwei Vorstudien dienten der Feststellung erster Trends sowie der Bewertung des generierten Bildmaterials. Die Hauptstudie besteht aus einer Kombination von Befragungen und Eyetracking Experiment.

Die Ergebnisse der vorliegenden Arbeit stehen der bisherigen Forschung in großen Teilen entgegen. Es fällt auf, dass die Veränderungen der physischen Selbstwahrnehmung sowie des Selbstbewusstseins im Durchschnitt positiv ist – wenn auch mit kleinen Effektstärken. Im Sinne der Theorie des Sozialen Vergleichs kann bestätigt werden, dass in erster Linie die Probanden von Veränderungen betroffen sind, die die Models attraktiv fanden. Als weitere relevante Variablen bei der Frage, wer von den *Fitspiration*-Bildern beeinflusst wird, stechen der eigene BMI sowie das Alter der Probanden hervor. Es ergeben sich, trotz einiger Limitationen, interessante Ansatzpunkte für weiterführende Forschung.

Keywords: Körperbild, Selbstwert, Fitspiration, Instagram, Sozialer Vergleich, Selbstwahrnehmung, computervermittelte Kommunikation, Eyetracking

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1. Introduction

Welcome to the 21st century. We live in a time in which online social networks have evolved and group memberships are made clear via hashtags. For example, *#nobodyshame* on the social network platform Instagram contains numerous photos of young women and men who postulate why true beauty and real values are not defined by clothing size. Another hashtag, established on the same platform, promotes a healthy lifestyle and focuses on slim, sporty bodies: *#Fitspiration*, a combination of fitness and inspiration. The associated content consists of images that intend to motivate people to do sports and pursue a healthier lifestyle. They are supposed to stimulate people to achieve a strengthened body image through exercise and healthy eating (Tiggemann & Zaccardo, 2015). Thus, *#Fitspiration* has a very positive mission compared to the successor *#Thinspiration*, which clearly emphasizes thin, even anorectic bodies of young women and men and propagates a slimming lifestyle (Boepple et al., 2016).

The present study raises the question of how the reception of *Fitspiration* content affects users' self-awareness and self-esteem. Based on social comparison processes and the peculiarities of computer-mediated communication via social networks, it joins an established research interest. Contrary to previous studies, the stimulus material is self-created and not selected from the existing Instagram pool of images. Great importance is attached to the elimination of disturbing variables in the pictures. The models are photographed in front of a neutral background in certain *Fitspiration* poses. Furthermore, the present study attaches importance to the investigation of the effects on women and men equally as well as to the observation of photos with and without social media context. Two preliminary studies serve to identify first trends and to evaluate the generated image material. Finally, a survey in combination with an eyetracking experiment is chosen for the main study. Both take place under controlled conditions using a permanently installed eye tracker (chapter 4.2).

The present paper is roughly divided into two parts: The first part (chapter 2) serves to clarify theoretical questions. First, previous research on media reception and resulting body dissatisfaction are considered (chapter 2.1). Building on this, an explicit definition and clarification of the term *Fitspiration* is given (chapter 2.2). Moreover, this paper considers the characteristics and peculiarities of computer-mediated communication via social networks (chapter 2.3) and focuses on the social comparison process according to Festinger (chapter 2.4). In combination with the social-cognitive learning theory (chapter 2.5),

explanations of the desire for self-improvement or change after viewing *Fitspiration* images can be provided. To complete the first part of this paper, the structure of self-related information processing as well as the characteristics of self-presentation and impression management are explained (chapter 2.6). In this context, the term objectification and its consequences, which are important in the context of media self-portrayal, will be discussed (chapter 2.7). Before the specific research design and the results of this study are presented in the second part, an overview of the current state of research is given (chapter 2.8). It turns out that the relevant findings are largely similar to former research on body ideals within mass media (Hargreaves & Tiggemann, 2002; Harper & Tiggemann, 2008; Hawkins, Richards, Granley, & Stein, 2004; Prichard & Tiggemann, 2012; Stice & Shaw, 1994). Nevertheless, the **concrete** results differ widely, which may be due to incomparable general conditions and variant stimulus material of the individual studies.

In a nutshell, the present study combines the investigation of a well-known problem with the young Instagram context, focusing on *Fitspiration*. An innovative research design consisting of a controlled experiment with minimalistic, standardized stimulus material is used to determine short-term effects of corresponding pictures on the body self-image.

2. Theoretical Foundation

The present study is based on several approaches and theories. In the first section, general insights into the effects of media reception on body satisfaction are explained, followed by a detailed definition of the term *Fitspiration*. Furthermore, the peculiarities of computer-mediated communication and network communication are made clear before the paper addresses the theoretical consideration of social comparison processes and social-cognitive learning theory. Since – in addition to the impact on body image – the effect of *Fitspiration* on self-esteem plays an important role in this paper, the terminology around *the self* and *self-related information processing* are explained as well. Moreover, the central topic of objectification will be discussed before the chapter is completed with a wrap up of the current research on *Fitspiration*.

2.1 Media Reception and Body Dissatisfaction

What is perceived as pretty or beautiful? Which clothes are appropriate in what situation? Which appearance is appropriate? To answer such questions, members of society often receive ideal images conveyed by the media – especially on the Internet (Boepple, Ata, Rum,

& Thompson, 2016). But not only the conscious search for role models can influence people: images, videos or texts can have an unconscious effect on thoughts or behavior as well. Hereby, not only goals are set, but also the opinion about oneself may be affected – both mentally and physically. One of the constructs that can be influenced by the reception of ideal societal images is the body image (Petersen, 2005; Schemer, 2007; Stronski, 2018).

Dissatisfaction with the own body is often attributed to women and therefore mostly examined in female participants. The perception of one's own body as flawed is largely attributed to socio-cultural factors, with the influence of the mass media having the greatest impact (Tiggemann, 2012; Tiggemann & Zaccardo, 2015). Parallel to the assumption that thin ideal images have a negative effect on the self-esteem of women, previous research has shown that muscular ideals can result in a lowering of the male body image (Barlett, Vowels, & Saucier, 2008). The consideration of idealized images is associated with an increased desire for muscularity and greater tendency for depressive symptoms (McCray, 2004). Images of sporty models can also lead to lower satisfaction with the own appearance and physical performance (Mulgrew, Johnson, Lane, & Katsikitis, 2014). An increasing dissatisfaction with the own, already existing muscularity, could also be determined (Hargreaves & Tiggemann, 2009).

Numerous correlational (Grabe, Ward, & Hyde, 2008) and experimental studies (Groesz, Levine, & Murnen, 2002) link media reception to body dissatisfaction. This reveals a certain responsibility of the media landscape to project a realistic and healthy appearance as a norm for society (Taveras et al., 2004). However, the idealized images that are distributed within magazines and television programs often largely contain the same factors. With regard to the female body, the ideal concepts are characterized by an above-average body size, relatively long legs, large breasts, a strikingly young appearance and extreme slenderness (Fouts & Burggraf, 1999, 2000) – a standard that not everyone can achieve anatomically (Garvin & Damson, 2008).

It was found that young people who have strongly internalized media-mediated physical standards are physically engaged to a comparatively high degree (Taveras et al., 2004). The results of Dittmar, Halliwell, and Stirling (2009) agree with this statement: corresponding pictures in their study evoke negative feelings towards the own body, especially in subjects who have already internalized the thin ideal. Overall, a significant amount of research suggests that exposure to cultural ideals of beauty (e.g. thin model dimensions) results in increased human discontent, internalization of the ideal shown, and unhealthy attitudes and behaviors regarding food among women (Grabe, Ward & Hyde,

2008; Groesz, Levine, & Murnen, 2002). Garvin and Damson (2008) found that women who saw fitness magazines with very athletic images of people in sportswear doing sports activities were more likely to have depressive symptoms than a comparison group. The subjects in the comparison group looked at National Geographic images. Homan, McHugh, Wells, Watson, and King (2012) showed that women who saw pictures of athletic women felt greater dissatisfaction with their own bodies than women who viewed control pictures of neutral objects. Furthermore, in the latter study, the consideration of women with an athletic but average physique in terms of their weight did not lead to greater body dissatisfaction. It can be assumed that it is primarily the slenderness factor that makes the decisive contribution to a negative body image after media reception.

Not only television and print magazines come up with corresponding photos that have the potential to influence people concerning their body image. The Internet offers many opportunities to encounter these ideal images, consciously or unconsciously. Evidence of this is provided, for example, by the knowledge of a connection between the time spent on the Internet and body dissatisfaction of adult and young women (Bair, Kelly, Serdar, & Mazzeo, 2012). Especially social media seems to be of particular relevance: in January 2016, almost a third of the world's population was involved in the use of corresponding applications (WeAreSocial, 2016, cited from Hawi & Samaha, 2017). These are more popular than conventional media formats among young women (Bair et al., 2012) and probably also among young men. Furthermore, they are increasingly being used by young people to gather information on topics such as health and nutrition (Vaterlaus, Patten, Roche, & Young, 2015). According to Palmer (2015), social media can be considered an expansion of the mass media. Idealized images are disseminated, which can lead to the viewers considering themselves as less attractive (ibid.). The peculiarity hereby is that young people nowadays do not compare themselves with models or celebrities, but rather with peers.

As Mark Zuckerberg stated, almost 2.9 billion people use at least one Facebook service per month (AllFacebook, 2020) and approximately 2.3 billion people use such a service every day (ibid.). Users of Facebook can create their own profiles, connect with strangers as well as friends and share messages, pictures or videos. Tiggemann and Zaccardo (2015) describe this as an intensive form of "'appearance conversations' that have been shown to be associated with poorer body image" (p. 62). Participants use social media to profile themselves through often optimized images (Brown & Tiggemann, 2016). In doing so, they consciously or unconsciously create a new form of idealization (ibid.). It is therefore not surprising that current research focuses heavily on dealing with the effects of social

media usage. The focus is often on how users deal with the postulated ideal. Accordingly, users who spend more time on Facebook are rather in favor of the slimming ideal and are less satisfied with their own bodies (Fardouly & Vartanian, 2015; Tiggemann & Slater, 2013). Also, eating disorders are more likely to occur in this group (Mabe, Forney, & Keel, 2014). Even the number of Facebook friends seems to be related to the desire for a slim body (Kim & Chock, 2015; Tiggemann & Slater, 2013).

Some recent studies are limited to specific tools within social media (Holland & Tiggemann, 2016). Thus, more detailed information about which factors influence the user in what way can be worked out. A review of the state of research on the subject of "impact of the use of social networking sites on body image and disordered eating outcomes" (p. 99) carried out by Holland and Tiggemann (2016) shows that image-related options stand out strikingly. In any case, these seem increasingly important not only within social interaction, but also for finding one's own identity (Van Dijck, 2008). This stands in line with the results of Meier and Gray (2014). They state that not necessarily the average usage time per se, but rather the specific activities in relation to photos go hand in hand with the concern for one's own body image. It can be concluded that primarily photo-based platforms have great associations with body image (Tiggemann & Zaccardo, 2015).

One platform specialized on image-based content delivery is Instagram, bought by Facebook in 2012. As of June 2018, there were one billion active users on Instagram (AllFacebook, 2018). Furthermore, one of the community's most popular buzzwords in June 2019 was *#fitness* (Statista, 2019).

2.2 Fitspiration – a Definition

Considering the development in recent years, a new ideal has manifested in the online world in terms of body and appearance. Even if the original guiding principle of thinness as a beauty standard is still common, a supposedly healthier ideal has established as well (Boepple et al., 2016; Garvin & Damson, 2008; Robinson, Prichard, Nikolaidis, Drummond, Drummond, & Tiggemann, 2017; Schaefer et al., 2015). According to Palmer (2015), the external appearance is currently perceived as being particularly relevant in both personal and social terms. In connection with an increasing trend to live healthy, this has contributed immensely to the fact that the appearance should now embody this lifestyle. He speaks of a cultural obsession, due to which the focus on fitness is increasing rapidly. Of particular interest in this regard is the topic of *Fitspiration*, which is particularly common on Instagram due to its image focus (Carrotte, Prichard, & Lim, 2017).

The term *Fitspiration* is composed of the two words *fitness* and *inspiration*. According to Slater, Varsani and Diedrichs (2017), it originally stands in opposition to *Thinspiration*, a new word from the two terms *thinness* and *inspiration*. Websites and corresponding appearances within social media, which are dedicated to the topic of *Thinspiration*, celebrate exaggeratedly slim body dimensions and thereby focus on diets, weight loss and a corresponding lifestyle (Boepple et al., 2016; Ghaznavi & Taylor, 2015). A bony and sexually suggestive body ideal is heroized (Ghaznavi & Taylor, 2015). *Fitspiration* posts, on the other hand, are intended to convey a comparatively healthy relationship with the own body (Peng, Wu, Chen, & Atkin, 2019). With texts such as "'exercise to be fit, not skinny,' 'strong is the new skinny,' or 'skinny is not sexy, health is'" (p. 24), *Fitspiration* articles often stand out with striking vehemence against the thin social ideal (Uhlmann, Donovan, Zimmer-Gembeck, Bell, & Ramme, 2018). The movement promotes the sharing of one's own training routine and healthy eating behavior via text and images (Peng et al., 2019; Tiggemann & Zaccardo, 2018). Here, emphasis is placed on increased exercise, physical activity (Boepple et al., 2016; Jong & Drummond, 2016) and "well-being" (Prichard et al., 2018, p. 789).

The search for the hashtag *Fitspiration* on Instagram – where the community is most active (Carrotte, Prichard, & Lim, 2017) – results in over 3.3 million hits (Tiggemann & Zaccardo, 2015). According to Carrottee et al. (2015) 31% of young Australians follow a *Fitspiration* page on a social online platform (p. 2). For female users, a subscription to a corresponding page is twice as likely (ibid.). The obvious thought is that *Fitspiration* content is only exposed to those who are actively looking for it. But it is not only in the own feed that people stumble across corresponding images. In addition, they are scattered via friends' feeds (on Facebook) or advertisements (on Instagram). People could even have linked their Instagram profile to Facebook, so that the content automatically achieves a greater reach. Therefore, an unintended consumption of content cannot be ruled out.

2.3 Computer-Mediated Communication and Hyperpersonal Dimensions

After clarifying the term *Fitspiration*, the focus will now shift to the special features of computer-mediated communication. Due to the increased occurrence of *Fitspiration* content on online platforms, these features are of particular relevance for the present study.

As recent theoretical work in the field of media psychology shows, the interaction via social networks or computer-aided channels leads to a restructuring and adaptation of conventional communication models and channels (Trepte & Reinecke, 2013). The

following chapter introduces these peculiarities regarding the subject of self-presentation. In addition, the hyperpersonal model of computer-mediated communication deals with the development of relationships in interpersonal online communication. It is of particular interest how individuals present themselves to others in an environment with a wide range of self-portrayal options and how other users rate this presentation (Schumaker, 2013).

2.3.1 Computer-Mediated Communication and Social Network Communication

Computer-mediated communication is understood as the "interactive process of creating, exchanging and receiving information with the help of computers between two or more people" by Trepte and Reinecke (2013, p. 158). Concerning this topic, media psychological research primarily focuses on the difference between computer-mediated communication (hereinafter CmC) and face-to-face communication. The assumption is based on reduced information stimuli in CmC, whereby fewer or different channels of exchange are available compared to classic face-to-face communication. Models of *reduced social cues* or *cues filtered out* approaches summarize this assumption (e.g. Social Presence Theory, Media Richness, etc., see Walther, 2011; Trepte, & Reinecke, 2013).

While face-to-face communication has a more homogeneous character, communication via social networks contrasts with the possibility of online self-presentation. Face-to-face communication must be carried out quickly and the communication partners can hardly gloss over the information about themselves (Haferkamp, 2010). With CmC, on the other hand, users can take more time to make decisions due to the asynchronous nature of the interaction (Schumaker, 2013). This form of communication allows maximum control over the information that users disclose and present to a largely unknown audience. By comparing impression management in virtual space with impression management in everyday face-to-face situations, it becomes clear that users have a lot more time to choose, emphasize and edit the elements of their self-portrayal. Therefore, it can be pointed out that social networks, in addition to the basic exchange of information, serve to specifically define and describe one's own person to others (Haferkamp, 2010).

The Internet can be seen as a "safe space" (Schumaker, 2013, p. 7) for identity experiments. Höflich (2016) concludes that every media presence always comes with a certain type of self-expression (a distinct, temporary media identity), which does not necessarily have to consist of profound lies. In return, however, a certain non-binding nature must always be expected, especially if a reality check is not possible.

2.3.2 The Hyperpersonal Model of Computer-Mediated Communication

In general, less information about the communication partner is available during CmC (Batinic & Appel, 2008). Therefore, there are fewer aspects that can be used to form an impression of the opponent. This goes hand in hand with the reduced social cues theory. Building upon this consideration, Joseph B. Walther developed the hyperpersonal model of computer-mediated communication in 1996, which analyses the peculiarities of interpersonal perception and relationship development in CmC (Trepte & Reinecke, 2013; Batinic & Appel, 2008). It is partly based on the SIDE Model (social identity model of deindividuation) according to Reicher, Spears and Postmes (1995).

A central point of the topic is deindividualization. This means that a person does not perceive him- or herself as an individual but defines him- or herself based on belonging to a group and comparing that group towards other groups. Therefore, the own behavior is rather based on the norms of the group than on individual ideas (Batinic & Appel, 2008). The SIDE model assumes that in anonymous CmC, salient identities are stabilized and norms of behavior are established that are conform to the personal or social identity (Trepte & Reinecke, 2013). When users of computer-mediated communication channels interact with others they cannot see, they experience deindividualization or a suspension of their individual identity. Anonymity is therefore a central element of the SIDE model (Walther, Van der Heide, Ramirez, & Burgoon, 2015). However, the model makes no reference to other levels of anonymity or to non-text-based communication media (Trepte & Reinecke, 2013).

The hyperpersonal model of computer-mediated communication assumes that, under certain circumstances, communication partners feel more intimately connected to each other than during face-to-face communication (Batinic & Appel, 2008). Since hyperpersonal communication focuses on specific characteristics of the sender's self-portrayal, which are perceived and reinforced by the receiver in a selective form, the mutual impression becomes hyperpersonal (Trepte & Reinecke, 2013). This postulate follows special features of the four elements of the classic communication process: sender, receiver, communication channel and feedback (Batinic & Appel, 2008). The sender is responsible for the targeted self-presentation through the selective display of properties. In addition, unintentional nonverbal behavior is not transferred (ibid.). This enables the sender to present him- or herself as more positive or to even entirely invent self-related information (Trepte & Reinecke, 2013).

The recipient then builds up exaggerated, idealized ideas about the broadcaster due to the lack of personal information (Batinic & Appel, 2008). If the recipient knows something about the sender's group membership, he or she draws conclusions about the appearance and character from stereotypes (Trepte & Reinecke, 2013). There is an illusion about the communication partner based on the focused properties (Batinic & Appel, 2008). The present study refers to this exaggerated idea of the media counterpart. The assumption is that viewers of *Fitspiration* content hardly have any information about the persons depicted in the stimulus material. Thus, they tend to stereotypically deduce their personality and healthy lifestyle based on the idealized representation of the models and to deal with them from a supposedly lower position to compare.

The communication channel as the third element has already been defined. The asynchronicity of the CmC promotes the editability of the messages without disrupting the actual flow of communication (Trepte & Reinecke, 2013). Users can focus their attention on constructing the messages precisely, in absolute contrast to face-to-face communication (Walther et al., 2015).

As shown in the classic communication model, during CmC the sender and receiver are connected to each other by feedback processes and reactions to them. If the recipient has a positive impression of the transmitter, he or she will behave accordingly towards him or her and thus trigger a self-fulfilling prophecy. Because of the positive feedback, the opponent will continue to behave in a cooperative and friendly manner, and so on. This increasing confirmation of behavior makes the relationship between the communication partners more intimate over time (Batinic & Appel, 2008). The selective self-expression is strengthened by mutual feedback of the communication partners during the interaction process (Trepte & Reinecke, 2013). Schumaker (2013) calls this the "inflated feedback loop" (p. 15). This precisely describes the process of recurring self-selectivity and exaggerated interpretations, which ultimately affect the user and construct a reality that could not exist outside of CmC. The personality traits that successfully received feedback will later be accepted and expressed by the user (identity shift). He or she becomes what the public thinks he or she is. However, it should be noted here that there is no substantiated evidence for the sustainable change of personality. Nevertheless, the feedback significantly increases what an individual identifies with (Schumaker, 2013).

According to Trepte and Reinecke (2013), it should be noted critically that the hyperpersonal model of computer-mediated communication’s scope has so far been limited primarily to text-based asynchronous communication. Furthermore, no statements are made

about the circumstances under which hyperpersonal effects occur and whether there are properties of CmC that lower these effects. The present study is affected by this point as it focuses on Instagram, which is a primarily image-based platform. Nevertheless, the communication process is asynchronous here too, which makes the application of the hyperpersonal model of CmC seem reasonable. Since the subjects in the present study do not become producers but only recipients of *Fitspiration* material, the applicability can only be checked regarding the effects of short-term social comparison. If the test persons recognize the models as ideal images, this could result in a change of the evaluation of their own body image based on hyperpersonal attributions.

2.4 Social Comparison and Possible Consequences

Within research on the increasing use of social media (Slater, Varsani, & Diedrichs, 2017) and the resulting impact on the body image of recipients, the theory of social comparison (Festinger, 1954) is often used as a basis for explanation. The theory addresses the urge for self-evaluation: the individual compares him- or herself, his or her own abilities, opinions and norms with the same factors of others. This process is supposed to create a realistic world view. Unless objective references are available, people who resemble the individual and thus represent a valid basis for comparison are preferred (ibid.).

Wood (1989) points out that an impartial comparison cannot be assumed. Unintended environmental influences can also lead to comparisons that serve for self-evaluation. There are differences depending on the situation, context, motivation, motives and goals. In addition, individual satisfaction is less dependent on absolute results. Rather, it is about the standard that is perceived as common (ibid.). Klein (1997) slightly modified the original assumption regarding the preferred comparison objects. He demonstrates that the comparison with other people may even outweigh objective comparison options.

A distinction is made between different social comparisons, including "upward, downward, and lateral/similarity comparison" (Peng et al., 2019, p. 5). The term upward comparison describes the comparison with a person who stands higher in relation to the attribute to be compared. The opposite to this is the downward comparison. Lateral comparison means a comparison to someone who has similar attributes. According to Peng et al. (2019) this reflects Festinger's (1954) reasoning best: people tend to choose the comparison option that is most similar to themselves (for the motivations concerning the different types of comparison see Peng et al. (2019), p. 5f.).

Social comparison extends to various dimensions of the self, including the appearance (Wheeler & Miyake, 1992). Cognitive reactions to social comparison include self-evaluation, distorting and refuting the comparison situation. Affective reactions include emotions such as envy, pride, malicious, joy or pity (Ingwersen-Matthiesen, 2008). According to Wood (1989), not only central points of comparison are considered, but also those that are related to or depend on them. Social media can be considered a rich platform for social comparison (Peng et al., 2019). "[T]he speed and ease with which individuals can connect to their peers gives rise to the opportunity for ready and multiple comparisons" (Tiggemann & Zaccardo, 2015, p. 62). There are several different functions or tools that can trigger the process. In addition to the specific *Fitspiration* content (Tiggemann & Zaccardo, 2015), this includes general likes and comments (Kim & Chock, 2015) or even the profiles of other users (Vogel, Rose, Roberts, & Eckles, 2014).

As one arrives at the conclusion that similar people could constitute a more significant comparison than objective standards, it can be deduced that the comparison of the self with non-models compared to models leads to a greater impairment of one's own body image (Carey, Donaghue, & Broderick, 2014; Cash, Cash, & Butters, 1983). Such supposedly more tangible personalities can be found especially when using social media platforms. The effect sizes resulting from the study by Tiggemann and Zaccardo (2015) provide an indication of the correctness of the assumption. Here, the image type has a significant impact on the negative mood and body dissatisfaction of the participants. The situational self-confidence regarding one's own appearance is less affected. Comparatively large effect sizes could evaluate a higher comparison pressure for users regarding the *Fitspiration* content. Maybe the contributions are generally more memorable than photos of models since they correspond more to the zeitgeist. However, the results within current research are not mutually agreed on, which will become evident further on in this paper. For example, it should be mentioned that Slater et al. (2017) cannot confirm the results – possibly due to methodological differences. They found no variation in the appreciation of the own body between women who had seen *Fitspiration* images and a control group (ibid.).

The comparison with *Fitspiration* images can lead to different consequences, including behaviorist reactions. For example, Palmer (2015) describes that some test subjects took the photos as an impetus to improve their own training procedure. The social-cognitive learning theory (Bandura, 2009) can be used to explain this behavior.

2.5 Model Learning: Social-Cognitive Learning Theory

The social-cognitive learning theory according to Bandura (2009) focuses on the human ability to learn via observation. Appropriate processes facilitate the development of new knowledge and skills by imitating others in the immediate or symbolic environment (e.g. via media content) (Peng et al., 2019). Bandura (2009) describes the process as modeling, which consists of four successive steps: "attention, retention, production, and motivation" (Peng et al., 2019, p. 9).

The theory of social comparison and the social-cognitive learning theory can be linked by a theoretical core: the motive for *self-improvement* and the motive for *self-enhancement* (Peng et al., 2019). In particular, behavioral modeling is likely when a person compares him- or herself with someone else out of a motivation for self-improvement (Wood, 1989), i.e. an upward comparison takes place. Self-enhancement through a downward comparison could, in turn, slow down the tendency towards behavior modeling. The individual is then motivated to maintain the difference between the self and others (Peng et al., 2019).

Similar to learning through mass media, which has been a focus of research for a long time, *Fitspiration* postings stimulate their viewers to imitate behavior through images or other forms of content (Peng et al., 2019). There is neither a direct observation of the other individual nor an understanding of the circumstances, but only the observation at a certain, selected moment. In addition, the displayed image can be modified, for example by image processing. Representative motivation through image material stimulates the individual expectation of results, just as well as direct motivation. The person who is influenced imitates behaviors when he or she believes that it leads to the desired or worthwhile consequence (ibid.). Accordingly, he or she rejects behaviors for which negative consequences or even punishment can be expected as a result.

It is assumed that model characteristics such as competence, attractiveness, status or influence have an impact on behavior modeling (Bandura, 2009; Peng et al., 2019). In the Instagram context, this is, among other influencing factors, comparable to the number of followers or likes. For content from the *Fitspiration* spectrum it can be assumed that the physical attractiveness of people depicted is perceived as a manifest worthwhile consequence. According to current content analyses (Boepple et al., 2016; Tiggemann & Zaccardo, 2018), primarily sporty bodies are shown. It can be expected that the physical attractiveness of those people is above average and therefore suitable to motivate viewers to

work on their own physical appearance by triggering an upward comparison (Peng et al., 2019).

2.6 The Self – Basic Terms and Self-Portrayal

After clarifying how social comparison processes work and what consequences they have in conjunction with social-cognitive learning processes for self-perception, it is necessary to explain the structure of self-related information processing as well as the techniques and functions of self-presentation. Additionally, the term *impression management* will be explained.

2.6.1 Basic Terms and Self-Related Information Processing

The self includes the entire knowledge that a person has about him- or herself and is hierarchically structured in self-images and self-concepts (Batinic & Appel, 2008). It contains the subjective image of oneself (Neyer & Asendorpf, 2018), i.e. a cognitive-descriptive component (Haferkamp, 2010), the self-concept and the assessment of oneself (Neyer & Asendorpf, 2018), i.e. an affective component (Haferkamp, 2010), the self-esteem. In addition, the self includes the characteristic mood (well-being) and satisfaction with the own life situation in general (life satisfaction) (Neyer & Asendorpf, 2018), which is not dealt with in detail in the present paper.

Psychologist William James (1890) distinguishes between two other aspects of the self: the own person as a subject, the *I* and the own person as an object, the *Me* (Neyer & Asendorpf, 2018). The self as a subject takes on the active role, while the self as an object is an aggregate of all the things that the self knows about him- or herself. It consists of several sub-aspects: while the material self includes the own body and all material possessions, the social self contains all the different ideas about other people, and the spiritual self includes the individual attitudes, dispositions and moral judgments of a person (Amelang, Bartussek, Stemmler, & Hagemann, 2006). The present study deals primarily with the influence on the body image as part of the material self.

The self-concept or self-image is understood as the relatively time-stable and long-term knowledge of a person about him- or herself, as well as the sum of all self-related assessments (Haferkamp, 2010). A distinction is made between the *real* and the *ideal* self. The *real* self encompasses all of a person's own ideas of how he or she actually is (Amelang et al., 2006). It is often referred to as self-assessment and results from social comparison with others (Hoppe & Kuhlmann, 2012). The *ideal* self describes the extent of the desired or

achieved attributes that a person would like to have (Amelang et al., 2006). It is strongly shaped by values and ideals (Hoppe & Kuhlmann, 2012). The incongruity between the *real* and the *ideal* self is considered as the cause of neuroses and dissatisfaction (Amelang et al., 2006) and is referred to as self-discrepancy (Hoppe & Kuhlmann, 2012).

Rosenberg (1965) divides the self-concept into three categories. The concept of the current self, i.e. the current self-image, the concept of the desired self, which is to be equated with the *ideal* self, and the representing self, which describes the way a person presents him- or herself to others (Krumlowsky, 2017). In this paper, the latter is named *self-portrayal* and will be discussed in detail in the next chapter.

The self-concept is often seen as a cognitive scheme for processing self-related information. In addition to information about behaviors, appearances and experiences from different situations, it also contains information about characteristics, attitudes, as well as goals and knowledge about social relationships, categories and internal processes, feelings and moods (Haferkamp, 2010). This content already gives a slight insight into the sources from which the self-concept is fed. Amelang et al. (2006) cite five: the first source is the observation of one's own behavior. This includes the concept of self-awareness, which plays a special role in the present paper. Self-awareness means the perception of the own body in physiology and behavior. The individual can expand his or her own experience space by means of any aids, such as a mirror or video recordings. Nevertheless, it should be said that the self-perception is not accurate. In the visual area, too, there are perceptual delusions of physiological processes and, above all, internal processes. Like any representation of reality, self-perception is not a passive construct, but rather driven by anticipation and carried out by comparing sensory information and expectations. Therefore, people tend to confirm their self-image and tend to see themselves as they think they are. This tendency is called self-consistency bias and leads to slight differences in the process of self-perception being aligned with the self-image (Neyer & Asendorpf, 2018).

Other sources for building the self-concept are the interaction with others (2nd source) and the resulting assignment of properties (3rd source) based on the behavioral observation of interaction partners (Amelang et al., 2006). Here, the opinion of others about a person becomes relevant. The individual sees him- or herself as he or she is reflected by others (social mirroring) and tends to believe that others see him or her the way he or she sees him- or herself. From this, it can be concluded that the impression of others only influences the self-concept if there is a discrepancy between this impression and the self-concept (Neyer & Asendorpf, 2018).

The fourth important source according to Amelang et al. (2006) is the comparison with other people (social comparison). Here, the self-image is determined by the differences between a person and another reference group as well as by the similarities to the own reference group (chapter 2.4; Neyer & Asendorpf, 2018).

The last source for developing the self-concept is thinking about past (self-remembering) or future actions (Amelang et al., 2006). However, since memory is distorted in the same way by a diagrammatic effect and expectations, this results in a self-concept-increasing effect (Neyer & Asendorpf, 2018). The individual believes that he or she knows who he or she is based on memories of previous situations and comparison with the present.

The following graphic (Figure 1) is intended to illustrate all relevant sources of the concept and their relationship to each another.

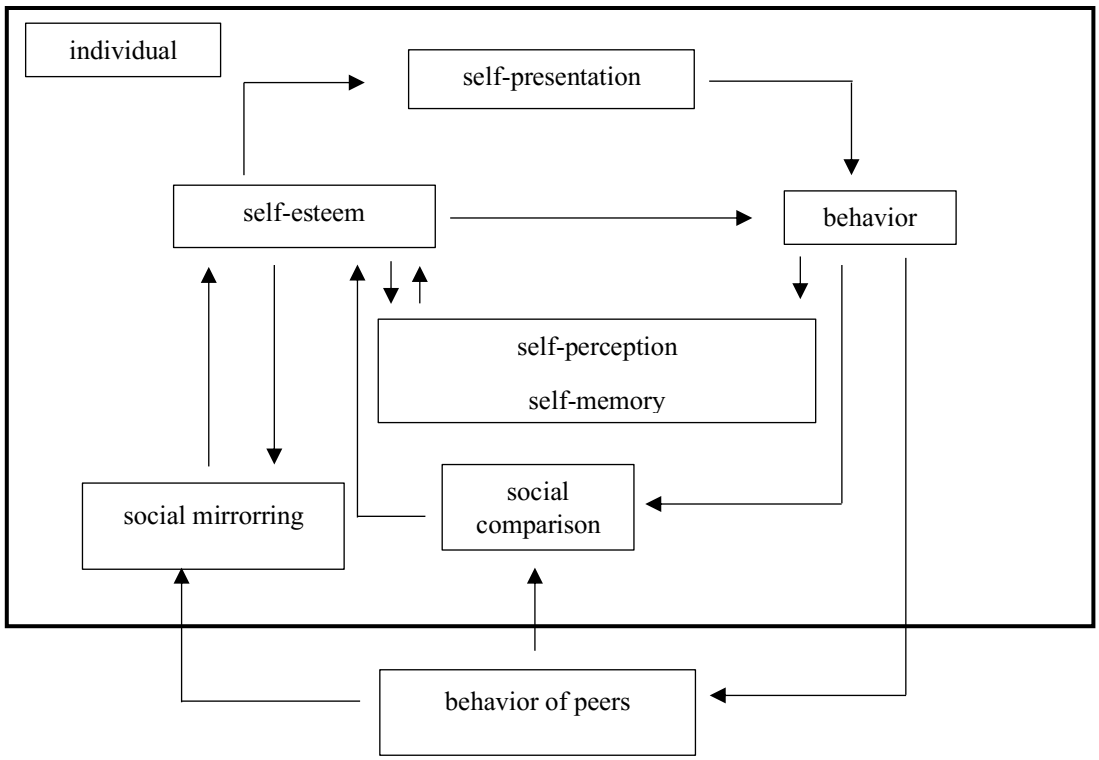

Figure 1: Self-related information processing (based on Neyer & Asendorpf, 2018, p. 226).

While the self-concept has to be located on a cognitive-descriptive functional level, the self-worth proves to be on an emotional-evaluating level. Self-esteem is the evaluation of the self-image and should be as high as possible (Haferkamp, 2010). Neyer and Asendorpf (2018) define self-esteem as the subjective assessment of one's own personality, the satisfaction with oneself. Self-esteem can therefore be seen as a special attitude: as an

attitude towards oneself. It is organized in a sector-specific manner. Differences between these areas are expressed in intra-individual contrast effects. It is probably the case that the intra-individual fluctuations in self-esteem decrease with age. Therefore, it is not surprising that general self-esteem in adulthood influences all central areas of life (Neyer & Asendorpf, 2018). Accordingly, self-esteem becomes more and more stable with increasing age and increasingly influences various aspects of the self-assessed quality of life. Conversely, especially in young people, short-term fluctuations in self-esteem can result in a medium to long-term change in general self-esteem (Neyer & Asendorpf, 2018). This finding is of great importance for the present study regarding the interpretation of the effects of *Fitspiration* content on the self-perception of the test subjects.

In general, it can be said that self-esteem is not constructed by an individual alone but also influenced by the social and cultural environment (Brauneis, 2016). Mead (1934), for example, states that self-esteem is based on how an individual presents him- or herself to others. Brauneis (2016) mentions six factors that can affect self-esteem. This includes biological factors, especially the physical appearance, which do or do not allow integration into a social group. If the appearance is not accepted socially and the individual is denied belonging to a social group, this has an extremely negative impact on self-esteem. Biological factors are the basis for the development of positive self-esteem since they play a major role in determining social acceptance. Social acceptance is based on norms and values that are negotiated culturally and socially. The second factor mentioned by Mead (1934) are personal moments. A lack of recognition by others can lead to lower self-esteem. It applies that high extraversion correlates with high self-esteem and high emotional stability (Brauneis, 2016). The social environment marks the third factor. The family is the most important influencing aspect in the development of a child. According to Tajfel & Turner's social identity theory (1979; see chapter 2.4), every individual strives for belonging and identification with something or someone in order to develop positive self-esteem. The cultural environment – the fourth factor according to Brauneis (2016) – with its norms and values also makes an important contribution to self-esteem, through the evaluation of personal actions and activities as well as a classification into good and bad. Demographic characteristics are mentioned as the fifth criterion of influence. Age, gender and the level of education have a positive or negative impact on self-esteem and its stability. Finally, the media is identified as the sixth factor. They convey a social ideal that is supposedly worth striving for but is difficult to achieve. Not meeting this ideal or not even approaching it can result in low self-esteem (Brauneis, 2016).

This last point is crucial for the present study. As a result, a person's self-esteem is higher, the closer he or she is to the media ideal, including the external appearance. As already mentioned, the body image is seen as a partial aspect of the self-concept and thus has a direct influence on self-worth (Krumlowsky, 2017). The media provides dense information on potential ideal self-images that can be used to carry out complex social comparison processes. Accordingly, people in media influence what a person wants or fears (Batinic, 2008). Possible discrepancies between the media ideal and the *real* self can lead to avoidance actions (Hoppe & Kuhlmann, 2012) or to a change in attitudes and behavior, which will be considered in more detail later in this paper (see chapter 3).

2.6.2 Self-Portrayal and Impression Management

Self-portrayal means that there is a possibility to switch between different self-images or identities. It plays an important role, especially with regard to the use of social media platforms, since here, idealized portrayals appear frequently. In the fitness area in particular, advantageous posing and a perfect complexion are displayed prominently. The individual attempts to make a favorable impression and therefore shows different characteristics and properties depending on the situation and interaction partner. However, self-portrayal is not just emphasizing a positive impression, but above all, creates an impression on the other person (Haferkamp, 2010). Another concept characteristic are personality variables. These can vary from person to person and can be emphasized depending on the situation. Only the currently activated self-image parts control the behavior (ibid.). Markus and Kunda (1986) introduce the term working-self-concept, which describes the part of the self-image that is currently activated in the working memory.

Arkin (1981) differentiates between acquisitive and protective self-expression. Individuals with acquisitive self-portraits behave in a way that is expected to be rated as positive as possible by the other person. Individuals with protective self-portrayals, on the other hand, simply try to offer as little target as possible and thus avoid negative social evaluations. Their self-expression depends on fear and failure (Neyer & Asendorpf, 2018). The term self-handicapping, according to which a person deliberately emphasizes negative characteristics to prevent attribution of failure by others, fits here (Haferkamp, 2010).

There are various theories of self-expression in the history of psychology and sociology, such as Erving Goffman's (1959) approaches to everyday social interaction. In his view, everyone acts theater in public. According to him, social behavior is essentially self-expression: individuals present themselves as they think they are to receive social

feedback that confirms their self-concept (Neyer & Asendorpf, 2018). However, Goffman's approaches to self-portrayal are inadequate for transferal on the Internet, since he assumes that the audience is aware and defined by the individual (Haferkamp, 2010).

Schlenker's (1980) thoughts are more suitable for this study. According to him, the self-concept, interpersonal relationships and self-presentation are closely related and mutually dependent (Figure 2). He further postulates that even in a situation in which the other person is not immediately present, the action of an individual is influenced by this second person.

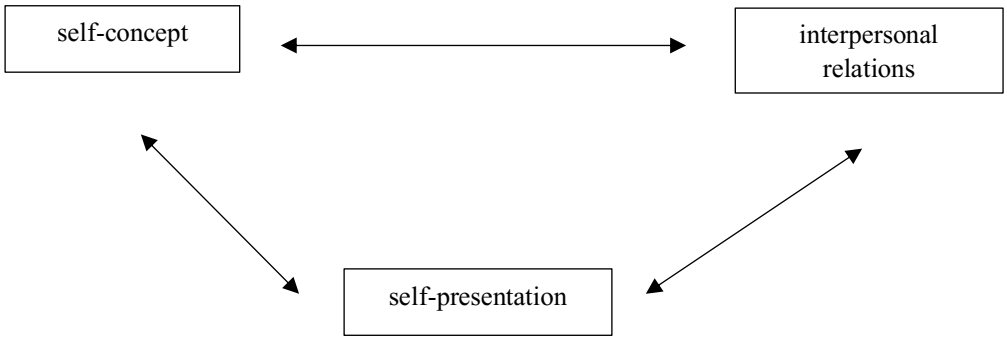

Figure 2: Self-presentation according to Schlenker (based on Haferkamp 2010, p. 81).

Another important theory of self-expression is called *impression management*. As already mentioned, self-presentation is one way to receive the desired positive feedback from others. This approach is close to the concept of the so-called *need to belong*. First, there is a motivation of the self-presenter, which depends on the relevance of the impression, the value of the desired results and the discrepancy with the current impression. The person's self-concept determines which impression is to be generated and the choice between desired and undesirable identities or self-images. Furthermore, the assigned roles in the situation, the values of the target person and the current social image of the self-presenter provide information about the framework in which the self-portrayal should be carried out. Impression management involves weighing all these influencing factors, thus promoting dominance and reducing the likelihood of being rejected (Haferkamp, 2010). Snyder (1974) introduces the construct of self-monitoring, by which he means checking whether and in what context self-presentation or even impression management can be carried out (Neyer & Asendorpf, 2018).

Regarding virtual self-portrayal on the internet, it can be said that it is also determined by the self-concept. Media-specific guidelines activate certain parts of the self-image and thus form the self-portrayal, such as person variables or situation-specific features (Haferkamp, 2010). The users try to achieve social goals (such as the ideal media persona), for example by manipulating depicted physical features that generally speak for social or sexual attractiveness. The main difference to the offline self-presentation is that addressing a target is possible but not always practiced. Instead, there is a desire to publish as much positive information as possible to satisfy a large target group and thus supposedly gain recognition or self-worth (Trepte & Reinecke, 2013). However, the positive response via online channels can lead to self-overestimation. Due to the motive of increasing self-esteem, there is a tendency to distort self-related information in a self-worthy manner. A lack of self-expression can result in a vicious circle. The failed attempt to increase self-esteem through self-portrayal further lowers self-esteem. The more a person overestimates him- or herself, or the less realistic he or she is, the more socially undesirable is his or her personality. The same is true for the opposite: merciless realism or a strong self-underestimation indicate a depressive tendency or an incredibly low self-esteem. This can also lead to devaluation by others (Neyer & Asendorpf, 2018).

In the context of social network communication, or – especially in this study – the interaction on Instagram, the self-serving distortion consists in the adaptation of motives by means of image processing or posing. The following chapter about the objectification theory deals with this focus on the body as an object regardless of its psyche.

2.7 Objectification Theory

In Western cultures, men have often been admired for their courage and their successes while women have been celebrated for their beauty and grace. Against this background, Fredrickson and Roberts established the objectification theory in 1970, according to which women are sexually objectified by the media and the world of men (Balraj, 2015). The objectification theory states that the female body is perceived as a socially constructed object in Western cultures, which may be viewed and evaluated based on its appearance. An example of this is the representation of women in the visual media (Holland & Tiggemann, 2016). Bartky (1990) sums up:

> Sexual objectification occurs when a woman's sexual parts or functions are separated out from her person, reduced to status of mere instruments, or else regarded as if they were capable of

> representing her. To be dealt with in this way is to have one's entire being identified with the body […]. (p. 35, quoted from Dixey, 2018, p. 23)

The observer's view of women develops far from the individual person towards a view as a tool, object or means to an end (Dixey, 2018).

Objectivation occurs in three areas: in the actual social encounter (for example, women are stared at more often than men and feel observed more often), in the visual media, which represent social encounters, and via visual media, which emphasize the body or parts of the body and allow a shameless view (e.g. music videos) (Roberts & Fredrickson, 1997). The objectification theory can thus be seen as a multi-dimensional process, which describes the self-objectification, the internalization of beauty ideals and the monitoring of one's own appearance, from which body-related fears, compulsions or shame can develop (Dixey, 2018).

The following chapters deal with the causes, the consequences, and a precise classification of when a case should be viewed as objectification.

2.7.1 Causes of Objectification and the Importance of the Media

Human bodies do not only exist in a purely biological context but are also embedded in and influenced by a social and cultural framework (Roberts & Fredrickson, 1997). Women and girls are therefore used to evaluating and seeing themselves according to the cultural perspective of women. Through historical subordination (to men), they have had the experience of being perceived as objects and internalized this view (Dixey, 2018). Following the gender scheme theory, patterns develop over time by observing the social public and by classifying gender-related actions, interests, personalities, or social attributes. Once such a scheme has been established, children behave according to their interpretations and the behavior of their social environment. Throughout life, people behave in a gender-specific manner and their lives are conversely dominated by this gender-focused mindset (Brauneis, 2016).

As a result, within the framework of the self-discrepancy theory, it is necessary to reduce the discrepancies between the socially negotiated pattern and the self-image actually perceived, in order to prevent dissatisfaction (Abba & Karadavut, 2017). Concerning this reduction, the media has high influence since they are based on the ideal image and play with forms of objectification. According to Dixey (2018), it was often shown that the distribution of sexually objectifying images on television (see Aubrey, 2006; Ward & Friedman, 2006), in magazines (see Morry & Staska, 2001), in music videos (see Prichard

& Tiggemann, 2012; Aubrey & Frisby, 2011) and in advertising (Halliwell, Malson, & Tischner, 2011; Herper & Tiggemann, 2008) leads to stronger self-objectification in women. Furthermore, Abbas and Karadavut (2017) state that the pressure to keep the physical appearance ideal, which is triggered by social media use and social comparison processes, causes people to actively influence and adapt their appearance. They summarize that more frequent use of social media predicts an increase in the pressure to keep the physical appearance ideal. This in turn is associated with an increased desire for cosmetic interventions. However, an examination on this topic would go beyond the context of the present study.

2.7.2 Pioneers of Objectification

To further elaborate the initial definition of the objectification theory, various points of *seeing someone as an object* are explained below in more detail. Nussbaum (1995) mentions seven aspects, which will be explained in appropriate relation to this paper using the example of a top model.

As the first aspect, *instrumentality* is named. It describes the objectifier treating the object as a tool for his or her own purpose. In the case of the top model, this means that a young woman is used to present a new robe. She serves as a living fashion doll. The second point is *denial of autonomy*, whereby the objectifier treats the object with a lack of autonomy and self-determination. The model herself is not allowed to decide what to wear or to express her opinion. The *lack of participation* presents the third aspect. The object is treated without any attention. Whether the model looks good or bad in a dress, or whether it suits the model, is ruthlessly and not empathetically communicated. This aspect would lead to the replacement of the model by a more suitable person in the next move. *Replaceability* describes this point. Next, Nussbaum (1995) mentions *vulnerability*. According to this, the objectifier treats the object with a lack of border integrity, as something that may be broken or injured. Assuming that the model's shoes are too small, and cause her pain, this does not concern the fashion designer. If it does, he makes use of point four, the replaceability. The penultimate item on the list includes *ownership*, according to which the objectifier treats the object as something that belongs to someone else. It can be lent or bought. This point is more difficult to transfer to the example of the top model and it remains to be ethically questioned whether booking the model already describes it. It would certainly be more appropriate if a fashion designer lends his muse for a photoshoot to a different label, but the question remains how realistic such a procedure would be. The seventh and final point on the list is the *denial*

of subjectivity, which is partially implied in all the other factors. The objectifier treats the object as someone whose experiences and feelings do not need to be considered. For example, if the top model has moral problems in a photo shoot with a male model, she will be replaced or her doubts will be ignored.

In summary, objectification means that one or more of the seven points above apply. However, especially with the last points, it became clear that all the factors mentioned interact and are mutually dependent. How the objectification is assessed always depends on the context (Nussbaum, 1995). Even in the example given, the question does not arise whether there is objectification taking place when the model is doing her job. However, this does not mean that the young woman is viewed exclusively as an object beyond the fashion scene and is treated without considering her personality.

2.7.3 Consequences and Health Risks

The objectification theory tries not only to delimit the causes of objectification, but also to explain the intra-individual psychological consequences for women and girls, which result from the fact that they are primarily viewed as bodies. The first psychological consequence is self-objectification. It describes a constantly present observer perspective on oneself (Calogero, 2012). This is a form of self-confidence, which is characterized by habitual and constant monitoring of the external appearance of the body (Holland & Tiggemann, 2016). As an objectified body is a measurable and controllable body (Calogero, 2012), women are better able to recognize their objective physical value and see how they affect others (ibid.). Self-objectification is not an indicator of narcissism, vanity, or physical dissatisfaction. However, it is probably a psychological strategy that gives women some control to see how they affect others (Calogero, 2012).

Another consequence of objectification involves subjective and mental health consequences. According to Calogero (2012), self-objectification is linked to some psychological consequences such as body shame, appearance and safety concerns/anxiety, reduced concentration or lack of flow experiences in mental and psychological tasks, as well as a reduced awareness of internal body conditions. These psychological changes can cause illnesses such as unipolar depression, sexual dysfunction or eating disorders. Consequently, self-objectification indirectly promotes these health risks (Figure 3) (ibid.).

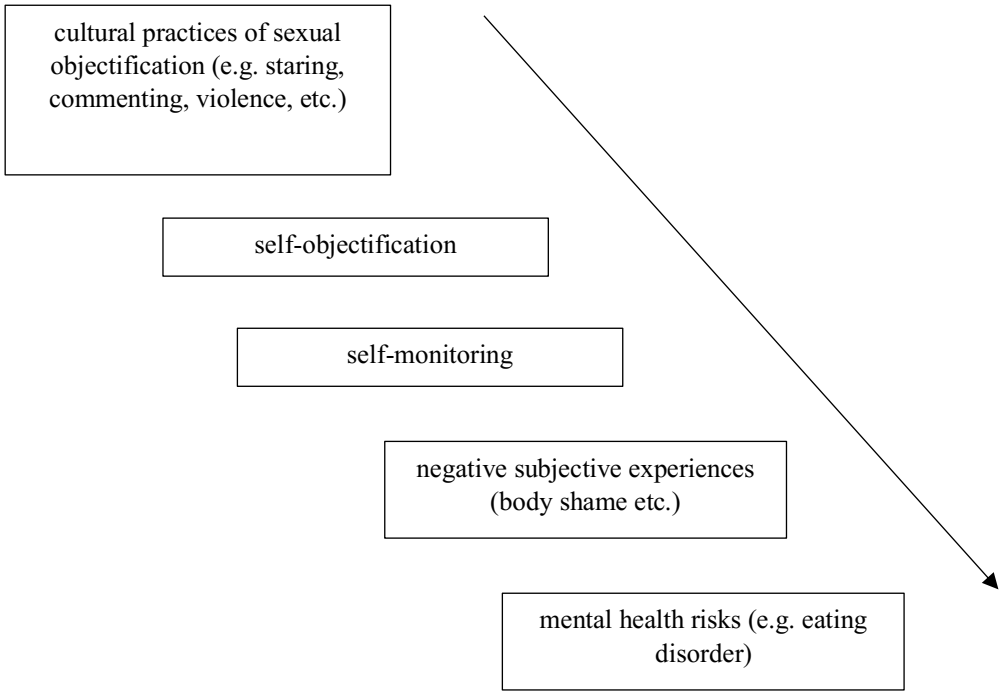

Figure 3: Health risks as a consequence of objectification (based on Calogero, 2012).

2.7.4 Bodyism and Faceism

Nowadays the objectification of women and girls seems to be more common than the objectification of men and boys (Brauneis, 2016). Research has pointed out that women show the highest level of self-objectification in their 20s and 30s. This decreases with age because the reproductive potential of women declines, which makes women less often the target of sexual objectification (Calogero, 2012).

The female body is often presented as an object in the media, which leads to a change in the way of thinking in men and women (Brauneis, 2016). Men, on the other hand, are presented in the media primarily with a detailed focus on the head or face, while women are presented as a whole, as a body. This trend is called *faceism bias* (Archer et al., 1983, cited from Roberts & Fredrickson, 1997). *Faceism* in men reflects exactly the opposite of *bodyism* (= objectification) in women (Roberts & Fredrickson, 1997). Using the eyetracking data, such gender-specific focus profiles are to be examined in the present study (chapter 3).

As women recognize this gender-specific media representation of men and women, this could lead them to focus on outward appearances instead of their inner values or, for example, their level of education in real life. In her study on the link between body weight and skepticism towards advertising, Brauneis (2016) found a higher correlation between the BMI and self-esteem in women than in men. Calogero (2012) states that women are twice

as likely to be depressed as men, and that concern about their appearance has a great influence on it, which further underlines the point above. The focus of objectification on women and girls does not mean that boys and men do not experience sexual self-objectification, but that other psychological variables play a role in this case as well (Calogero, 2012).

Objectification is an important background variable in the present study. It is questionable whether pictures of women and men are viewed or rated differently – even if the models are in the same pose. It would be equally interesting if the effect on women and men is different. While relevant research initially focused on women, meanwhile men and their handling of idealized body images are increasingly becoming the focus. However, this is not the focus of the present paper and should be addressed in further studies. The following chapter provides a rough overview of the current state of research.

2.8 State of Research on Fitspiration

In the present paper, a brief outline of research on potential impact of idealized media images on the body image of individuals has already been given (chapter 2.1). It could be assumed that the presentation within fashion-formats is different from formats that focus on fitness. However, the slim body ideal is still present in both areas (Prichard et al., 2018). Tiggemann and Zaccardo (2015) therefore assume that the effect of *Fitspiration* images on women could be similar to that the effects found in relation to the consumption of fashion, beauty and sports magazines. The assumption that people can escape *Fitspiration* content and its possible influence by not looking for corresponding contributions is most likely not true for most users of social media. Due to algorithms and targeting (Aruguete & Calvo, 2018), it can be assumed that the potential impact of content is far greater than the impact of traditional media (Peng et al., 2019). In these cases, the perception is not necessarily conscious, which may circumvent the conscious system, including possible rational objections – mirroring the strategy of well-implemented marketing measures (Häusel, 2014).

Even though many studies assume that the comparison between the self and a model is a result of the own motivation of an individual (Taylor, Wood, & Lichtman, 1983; Wheeler, 1966), users do not always actively look for it. Rather, they are subliminally compelled to constantly compare themselves with acquaintances and friends regarding various aspects (Choi & Chen, 2007; Vogel, Rose, Roberts, & Eckles, 2014). The *Fitspiration* material could have a greater impact in terms of the theory of social comparison, since it is often not about unreachable celebrities, but rather about people who present

themselves as normal and average. In the present study, the motivation aspect is therefore only briefly touched upon in theory. The focus remains on social comparison, which is not necessarily initiated voluntarily.

Previous studies in relation to *Fitspiration* not only set several priorities, they proceed differently using various stimuli and measuring instruments. Although they sometimes even refer to different theoretical bases, direct comparisons are often made between the results. In the following, the current state of research will be reviewed. For this purpose, content analyses on the topic of *Fitspiration* are looked at in order to obtain a precise overview of the nature of the corresponding material. Furthermore, papers on the central point of body self-assessment are reviewed. The aspect of motivation, which plays an important role in the construct of *Fitspiration*, is also briefly mentioned.

2.8.1 Content Analysis

According to Tiggemann and Zaccardo (2015), *Fitspiration* posts have the potential to noticeably influence both the mental and physical health of viewers in a positive way. However, content analyses show that applicable contributions often advertise an unhealthy (Tiggemann & Zaccardo, 2016) and one-sided body ideal that corresponds to the socio-cultural ideal already outlined (Tiggemann & Zaccardo, 2018). The age of the models shown is usually around 25 years or less (Carrotte et al., 2017). In terms of pictures, the *Fitspiration* images often show either meals, people doing sports or passive models, possibly combined with motivating lines of text.

Robinson et al. (2017) describe *Fitspiration* posts as "'athletic ideal' characterized by both thinness and visible toning, including a more muscular upper body, toned abdomen and firmer lower body" (p. 65). Various body types are automatically excluded (Dworkin & Wachs, 2009). According to Tiggemann and Zaccardo (2018), the overrepresentation of selected manifestations means that fitness merges with the attribute of slenderness (or muscles). As a matter of fact, this gives the impression that adequate fitness can only be achieved in combination with a certain appearance. This in turn could lead to people engaging in disturbed behaviors regarding diet or exercise to achieve the supposedly ideal figure, even though they are already physically healthy. Alternatively, it can prevent people who have an externally ideal figure without effort from improving their health and fitness (ibid.).

In addition to the focus on fitness, diets and general weight loss are glorified in the course of the *Fitspiration* movement – the importance of one's own appearance is in the

foreground (Boepple et al., 2016; Carrotte et al., 2017; Tiggemann & Zaccardo, 2016). Research on various relevant blogs leads to the conclusion that a large part of the content found there normalizes diet, shame while eating, excessive exercise, the stigmatization of overweight and the objectification of the body (Boepple & Thompson, 2014). A fit, athletic and defined body type is predominantly brought to the fore in *Fitspiration* images (Boepple et al., 2016; Carrotte et al., 2017; Tiggemann & Zaccardo, 2016). However, the functionality of the body moves noticeably into the background or is not mentioned at all (Carrotte et al., 2017), even though this should be relevant in terms of sporting activity. According to Prichard et al. (2018) *Fitspiration* content can be split into two categories: images that are shot in fitness studios or gyms during sports exercises and thus emphasize the functional abilities of the body, as well as images that show individuals in sitting or posed positions. The latter are often created by the models themselves using a mirror (so-called *selfies*). Prichard et al. (2018) state that these different types of representing sporting bodies are not considered in previous studies that examine the effect of fitness media on body satisfaction and on the mood of observers. However, they summarize that within the existing research, it is asserted that functionality-based images are no better for the body image of women than traditional media images (ibid.). Tiggemann and Zaccardo (2015) assume that adding muscle strength and fitness to an already thin body ideal could result in women only being provided with additional aspects that they may find inadequate about themselves.

Beyond the aspects already mentioned, *Fitspiration* images still largely show a type of sexual objectification (Boepple et al., 2016). Boepple et al. (2016) speak of idealized, culturally attractive female bodies. It is striking that women in the pictures are objectified or sexualized more often than male counterparts (Carrotte et al., 2017; Tiggemann & Zaccardo, 2016). According to Santarossa, Coyne, Lisinksi and Woodruff (2019), in the case of men, there are more images from a close perspective. Carottee et al. (2017) establish a focus on the face in male models, while in the case of women the focus is on the entire body or especially the buttocks. Regarding men, the focus lies on visible abdominal muscles, the biceps and chest muscles. Outside the specified coding of their study, there is an emphasis on the back muscles within the research. The results nevertheless support the point of faceism bias mentioned above (Archer et al., 1983, cited from Roberts & Fredrickson, 1997).

Women are typically in passive poses within the *Fitspiration* content, but in the paper by Santarossa et al. (2019) they are nevertheless found to be active as well. The authors attribute this to the fact that the material does not consist of magazine pictures, but Instagram photos that can be designed by the owners themselves. The selection is entirely up to them

and is usually not subject to an editorial plan or team. In summary, they find that neither men nor women were frequently shown in fitness activities (ibid.)

Supplementary to the pure images, modules and captions can be found that stigmatize weight, emphasize the importance of diets and can even trigger a feeling of guilt (Boepple et al., 2016; Boepple & Thompson, 2016). The *Fitspiration* contributions seem to supplement the previously lean body ideals only with a focus on fitness – and particularly visible muscles (Tiggemann & Zaccardo, 2016). Garvin and Damson (2008) speculate that this ideal, despite appearing to be healthier, is even more difficult to achieve for women than the extreme slenderness of fashion models. It is also striking that they mostly focus on the benefits of a healthy lifestyle that are related to the physical appearance (Tiggemann & Zaccardo, 2015). *Fitspiration* could therefore again be an ideal that is difficult to achieve for many women, therefore potentially offers room for an upward comparison (Festinger, 1954; Wood, 1989) and goes hand in hand with a subsequent feeling of inferiority. Regarding the male gender, Palmer (2015) concludes that above all a hyper-masculine stereotype, similar to that found within the traditional media, is established.

In summary, the aspect of slenderness still appears to be central to *Fitspiration* images, which are supposed to compensate for the previous thin ideal – regardless of what the model does in the image or which text modules are additionally processed (Prichard et al., 2018). Less than a quarter of *Fitspiration* images show women of normal weight (Prichard et al., 2018; Tiggemann & Zaccardo, 2016). Boepple et al. (2016) even conclude from their analysis that *Fitspiration* websites share information about appearance, food and sport that is remarkably similar to that of *Thinspiration* websites.

2.8.2 Stimulus Material

Different types of stimuli and control objects are used to examine the effect of *Fitspiration* images on the body image of the viewer. Tiggemann and Zaccardo (2015) used vacation photos as control images, some of which do not show any people. Slater et al. (2017), on the other hand, used pictures of interior. This could make it difficult to weigh up the comparison process regarding the viewers own body, since sometimes no people can be seen on the control images. In consequence, the subjects cannot compare any characteristics of the body. This assumption is conducive to the fact that participants who were exposed to *Fitspiration* images showed a greater *state appearance comparison* than those who were exposed to travel images (Tiggemann & Zaccardo, 2015). Women who had seen *Fitspiration* images also had lower levels of body satisfaction, self-compassion, and a higher negative mood than

women who had seen facility images (Slater et al., 2017). It is difficult to judge whether this is due to the figure or the general attractiveness of the person depicted due to the selected control variables. The approach of Benton and Karazsia (2015), on the other hand, appears more valid, as they admittedly used cars as control variables, but their other stimuli pictures were already divided into the categories thin, thin and muscular as well as thin and very muscular. In this way it seems more likely to get a differentiated result regarding the effect of the body type.

Existing images from the Instagram database are often used to create stimulus material. Tiggemann and Zaccardo (2015) created an image pool based on research on Instagram for the specific hashtag. Three women assessed the objects in terms of quality and visual standards (Tiggemann & Zaccardo, 2015). However, no criteria were set for the *Fitspiration* category in advance. Slater et al. (2017) used a different method. Their pre-selection was done by 30 persons with pre-defined norms and the question whether the pictures fit Instagram. Given the fact that hashtags can be set arbitrarily, a pre-defined statement makes sense. The final image selection of both studies included photos of sporty women in tight training clothes during a sporting activity or in a passive pose. The material is not accessible, but it can be assumed that there are some other factors within the images that affect the viewer. It is also not possible to differentiate whether the body stature, the pose or the stimuli of the direct environment (setting) lead to a change in the dependent variable measured within the experiment. Robinson et al. (2017) proceeded more differentiated and categorized according to thin, athletic or muscular ideal, similar to Benton and Karazsia (2015). However, it can be assumed that again, there were some confounding variables in the picture and that the women photographed – or in the case of Benton and Karazsia (2015) the men photographed – took quite different poses. The same applies to Carrotte et al. (2017), who created their own visual material. They developed three simulated Instagram accounts. Each contained eight selfies of the same male model doing sports in the gym. The images were edited and the body shape of the model was adjusted according to three categories: muscular, normal and unsportsmanlike. Interference variables cannot be excluded here either.

Tiggemann and Zaccardo (2015) overwrote four pictures of their set with a lettering that can be considered a possible disruptive factor. The subchapter after next goes into this aspect in more detail. They also asked the test participants to pay attention to the quality of the pictures. This suggests that the subjects' viewing behavior did not correspond to their usual habitus. By contrast, Slater et al. (2017) created new Instagram accounts, provided the

pictures with appropriate hashtags and each participant got five minutes for free viewing. This gave them the opportunity to behave in accordance with their usual habits.

2.8.3 Effect on Body Image and Mental State

Over the course of the present study, it is of interest whether situational or long-term variables cause a comparison that leads to increasing body dissatisfaction. Within the retracted study by Trampe, Stapel and Siero (2007) it became clear that it depends on both characteristics of the viewers and characteristics of the model whether the self-assessment is influenced. Negative consequences were found particularly in women who are dissatisfied with their bodies when seeing pictures of physically attractive female individuals.

According to Robinson et al. (2017), as well as Tiggemann and Zaccardo (2015), the character-based tendency towards comparing the own appearance (*trait appearance comparison*) does not represent a moderator in the relationship of viewing different images and the corresponding effect on body dissatisfaction. Additionally, Tiggemann and Zaccardo (2015) state that viewing *Fitspiration* images results in greater dissatisfaction with women's own bodies and thereby lowers the *state appearance self-esteem* more than viewing vacation images.

Robinson et al. (2017) found that photos of athletic and thin people have a negative effect on body satisfaction, while pictures of muscular people are excluded from having this impact. Subjects who had seen athletic images also reported greater body dissatisfaction than subjects who had viewed images of thin people (Robinson et al., 2017). In contrast to that, Benton and Karazsia (2015) found that images of muscular people are just as harmful to the body image of women as the classic thin ideals. Homan et al. (2012), referring to Harrison and Fredrickson (2003) and Daniels (2009), summarize that looking at athletic pictures is only linked to dissatisfaction with one's own body if the model is very slim. Their study showed that looking at very thin and sporty models increased dissatisfaction with people's own bodies, while looking at normal-weight, sporty models did not have that effect.

Sabiston and Chandler (2010) found that women who were exposed to images of fitness models had a higher body-related anxiety after exposure than women who were not exposed to such images. Prichard et al. (2018) found an increase in negative mood in addition to a reduction in body satisfaction after participants were looking at *Fitspiration* images. However, it is not clear which factor of the content is the decisive one. Tiggemann and Zaccardo (2015) found that the viewing of *Fitspiration* images led to a lower mood and body

satisfaction as well as lower self-confidence regarding the own appearance (*state appearance self-esteem*) compared to their control unit (travel pictures).

Garvin and Damson (2008) tested both female and male participants. In terms of depression and mood, both treated groups were more battered than the control group. With regard to state anxiety alternations, only female test subjects had more negative results than the control group after 30 minutes of looking at fitness magazines.

The finding that viewing *Fitspiration* images of thin and defined (female) bodies led to lower body satisfaction and a poorer mood among the viewers is consistent with the overarching research on the thin body ideal regarding magazines, television programs (Hargreaves & Tiggemann , 2002; Harper & Tiggemann, 2008; Hawkins et al., 2004; Prichard & Tiggemann, 2012; Stice & Shaw, 1994) and music videos (Prichard & Tiggemann, 2012). However, the studies show slight to serious differences in their results, which can be attributed, among other things, to the stimulus material which is prone to failure. Within the present study, therefore, heavily cleaned, minimalistic stimulus material will be used. The pictures should contain as few unwanted variables as possible.

2.8.4 Influence on Motivation/Inspiration

The term inspiration is obviously anchored in the word *Fitspiration*. As previously noted, the viewer shall be motivated for a healthier, above all sportier lifestyle with more exercise. Prichard et al. (2018) assume that the inspiring quality of the pictures and their focus on healthy, sporty behavior could be one reason for the increasing popularity of *Fitspiration* pictures on Instagram. To what extent motivation can be increased by comparing the self with *Fitspiration* is for example examined by Peng et al. (2019). Accordingly, the comparison with attractive models strengthens the self-improvement motive. In addition, the assessment of one's own self-efficacy is an important factor in relation to the motivation to exercise. In contrast, the attractiveness of the models in this study had a negative effect on the intention to do sports (ibid.).

Robinson et al. (2017) measured the short-term comparison of appearance (*state appearance comparison*) and the motivation of the participants to do sports after a ten-minute training session. Previously, the test persons had viewed the stimulus. An influence on the results by the exercise session cannot be ruled out. Like Tiggemann and Zaccardo (2015), they found that their *Fitspiration* test subjects were more motivated to do sports – especially when they saw athletic images beforehand (Robinson et al., 2017). In addition, the distance covered within the unit was used to measure whether the different image types

had an influence on the training behavior of the participants (Robinson et al., 2017): the results showed no differences. However, it should be considered that viewing the images and the possible increase in motivation does not automatically enhance performance. Performance was also only determined based on the meters covered. A measure better suited to indicate the actual effort of the test subjects could be the heart rate.

Tiggemann and Zaccardo (2015) confirm that looking at *Fitspiration* images stimulates women to improve their fitness. However, the comparison group saw travel pictures, which can question the quality of the effect. Peng et al. (2019) acknowledge that an upward comparison with attractive models strengthens the motive of self-improvement in relation to the sporty workout of their male participants. Significant predictors for this are "pleasant affective responses to the images, [self-improvement (upward comparison)] and one's self-efficacy for working out" (ibid., p. 1). However, the attractiveness of the models had a direct, negative effect on the athletic intentions of the test subjects.

A frequently used accessory of the *Fitspiration* images is the presence of motivating quotes or sayings (Prichard et al., 2018; Tiggemann & Zaccardo, 2018). These are intended to inspire viewers to adopt a healthy lifestyle (Prichard et al., 2018). For example, the self-compassion images additionally introduced by Slater et al (2017) in their study have a positive effect (Slater et al., 2017). Among other things, subjects who had seen a mixture of this type of images and *Fitspiration* images reported greater satisfaction with their own bodies and a better mood than those who had seen *Fitspiration* images only (Slater et al., 2017). However, an examination of the relevant texts on *Fitspiration* websites by Boepple et al. (2016) shows that these are primarily aimed at the appearance: the focus is on weight loss or the objectification of the body (for a study of the influence of objectifying words see Roberts and Gettman, 2004). The implementation of guilt, for example in the case of alleged excuses not to do sports, also plays a role (Boepple et al., 2016).

Although the presence or absence of appearance-focused texts could have a relevant impact on the effect of the *Fitspiration* images (Prichard et al., 2018), this aspect is not to be examined within the present study. Instead, the focus lies on the cognitive processing of the pure, minimalist image material.

3. Research Questions and Hypotheses

This paper focuses on the effect that *Fitspiration* content has on its viewer. The main emphasis is primarily on the body image, which has already been examined frequently in previous studies – yet without conclusive results (see Benton & Karazsia, 2015; Robinson et al., 2017; Tiggemann & Zaccardo, 2015). Furthermore, it can be expected that the material has an impact on changes in the participants' self-esteem.

The first question that arises is whether the beauty stigma of society influences the participants even before they look at the stimulus material. If one assumes a slim ideal, it is reasonable to expect that people with a relatively high body weight rate themselves more negatively than people with a lower body weight. A corresponding *upward comparison* could take place in the daily life of the test subjects – consciously or unconsciously. Thus, the following research question arises:

RQ1: Does the BMI affect the body image perception?

Likewise, it can be assumed that looking at *Fitspiration* material leads to a comparison process. Because of the community-feeling on Instagram, the effect could be even greater when seeing such material compared to just looking at conventional model pictures (Carey, Donaghue, & Broderick, 2014; Cash, Cash, & Butters, 1983). Due to most previous research results (see chapter 2.8.3), the following hypothesis emerges:

H1: Viewing Fitspiration images leads to a poorer body image.

It should be noted that an *upward comparison* only takes place if the model is perceived as better regarding the aspect being compared. However, it is not only the specific factor – in this case the sportiness – that counts, but also the related attributes (Wood, 1989). Since the *Fitspiration* images involve the aspect of beauty as well, it can be assumed that the effect is smaller when the model is not perceived as attractive. To be able to integrate a control variable for the feeling of beauty in addition to the pure sportiness, the participants are asked to assess the attractiveness of the face of the models. The following subordinate hypothesis results:

H1.1: If the face of a model is perceived as less attractive, the effect of Fitspiration content on the body image is smaller.

Based on the current state of research, it is noticeable that not only the body image is influenced by looking at the *Fitspiration* images. For example, body-related fear (Sabiston & Chandler, 2010), the mood of the participants (Garvin & Damson, 2008; Prichard et al. ,

2018; Tiggemann & Zaccardo, 2015), as well as self-confidence regarding one's own appearance (Tiggemann & Zaccardo, 2015) are commonly affected. Therefore, a decrease in self-esteem is also likely. This can be subject to short-term fluctuations, especially in young people (Neyer & Asendorpf, 2018).

H1.2: Self-esteem is influenced in a negative way by viewing Fitspiration images.

It is of interest whether the change in self-esteem occurs even more in people who perceive their own body as less positive. Brauneis (2016) names social acceptance as one of six factors that affect self-esteem concerning a person's physical appearance. Furthermore, Calogero (2012) emphasizes that objectification –including self-objectification – can have subjective and mental health consequences. This implies self-devaluation and a decline in self-esteem. In this sense, it is of interest whether people with a poor body image have less self-esteem than the comparison group and vice versa.

H2: People with a positive body image have an equally positive self-esteem.

While this thesis looks at the proportional relationship between self-esteem and body image, the following research question includes the influence of the stimulus material. Thus, it expands the theoretical construct with hyperpersonal effects and asks whether the *Fitspiration* material can influence the congruence of *real-self* and *ideal-self.* The gap between *real* and *ideal* self is smaller for people with positive self-esteem than for people with negative self-esteem (Hoppe & Kuhlmann, 2012). Depending on how strongly the representation of the models stirs up the idealized illusion about their character and lifestyle (as part of hyperpersonal communication) (Batinic & Appel, 2008), the greater the influence on the self could be.

RQ2: How does the self-esteem of people with a positive or a negative body image change after viewing Fitspiration images?

The fulfillment of the social ideal in terms of appearance and sportiness is not the top priority for everyone. Therefore, the impact of *Fitspiration* content might depend on the mental presence of the ideal picture and possible own deviations of the self. A comparison with negative effects can only be made if the person's own supposed inadequacy is mentally present and the object of comparison comes up with a better standard. It is reasonable to assume that people who are already dissatisfied with certain regions of their bodies tend to feel worse when compared with the *Fitspiration* images than people who are satisfied with these regions. This aspect is examined by looking at the example of the waist.

RQ3: Do people who are dissatisfied with their waist feel worse after viewing Fitspiration images than people who are satisfied with their waist?

As part of the hyperpersonal model of computer-mediated communication, an illusion about the communication partner arises over the course of asynchronous communication. As in real life, the subjects of the present study have little information about the people depicted in the stimulus material (Batinic & Appel, 2008). So, they could tend to use stereotyped models to draw a stereotypical picture of lifestyle and character and use this as an opportunity for social comparison. For the following question, it is assumed that knowledge about *Fitspiration* also influences perception and therefore the eye movement.

RQ4: Does the focus of people who are familiar with Fitspiration lie on fitness relevant areas such as muscles and waist of the models?

It is assumed that people who are familiar with the topic recognize the content and focus accordingly. People who are not familiar with the topic of *Fitspiration* could be more interested in personality traits of the people shown and therefore rather inspect areas such as the face. They might not be concerned with the fitness value of the images, but with the classification of the entire person. This leads to the question:

RQ5: Does the focus of people who are not familiar with the topic of Fitspiration lie on the face of the models?

According to the mind-eye hypothesis, people focus on the features or areas they are thinking about. A longer fixation period is equated with a longer cognitive processing and therefore with more attention (Nielsen & Pernice, 2010). It can be assumed that greater attention goes hand in hand with a stronger social comparison process. Subjects who focus on certain regions with high fixations might process these areas more intensively. This relationship is established in the following hypothesis:

H3: People who do not like certain regions of their bodies specifically look at these regions on the models.

Self-related information processing includes the direct connection between self-esteem and self-awareness. The latter comprises the perception of the body in physiology and behavior. As already mentioned in chapter 2.6.1, this is not passive behavior but expectation-driven and done by comparing sensory information – such as the stimulus material of the obviously slim and sporty models. Expectations, such as a conclusion about the belonging of the models to a social group, are relevant as well (Neyer & Asendorpf, 2018).

The mere devaluation of one's own body emerges directly to self-objectification, according to which the person no longer regards him- or herself as an individual but as a body (Calogero, 2012). If the test subjects objectify themselves out of dissatisfaction with their own body, it is reasonable to assume that they also objectify the models and see them as sporty and slim objects. Being less interested in the person as such, the test subjects increasingly let their eyes wander over the entire picture. They compare themselves more intensively with the models to assess their group membership or distance as part of an *upward comparison*. The next hypothesis follows from these considerations, as well as from the results of the second preliminary study (chapter 5.2.2):

> *H4: When people are rather dissatisfied with their bodies, the focus points while viewing Fitspiration images scatter.*

The equivalent contrary hypothesis can be derived:

> *H5: When people are satisfied with their bodies, the focus while viewing Fitspiration images lies on the faces of the models.*

Similar to research question 4, it can be assumed here that people who are satisfied with their bodies are not that interested in the fitness value, but in areas and characteristics that suggest personality, such as the face. According to Brauneis (2016), the objectification of women is significantly more common than the objectification of men. In the media, women are often portrayed as a whole, as a body, whereas in case of men the focus is primarily on the head or face (Archer et al., 1983, cited from Roberts & Fredrickson, 1997). The *bodyism* of women is opposed to the *faceism* of men. It is therefore reasonable to assume that the focus on women and men could be biased in real life and influenced by the media representation.

> *H6: The spread of the focus on pictures showing the female model is higher than on pictures showing the male model.*

Finally, in context of computer-mediated communication via social networks, there is an interest in whether general trends can be found concerning the eye movements of the channel- and content-test-group (further explained in chapter 4.1.1) and whether there are channel-effects in particular with regard to research questions 4 and 5 as well as the hypotheses 3 and 6.

The following model (Figure 4) illustrates the connections of all mentioned hypotheses and research questions including the theoretical foundation and the variables of the research interest:

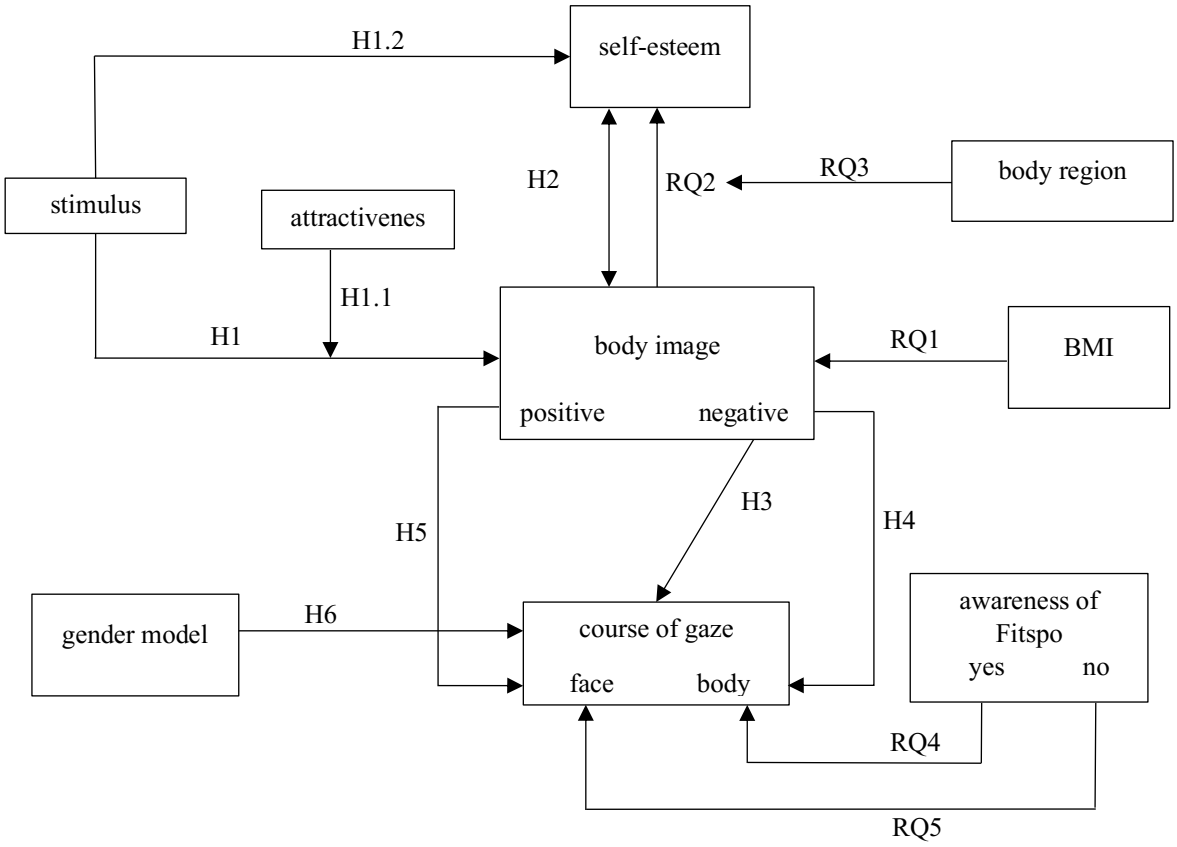

Figure 4: Visualization of the connections between variables, hypotheses and research questions (source: own representation).

4. Method

The research design of the present paper is divided into three parts: a study with an online questionnaire, another questionnaire including an eye tracker and the main study, in which a questionnaire and the eye tracker are used again. The pure online study was used to evaluate the stimulus material in relation to certain areas such as sportiness or attractiveness. In the second study, the eye movements of the test subjects were tracked while viewing the stimulus material. The third study (or: main study) records the self-confidence and self-awareness of the participants before and after looking at the stimulus material. The eye tracker is used here as well. The exact procedure, the scales and devices used, the operationalization as well as the exact project in relation to the data received are described in the next chapters. For study 1 and study 2, the theoretical basis, the hypotheses and the

interpretation of the results are not described in detail. These can be seen in the respective project reports. At this point, only the aspects relevant to study 3 are important.

4.1 Questionnaire

A questionnaire was used in all related studies of the present paper. In the first study, an online questionnaire was filled out by the participants. One advantage of this approach is that the computer-assisted survey allows the collection of a large data set that can nevertheless be generalized (Möhring & Schlütz, 2013). For the first study, in which the personal opinion of a broad mass of people was important, this is the most optimal method (for the implementation and results of study 1, see chapter 5.1). An essential point is independence in terms of time and place. The test subjects can start, interrupt or end the questionnaire at their own discretion. Accordingly, one of the disadvantages is a high risk of early termination. It is also difficult to assess the credibility of the data (Paccagnella, 1997). In the present case, however, the advantages outweigh. An online questionnaire was also used within studies 2 and 3. Albeit this time, its processing took place directly in the laboratory where the eye tracker is located.

4.1.1 Operationalization

The following section describes the operationalization of the variables tested in the questionnaire. Since the sample consisted of German speakers, already established English scales were translated, or existing and validated translations were used. The creation of the stimulus material used is shown in the subsequent chapter.

Attractiveness and Sportiness of the Models

The first study was designed as a pure online study. It was used to check the stimulus material created and, if necessary, to sort the photos in terms of attractiveness or sportiness. The images were divided into three different questionnaires so that the respective participants were expected to process them quickly. Each photo was rated in terms of attractiveness and sportiness. The evaluation was based on a 5-point Likert scale from 1 (*completely disagree*) to 5 (*completely agree*). The eight items used can be viewed in Appendix A. The items order of display and the order of the images were randomized within each questionnaire.

Cognitive Dimension of Self-Assessment

Subscales of the Physical Self-Description Questionnaire-Short form (PSDQ-S: Marsh, Martin & Jackson, 2010) were used to capture the cognitive dimension of self-assessment. In studies 1 and 2, this happened before viewing the stimulus material and in case of study 3 additionally after viewing the images. With its 40 items, the original scale is relatively short and yet psychometrically robust. It is therefore well suited for capturing the multi-dimensional factors of the physical self-concept of young adults and adolescents.

The original scale consists of nine subscales. Four of them were considered relevant for the present study. The PSDQ-S proved to be extremely reliable across all four selected categories across samples, nationalities and age groups (Marsh, Martin & Jackson, 2010; Maïano, Morin & Mascret, 2015; Dolenc, 2016). Cronbach's alphas were between .81 and .94 in the respective subscales (Marsh, Martin, & Jackson, 2010). They relate to statements about appearance (*I am good looking/Ich bin gutaussehend; I have a nice looking face/Ich habe ein gutaussehendes Gesicht; I am better looking than most of my friends/Ich sehe besser aus als die meisten meiner Freunde*), body fat (*I am overweight/Ich bin übergewichtig; I have too much fat on my body/Ich habe zu viel Fett an meinem Körper; My waist is too large/Mein Taillenumfang ist zu groß*), sport (*I have good sports skills/Ich habe gute sportliche Fähigkeiten; I play sports well/Ich bin gut in Sport; I am good at most sports/Ich bin in den meisten Sportarten gut*) and the global physical (*Physically, I am happy with myself/Ich bin glücklich mit meinem Körper; Physically, I feel good about myself/Ich fühle mich gut in meinem Körper; I feel good about who I am physically/Ich fühle mich körperlich wohl*). The subjects responded to the selected elements using a 5-point Likert scale from 1 (*completely disagree*) to 5 (*completely agree*). Aspects that allude to the observation of the body by others or that were not relevant for the examination carried out were excluded. Originally, the scale had six answer options. However, this was modified to ensure comparability with other scales within the study. Over the course of the evaluation, some statements (*My waist is too large/Mein Taillen-Umfang ist zu groß; I am overweight/Ich bin übergewichtig; I have too much fat on my body/Ich habe zu viel Fett an meinem Körper*) were coded in reverse so that a value of 1 stands for a negative body image and a value of 5 for a positive body image, also to ensure congruence with all other items.

Affective Dimension of Self-Assessment

A revised version of the Body Appreciation Scale (BAS-2) developed by Tylka and Wood-Barcalow (2015) was used to examine the affective dimension of self-assessment. Just as the

PSDQ-S scale, it was queried in studies 1 and 2 before viewing the material and in study 3 additionally afterwards. The order of the items of both scales was randomized.

The BAS-2 is a short and therefore user-friendly scale. It is a psychometrically robust measure of the body image for both female and male subjects. The participants indicated their opinion on their own appearance (e.g. *I respect my body/Ich respektiere meinen Körper*) using a 5-point Likert scale from 1 (*completely disagree*) to 5 (*completely agree*). All relevant items can be seen in Appendix A. A low value speaks for a negative body image, while a positive body image can be assumed for a high value. In the past, the scale was found to be internally reliable with regard to women ($\alpha = 0.94$) and men ($\alpha = 0.93$) (Tylka & Wood-Barcalow, 2015). In addition, the reliability of retests was stable over a period of three weeks within a student and social sample (ibid.).

Self-Confidence/Self-Worth/Self-Esteem

In addition to the cognitive and affective dimension of self-assessment, study 3 asked for the subjects' self-esteem before and after considering the stimulus material. The Rosenberg Self Esteem Scale (Rosenberg, 1965) was used for this purpose. The ten items can be viewed in Appendix A. The scale measures global self-esteem, i.e. positive and negative feelings about oneself. A final value results from the sum of the evaluations of personal characteristics, such as *Overall, I am happy with myself (Im Großen und Ganzen bin ich mit mir zufrieden)*. The scale shows a high internal consistency (Cronbach's Alpha .88) and reliability over a period of two weeks ($.81 < r_{tt} < .84$) (Ferring & Filipp, 1996).

Originally, a four-stage answer range was used, on basis of which 0 to 3 points were awarded. To ensure comparability with other values recorded within the study, this procedure was replaced with a 5-point Likert scale. The items could be rated on a scale from 1 (*completely disagree*) to 5 (*completely agree*). Negative items were reversed in the evaluation, so that a low value speaks for low self-esteem and a high value suggests good self-esteem.

Sympathy towards the Models

After considering the stimulus, respectively after rating the pictures in study 1, the perceived sympathy for the models was determined. The question to be answered was: *In the following we would like you to tell us how attractive you think the face of the previously shown female or male person is* (*Nachfolgend würden wir gern von Ihnen erfahren, wie attraktiv Sie das Gesicht der zuvor gezeigten weiblichen beziehungsweise der männlichen Person*

einschätzen). This could be answered via a Likert scale from 1 (*not at all attractive*) to 5 (*very attractive*) for the face of the female and the face of the male model.

Awareness of the Models

The personal awareness of the models was recorded as a control variable. The question whether one of the persons shown was known before the study could be answered with *yes* or *no*.

Instagram Usage

The subjects were asked whether they are Instagram users. This could be answered with a simple statement of *yes* or *no*. In addition, they were asked to indicate their daily usage time in minutes.

Awareness of Fitspiration

In addition to the question whether the models were already known to the test subjects, they were asked whether they were familiar with the genre *Fitspiration*. This question could be answered with a simple choice of *yes* or *no*. In addition, the test subjects were asked to respond to each of the following questions with an assessment of 1 (*completely disagree*) to 5 (*fully agree*):

- *I think Fitspiration is superfluous (Fitspiration halte ich für überflüssig)*
- *Fitspiration puts me under pressure (Fitspiration setzt mich unter Druck)*
- *Fitspiration inspires me in a positive way (Fitspiration inspiriert mich im positiven Sinne)*
- *Fitspiration makes me feel bad (Fitspiration gibt mir ein schlechtes Gefühl)*

Channel-Effect

It is questionable whether the presentation of *Fitspiration* images within a specific social media context, in which they can primarily be found, has different effects on the recipients than seeing the photos without this framework (Meier, Gilbert, Börner, & Possler, 2019; Scott & Ravenscroft, 2017; Westerwick, Johnson, & Knobloch-Westerwick, 2017). It is possible that the images only have an impact on the viewer if they can be seen in the Instagram context, since they are perceived as peer content due to the supposedly personal authorship (Brown & Tiggemann, 2016; Jones, 2001). Without such a social media framework, the people depicted could simply be perceived as sports models whose social and personal distance to the test subjects makes a comparison less relevant (Wood, 1989).

In addition, it can be assumed that the course of the gaze is influenced by the social media framework.

In the main study, all images are shown either in a pure content version or in a channel version (Instagram frame with profile picture, name, a moderate number of likes, usual hashtags). The subjects are randomly assigned to one of the groups.

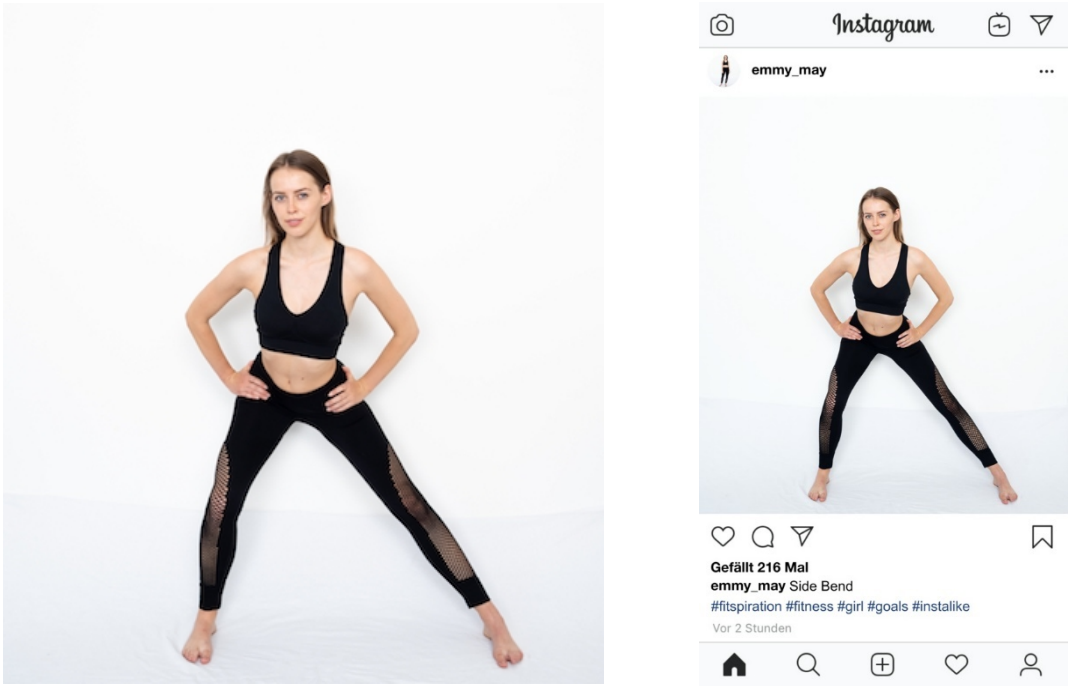

Figure 5: Example of a content picture and a channel picture.

BMI

The BMI represents an important control variable regarding the body image. Before considering the stimulus, the participants were asked to state their height in centimeters and their weight rounded in kilograms (Deutsche Adipositas Gesellschaft e. V., n. d.).

Pre-Existing Illness

The body self-image and the perception of one's own stature can be influenced by various previous illnesses. It is possible that weight and muscles can only be influenced to a limited extent. After viewing the stimulus, the participants were asked to name pre-existing conditions that affect their body weight or skills. The choices were *none, eating disorders (e.g. anorexia), metabolic diseases (e.g. diabetes)* and *others (own input)*.

Socio-Demographic Characteristics

The socio-demographic characteristics gender (*male, female, other, not specified*) and age (*open input*) were asked for as control variables before considering the stimulus (Hoffmeyer & Zlotnik, 2014).

Education

Education was recorded in terms of the highest general educational qualification (Hoffmeyer & Zlotnik, 2014). In all studies, this took place before viewing the stimulus. The individual items can be seen in Appendix A.

Partner Choice Preference

The sexual preference of the participants is particularly relevant with regard to the first study. Here, the stimulus material was assessed in terms of the appearance and especially the attractiveness of the models, which is highly linked to sexual preferences. The partner choice preference could be answered within all studies by choosing *heterosexual, homosexual, bisexual* or *no information* before considering the stimulus.

4.1.2 Creation of the Stimulus Material

A photo shoot with two volunteer models was organized to create the stimulus material. The selection criteria were determined according to the basic idea of the *Fitspiration* movement. Accordingly, the two models were supposed to look sporty. In case of the male model, the muscularity was relevant, the female model was supposed to be particularly slim. Both were photographed in several *Fitspiration* poses. According to the current state of knowledge, an exact list of such poses does not exist. *Fitspiration* is not a protected term and is therefore left to the respective creator. Orientation was provided by the content analyses outlined in Chapter 2.8.1, which refer to a still unhealthy, thin or unreachably defined body image (Tiggemann & Zaccardo, 2016, Carrotte et al., 2017, Robinson, 2017). In order to be able to present a catalog of suitable positions for the planned photo shoot, several image analyses and content analyses were sighted (Talbot, Gavin, Van Steen, & Morey, 2017; Santarossa et al., 2019; Bell, 2017; Carrotte et al., 2017; Bohjalian, 2017; Boepple et al., 2016). This resulted in a catalog of 21 different postures, most of which were photographed from the side, from the front and from the back.

The photo shoot took place in front of a white wall without any influencing factors. According to Nielsen & Pernice (2010), friendly, smiling, authentic people who look directly

into the camera and are positioned against a simple background attract the attention of the viewer. The models were asked to wear plain sportswear, no make-up, as well as to remove all disruptive factors such as accessories. Viewpoints and the distance to the camera were measured to ensure the exact comparability of the pictures. The images were taken with a sensitivity sensor ISO 64,24mm focal length on a small image (36mm x 24mm sensor size), an aperture 4 with a 1/125s exposure time. In addition, two flashes (Yongnuo YN560 Mark 3 to 1/4 power) were installed indirectly with a distance of about 50cm from the flashed wall.

Some of the poses originally planned had to be excluded due to movement restrictions. The format of all images has been standardized to 4150 x 4700 px to obtain an approximately square format, as it is also used on Instagram. The resolution was reduced to 72 px, which guaranteed an optimal resolution for the display on screen in the first online survey. After this standardization, the exposure was corrected to (+0.75) and the temperature in all images was set to 6300 Kelvin and -6 tint. Inscriptions, remains of tape on the floor and on the wall were retouched. The result of the shoot are 68 comparable pictures, which are largely free of disturbing factors. The entire stimulus material can be seen in Appendix B or with social media frame in Appendix C.

4.2 Eyetracking

The eye tracker iView X ™ Hi-Speed 1250 from SMI was used for the experiment. It is a permanently installed device and delivers the highest sampling rate of 1250 Hz and latencies of less than 0.5 milliseconds. Furthermore, according to the manufacturer, it has a measuring accuracy of 0.25° to 0.5°, which corresponds to a very high accuracy. A disadvantage of such a device is the required unnatural, fixed head posture of the participants, which emphasizes the experimental character and makes people aware of the unfamiliar situation. Nevertheless, the diagnostic eyetracking method provides objective data on the visual attention and perception of the participants and, due to the anonymous detection of the eye movements, excludes social desirability (Feuß, 2013).

It should be emphasized that an eye tracker only records the obvious eye movements and not the shift in attention (Feuß, 2013). However, the so-called mind-eye hypothesis accounts for this. According to this hypothesis, individuals focus on the areas which they are thinking about. Fixations are therefore equated with attention (Nielsen & Pernice, 2010). Against the theoretical background of this study, it can be assumed that greater attention goes hand in hand with a stronger social comparison process.

After the questionnaire in study 2 and 3, the test person's position at the eye tracker was set up and the camera was calibrated. A grid with 13 alternating points was used for this. With this process, impurities in the eye's course were quickly recognized. For example, painted eyelashes or contact lenses lead to distortions, which could be avoided early on by removing make-up or changing settings. The participants were shown all the pictures for five seconds. Depending on the test group, the pictures were embedded in a fictitious Instagram frame or not. The image section was interrupted by a centered white cross on a black background after each photo. In this way, the starting point of the gaze path was standardized for each picture. On average, the experiment lasted about six minutes per participant, depending on how quickly the test person completed the calibration and the introduction text.

SMI's program BeGaze was used to evaluate the material. Due to the mass of data for the selected analysis groups, it was not possible to work with gaze plots and scan paths layered on top of each other because the results were too confusing. Therefore, focus maps or heat maps were created to uncover notable focus points. The latter offer the advantage of not only illustrating the focused areas, but also the intensity of the focus. Nevertheless, it should be mentioned that neither heat maps nor focus maps can indicate the number of fixations or the duration of the fixations. They only show how long the participants focused on a certain position in total and not how often they came back to this position (Niels & Pernice, 2010). These detailed values are provided by the event statistics of the respective experiment as well as the output of the Gridded AOIs. The data was used to make the selected images precisely comparable.

The measurement of gaze courses and the gaze course duration would have been interesting to look at with regard to the efficiency of gaze behavior, since "greater visual clarity results in shorter scan paths when searching for specified targets" (Feuss, 2013, cited from Goldberg & Wichansky, 2003, p. 502). However, this evaluation was not possible in the experiment due to the fixed time of the image insertion.

For the statistical evaluation of the event statistics, the number of fixations, the fixation frequency (fixation/s) and the total length of the gaze were examined. A high number of fixations suggests a further course of the eye, i.e. a longer scan path. A high fixation frequency implies that the subject changed the focus more often and therefore stayed on a feature for less time. In addition to the purely visual data, the numerical values described provide information about the presumptions that are fundamental for the hypotheses and questions. The number of saccades was not evaluated because some of the results were not

explainable. For example, the number of saccades should increase in proportion to the number of fixations and the frequency of fixation, but this was once not the case. A possible explanation could lie in the definition of the saccades by the computer program. The research team as well as the supervising laboratory management are not aware of the threshold value at which the program counts a saccade, since the eye basically never stands still and so-called microsacades or tremor-like movements also occur during fixations (Duchowski, 2007).

5. Preliminary Studies

The structure and the results of both preliminary studies are explained below. The detailed interpretations and implementation of the studies can be found in the corresponding separate project reports.

5.1 Study 1

The first study was designed as an online survey. It was used to check and evaluate the stimulus material created. The images were divided into three different questionnaires to reduce the processing time for the participants. In addition, some demographic data and the body self-awareness of the participants were ascertained.

5.1.1 Structure and Goal

The image evaluation was carried out via a self-developed 5-point Likert scale. It contained eight items, which were acquired based on previous studies (Homan et al., 2012; Brown & Tiggemann, 2016). In addition, some socio-demographic data, as well as weight and size of the participants were recorded. The study included the question whether one of the models was known to the test subjects. If this was the case, these respective participants were excluded from the study to avoid irritation of the data. The participants' partner choice preference was also ascertained. Before viewing the images, the BAS-2 and the PSDQ-S scale were queried.

5.1.2 Results

Out of 140 completed questionnaires, only two had to be excluded due to personal familiarity with the models. Thus, data from 138 people between 14 and 57 years (M = 28.88) was released for further processing. Overall, more female (N = 85) than male (N = 53) participants were included. The majority of the respondents indicated a heterosexual

orientation (N = 121). The BMI was calculated based on weight and height. For the population there is a value of M = 23.91 which is located in an inconspicuous range. Existing health restrictions have also been identified. Six subjects responded they have a metabolic disorder or an eating disorder.

To examine which images received the best rating, all measurements of the respective image were added to form an index (Cronbach's $\alpha > 0.8$). In this way, all stimuli could be connected to each other. The best picture with an average index of 32.15 was *5_frontal_Arm Huefte_m*. The worst rated picture was *30_seit_Profil_w* with an index of 27.34. It is noticeable that the 25 best rated pictures show the male model, while each of the 13 worst rated pictures shows the female model (s. Appendix G). This could be explained by the uneven distribution of male and female participants in connection with their sexual orientation.

5.2 Study 2

The second preliminary study included an experiment with a permanently installed eye tracker. In addition, the participants were asked to fill out a self-assessment questionnaire before the stimulus material was presented. The aim of this study was to determine whether there are different trends in the eye-movements of the participants who are dissatisfied or satisfied with certain characteristics of their body.

5.2.1 Structure and Goal

The questionnaire included general demographic questions about gender (N = 14 female participants; N = 11 male participants) and educational background. Subsequently, the participants were asked to assess their own appearance by answering the PSDQ-S scale and their overall physical satisfaction using the BAS scale. The elements of the first online preliminary study were used for this procedure (see chapter 4.1). After a short introduction and calibration, the subjects were shown all 68 images – each for four seconds – on the eye tracker. The image loop was interrupted by a black screen with a centered white fixation cross after each image.

To evaluate the questionnaire, the twelve items of the PSDQ-S scale were summarized in six groups. A confirmatory factor analysis examined a relationship between the items. The new variable *good looking* (*gutaussehend*) was generated from the mean of the two elements *I am better looking than most of my friends* (*Ich sehe besser aus als die meisten meiner Freunde*) and *I am good looking* (*Ich bin gutaussehend*). The same procedure

was performed with other elements: using the elements *I have too much fat on my body* (*Ich habe zu viel Fett an meinem Körper*) and *I am overweight* (*Ich bin übergewichtig*) the new variable *overweight* (*übergewichtig*) was generated. The elements *I am good at most sports* (*Ich bin in den meisten Sportarten gut*), *I have good sports skills* (*Ich habe gute sportliche Fähigkeiten*) and *I play sports well* (*Ich bin gut in Sport*) have been put together to a new variable named *sportiness* (Sportlichkeit). From the items *Physically, I am happy with myself* (*Ich bin glücklich mit meinem Körper*), *I feel good about who I am physically* (*Ich fühle mich gut in meinem Körper*) and *Physically, I feel good about myself* (*Ich fühle mich körperlich wohl*) the new variable *well-being* (*Wohlbefinden*) was generated. The items *I have a nice-looking face* (*Ich habe ein gutaussehendes Gesicht*) and *My waist is too large* (*Mein Taillenumfang ist zu groß*) were individually categorized as *good-looking face* (*gutaussehendes Gesicht*) and *waist size* (*Taillenumfang*).

All 25 participants were classified based on these six groups (*good-looking, good-looking face, overweight, waist size, sportiness, well-being*), each with a positive or a negative manifestation (positive or negative self-assessment). The subjects who had an average of exactly 3.0 were left out. In the next step, trends in the course of the gaze were examined for the resulting twelve groups. The necessary selection of relevant images was based on the image ranking of study 1. The three best pictures showing the male and the three best pictures showing the female model were chosen. In order to select the most suitable images for each of the six analysis groups (*good-looking, good-looking face, overweight, waist size, sportiness, well-being*), the elements of the image evaluation scale were combined apposite to the six (above) groups of the PSDQ-S. For this purpose, the relationship between the items was checked by a factor analysis. In a further step, they were combined. Unfortunately, there were no suitable items for the group *good-looking face*. Accordingly, there was no further examination for this group.

variables of the first preliminary study	**relevant corresponding variables in the second preliminary study**
athletic (sportlich)	athletic (sportlich)
beautiful (schön)	good-looking (gutaussehend)
attractive (attraktiv)	good-looking (gutaussehend)
sexy	good-looking (gutaussehend)

variables of the first preliminary study	**relevant corresponding variables in the second preliminary study**
muscular (muskulös)	athletic (sportlich)
strong (stark)	athletic (sportlich)
optimal weight (optimales Gewicht)	overweight, waist (übergewichtig, Taille)
healthy (gesund)	well-being (Wohlbefinden)

Table 1: Combination of the variables of the first and the second preliminary study.

According to the analysis, the image *4_frontal_beide_Arme_m* (*M* = 4.4) (male model) and the image *26_seit_Rueckplank_w* (*M* = 3.57) (female model) were determined as the most relevant in terms of *sportiness*. The analysis of the group *good-looking* showed that *32_seit_Sprung_w* (*M* = 3.71) (female model) and *5_frontal_Arm_Huefte_m* (*M* = 3.53) (male model) were the most relevant pictures in this case. For the categories *overweight* and *waist* the pictures *26_seit_Rueckplank_w* (*M* = 4.27) (female model) and *26_seit_Rueckplank_m* (*M* = 4.27) (male model) were chosen. Furthermore, the best pictures for the group *well-being* were *18_seit_Ausfallschritt_w* (*M* = 4.29) (female model) and *4_frontal_beide_Arme_m* (*M* = 4.34) (male model).

In the last step, scan paths with fixations and focus maps were created using the SMI program BeGaze. All scan paths of the subjects in the respective group were overlaid. Hereby, trends could be recognized immediately.

5.2.2 Results

As already explained, the evaluation was based on the three best-rated images (male and female). From these images, the one that performed best in the relevant categories according to the first pre-test was selected. The variables of the online study were assigned equivalent variables in the laboratory survey. Participants who classified themselves as very good or very bad in the respective categories were divided into groups. Their eye movements were examined for uniform tendencies. The relevant time in milliseconds mentioned below refers to the average overall fixation time and not to the fixation time on a specific point at a specific time.

In the *good-looking* category, the ratings of the images from the first preliminary study in terms of *beauty*, *attractiveness* and *sexuality* were taken into account. As mentioned

above, it is statistically proven that the relevant elements can be combined if they load on one factor. Regarding the female model, the picture *32_seit_Sprung_w* (group *good-looking*) received the highest score. Looking at the gaze profiles of the participants who scored positive in the relevant self-assessment (N = 11), the average overall focus was clearly on the face (1345.1 ms). From the starting cross in the middle of the picture, there was a clear tendency towards the body and shoulder area. After that, in most cases the face was examined first, followed by the limbs. However, the gaze always went back to the face. In contrast, the subjects who did not consider themselves to be good-looking (N = 8) had a greater focus diversity from the start. Of particular note is the length of stay in the abdomen and chest area with an average of 1059.9 ms.

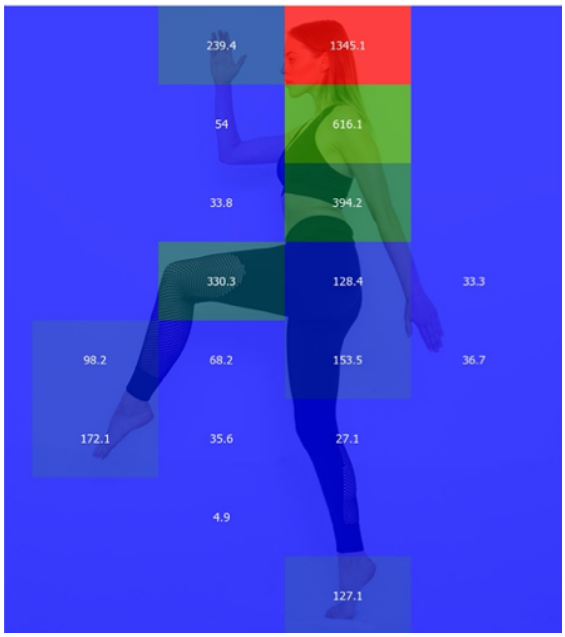

Figure 6: 32_seit_Sprung_w, group good-looking – positive self-assessment.

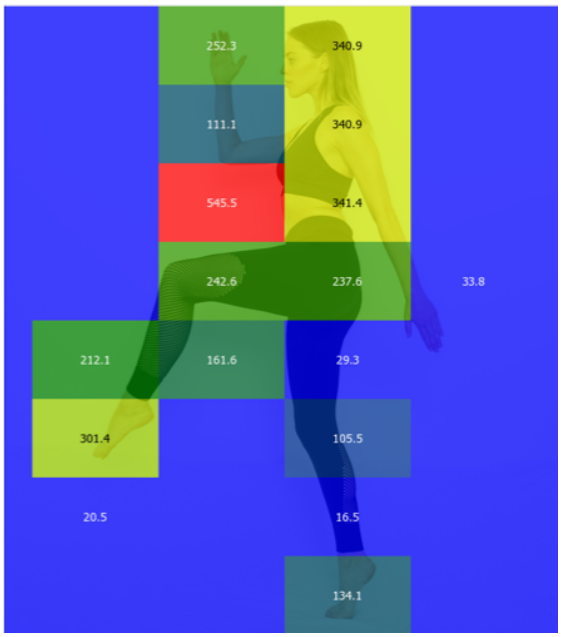

Figure 7: 32_seit_Sprung_w, group good-looking – negative self-assessment.

A similar behavior of the eye movements was found regarding the image of the male model (*5_frontal_Arm_Huefte_m*). People who felt *good-looking* mostly looked at the shoulder/neck muscles and face from the starting point. The average length of the face fixation and shoulder area was 2303.5 ms. Again, the face was very much the focus area. Next, the majority of the subjects returned to the abdomen and to the limbs. Participants who rated themselves as less *good-looking* tended to look from the starting point to the chest and neck area first (average length of stay shoulder/chest area: 1140 ms, chest/abdominal area: 1735.5 ms) and then looked at the face (average length of stay in the face/shoulder area: 1467.6 s).

The subjects' assessment of their general *well-being* is probably closely related to the attribute *good-looking*. The *well-being* attribute was therefore also relevant for this examination in the image ranking. Subjects who felt comfortable in their own bodies ($N = 22$) mostly looked directly from the starting point to the face (image w: 972.2 ms, image m: 1208.8 ms). Most of the neck area was of interest in the image of the female model. The test persons views then continued to the chest/shoulder area and the upper arms, followed by the lower body with buttocks, legs and feet – the view was strongly directed from top to bottom. In addition to a very wide spread, a congestion on the face as well as in the area of cleavage and arms (1040.6 ms) could be determined. In case of the male model, there was a noticeable scatter of views with a renewed focus on the face (1202.8 ms), chest/biceps (1015.1 ms) and stomach (621.5 ms). Regarding the only person who felt rather uncomfortable in his or her own body ($N = 1$), there is a tendency to look from the starting point to the belly (172.1 ms) and then to the face (2036.8 ms) of the male model. A triangle of shoulders (1478.6 ms) and face gradually accrues. This finding deviates from the image of the female model. Here, the test participant looked at the back more frequently from the starting point and remained there (1084.5 ms). Afterwards, the head and in particular the eyes, temples, ear and hairline were of interest (1294, 5 ms), but hardly the front part of the face with nose and mouth. However, this could also be due to the different pose.

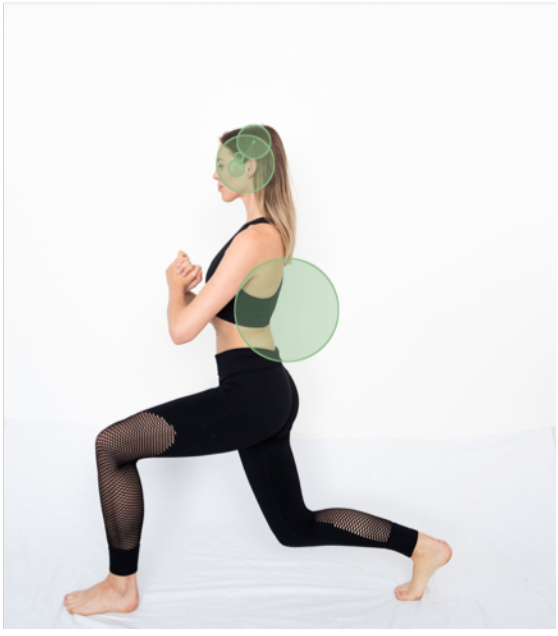

Figure 8: 18_seit_Ausfallschritt_w, group well-being – negative self-assessment.

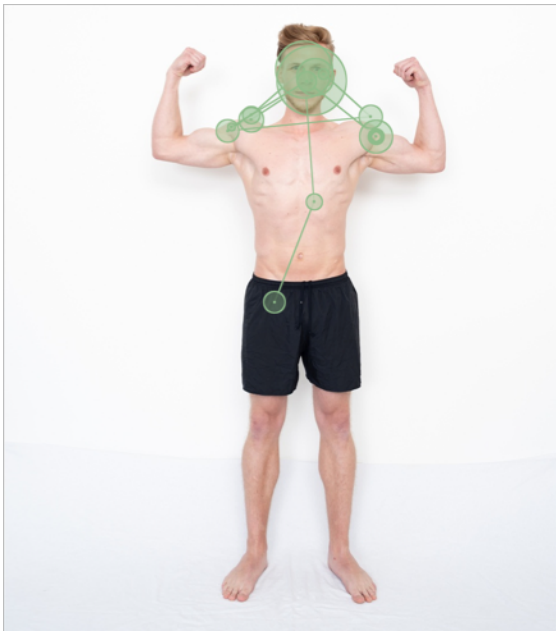

Figure 9: 4_frontal_beide_Arme_m, group well-being – negative self-assessment.

In addition, participants in the laboratory study were asked how sporty they perceived themselves. The image ratings for the attributes *sportiness*, *musculature* and *strength* were checked to select an image that scored high in this area. Again, the factor loading was tested in advance. Regarding the pictures of the female model, the one with the best score for this category was *26_seit_Rueckplank_w*. The group of people who considered themselves athletic ($N = 18$) tended to look from the starting point to the upper body (shoulder and chest, upper body, head). Later, there was a transition to the lower part of the body and finally to the feet and hands. This finding was supported by the average length of fixation: the torso with 1214.1 ms, the feet with 470.7 ms. In contrast, the group of participants who considered themselves to be less athletic ($N = 5$) looked at the face first (832 ms), followed by the neck area. A transition followed to the abdomen and chest, later to the hands, with the focus accumulating mainly on the face. For the male image (*4_frontal_beide_Arme_m*), results from people who assessed themselves poorly regarding their sportiness showed that there is a strong focus distribution. Here, too, the torso clearly stands out again (chest/biceps: 1380.9 ms, belly: 876.4 ms). The majority of the face (668.3 ms) and upper body were viewed first. The same applies to the group of people who rated themselves better: there was a strong tendency to the face, which was reflected in an average length of fixation of 1327.3 ms. Chest and biceps were focused for an average of 1020.3 ms.

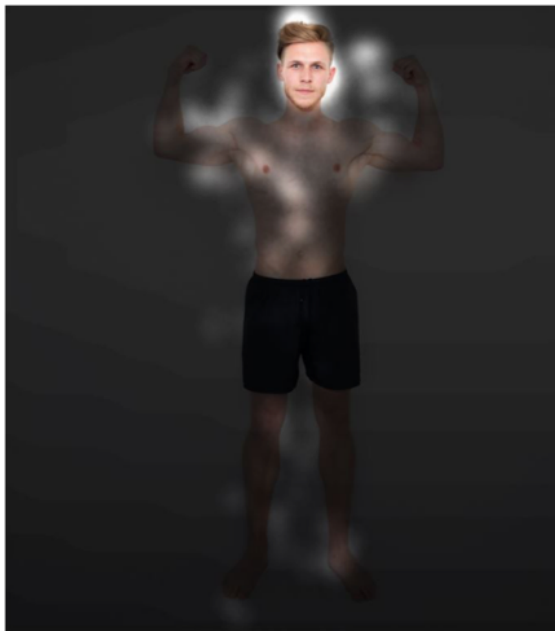

Figure 10: 4_frontal_beide_Arme_m, group sportiness – positive self-assessment.

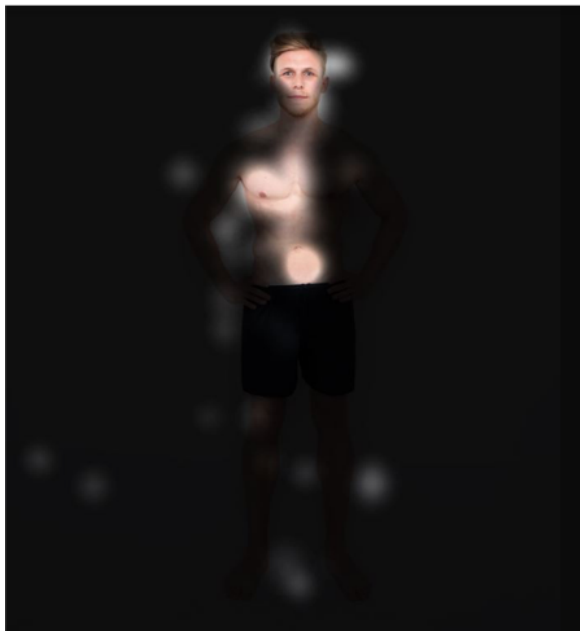

Figure 11: 4_frontal_Arme Huefte_m, group sportiness – negative self-assessment.

There was a peculiarity for the *overweight* category: participants with a value above 3.0 classified themselves as negative. This group ($N = 4$) first focused on the face in both relevant images (male and female model). On the image with the female model there was a path between the feet (1085.9 ms) and the hands (304.6 ms). In contrast, on the image with the male model, the eye movements focused more on the face (865.4 ms), hip/abdomen (534.7 ms) and chest (727.8 ms). In general, there was a greater focus diversity than among the participants who rated themselves positively ($N = 18$): a look at the image of the female model shows that fewer looks concentrated on the face (951.1 ms) while the hands, upper body and shoulders (shoulder/waist 413 ms) were viewed more frequently and longer. A clear focus could be found on the entire face and feet (509.5 ms). Consequently, the focus map showed lighter areas with less fixations on the abdomen. The focus on the feet was significantly lower in the male image (342.8 ms). From the starting point, the positive group looked at the face (620.5 ms), the chest (1004.3 ms) and occasionally the hips and abdomen (331.2 ms). Here, the spread was clearer than in the negatively rated group, too.

Figure 12: 26_seit_Rueckplank_m, group overweight – positive self-assessment.

Figure 13: 26_seit_Rueckplank_m, group overweight – negative self-assessment.

The category *waist* is closely related to the category *overweight*. Those who rated this category higher than 3.0 were assigned to the positive group, while people who rated themselves lower were assigned to the negative group. As a result, the variables were recoded in these two categories. Subjects in the low-score group ($N = 6$) tended to look at the face first on both the male and female image. Concerning the female model, in most

cases one could see a first gaze at the feet, sometimes with a strong focus (999.4 ms) that exceeded the focus on the face (534.6 ms). This trend did not support the assumption that people who are not satisfied with their own waist are more likely to look at the model's waist. However, for the pictures of the male model a different pattern emerges. In the relevant picture (*26_seit_Rueckplank_m*), a male and a female participant who rated themselves very poor (4.0 and 5.0), shifted their view directly from the starting point to the waist (waist/belly: 376.2 ms). Notwithstanding most of the time the face (828.7 ms), chest (497.9 ms) and limbs were focused. In the group that rated the own body positively ($N = 15$), the first focus was usually the face or neck and then the chest or belly. With regard to the male image, a strong focus was found on the chest (839.6 ms) and face (611.1 ms). When looking at the female model, the viewer's first interest seemed to be aroused by the neck/décolleté, upper body, then face (903.2 ms) and belly/waist (464.2 ms). It was striking that the group that assessed their own body positively also concentrated more on the waist and abdomen due to the wider spread of eye movements.

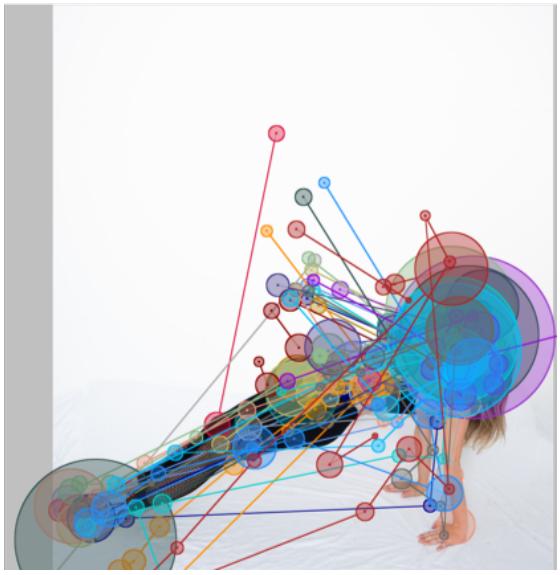

Figure 14: 26_seit_Rueckplank_w, group waist – positive self-assessment.

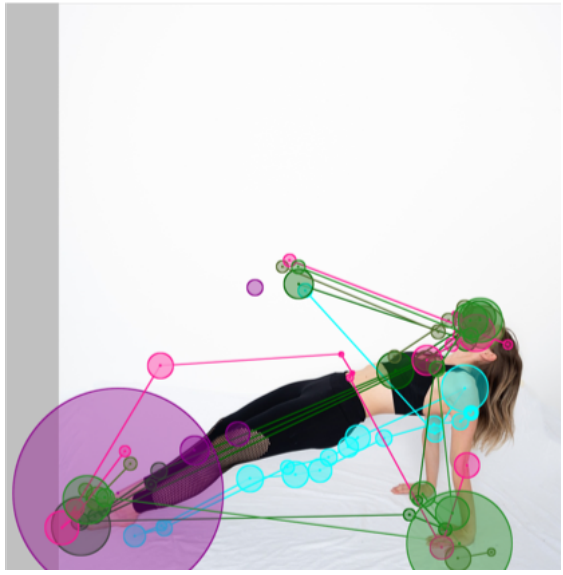

Figure 15: 26_seit_Rueckplank_w group waist – negative self-assessment.

In general, it can be said that the gaze of people who tend to negatively assess their own bodies was more diverse. In most cases, these subjects concentrated less on the face of the models than people who rated their own bodies more positively. The latter let their gaze wander far less across the entire picture and instead concentrated more on striking areas such as the face, hands or feet. It should be noted that the face plays a very important role across all images and groups. An exception is the gaze of the participants, who rated themselves as

less good-looking in relation to the female model. In this case, the eyes, ears and hairline were of particular interest, but hardly the front of the head.

6. Main Study – Results

In the following chapters, the hypotheses and research questions are evaluated and the results of the main study are discussed. In addition, a description of the data record is given beforehand.

6.1 Description of the Data Set

The data set as basis for the statistical analysis comprises 44 subjects with an exact 50:50 division into channel-test-group (stimulus material with Instagram frame) and content-test-group (stimulus material without Instagram frame).

Overall, the gender distribution is relatively even with 23 female (52%) and 21 male (47%) subjects. Since it is not a pure student sample, the age range is comparatively wide (15 to 64 years). However, most of the subjects are between 20 and 29 years old (M = 29.82 years). With 39% (N = 17), most of the participants stated that a bachelor's degree is their highest level of education. The second largest group of educational qualifications are eleven participants (25%) with a high school diploma (Abitur). Furthermore, the partner choice preference was asked, which is predominantly heterosexual with 96% (N = 42). The BMI could be calculated from the weight and height. Most of the subjects (N = 29, 66%) had normal weight and only four subjects belong to the obesity group (9%). None of the subjects were underweight.

The use of Instagram was queried in a topic-specific survey part 17 out of 44 persons do not use Instagram at all. Most participants (11%) use the social network between 1 to 15 minutes a day. Only one person uses Instagram for over 90 minutes a day. The popularity of *Fitspiration* is distributed inconsistently. Only 13 subjects (29%) are familiar with the topic while 31 (71%) are not familiar with this hashtag.

Regarding the models, awareness was initially asked to ensure that the information in the survey and the course of the gaze are not influenced by personal concerns. 35 subjects (80%) did not know the models and only four participants (9%) indicated that they know one of the models – which one exactly is unknown. Four persons did not answer this question. The attractiveness rating is slightly higher for the female model. On a Likert scale from 1 to 5 (1 = not at all attractive, 5 = very attractive), most participants (N = 20, 46%) gave the value 4, followed by N = 14 (32%) participating giving the value 3. For the male

model, the group distribution looks exactly the opposite. Most (N = 18, 41%) gave a 3 on the scale and then with N = 14 (32%) the higher value of 4.

The raw data from the eyetracking experiment includes all data from the two experiments (channel and content), such as the number of fixations or scan path length for all subjects and all images. This allows statements about fixation density or eye movements to be made independently from the visualizations of the images themselves.

6.2 Evaluation of the Hypotheses/Research Questions

The evaluation is based on the developed hypotheses and research questions in the order previously presented. Within this chapter, the respective evaluation procedures are explained and justified. Yet the results are presented without further interpretation as the final evaluation of the results takes place within the discussion as well as in the summarizing chapter at the end of the paper.

6.2.1 Evaluation of Survey Data

The first research question to be answered deals with the control variable BMI and its connection with the self-perception of the participants even before considering the *Fitspiration* images.

RQ1: Does the BMI affect the body image perception?

As stated in the description of the data set, the BMI is calculated by offsetting size and weight. This approach is based on the information provided by the *German Obesity Society* (Deutsche Adipositas Gesellschaft, n.d.). Since no test subjects meet the requirements of the underweight group, this category does not apply. To answer the research question, the group overweight (N = 11) and the group obese (N = 4) are combined, since both fall into the spectrum of overweight (underweight/normal weight = low; overweight/obesity = high).

For the investigation, indexes are formed based on the data obtained from the PSDQ S and BAS-2 scale. Therefore, it must be checked whether a summary of the different items is possible, i.e. whether there is an internal consistency between the respective items. The inter-item correlation is calculated, taking into account variance and covariance. Cronbach's α is an indicator of the reliability of the construct represented by the items (Streiner, 2003). A prerequisite for this measure is that at least three statements to be assessed are summarized. Otherwise the Spearman-Brown coefficient would have to be calculated at this point (Kelava & Moosbrugger, 2012). Furthermore, the direction of the questions should

match, i.e. the corresponding questions or items should have the same meaning in their evaluation. For this purpose, some statements are recoded as already explained in chapter 4.1.2. Since the value ranges of all items were adjusted before the survey, a calculation of the standardized Cronbach's α is not necessary. The first scale to be summarized is the PSDQ-S. It contains 12 items, the inter-item correlation of which is Cronbach's α = .74. The inter-item statistics is only slightly better if the attribute *I am overweight* (*Ich bin übergewichtig*) is omitted (α = .75). In addition, the deletion of the item cannot be justified sufficiently, so that it is kept within the index. The value of Cronbach's α is considered high enough to combine the items. For this, all of them are summed up and divided by their number. Testing the BAS-2 scale with 10 items results in an even higher value of α = .88. The items show a sufficiently high inter-item correlation. The inter-item statistic is even better if the item *I pay attention to the needs of my body* (*Ich achte auf die Bedürfnisse meines Körpers*) is omitted (α = .90). Since the item does not directly relate to the affective attitude towards the body, it is dropped from calculating the index.

A t-test for independent samples is carried out to examine both groups. For this, the dependent variable should be normally distributed, especially in the case of a population of less than 30 observations. This can be checked with the Shapiro-Wilk-test (Shapiro & Wilk, 1965) or the Kolmogorov-Smirnov-test (Razali & Wah, 2011; Steinskog, Tjøstheim & Kvamstø, 2007). If a normal distribution is not given, the Wilcoxon or Mann-Whitney-U-test must be carried out. Since the Shapiro-Wilk-test has a comparatively high statistical power, it is preferred in this paper. Accordingly, the values of the PSDQ-S index (low BMI p = .462, high BMI p = .670) and the BAS-2 index (low BMI p = .254, high BMI p = .157) are normally distributed for both groups in question. Another prerequisite for the t-test is homogeneity of variance, which is examined using the Levene-test (Levene, 1960). It examines the null hypothesis that the variances of the groups do not differ. If the Levene-test is not significant, homogeneous variances can be assumed. The analysis is considered robust against minor outliers – especially in case of large samples. However, if the groups are distributed unevenly, a severe bias from outliers an result in the F-test failing. The Brown-Forsythe-test or the Welch-test are more sound options in that case. In the present case, the values of the PSDQ-S scale (p = .94) and the BAS-2 scale (p = .57) allow the t-test to be carried out.

On average, the body image perception of people with a high BMI was significantly worse than that of people with a low BMI. This applies both to the results of the PSDQ-S scale (low BMI M = 3.75, SD = 0.39; high BMI M = 3.28, SD = 0.46, 95% -CI [0.21, 0.75])

as well as to the BAS-2 (low BMI $M = 4.05$, $SD = 0.57$; high BMI $M = 3.62$, $SD = 0.56$, 95% -CI [0.07, 0.79]). The difference between the two groups in relation to the first-mentioned scale ($t(42) = 3.60$, $p = .001$, $d = 1.10$) as well as to the BAS-2 ($t(42) = 2.41$, $p = .021$, $d = 0.76$) is significant in each case. To classify the results in terms of their significance, the effect size is calculated, using effect size *d* according to Cohen (Cohen, 1988). A further interpretation is given in the discussion section.

To check the *body image* as a whole, both scales are combined. In order to check the internal consistency of all items, Cronbach's α is calculated including all items of the two scales. This results in a very good inter-item correlation ($\alpha = .89$). The inter-item statistics reveal that the value does not improve by omitting an item. Both scales are thus combined. According to the Shapiro-Wilk-test, the body image index was found to be normally distributed for both BMI groups (low BMI $p = .573$, high BMI $p = .127$). The variances of the groups are the same ($F(1, 42) = 0.03$, $p = .859$, $N = 44$). With regard to the combined body image, consisting of both scales, it can be stated that the body image perception of people with a higher BMI is worse than that of people with a lower BMI (95% CI [0.17, 0.75]). People with normal weight have an average of $M = 3.91$ ($SD = 0.43$). Overweight people were below this ($M = 3.45$, $SD = 0.49$). This difference is significant ($t(42) = 3.17$, $p = .003$, $d = 1.00$).

It is of interest whether viewing the stimulus material changes this body image:

H1: Viewing Fitspiration images leads to a poorer body image.

The sequential values are tested using a t-test for paired samples. For this, two connected samples or groups must exist, but the measured value pairs must be independent. In addition, there should be a normal distribution of the differences between the connected test values. This is the case for the combined index of the body image ($p = .163$), but not for PSDQ-S ($p = .01$) and BAS-2 ($p < .001$). However, the size of the population ($N = 44$) allows to assume a given robustness of the test despite the violation of the normal distribution (see Sander, Uhlmann, & Bruckner, 2015; Malcherczyk, 2018; Rasch, Friese, Hofmann, & Naumann, 2010).

In case of repeated measurements, there is a plausible possibility that the data correlate. This also applies to the values of the PSDQ-S scale ($r = .93$, $p < .001$), the BAS-2 scale ($r = .94$, $p < .001$) and the summarized attribute body image ($r = .97$, $p < .001$). For the PSDQ-S scale, there is an average of 3.59 ($SD = 0.47$) for the time before the stimulus presentation and an average of 3.70 ($SD = 0.41$) after viewing the images. The difference is

significant ($t(43) = 3.62$, $p = .001$, 95% -CI [0.05, 0.16], $d_z = 0.63$), but in a different direction than originally assumed. The same applies to the values of the BAS-2 scale, which first have an average of 3.90 (SD = 0.59) and later a value of 3.98 ($SD = 0.64$). Here the difference is significant ($t(43) = 2.48$, $p = .017$, 95% -CI [0.01, 0.14], $d_z = 0.20$), too. It is therefore not surprising that the results in relation to the summarized body image are alike. For the first point in time there is an average of 3.75 ($SD = 0.50$), later an average of 3.84 ($SD = 0.54$). Again, there is a significant difference ($t(43) = 4.22$, $p < .001$, 95% CI [0.05, 0.13], $d_z = 0.67$). A special form of Cohen's *d* is calculated for the paired t-test, namely Cohen's d_z using the *t*-value and the degrees of freedom (*df*). According to Cohen's formula, d_z is calculated by dividing the difference between the mean values of the two groups by the root of the degrees of freedom plus 1. The G*Power program is used here. Results are interpreted in the discussion chapter.

It is questionable whether other factors besides the stimulus have an impact on changing the body image between the first and second measurement. To investigate this, a multi-factorial analysis of variance with repeated measurement on one factor is calculated. The following factors are taken into account: BMI groups (normal weight, overweight, obesity), the previously formed BMI groups (high and low), the age (up to 19 years, then graduated in groups of 10 years) and the gender. One of the most important prerequisites for carrying out a repeated measurement ANOVA is sphericity (Girden, 1992; O'Brien & Kaiser, 1985; Salkind, 2007). This means the assumption that the differences between all levels of the independent variables are the same. It is also known as homoesque elasticity between levels. To test this, the Mauchly-test is carried out. If its *p*-value is greater than or equal to .05, the data can be assumed to be spherical. If it is significant, the degrees of freedom must be corrected. However, since the inner subject factor of the present study, consisting of the stimulus material, has only two stages, the Mauchly-test does not provide a usable result. If there is only one difference, sphericity of the data is automatically given. Normally, a t-test should be calculated for a two-stage internal subject factor. To be able to include the other factors of interest, the desired process is nevertheless continued here.

For the treatment, i.e. the observation of the *Fitspiration* images, a significant result is shown in relation to the PSDQ-S scale ($F(1, 28) = 0.23$, $p < .001$, $\eta p^2 = 0.420$, observed sharpness = 99.2%). In addition, there is a significant interaction with the BMI groups ($F(1, 28) = 7.06$, $p = .013$, $\eta p^2 = 0.201$, observed sharpness = 72.2%). This means that the two relevant factors work together in a complex way. The effect of each factor depends on the characteristics of the other.

The appropriate effect size measure for ANOVA is eta square, which is calculated from the error square sum. A value less than 0.06 is expected to have a small effect, between 0.06 and 0.14 there is a medium effect, larger values indicate strong effects. In the case of multi-factorial analysis of variance, the partial eta square has to be considered. This value relates to the variation that is explained by a specific factor in a model. That variation is not explained by other factors within the model calculated. In the present case, the value is $\eta p^2 = 0.201$, so the treatment explains 20.1% of the error variation that the model would show if the factor (in our case: the treatment) would not have been included. The observed test strength or sharpness to find an effect of this size under the same conditions is 72.7%.

Moreover, the interaction with the age groups is highly significant ($F(4, 28) = 7.83$, $p < .001$, $\eta p^2 = 0.528$, observed sharpness = 99.2%). Without this interaction, 52.8% of the variation could not be explained. No main effect of gender can be determined ($p = .303$) and the interaction of the treatment with age groups and gender ($p = .604$) does not result in a significant interaction. Within the testing of the between-subject effects, gender is most likely to be marginally significant ($F(1, 28) = 1.80$, $p = .190$, $\eta p^2 = 0.061$, observed sharpness: 25.4%). Following this, a post hoc test is carried out. It consists of a t-test for each combination of two mean values based on factors with more than two characteristics. A Bonferroni correction is used to solve the problem of alpha error, which consists in the false rejection of the null hypothesis, the probability of which increases with the number of comparisons. Here, α is divided by the number of comparisons. There is a significant difference between normal weight and obese participants ($p = .012$, 0.7583, 95% -CI [0.1400, 1.3765]). Based on the age groups, no post hoc test can be carried out at first, since only one case was recorded within the youngest group. However, even after excluding this category, there is no significant difference between the groups (see Appendix D).

The procedure described above is also carried out for the BAS-2 scale. As in case of the previous measurement, there is a significant main effect of the treatment ($F(1, 28) = 5.41$, $p = .027$, $\eta p^2 = 0.162$, observed sharpness = 61.3%). However, there are no other interactions or main effects (see Appendix D). Considering the Bonferroni-corrected post hoc test, the difference between normal and obese people is found to be significant ($p = .028$, 0.7737, 95% CI [-0.0757, 1.6231]).

Finally, the procedure is carried out for the attribute *body image*. A significant main effect, triggered by the image viewing, exists here ($F(1.28) = 19.08$, $p < .001$, $\eta p^2 = 0.405$, observed sharpness = 98.8%). There is a significant interaction with the age groups

($F(4, 28) = 3.32$, $p = .024$, $\eta p^2 = 0.321$, observed sharpness = 77.1%). A Bonferroni-corrected post hoc test shows a significant difference ($p = .027$) in performance between the normal-weight group and the obese group (0.766, 95% CI [0.729, 1.4591]).

The perceived attractiveness of the models' faces was recorded as a control variable. It is questionable whether the effect on the body image changes when also considering the perception of attractiveness of the face.

> *H1.1: If the face of a model is perceived as less attractive, the effect of Fitspiration content on the body image is smaller.*

To investigate the hypothesis, a new variable is created that is supposed to contain the general feeling of attractiveness. The median (*Mdn*) of the two original attractiveness variables (*MO02_01: face of the female person/Gesicht der weiblichen Person* and *MO02_02: face of the male person/Gesicht der männlichen Person*) is used for this. Values above the median are coded with 2. Values below the median are encoded as 1. The new variable *attractiveness_allg* (*Attraktivität_allg)* is created. For this purpose, the perception of attractiveness of both models is added, which means: with a value of 4, both models were perceived as attractive, with a value of 3, one model was perceived as attractive, and with a value of 2, neither was rated as attractive. The next step is to perform a t-test for a dependent sample.

Within the group that perceived both models as attractive ($N = 14$), the differences between two connected test values are normally distributed both in the BAS-2 ($p = .248$) and the combined body image ($p = .738$) according to Shapiro-Wilk. In case of the BAS-2 scale, the mean values of the two measurement times do not differ significantly ($M = 0.16$, $SD = 0.32$, $t(13) = 1.95$, $p = .073$, 95% -CI [0.346, -0.018], $d_z = 0.51$). This is different for the combined body image ($M = 0.16$, $SD = 0.17$, $t(13) = -3.52$, $p = .004$, 95% -CI [0.258, 0.062], $d_z = 0.85$). No normal distribution can be assumed for the difference between the connected test values of the PSDQ-S scale (Shapiro-Wilk-test $p = .002$). Since no robustness can be assumed due to a lack of test values, the Wilcoxon-test is carried out here. The test statistic is $z = -2.84$ and the associated significance value $p = .004$. The central tendencies of the two measurement times differ significantly. The *z*-value is used to calculate the effect size dimension *r* using the formula $r = Z / \sqrt{N}$ ($N = n1 + n2$, according to Field, 2013). The value of the effect size measure *r* can be set in relation to the conventions according to Cohen (1988; 1992). There is a strong negative effect size with $r = -0.54$.

According to the results of the Shapiro-Wilk-tests, all differences between the test values of the PSDQ-S scale (p = .296) as well as the BAS-2 scale (p = .433) and the body image (p = .269) are normally distributed within the group that found one model to be attractive (N = 19). However, none of the mean values of the two measurement times are confirmed to be significantly different (see Appendix D).

In case of the subjects who did not consider any of the models attractive (N = 10), according to the Shapiro-Wilk-test, the differences between the connected test values of the body image (p = .065) and the PSDQ-S scale (p = .165) are normally distributed. However, the differences between the mean values of the two measurement times are neither significant in the first (body image: M = -0.07, SD = 0.12, $t(9)$ = -1.85, p = .097, 95% -CI [-0.152, -0.015], d_z = 0.58) nor in the second case (PSDQ-S: M = -0.17, SD = 0.20, $t(9)$ = -1.84, p = .100, 95% -CI [-0.261, -0.027], d_z = 0.54). For the differences between the test values of the BAS-2 scale, no normal distribution can be assumed according to the Shapiro-Wilk-test (p = .025). Therefore, the Wilcoxon-test is carried out instead of the t-test. It gives z = -0.816 and the associated significance value of p = .414. The central tendencies of the two measurement times do not differ significantly.

To check whether there are interactions between the treatment, the perceived attractiveness of the models and other intermediate subject factors, a multi-factorial analysis of variance with repeated measurement on one factor is carried out (sphericity is assumed). The factors examined are the same as in the previous analysis. In the current case, there is only one significant interaction between the treatment, the perceived attractiveness of the models and the age group of the test subjects with regard to the BAS-2 scale ($F(2.17)$ = 3.71, p = .046, ηp^2 = 0.304) . The post hoc test did not provide any significant results after excluding the age-category with only one case (see Appendix D).

H1.2: Self-esteem is influenced in a negative way by viewing Fitspiration images.

To investigate the next hypothesis, an index is created using the values of the Rosenberg scale. Cronbach's α is therefore calculated in accordance with the previous index formation. Before the treatment there is a Cronbach's α of .76. This is improved to .88 when leaving out the item *I wish I could have more respect for myself* (*Ich wünschte, ich könnte vor mir selbst mehr Achtung haben*). The only hypothetically formulated statement is thus excluded. The Cronbach's α value after viewing the *Fitspiration* images is .76. Again, there is an improvement up to .91 if the same item is omitted. It is therefore not taken into account when building the index.

A paired t-test is considered to test the hypothesis. However, the differences between the connected test values of the Rosenberg scale before and after viewing the *Fitspiration* images according to the Shapiro-Wilk-test proved not to be normally distributed ($p = .001$). Since all cases surveyed are considered within this hypothesis evaluation, the robustness of the sample ($N = 44$) can be used to argue again for carrying out the t-test (Sander, Uhlmann, & Bruckner, 2015; Malcherczyk, 2018; Rasch, Friese, Hofmann, & Naumann, 2010). The mean increased from $M = 4.27$ ($SD = 0.59$) before viewing the stimulus to $M = 4.41$ ($SD = 0.55$) after viewing the images. The change is significant ($M = 0.14$, $SD = 0.25$, $p = .001$, 95% -CI [0.06, 0.21], $t(43) = 3.73$, $d_z = 0.57$).

A multi-factorial analysis of variance with repeated measurement of one factor is used (sphericity is assumed). The treatment itself is significant ($F(1, 17) = 14.22$, $p = .002$, $\eta p^2 = 0.456$, observed sharpness = 94.4%). The interaction between treatment and age groups is also significant ($F(4, 17) = 7.20$, $p = .001$, $\eta p^2 = 0.629$ observed sharpness = 97.6%). The same applies to the interaction between viewing the stimulus material, the perception of attractiveness towards the models and the gender of the participants ($F(2, 17) = 4.13$, $p = .034$, $\eta p^2 = 0.327$, observed sharpness = 64.9%). Finally, the interaction between treatment, age and gender performs significantly ($F(1, 17) = 0.59$, $p = .018$, $\eta p^2 = 0.307$, observed sharpness = 8.2%). When considering the between-subject effects, the interaction between the perception of attractiveness and the gender of the test subjects emerges as significant ($F(2, 17) = 3.47$, $p = .054$, $\eta p^2 = 0.290$, observed sharpness = 56.9%). The interaction between attractiveness and the BMI is almost significant ($F(2, 17) = 3.32$, $p = .060$, $\eta p^2 = 0.281$, observed sharpness = 55.0%). A post hoc test does not provide any further results (see Appendix D).

H2: People with a positive body image have an equally positive self-esteem.

To assess hypothesis 2, the data set is divided into people who have a positive body image and those who have a negative body image. To implement this, the body image index is divided based on the median ($M = 3.75$, $Mdn = 3.77$). Participants whose value is higher are assigned to the group with a positive body image and vice versa.

The normal distribution of both groups is examined using the Shapiro-Wilk-test. It results in a normal distribution ($p = .214$) for the measurement of the group with a negative body image, but not for the group with a positive body image ($p = .050$). If the samples are unrelated and not normally distributed or ordinal, the Mann-Whitney-U-test is used. There is a significant difference in the medians of the self-assessment indexes between the group

with a positive (*Mdn* = 4.56) and those with a negative (*Mdn* = 4.22) body image, *U* = 147.50, *z* = -2.22, *p* = .026.

RQ2: How does the self-esteem of people with a positive or negative body image change after viewing Fitspiration images?

To answer this research question, the data set is divided into people who have a positive body image and those who have a negative body image. The process is similar to the method already described for assessing hypothesis 2. After dividing the data set, a paired t-test regarding self-esteem is carried out for the values before and after viewing the *Fitspiration* material. For the group with a negative body image (*N* = 23), a normal distribution of the difference between the connected test values according to Shapiro-Wilk is given (*p* = .605). The mean of the index in question changes from *M* = 4.08 (*SD* = 0.64) before viewing the *Fitspiration* images to *M* = 4.16 (*SD* = 0.56) after viewing the images. The mean values don't show a significant difference (*M* = 0.08, *SD* = 0.23, *t*(22) = 1.73, *p* = .098, 95% -CI [-0.016, 0.181], d_z = 0.36).

According to the Shapiro-Wilk-test, there is no normal distribution of the difference between the connected test values for the group with a positive body image (*N* = 21) (*p* < .001). The Wilcoxon-test which is therefore carried out gives a *z*-value of -3,455 and a significance value of *p* = .001. The central tendencies of the two measurement times therefore differ significantly. There is a strong negative effect size of *r* = -0.55.

In addition, a multi-factorial analysis of variance with repeated measurement on one factor is carried out for the entire population in order to test whether there is a main effect or an interaction with the classification of the body image (sphericity is assumed). In addition to the factors previously included in the respective tests, the body image factor is added. There is no significant interaction between the treatment and the body image variable (*F*(1, 11) = 0.08, *p* = .790, ηp^2 = 0.007, observed sharpness = 5.7%). When the intermediate subject effects are tested, there is a significant main effect for dividing the body image into good or bad (*F*(1, 11) = 22.50, *p* = .001, ηp^2 = 0.672, observed sharpness 99%).

RQ3: Do people who are dissatisfied with their waist feel worse after viewing Fitspiration images than people who are satisfied with their waist?

It is questionable whether there is an interaction between the feeling of dissatisfaction with one's own waist and viewing *Fitspiration* images. In this sense, a multi-factorial analysis of variance with repeated measurement on one factor is carried out (sphericity is assumed). The

factor that is not measured repeatedly is the assessment of one's own waist before the treatment. This factor is taken from the PSDQ-S scale. The corresponding item reads *My waist size is too large* (*Mein Taillenumfang ist zu groß*) and could be answered by the participants on a scale from 1 (*completely agree*) to 5 (*completely disagree*). The test of the within subject effects shows no interaction of the treatment with the assessment of the waist ($F(3, 40) = 1.39$, $p = .260$, $\eta p^2 = 0.094$, observed sharpness = 34%). A test of the inter-subject effects and a post hoc test also reveal no further significant findings (see Appendix D).

In addition, a univariate analysis of variance is carried out. The subjects' assessments of their own waist before and after treatment are considered as between-subject factors. There is no main effect of the waist assessment before viewing the images on the later condition in terms of self-worth ($F(3, 40) = 0.37$, $p = .774$, $\eta p^2 = 0.027$, observed sharpness = 11.6%). Bonferroni-corrected post hoc tests show that the groups do not differ significantly.

6.2.2 Evaluation of Eyetracking Data

For the evaluation of the eyetracking data, the eye movements were visualized using the program BeGaze. Additionally, the output of the event statistics (raw data, eye movement data) was used.

Research question 4 *Does the focus of people who are familiar with Fitspiration lie on fitness relevant areas such as muscles and waist of the models?* and research question 5 *Does the focus of people who are not familiar with the topic of Fitspiration lie on the face of the models?* were evaluated based on the three best pictures per model regarding *sportiness*. The reason for the limited selection of the sportiest pictures is the assumption that the photos that were classified as sporty are also the pictures that optimally reflect the fitness-relevant areas. The selection was taken from the first preliminary study and resulted in the following poses and associated pictures: regarding the male model, the photos *2_frontal_Arm links_m* ($M = 4.73$), *1_frontal_m* ($M = 4.65$) and *5_frontal_Arm_Huefte_m* ($M = 4.70$) were filtered. Regarding the female model, the photos *19_seit_drehen_anspannen_w* ($M = 4.24$), *26_seit_Rueckplank_w* ($M = 4.37$), and *25_seit_Plank_w* ($M = 4.28$) were selected. These six images were used both for the channel-group (saw the stimulus material with the Instagram frame) and the content-group (saw the stimulus material without Instagram frame). Subsequently, all eye movements of those who know *Fitspiration* ($N = 13$) and those who do not know it ($N = 31$) were overlaid and visualized as heat maps and Gridded AOIs (see chapter 4.2).

In three out of six images, the evaluation of the channel-group shows no significant differences between those who are familiar with *Fitspiration* and those who are not. For the picture *2_frontal_Arm links_m* (Figures 16 to 19), the focus points of the group that do not know *Fitspiration* diffuse significantly more, while the others focus exclusively on the face. The same applies for the photo *19_seit_drehen_anspannen_w* and *25_seit_Plank_w* (see Appendix E): the points scatter more among those who do not know *Fitspiration*. However, the clearest focus is always on the face across all images of the channel-group.

There are no clear differences for any image in the content-group. Generally and cautiously, it can be seen that the group which is not familiar with *Fitspiration* continues to spread the gaze. Again, the focus of all subjects is clearly on the face and not on areas relevant to fitness.

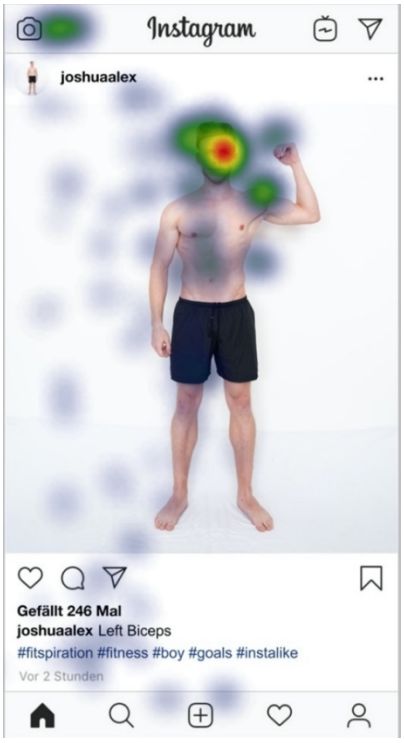

Figure 16: 2_frontal_Arm links_m, heat map of the group that does not know *Fitspiration*.

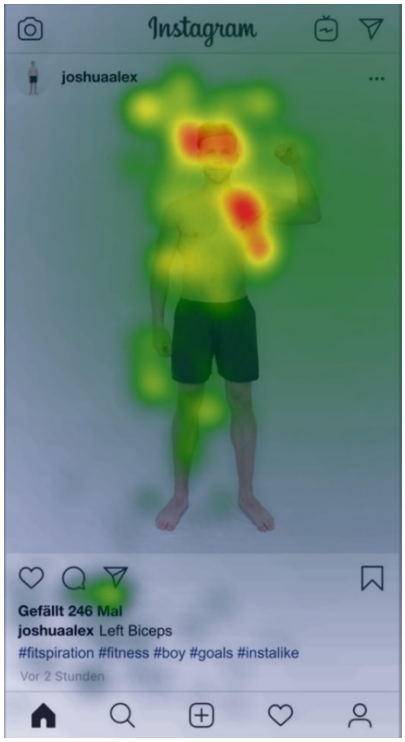

Figure 17: 2_frontal_Arm links_m, heat map of the group that does know *Fitspiration*.

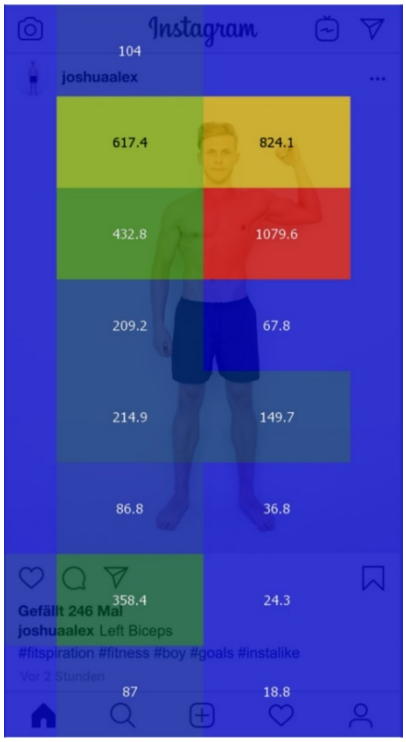

Figure 18: 2_frontal_Arm links_m, gridded AOIs of the group that does not know *Fitspiration*.

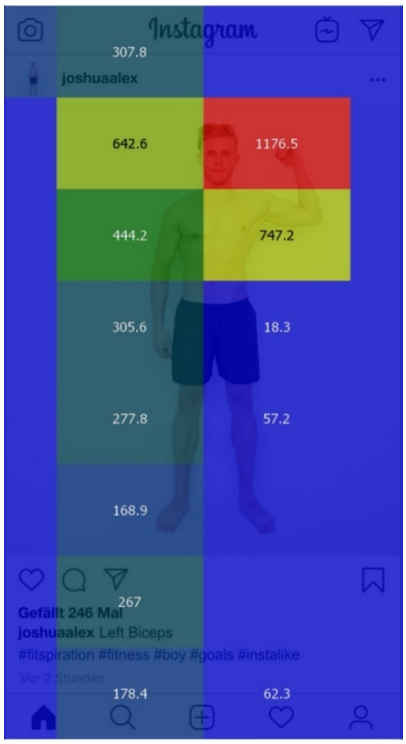

Figure 19: 2_frontal_Arm links_m, gridded AOIs of the group that does know *Fitspiration*.

The evaluation of hypothesis 3 *People who do not like certain regions on their bodies specifically look at these regions on the models.* is done based on the waist, since only this area was specifically asked for. The selection of pictures was again limited to three female and three male pictures. Images that reveal the waistline came into question. The pictures *1_frontal_m, 1_frontal_w, 4_frontal_beide Arme_m, 4_frontal_beide Arme_w, 9_rueck_m, 9_rueck_w, 12_rueck_beide Arme_m, 12_rueck_beide Arme_w* were chosen. These images also ensured that the hands did not pull the attention at the waist. The same poses of the male and female models were selected to ensure comparability.

Satisfaction with one's own waist was queried in the survey before treatment with the item *My waist is too large*, rated on a 5-point Likert scale from 1 (*completely disagree*) to 5 (*fully agree*). This item had to be reverse coded. Since, based on the median ($Mdn = 4.00$), no clear and uniform separation of all subjects into a group that evaluated their waist positively and a group that assessed their waist negatively can be made, the gaze courses for the four existing groups are each overlaid and then compared (the evaluation in ascending order: 2: $N = 5$, 3: $N = 9$, 4: $N = 15$, 5: $N = 15$). Visualizations as heat maps and gridded AOIs were again issued for the respective analysis groups.

For the channel-test-group it can be said that generally the better the ratings of their own waist (2 → 5), the more the focus points are scattered. This is particularly evident in the picture *4_frontal_beide Arme_m* (Figure 20 to 27) (with Instagram frame), whereas the female equivalent of this pose has no peculiarities.

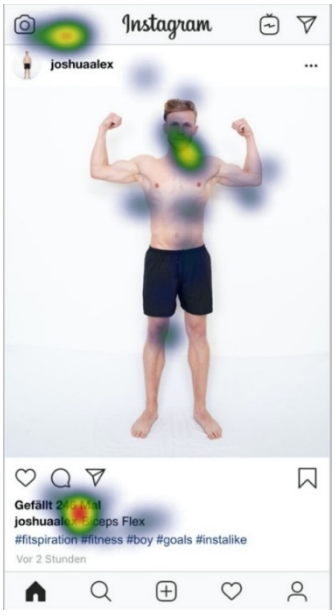

Figure 20: 4_frontal_beide Arme_m, heat map of participants who rated their waist with the lowest value 2.

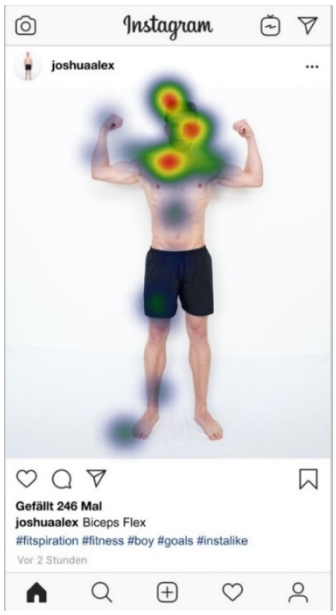

Figure 21: 4_frontal_beide Arme_m, heat map of participants who rated their waist with the value 3.

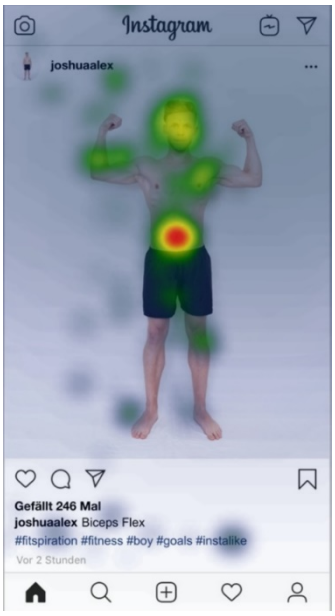

Figure 22: 4_frontal_beide Arme_m, heat map of participants who rated their waist with the value 4.

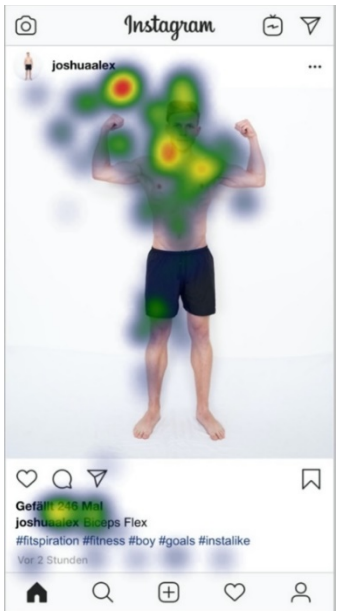

Figure 23: 4_frontal_beide Arme_m, heat map of participants who rated their waist with the highest value 5.

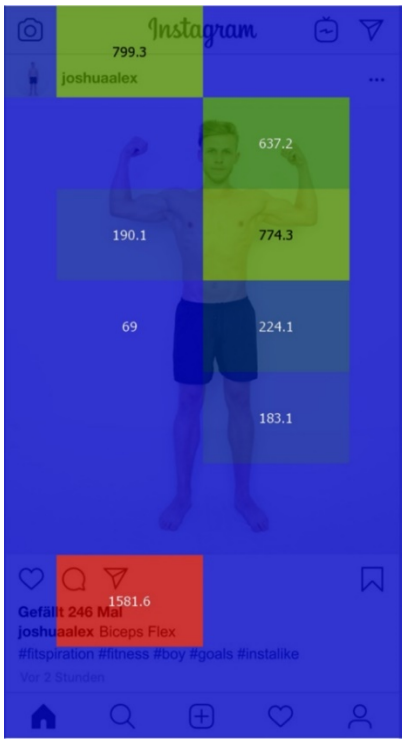

Figure 24: 4_frontal_beide Arme_m, gridded AOIs of participants who rated their waist with the lowest value 2.

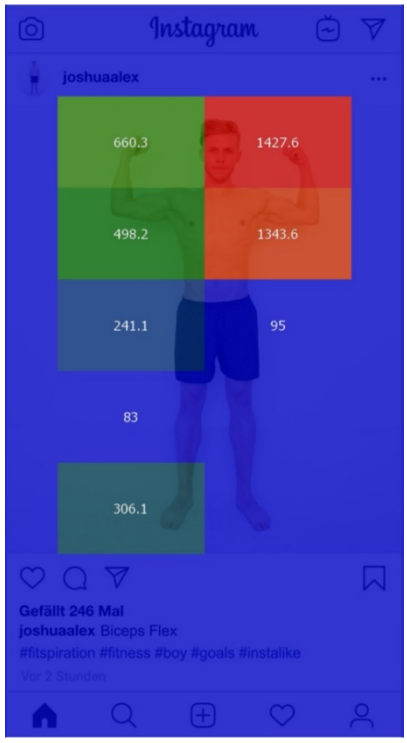

Figure 25: 4_frontal_beide Arme_m, gridded AOIs of participants who rated their waist with the value 3.

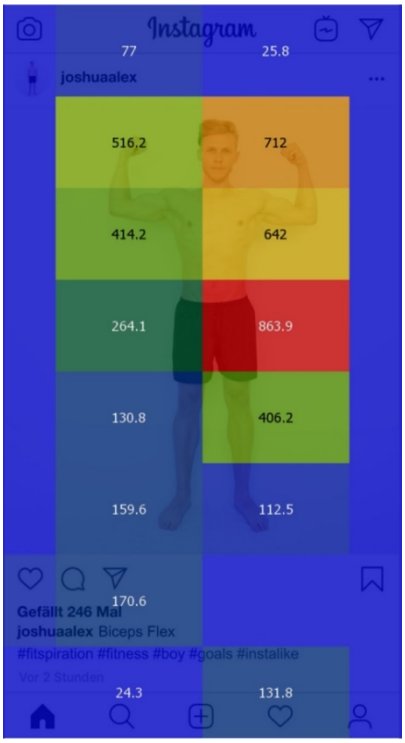

Figure 26: 4_frontal_beide Arme_m, gridded AOIs of participants who rated their waist with the value 4.

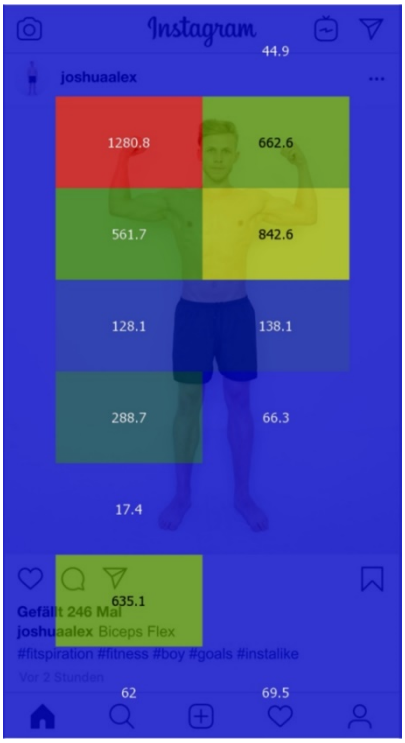

Figure 27: 4_frontal_beide Arme_m, gridded AOIs of participants who rated their waist with the highest value 5.

In the content-test-group there are no noticeable differences between those who are rather satisfied or dissatisfied with their waist. Furthermore, the fixations in both the channel- and content-group are never clearly on the waist. Accordingly, hypothesis 3 cannot be confirmed.

For the evaluation of hypothesis 4 *If people are rather dissatisfied with their bodies, the focus points scatter more.* and hypothesis 5 *When people are satisfied with their bodies, the focus when viewing the Fitspiration images lies on the face.* the image evaluations from the first preliminary study were used again. The selection consists of the three best pictures of the male model and the three best pictures showing the female model. The following images are chosen: *5_frontal_Arm_Huefte_m* (M = 32.15, SD = 5.03), *26_seit_Rueckplank_m* (M = 31.56, SD = 5.80), *4_frontal_beide_Arme_m* (M = 31.56, SD = 5.15), *26_seit_Rueckplank_w* (M = 30.27, SD = 5.81), *32_seit_Sprung* (M = 30.15, SD = 5.60) and *18_seit_Ausfallschritt_w* (M = 30.12, SD = 4.95)

The image analysis is based on the overlaid gaze profiles of participants who are generally satisfied or dissatisfied with their bodies (for information on group formation see chapter 6.1). The gaze data is visualized for analysis in form of gridded AOIs and focus maps.

The analysis shows for the channel-test-group that the satisfied participants spread their focus more. However, the main focus is always clearly on the face or upper body (Figures 28 to 31). This trend is reversed only in picture *18_seit_Ausfallschritt_w* (with Instagram frame).

For the content-test-group, the image analyses showed no striking differences between the satisfied and unsatisfied participants. Only picture *32_seit_Sprung_w* (Figures 32 to 35) shows a higher focus spread of the group which is satisfied with the own body. Based on the image analysis, hypothesis 5 can initially be confirmed for the channel-test-group but not for the content-group.

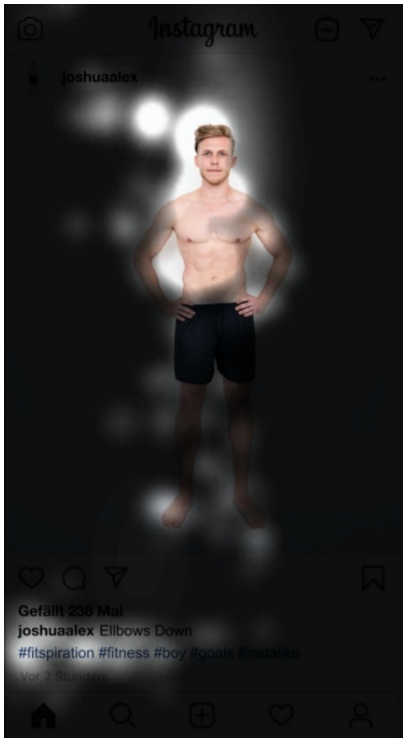

Figure 28: 5_frontal_Arm Huefte_m, focus map of participants who are dissatisfied with their bodies.

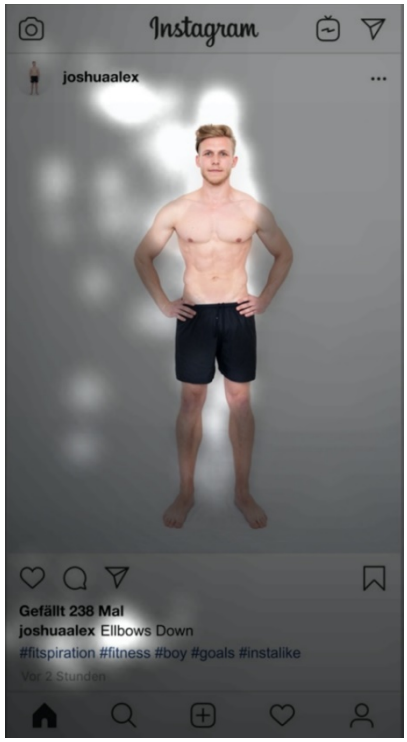

Figure 29: 5_frontal_Arm Huefte_m, focus map of participants who are satisfied with their bodies.

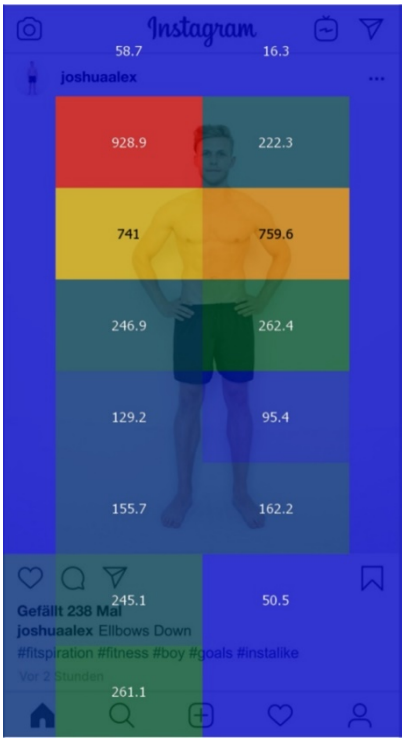

Figure 30: 5_frontal_Arm Huefte_m, griddes AOIs of participants who are dissatisfied with their bodies.

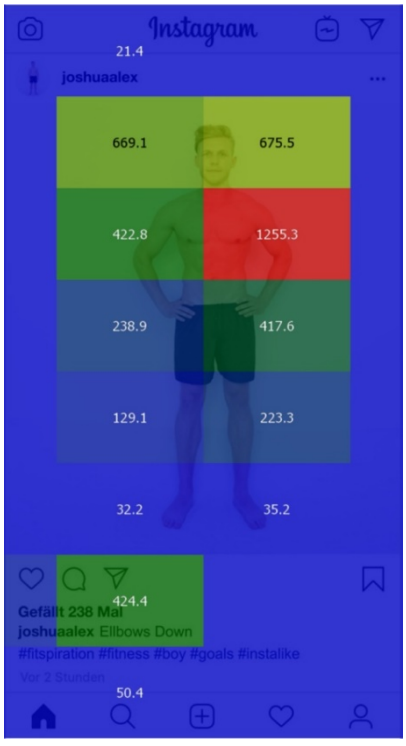

Figure 31: 5_frontal_Arm Huefte_m, gridded AOIs of participants who are satisfied with their bodies.

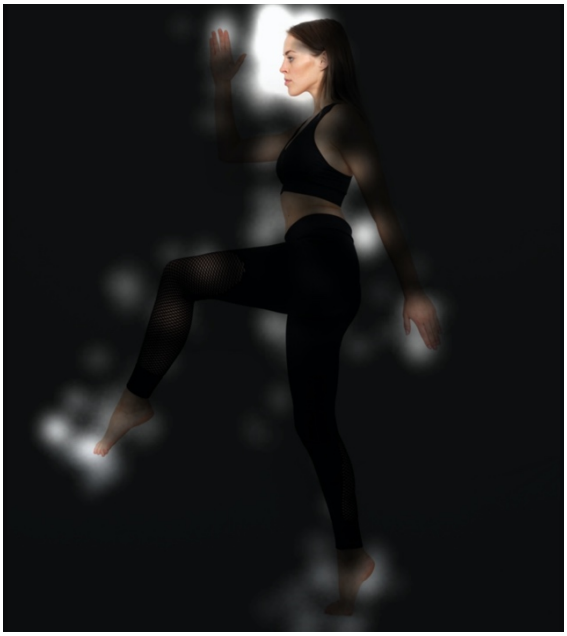

Figure 32: 32_seit_Sprung_w, focus map of participants who are dissatisfied with their bodies.

Figure 33: 32_seit_Sprung_w, focus map of participants who are satisfied with their bodies.

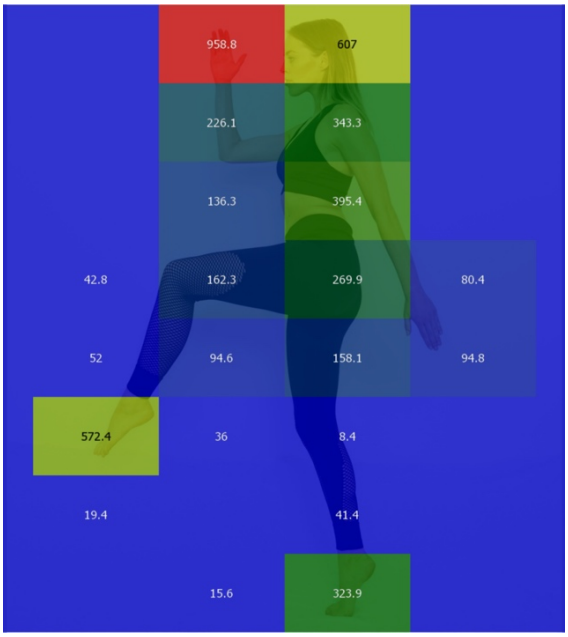

Figure 34: 32_seit_Sprung_w, gridded AOIs of participants who are dissatisfied with their bodies.

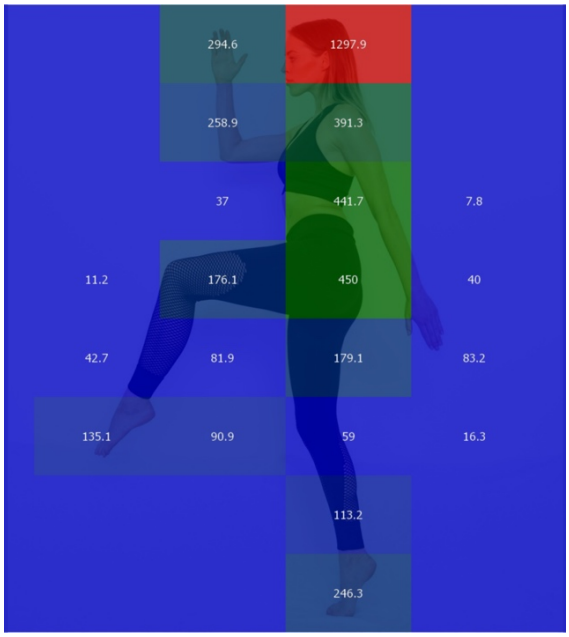

Figure 35: 32_seit_Sprung_w, gridded AOIs of participants who are satisfied with their bodies.

In addition to the pure analysis of the image outputs, the raw data of the eyetracking experiment are evaluated for hypothesis 4. The number of fixations, the fixation frequency (fixation/s) and the scan path length are considered. As mentioned, a longer scan path would have to go hand in hand with a higher number of fixations etc. (see chapter 4.2). The statistical evaluation is carried out for the channel- and content-test-group. T-tests for

independent samples are used to determine significant differences between the subjects who are unsatisfied or satisfied with their bodies. For the channel-test-group, the Shapiro-Wilk-test initially gives a significant result. However, due to the large sample of N = 1496, the t-test is still considered robust (Sander, Uhlmann, & Bruckner, 2015; Malcherczyk, 2018; Rasch, Friese, Hofmann, & Naumann, 2010). The large N in the data set results from the 22 subjects multiplied by the 68 images. The data set contains the gaze history data of each subject regarding each picture.

As the results of the Levene-test reject the requirement of the same variances (Levene-test is significant for number of fixations p = .001, fixation frequency p = .001, scan path length p < .001), the values of the Welch-test are observed for all three variables – number of fixations, fixation frequency and scan path length. It turns out that participants who are dissatisfied with their own bodies have a significantly higher number of fixations (M = 15.53) than those people who are satisfied with their body (M = 14.56), $t(1282.867) = 4.61$, $p < .001$ with a small effect size of $d = 0.26$. Regarding the frequency of fixation, there are significantly higher values for the group which is dissatisfied with the own body, $t(1283{,}573) = 4.53$, $p < .001$ with a small effect size of $d = 0.25$ (dissatisfied $M = 2.85$, satisfied $M = 2.67$). The scan path length rounds off the confirmation of the hypothesis for the channel-group with significantly higher values for the group dissatisfied with the own body, $t(1307{,}382) = 3.96$, $p < .001$ with a small effect size of $d = 0.22$ (dissatisfied M = 1964.25 px, satisfied M = 1764.73 px).

Concerning the requirement for normal distribution in the content-test-group, the Shapiro-Wilk-test is significant. However, a t-test for independent samples is used nevertheless, due to the robustness of the t-test at N = 1408. Furthermore, in this test group the Levene-test for homogeneity of variance confirms the equality of variances of all variables (number of fixations p = .070, fixation frequency p = .063, scan path length p = .249).

All three examined variables have a significantly higher value in the group that is dissatisfied with the own body, albeit with small effects. The number of fixations is on average M = 15.25 regarding the group that is dissatisfied with the own body and M = 14.45 in the group satisfied with the own body. This difference is significantly higher for the first group, $t(1406) = 3.51$, $p < .001$ with an effect size of $d = 0.19$. The fixation frequency is on average M = 2.79 fixations/s for the first group and M = 2.65 fixations/s for the group that is satisfied. This difference is also significantly higher for the first group, $t(1406) = 3.49$, $p < .001$ with an effect size of $d = 0.19$. The last measure, the scan path length, is on average

M = 2315.11 px for the unsatisfied group and *M* = 2035.24 px for the other group, which also makes a significantly higher difference for the first group, *t*(1406) = 2.20, *p* = .028 with an effect size of *d* = 0.12. Hypothesis 4 can therefore be confirmed based on the statistical evaluation.

The last hypothesis which can be examined by using the data from the eyetracking experiment for evaluation, is hypothesis 6 *The spread of the focus on pictures showing the female model is higher than on pictures showing the male model*. Again, the images are evaluated purely optically and the raw data is used for statistical evaluation. A t-test for independent samples provides information about significant differences in the number of fixations, the fixation frequency, and the scan path length. To confirm the hypothesis, fewer fixations should be detected on the pictures with the male model than on the pictures with the female model.

No further selection is made for the image analysis. For the channel- and content-test-groups, all images of the female and male model are included. The gaze data is again issued as gridded AOIs and focus maps. The channel-group's image analysis shows that the focus points regarding the images with the male model scatter slightly more than on the images with the female model (Figures 36 to 39).

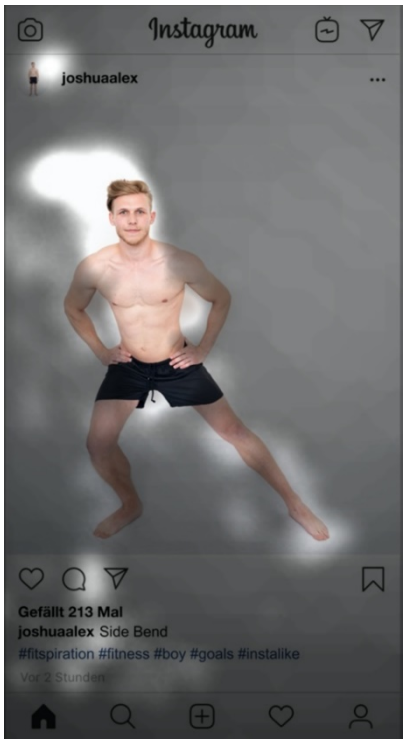

Figure 36: 28_frontal_Beuge links_m , focus map.

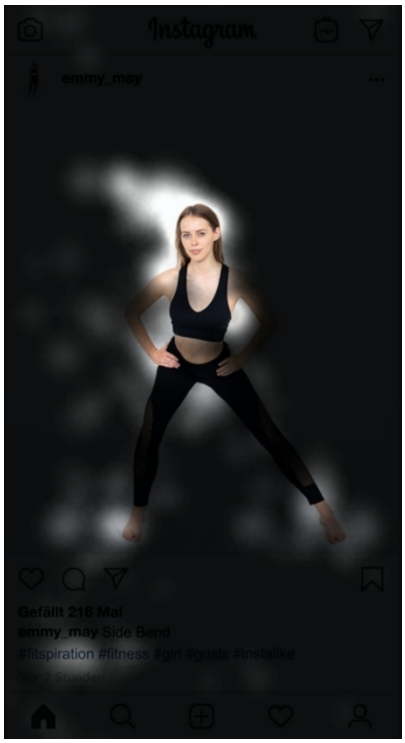

Figure 37: 28_frontal_Beuge links_w, focus map.

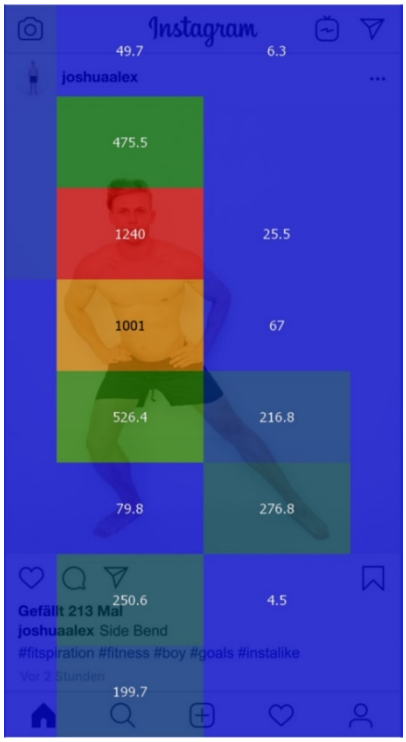

Figure 38: 28_frontal_Beuge links_m, gridded AOIs.

Figure 39: 28_frontal_Beuge links_w, gridded AOIs.

The analysis shows no specific patterns or tendencies for the content-group.

For the statistical evaluations of the channel-group, the Shapiro-Wilk-test is used to test the normal distribution in preparation for the t-test for independent samples. Its significance ($p < .001$) rejects the normal distribution, which can be ignored when $N = 1496$. Furthermore, the Levene-test for homogeneity of variance shows that the variances for the number of fixations are the same ($p = .652$), likewise for the fixation frequency ($p = .881$). Only the scan path length differs in its variances ($p = .015$) so that the values of the Welch-test are taken into account here.

The statistical evaluations for the channel-group show no significant results regarding the number of fixations (female model $M = 14.90$, male model $M = 15.28$, $t(1494) = 1.83$, $p = .067$) and the fixation frequency (female model $M = 2.73$ fixations/s, male model $M = 2.80$ fixations/s, $t(1494) = 1.80$, $p = .072$). Only the scan path lengths differ significantly from each other (female model $M = 1805.67$ px, male model $M = 1941.44$ px). Surprisingly, it is higher on the pictures of the male model $t(1476{,}947) = 2.75$, $p = .006$ with a small effect size of $d = 0.14$.

In the content-group the requirement for normal sample distribution is rejected by a significant Shapiro-Wilk-test ($p < .001$), but the large sample with $N = 1408$ proves the robustness of the t-test for independent samples. The Levene-test for homogeneity of variance, on the other hand, confirms the same variances for all variables (number of fixations $p = .459$, fixation frequency $p = .480$, scan path length $p = .376$) and thus legitimizes the use of the t-test. The content-group reveals fairly consistent values with no significant differences. The number of fixations with $t(1406) = 0.68$, $p = .499$ and an average of $M = 14.74$ fixations on the pictures of the male model and $M = 14.89$ fixations on the pictures of the female model show no significant difference. The frequency of fixation is only marginally different with $M = 2.70$ fixations/s on the pictures with the female model and $M = 2.73$ fixations/s on the pictures with the male model and $t(1406) = 0.69$, $p = .493$. The scan path length confirms this tendency with a negative $t(1406) = -0.27$ and a significance of $p = .788$ (scan path on the pictures of the female model $M = 2179.54$ px and on the pictures of the male model $M = 2145.37$ px). Hypothesis 6 can therefore clearly not be confirmed.

6.3 Discussion

The analysis of the hypotheses and research questions referring to the survey data show mixed results. Regarding research question 1, it was found that the body image perception of people with a BMI in the overweight area was on average significantly worse than the body image of normal weight people. This applied to both scales tested and the body image index. The effect is particularly high with the PSDQ-S scale ($d = 1.10$) and the combined body image ($d = 1.00$). For the BAS-2 scale, there is a comparatively smaller, but objectively still strong effect ($d = 0.76$). The fact that people with an overweight BMI indicated lower body image values than people in the normal range before considering the stimulus could be due to various factors. One of them could be conditioning in everyday life, where people constantly make comparisons even without a targeted search (Wood, 1989). They may always be aware that they do not fully correspond to the social ideal, even though efforts to put less slim or athletic people in a positive light can be seen in many places.

The hypothesis that viewing *Fitspiration* images leads to a poorer body image (H1) cannot be confirmed. In relation to the PSDQ-S scale, as well as to the BAS-2 scale and the summarized body image, a different picture emerges. All mentioned variables improve significantly after the participants have seen the stimulus material. The effect size is in the strong range regarding the PSDQ-S scale ($d_z = 0.63$) and the summarized body image

($d_z = 0.67$). Only the effect in relation to the BAS-2 scale turns out to be very small ($d_z = 0.20$). This could be due to the fact that the affective body image of the participants measured by the BAS-2 scale is not impacted by viewing the images to the same extent as the cognitive body image which is reflected by the PSDQ-S scale. A longer lasting treatment may be necessary to address the affective component of the body image. The fact that the body image improves significantly contradicts hypothesis 1.

There are many possible explanations for this: the test subjects may not have perceived the images as realistic enough due to the experimental test situation. It is also possible that they were influenced by the comparatively long observation of the same people, or that they recognized flaws in them in different poses that they would not have seen by simply viewing self-selected images. Maybe aspects which are personally very important for the participants were not in the foreground or the models did not correspond to their preferred phenotype. Another possibility is that the participants felt confirmed in their own existing way of life by the pictures. Further they might be motivated according to the actual meaning of the *Fitspiration* pictures and thereby perceived themselves and their bodies more positively. A reference to Amelang et al. (2006) would also be conceivable. The authors emphasize the importance of the mismatch between ideal and real self. Accordingly, a negative mismatch should be reflected in a more negative assessment after the stimulus. If it does not do so, or if the opposite occurs as in the present case, this could be explained by the fact that the test subjects have a healthy self-perception and no neurotic abnormalities, as well as a stable self-concept.

In this regard, it is interesting to see which other factors play a role when *Fitspiration* images influence the body image. The change in the PSDQ-S scale is influenced by an interaction of the treatment with the factor BMI. However, this interaction explains 20.1% of the error variation that the theoretical model would have if the interaction was not included. The interaction of the image viewing with the age groups is highly significant. The main effect of gender categorization achieved marginal significance. In addition to the main effect of the stimulus, numerous other factors are decisive – albeit with small effect sizes. The high significance of the interaction with age groups could indicate that younger participants can be influenced more, even if no further conclusions about significant differences between the groups could be made within the post hoc test. This point is in line with the findings of Groez et al (2002), which suggest that the body image of girls in puberty is more affected by the reception of ideal models than that of adult women. In relation to this, as well as to the gender classification, the question arises whether a clearer picture

would emerge when looking at a larger sample with more cases in all categories. It stands out that there is a clear difference regarding the effects of normal weight and obese people. This can also be determined in relation to the summarized body image. In addition, there is a significant interaction of the treatment with the age groups. Regarding the BAS-2 scale, apart from the main effect of the treatment, which was not very strong, there were no other effects. This is the second time that the scale has dropped out of the pattern of the other two tested constructs. It can be assumed that the cognitive perception of the body image can be influenced more easily or noticeably in the short term than the affective component. Reference can be made to Ingwersen-Matthiesen (2008), who said that self-evaluation is one of the cognitive reactions to social comparison. This is expressed here. Affective reactions tend to include pride or envy. These cannot be recorded with the selected scales.

Another factor that has been tested is the perceived attractiveness of the models' faces. If both models are rated as attractive, the mean values of the BAS-2 scale and the combined body image differ significantly between the two measurement times with medium to high effect size (BAS-2: $d_z = 0.51$, body image: $d_z = 0.85$). Moreover, there is a significant difference for the values of the PSDQ-S scale. If only one model is found to be attractive, however, there are no significant differences between the values of the two measurement times of all scales tested. The same applies for the group of participants who found neither model to be attractive. It should therefore be noted that only the participants who found both models attractive showed significant changes concerning the measured body image values. This goes along with the assumption of social comparison. The theory assumes that there is no influence unless the object of comparison is perceived as relevant and similar to the individual (Wood, 1989). In addition, influencing by peers tends to be more likely than by models (Fardouly & Vartanian, 2015). A more in-depth investigation shows an interaction of the treatment with the age group with regard to the BAS-2, which makes the affective component stand in the foreground for the first time. It would be possible that especially young people can be influenced by likeable, supposed peers, which would also create a connection to the current influencer hype. However, this in parts contradicts Peng et al (2019). The attractiveness of the models had a negative effect on the athletic intentions of the participants in their study.

In addition to the body image, the self-esteem of the participants has been considered. Hypothesis 1.2 assumed that self-esteem is negatively influenced by viewing *Fitspiration* images. However, equivalent to the previously tested values, there is an improvement in the mean value of the Rosenberg scale to a significant extent and with a high effect. Again, there

are interactions between the treatment and the age groups with a relatively high effect. The even more complex interaction between the treatment, the perception of attractiveness towards the models, and the gender of the participants is significant but of lower magnitude. When considering the within-subject effects, the interaction between the perception of attractiveness and the gender of the test subject is significant. The interaction between attractiveness and the BMI turns out to be almost significant. It should be emphasized that when looking at the self-worth variable, the BMI takes a less relevant position than when looking at the variables that are more clearly related to the body image. However, the age of the participants is placed in the foreground here as well. It can be assumed that regarding the influence of *Fitspiration*, a particularly vulnerable group could be defined primarily by age and possibly by gender. It is questionable whether one can really speak of a potential hazard when considering the results. In any case, Hypothesis 1.2 must be negated, because looking at the *Fitspiration* images does not lead to a negative influence on self-esteem. However, self-esteem could be influenced indirectly via the body image, which is considered a component of self-esteem (Calogero, 2012; Neyer & Asendorpf, 2018).

Hypothesis 2 shows that people with a more positive body image have a higher self-esteem. If the body image is influenced by the *Fitspiration* images, there is a good chance that the self-esteem of those affected will change in the long-term as well (research question 2), even if this cannot be determined in a short-term measurement. The data provides a first glimpse: for people with poor body images, the mean value of the Rosenberg scale changes from $M = 4.08$ ($SD = 0.64$) to $M = 4.16$ ($SD = 0.56$), but not to a significant extent ($p = .098$). For the group with a good body image there is a significant difference between the two measurement times with a high effect size. In both cases, the change in self-esteem is positive, but only significant in the group with a positive body image. In addition, the multi-factorial analysis of variance shows a significant effect of the variable *body image good/bad*. It seems that especially those who already have a good body image and a comparatively high self-esteem are influenced to a positive degree by the *Fitspiration* images. Possibly they feel confirmed or motivated by the pictures to continue their already established lifestyle.

Research question 3 is devoted to the consideration of a specific area of the body and the related satisfaction or dissatisfaction of the participants. Given the lack of significant results, the question whether people who are unsatisfied with their waist are more likely to feel bad than others after looking at *Fitspiration* images is neglected. It is possible that the subjects' satisfaction or dissatisfaction with the waist is not necessarily salient or generally does not play a major role. The results might have been different with view to another region

of the body or may be related to the gender of the participants. It is possible that, for example, men place more value on biceps or back muscles, while women are more focused on legs and buttocks. In this context, it is also interesting to examine the course of the gaze, whereby this chapter moves from the mere consideration of statistical data to the inclusion of gaze data.

In summary, it can be said that the evaluation of the eyetracking data hardly confirms the suspected or requested relationships. Research questions 4 and 5 regarding the awareness of the topic *Fitspiration* and the resulting focus placement cannot be confirmed. Both analysis groups mainly fixed the face of the models, whereby those who are not familiar with the topic show an even higher focus distribution. However, none of the groups pay attention to fitness-related areas such as muscles or waist. This could mean that, based on the hyperpersonal model, the fitness value of the images was not perceived as high enough to encourage comparison with the athletes. Maybe the models were not perceived as sporty enough to draw sporty and healthy ideals with which a comparison would be desirable. The information available about the persons represented in the stimulus material might be not clear or ideal enough. This assumption is confirmed by numerous conversations with the participants after the experiment, which showed that the male model in particular was perceived as orthopedically conspicuous and muscular, but not as particularly athletic.

This explanation undermines the veracity of the third hypothesis, according to which people look at the exact body-parts with which they are dissatisfied regarding themselves. The hypothesis is based on the mind-eye hypothesis and cannot be confirmed. No fixation of the waist was found in neither the channel- nor the content-test-group. It is possible that again the male model does not have a desirable waist. Furthermore, it is possible that the waist – as already indicated above – is very rarely a typical problem area for people who are unsatisfied with their bodies. Querying the thighs, abdominal area, upper arms or biceps might have brought out better results, but the items on the PSDQ-S scale did not specify this.

Hypotheses 4 and 5 proposed different gaze patterns of people who are satisfied or dissatisfied with their bodies. Hypothesis 4 can be confirmed, even if there are only small effects (see chapter 6.2). The results are significantly higher for the group of people who are dissatisfied with their bodies. However, the statement that the focus points are more scattered among those who are rather dissatisfied was more undefined than the questions and hypotheses that focus on certain regions of the image. The presumed connection between self- and external objectification (Calogero, 2012) is thus confirmed. The dissatisfaction with one's own body results in self-objectification and is transferred to the mere comparison with

the bodies of the models. Neither the own values and personality traits nor the ones of the models play a role, which explains the wide focus spread over the entire picture.

The associated Hypothesis 5 can only be carefully confirmed for the channel-test-group. Here, the focus of those who are satisfied with their bodies and those who are not satisfied with their bodies is always on the face or upper body. The only difference within this test-group is that the focus spread of those who are satisfied is slightly higher. There were no obvious differences in the course of the gaze between the two analysis groups for the content-group. This rejection of Hypothesis 5 could be attributed to the possible lack of fitness value in the pictures. The participants might not have accepted either model as an exceptionally attractive athlete.

Hypothesis 6 concerning the so-called *faceism bias* (Archer et al., 1983, quoted from Roberts & Fredrickson, 1997) could not be confirmed. This result is the most difficult to classify, since it is about perception patterns that are generally shaped by society. There are clear differences between men and women in all media depictions. While men are shown with the focus on the head or face in semi-total shots, the view on women is primarily focused on the body as a whole (Archer et al., 1983, cited from Roberts & Fredrickson, 1997). Based on this, the assumption was established that a consideration of men or women is already predefined by this socialization. For example, the gaze courses on the pictures with the male model should be shorter and have significantly more focus points on the head than the pictures of the female model. However, the evaluation showed that there were hardly any differences in the course of the gaze on the pictures. There was even a slight – if not significant – tendency to the contrary. This hypothesis with its theoretical justification is independent of the topic of *Fitspiration* and the fitness value of the models. In addition, the models were both clearly recognizable as men or woman. Nevertheless, the assumption must be denied.

Finally, it should be pointed out that there were no channel-effects with regard to research questions 4 and 5 and Hypotheses 3 and 6. An explanation for this could be that the stimulus material with the Instagram frame was not perceived as authentic social media material and therefore not as authentic *Fitspiration*. This suggests that *Fitspiration* does not actually refer exclusively to sporty people in sporty poses with sporty clothing, but that embedding this scene in a background or with accessories is just as important for the authenticity and the effect of the hashtag.

In addition, the idea remains that the models presented were not considered diverse enough to satisfy all of the subjects' preferences. Also, there is the wide age range of the

participants (from 15 to 64 years), while the age of the models, according to the typical *Fitspiration* content, is around 25 years. More diverse stimulus material adapted to different age groups could clear this assumption and remains to be examined.

7. Conclusion and Limitations

At the beginning of the present paper, theory and research led to the expectation that *Fitspiration* content is just as harmful towards body image and self-esteem as *Thinspiration* contributions. The focus on a supposedly healthy life seemed to be pushed to hide a construct that still aims at slenderness and an already established physical ideal but is in fact not very benevolent about mistakes and differences. The results concerning research question 1 suggest a need for action within society to nonetheless support people who are outside the norm to feel more positive about their bodies. Those with a higher body weight should not feel worse than those in the normal range, especially if there is no health impairment associated with their weight. Whether movements like *body positivity* can contribute to this might not be part of this paper, but is just as interesting and a comparison with constructs like *Fitspiration* could prove to be insightful.

It was shown that *Fitspiration* images lead to a significantly improved body image, even if the effect sizes were small. The biggest differences were found between normal-weight people and people with obesity. It is questionable whether there would have been an even greater difference between the latter and underweight people – or whether underweight people would have experienced a different form of body criticism. It could also be possible for underweight people to be quickly confirmed in their behavior by appropriate media content.

What becomes particularly clear within the present study is that not only one factor determines how the *Fitspiration* images are perceived. Regarding the cognitive perception of the body image, the perceived attractiveness of the models, as well as the age, and sometimes the gender of the participants are also important. In future studies, attention should be paid to an even broader age spectrum, considering that especially younger people are likely to be easily influenced (Neyer & Asendorpf, 2018). The intra-individual fluctuations decrease with increasing age. In part, this can be conveyed by the results of the present study.

The theory of social comparison represents a helpful foundation for the investigation of the effect of the material in question. This becomes particularly clear since there only

occurred significant changes with regard to the body image for the subjects who found both models attractive. This could be relevant for other areas of life, for example the marketing use of Instagram profiles. Influencers are not only able to gain the trust of their fans faster than unreachable celebrities, they also seem to have great potential for influencing the body image and self-esteem of their followers. The values, behaviors and norms they convey could be established via the shortest possible way in the lives of their fans. It is therefore even more logical that many well-known Instagram users are currently cooperating with sports, lifestyle or health brands. Also, nowadays an emphasis on self-actualization, mindfulness and closeness to nature seems to be on the rise.

Regarding the aspect of self-esteem, it should be emphasized that the BMI stands rather in the background compared to the effect on the body image. However, the age of the participants stands out again. As mentioned, self-esteem could be indirectly affected by a long-term influence on the body image. People with a better body image have a higher self-esteem within the present data set. It also seems that especially those who already have a good body image and a comparatively high self-esteem are influenced to a positive degree by the *Fitspiration* images.

It is advisable to take a closer look at a younger target group for further studies of this aspect. Significantly larger effects could arise here. In addition, the target group of those who grew up with Instagram and other social media platforms is probably also the one who is most in contact with it. Of particular interest here is the usage time, which was recorded within the present study. Unfortunately, a closer look would go beyond the theoretical framework and extend the paper and its focus even more. Research questions 4 and 5, which related to the awareness of the topic of *Fitspiration* aimed in a similar direction. However, no significant difference in focus placement could be found between the two analysis groups. Those who are not familiar with the topic tend to have a higher focus spread. A conspicuous concentration on fitness-relevant areas cannot be determined in any of the groups.

Concerning the waist focus area, no significant results could be achieved with neither the survey nor the eyetracking data. It remains questionable whether this is due to the material available or the selected focus area. It is the responsibility of further examinations to check the question using other sport-relevant areas of the body.

It should be noted that the focus points of participants who are rather dissatisfied with their body image are distributed more widely over the images shown. Counter hypothesis 5 *When people are satisfied with their bodies, the focus while viewing Fitspiration images lies on the face* could only be carefully confirmed for the channel-test-group. The decisive factor

here was the higher focus diversification of those who are considered satisfied with their own bodies. There were no discernible differences in the course of the gaze between the two analysis groups for the content-group. It remains questionable whether the two models are considered sporty enough to even have a corresponding effect. An exaggerated posing or a suitable environment in the form of gyms or the like may also be expected within *Fitspiration* images.

The two models were photographed and shown in different positions. This should primarily provide an answer to the question of *faceism bias* (Archer et al., 1983, cited from Roberts & Fredrickson, 1997). Accordingly, the course of the gaze on the pictures with the male model was expected to be shorter. In addition, significantly more focus points were awaited in the head and face area. However, there were hardly any differences in the evaluation of the eye data. On the contrary, the tendency was even the reverse. It remains to be investigated in further research whether the *faceism bias* can be questioned in general.

In addition to the restrictions already mentioned, there are some further limitations which should be considered. The design cannot make any statements about long-term effects, although the influence of social media users is probably primarily due to repeated exposure to content. It has already been mentioned that more subjects in all age groups are required for more meaningful results. In addition, the usage time of Instagram could not be included within the present study. Instead, the investigation was limited to the awareness of *Fitspiration*, whereby it can be said that for many of the participants who had negated the concept, it turned out afterwards (after a brief explanation) that they did indeed know it, but out under a different name or had already received such content without any categorization.

It is questionable whether the models were really perceived as "*Fitspiration* content", since not all participants perceived them as beautiful or sporty. In relation to the female model it was mentioned in follow-up discussions that she was not perceived as sporty, but rather as very thin, although she was active as a fitness model for a sporting goods manufacturer. The male model was often discussed in terms of orthopedic rather than athletic considerations. It is therefore generally questionable whether an upward or downward comparison took place. For this purpose, further variables could be collected for control in further studies. In addition to the criticism of the model selection, the material may not have been recognized as *Fitspiration* material since this includes more than a pose in sports clothes. The different, distracting aspects such as background, accessories etc. may be perceived as essential for this category of posts.

In general, it should be mentioned that it is impossible to meet all tastes with just two models, and that the aspect of diversity remains completely in the background. Statements relating to culture cannot be made either. Since all data were collected at once, no difference in gender or sexuality can be examined.

Last but not least, the large section of *inspiration* was left out as well. This includes motivation, which could be stimulated for example by text modules in the Instagram description of the pictures or corresponding profile descriptions of the models. Such did not occur at all in the present study since the design itself was quite static.

Despite all these limitations, the paper nevertheless comes up with interesting results that largely contradict the previous theoretical thoughts. It will be all the more interesting to investigate the reasons for these contradictions within further studies.

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Appendix

Note: Appendix D and E will be found in the digital version.

Appendix A: Survey of the main study

Liebe Teilnehmende,

herzlichen Willkommen zu unserer Umfrage. Bevor es mit dem Experiment losgeht, würden wir Sie bitten, einige Fragen zu beantworten, welche auf den nächsten Seiten folgen.

Bitte lassen Sie sich nicht davon verunsichern, dass einige der Fragen ähnlich aufgebaut sind. Dies ist Teil der Untersuchung.

Als Dankeschön für Ihre Teilnahme haben Sie am Ende des Fragebogens die Möglichkeit, an der Verlosung von drei Amazon-Gutscheinen im Wert von je 10€ teilzunehmen.

Bei Fragen stehen wir jederzeit zur Verfügung.

Vielen Dank für Ihre Bereitschaft!

1. Versuchspersonen-Nummer (wird von der Versuchsleitung eingegeben)

Seite 02

2. Geschlecht

[Bitte auswählen]

3. Alter

4. Bitte geben Sie Ihre Größe in Zentimeter an, z. B. 165 cm --> 165

5. Bitte geben Sie Ihr Gewicht gerundet in Kilogramm an, z. B. bei 80kg --> 80

Seite 03

6. Was ist Ihr höchster Bildungsabschluss

- ○ kein Schulabschluss
- ○ Grund-/Hauptschulabschluss
- ○ Realschule (Mittlere Reife)
- ○ Gymnasium (Abitur)
- ○ Abgeschlossene Ausbildung
- ○ Fachhochschulabschluss
- ○ Hochschule (Bachelor)
- ○ Hochschule (Master)
- ○ Hochschule (Promotion)
- ○ Sonstige

7. Partner*innenwahlpräferenz

[Bitte auswählen]

8. Bestehen Vorerkrankungen, die Sie in Bezug auf Ihr Körpergewicht oder Ihre motorischen Fähigkeiten einschränken?

- ☐ keine
- ☐ Essstörung (z. B. Anorexie)
- ☐ Stoffwechselerkrankung (z. B. Diabetes)
- ☐ Sonstige (eigene Eingabe)

Seite 04
04

9. Bitte beurteilen Sie, inwieweit folgende Aussagen auf Sie zutreffen bzw. nicht zutreffen.

Ihre Antworten können Sie jeweils zwischen 1 = „stimme überhaupt nicht zu“ bis 5 = „stimme vollkommen zu“ abstufen.

	stimme überhaupt nicht zu				stimme vollkommen zu
Ich fühle mich körperlich wohl	○	○	○	○	○
Ich sehe besser aus als die meisten meiner Freunde	○	○	○	○	○
Ich habe gute sportliche Fähigkeiten	○	○	○	○	○
Ich fühle mich gut in meinem Körper	○	○	○	○	○
Ich habe zu viel Fett an meinem Körper	○	○	○	○	○
Ich bin gut in Sport	○	○	○	○	○
Mein Taillenumfang ist zu groß	○	○	○	○	○
Ich bin in den meisten Sportarten gut	○	○	○	○	○
Ich bin übergewichtig	○	○	○	○	○
Ich bin gutaussehend	○	○	○	○	○
Ich habe ein gutaussehendes Gesicht	○	○	○	○	○
Ich bin glücklich mit meinem Körper	○	○	○	○	○

Seite 05
05

10. Bitte beurteilen Sie, inwieweit folgende Aussagen auf Sie zutreffen bzw. nicht zutreffen.

Ihre Antworten können Sie jeweils zwischen 1 = „stimme überhaupt nicht zu“ bis 5 = „stimme vollkommen zu“ abstufen.

	stimme überhaupt nicht zu				stimme vollkommen zu
Ich bin zufrieden mit meinem Körper	○	○	○	○	○
Meinem Empfinden nach hat mein Körper zumindest einige gute Eigenschaften	○	○	○	○	○
Ich schätze die unterschiedlichen und einzigartigen Eigenschaften meines Körpers	○	○	○	○	○
Ich achte auf die Bedürfnisse meines Körpers	○	○	○	○	○
Ich fühle mich in meinem Körper wohl	○	○	○	○	○
Ich liebe meinen Körper	○	○	○	○	○
Ich respektiere meinen Körper	○	○	○	○	○
Ich habe eine positive Einstellung zu meinem Körper	○	○	○	○	○
Ich empfinde mich als schön, auch wenn ich mich von Bildern in den Medien oder attraktiven Menschen (z. B. Models, Schauspielerinnen/Schauspielern) unterscheide	○	○	○	○	○
Mein Verhalten zeigt meine positive Einstellung zu meinem Körper; zum Beispiel bewege ich mich erhobenen Hauptes und lächle	○	○	○	○	○

Seite 06

06

11. Bitte beurteilen Sie, inwieweit folgende Aussagen auf Sie zutreffen bzw. nicht zutreffen.

Ihre Antworten können Sie jeweils zwischen 1 = „stimme überhaupt nicht zu“ bis 5 = „stimme vollkommen zu“ abstufen.

	stimme überhaupt nicht zu				stimme vollkommen zu
Ich halte mich für einen wertvollen Menschen, jedenfalls bin ich nicht weniger wertvoll als andere auch	○	○	○	○	○
Ich besitze eine Reihe guter Eigenschaften	○	○	○	○	○
Ich habe eine positive Einstellung zu mir selbst gefunden	○	○	○	○	○
Ich wünschte, ich könnte vor mir selbst mehr Achtung haben	○	○	○	○	○
Alles in allem bin ich mit mir selbst zufrieden	○	○	○	○	○
Ich fühle mich von Zeit zu Zeit richtig nutzlos	○	○	○	○	○
Ich fürchte, es gibt nicht viel, worauf ich stolz sein kann	○	○	○	○	○
Alles in allem neige ich dazu, mich für einen Versager zu halten	○	○	○	○	○
Hin und wieder denke ich, dass ich gar nichts tauge	○	○	○	○	○
Ich besitze die gleichen Fähigkeiten wie die meisten anderen Menschen auch	○	○	○	○	○

Seite 07

07

Vielen Dank für die Beantwortung der Fragen. Im nächsten Schritt bitten wir Sie, an den Computer rechts neben Ihnen zu wechseln.

Bitte wenden Sie sich an die Versuchsleitung.

Seite 08
08

12. Bitte beurteilen Sie, inwieweit folgende Aussagen auf Sie zutreffen bzw. nicht zutreffen.

Ihre Antworten können Sie jeweils zwischen 1 = „stimme überhaupt nicht zu“ bis 5 = „stimme vollkommen zu“ abstufen.

	stimme überhaupt nicht zu				stimme vollkommen zu
Ich bin gutaussehend	○	○	○	○	○
Ich fühle mich gut in meinem Körper	○	○	○	○	○
Mein Taillenumfang ist zu groß	○	○	○	○	○
Ich habe ein gutaussehendes Gesicht	○	○	○	○	○
Ich bin übergewichtig	○	○	○	○	○
Ich habe zu viel Fett an meinem Körper	○	○	○	○	○
Ich fühle mich körperlich wohl	○	○	○	○	○
Ich bin gut in Sport	○	○	○	○	○
Ich sehe besser aus als die meisten meiner Freunde	○	○	○	○	○
Ich habe gute sportliche Fähigkeiten	○	○	○	○	○
Ich bin in den meisten Sportarten gut	○	○	○	○	○
Ich bin glücklich mit meinem Körper	○	○	○	○	○

Seite 09
09

13. Bitte beurteilen Sie, inwieweit folgende Aussagen auf Sie zutreffen bzw. nicht zutreffen.

Ihre Antworten können Sie jeweils zwischen 1 = „stimme überhaupt nicht zu“ bis 5 = „stimme vollkommen zu“ abstufen.

	stimme überhaupt nicht zu				stimme vollkommen zu
Ich empfinde mich als schön, auch wenn ich mich von Bildern in den Medien oder attraktiven Menschen (z. B. Models, Schauspielerinnen/Schauspielern) unterscheide	○	○	○	○	○
Ich respektiere meinen Körper	○	○	○	○	○
Ich achte auf die Bedürfnisse meines Körpers	○	○	○	○	○
Meinem Empfinden nach hat mein Körper zumindest einige gute Eigenschaften	○	○	○	○	○
Ich liebe meinen Körper	○	○	○	○	○
Ich fühle mich in meinem Körper wohl	○	○	○	○	○
Ich schätze die unterschiedlichen und einzigartigen Eigenschaften meines Körpers	○	○	○	○	○
Ich bin zufrieden mit meinem Körper	○	○	○	○	○
Mein Verhalten zeigt meine positive Einstellung zu meinem Körper; zum Beispiel bewege ich mich erhobenen Hauptes und lächle	○	○	○	○	○
Ich habe eine positive Einstellung zu meinem Körper	○	○	○	○	○

Seite 10
10

14. Bitte beurteilen Sie, inwieweit folgende Aussagen auf Sie zutreffen bzw. nicht zutreffen.

Ihre Antworten können Sie jeweils zwischen 1 = „stimme überhaupt nicht zu“ bis 5 = „stimme vollkommen zu“ abstufen.

	stimme überhaupt nicht zu				stimme vollkommen zu
Hin und wieder denke ich, dass ich gar nichts tauge	○	○	○	○	○
Ich fürchte, es gibt nicht viel, worauf ich stolz sein kann	○	○	○	○	○
Alles in allem neige ich dazu, mich für einen Versager zu halten	○	○	○	○	○
Ich habe eine positive Einstellung zu mir selbst gefunden	○	○	○	○	○
Alles in allem bin ich mit mir selbst zufrieden	○	○	○	○	○
Ich wünschte, ich könnte vor mir selbst mehr Achtung haben	○	○	○	○	○
Ich besitze die gleichen Fähigkeiten wie die meisten anderen Menschen auch	○	○	○	○	○
Ich fühle mich von Zeit zu Zeit richtig nutzlos	○	○	○	○	○
Ich halte mich für einen wertvollen Menschen, jedenfalls bin ich nicht weniger wertvoll als andere auch	○	○	○	○	○
Ich besitze eine Reihe guter Eigenschaften	○	○	○	○	○

Seite 11
11

15. War Ihnen eine der gezeigten Personen bereits vor dieser Studie bekannt?

○ ja
○ nein

16. Nachfolgend würden wir gerne von Ihnen erfahren, wie attraktiv Sie das Gesicht der zuvor gezeigten weiblichen beziehungsweise der männlichen Person einschätzen

	gar nicht attraktiv				sehr attraktiv
Gesicht der weiblichen Person	○	○	○	○	○
Gesicht der männlichen Person	○	○	○	○	○

Seite 12

17. Sind Sie selbst ein Nutzer von Instagram?

- ◯ ja
- ◯ nein

18. Wie viel Zeit verbringen Sie täglich im Durchschnitt auf Instagram?

Bitte geben Sie die Dauer in Minuten an.

Seite 13

19. Ist Ihnen das Genre „Fitspiration“ bekannt?

- ◯ ja
- ◯ nein

20. Bitte geben Sie zu den folgenden Aussagen Ihre persönliche Einschätzung ab.

	stimme überhaupt nicht zu				stimme vollkommen zu
Fitspiration halte ich für überflüssig	◯	◯	◯	◯	◯
Fitspiration setzt mich unter Druck	◯	◯	◯	◯	◯
Fitspiration inspiriert mich im positiven Sinne	◯	◯	◯	◯	◯
Fitspiration gibt mir ein schlechtes Gefühl	◯	◯	◯	◯	◯

Seite 14

Wenn Sie Interesse an der Verlosung der Amazon-Gutscheine im Wert von drei mal 10€ haben, dann geben Sie bitte hier ihre E-Mail-Adresse ein. Diese steht nicht im Zusammenhang mit Ihren Antworten und wir separat gespeichert.

- ☐ Ich will am **Gewinnspiel** teilnehmen. Ich willige ein, dass meine E-Mail-Adresse bis zur Ziehung der Gewinner gespeichert wird. Diese Einwilligung kann ich jederzeit widerrufen. Meine Angaben in dieser Befragung bleiben weiterhin anonym, meine E-Mail-Adresse wird nicht an Dritte weitergegeben.
- ☐ Ich interessiere mich für die **Ergebnisse dieser Studie** und hätte gerne eine Zusammenfassung per E-Mail.

Letzte Seite

Wir möchten uns ganz herzlich für Ihre Mithilfe bedanken.

Ihre Antworten wurden gespeichert, Sie können das Browser-Fenster nun schließen.

Möchten Sie in Zukunft an interessanten und spannenden Online-Befragungen teilnehmen?

Wir würden uns sehr freuen, wenn Sie Ihre E-Mail-Adresse für das SoSci Panel anmelden und damit wissenschaftliche Forschungsprojekte unterstützen.

E-Mail: Am Panel teilnehmen

Die Teilnahme am SoSci Panel ist freiwillig, unverbindlich und kann jederzeit widerrufen werden.
Das SoSci Panel speichert Ihre E-Mail-Adresse nicht ohne Ihr Einverständnis, sendet Ihnen keine Werbung und gibt Ihre E-Mail-Adresse nicht an Dritte weiter.

Sie können das Browserfenster selbstverständlich auch schließen, ohne am SoSci Panel teilzunehmen.

Appendix B: Stimulus showed to test group “content”

1_frontal_m

1_frontal_w

2_frontal_Arm links_m

2_frontal_Arm links_w

3_frontal_Arm rechts_m

3_frontal_Arm rechts_w

4_frontal_beide Arme_m

4_frontal_beide Arme_w

5_frontal_Arm Huefte_m

5_frontal_Arm Huefte_w

6_frontal_Arm Kopf_m

6_frontal_Arm Kopf_w

7_frontal_Arme vorne_m

7_frontal_Arme vorne_w

8_frontal_Squat_m

8_frontal_Squat_w

9_rueck_m

9_rueck_w

10_rueck_Arm links_m

10_rueck_Arm links_w

11_rueck_Arm rechts_m

11_rueck_Arm rechts_w

12_rueck_beide Arme_m

12_rueck_beide Arme_w

13_rueck_Arm Huefte_m

13_rueck_Arm Huefte_w

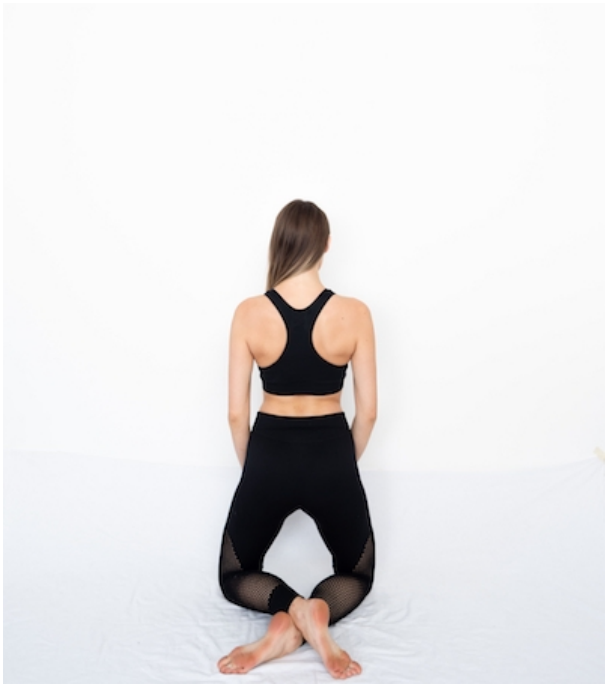
14_rueck_Arm Kopf_m

14_rueck_Arm Kopf_w

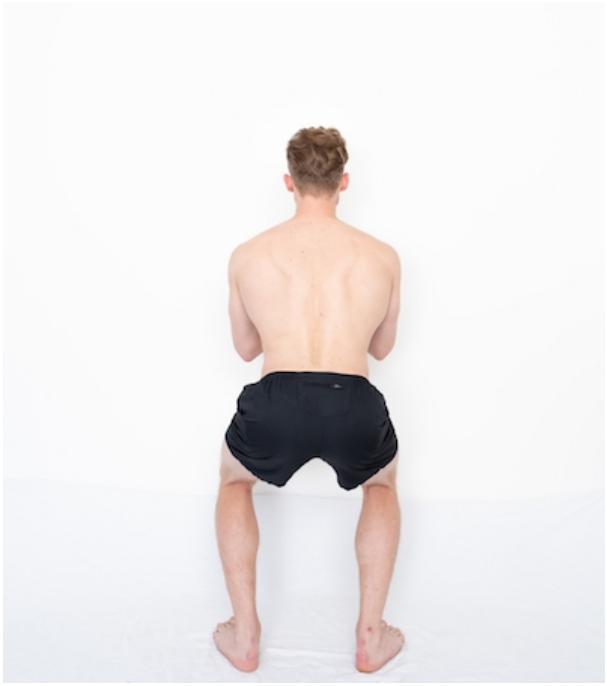
15_rueck_Beuge rechts_m

15_rueck_Beuge rechts_w

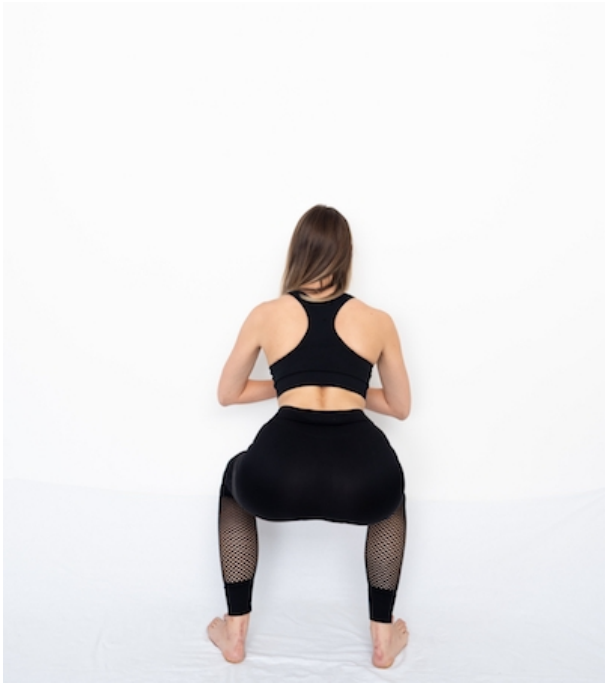
16_rueck_Knie_m



16_rueck_Knie_w

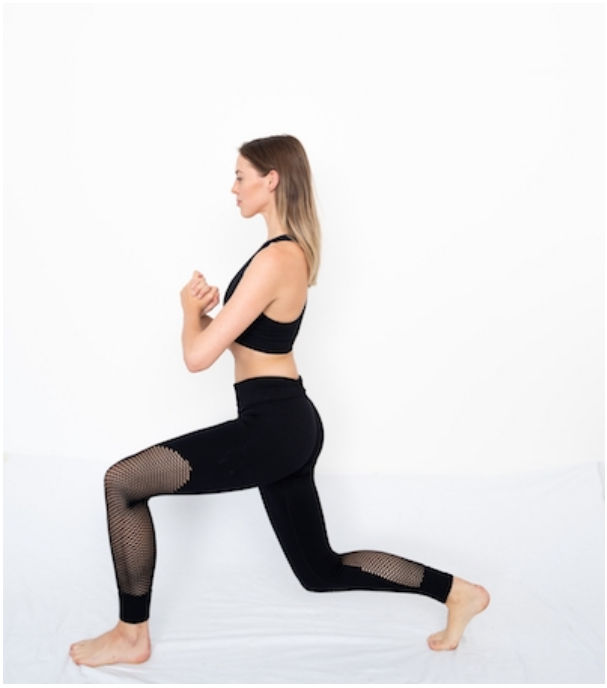


17_rueck_Squat_m



17_rueck_Squat_w

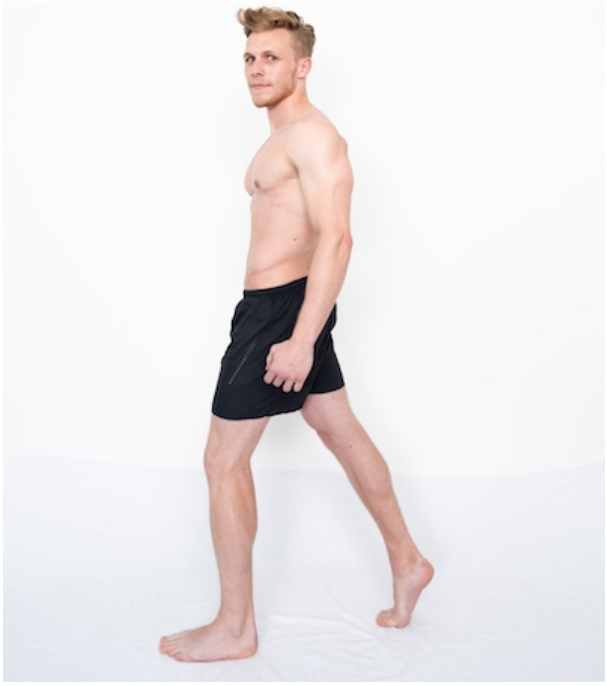
18_seit_Ausfallschritt_m



18_seit_Ausfallschritt_w

19_seit_drehen anspannen_m

19_seit_drehen anspannen_w



20_seit_Drehung_m

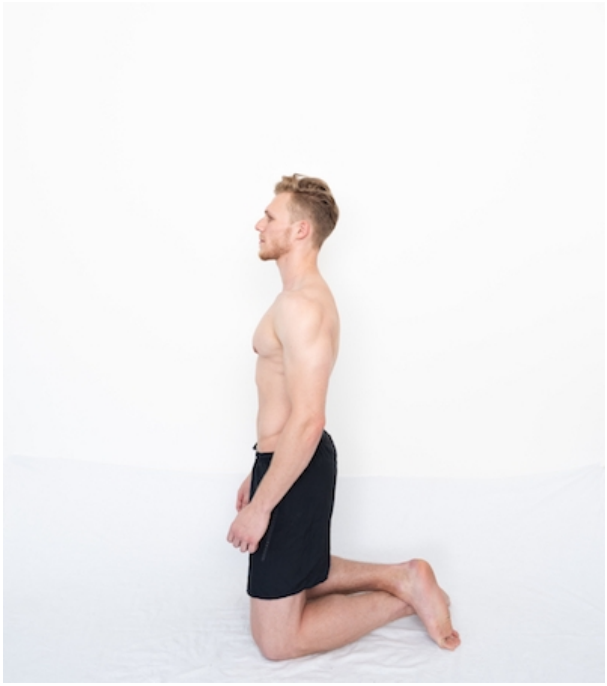
20_seit_Drehung_w

21_seit_Gesicht_m

21_seit_Gesicht_w

22_seit_Hand Huefte_m

22_seit_Hand Huefte_w



23_seit_Knie_m

23_seit_Knie_w

24_seit_Liegestütz_m

24_seit_ Liegestütz_w

25_seit_Plank_m

25_seit_Plank_w

26_seit_Rueckplank_m

26_seit_Rueckplank_w

27_seit_Stuetz_m

27_seit_Stuetz_w

28_frontal_Beuge links_m

28_frontal_Beuge links_w

29_frontal_Knie_m

29_frontal_Knie_w

30_seit_Profil_m

30_seit_Profil_w

31_seit_sitzend_m

31_seit_sitzend_w

32_seit_Sprung_m

32_seit_Sprung_w

33_seit_Squat_m

33_seit_Squat_w

34_seit_Crunch_m

34_seit_Crunch_w

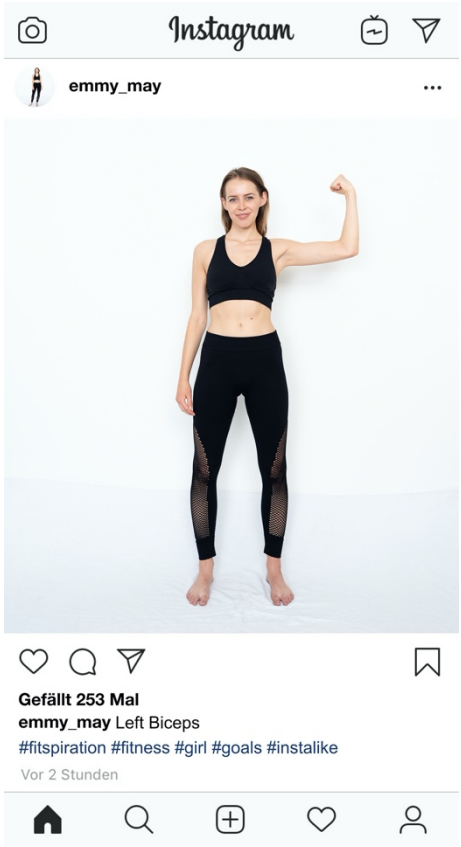
Appendix C: Stimulus showed to test group “channel”

This chapter contains the images showed to the “channel” test group. The pictures are embedded in an Instagram frame. The profiles and text areas are fictitious. Care was taken to ensure that the like numbers are in a similar, discreet range. The text parts are redundant and describe the pose shown. The hashtags also describe what is shown and give no further information about the profiles.

1_frontal_m

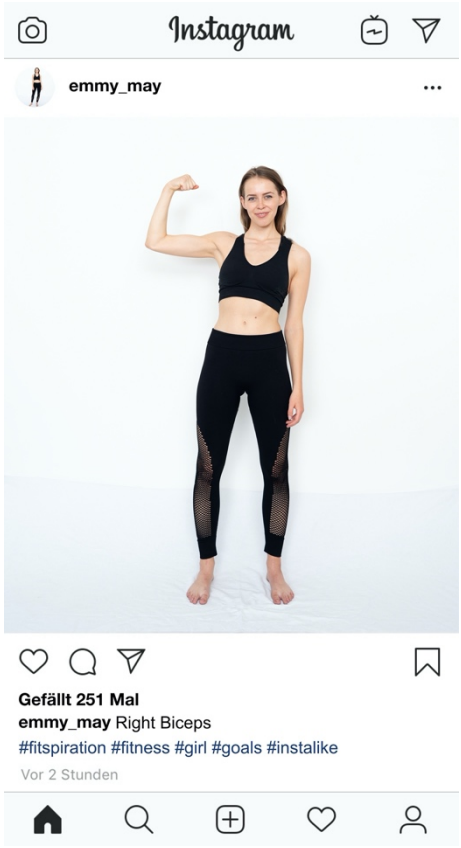
1_frontal_w

2_frontal_Arm links_m

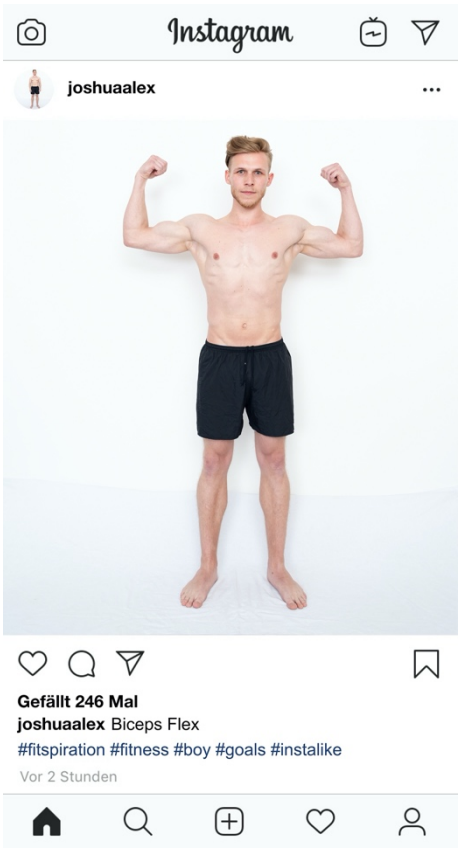


2_frontal_Arm links_w

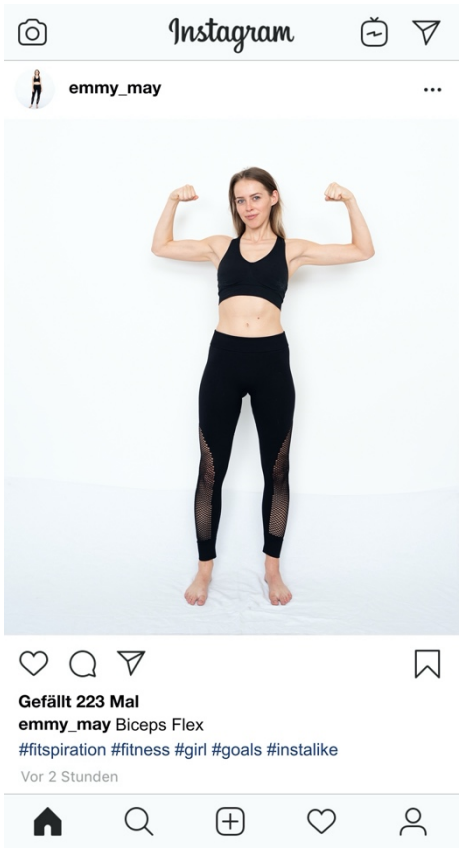
3_frontal_Arm rechts_m



3_frontal_Arm rechts_w



4_frontal_beide Arme_m

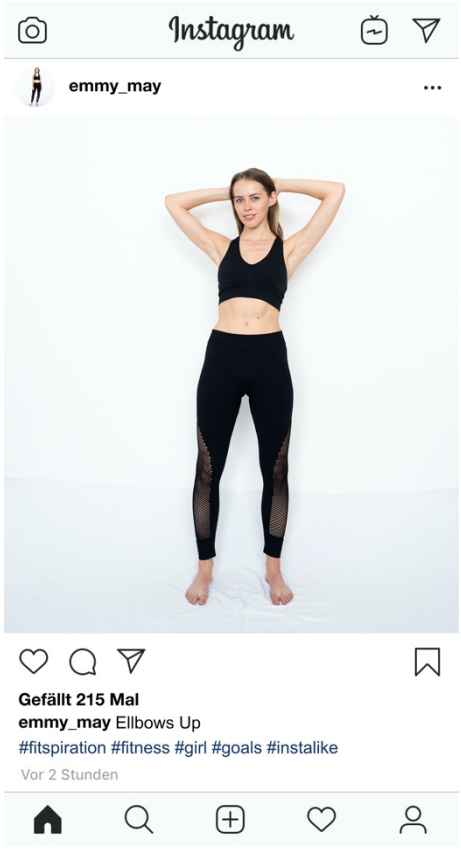


4_frontal_beide Arme_w

5_frontal_Arm Huefte_m

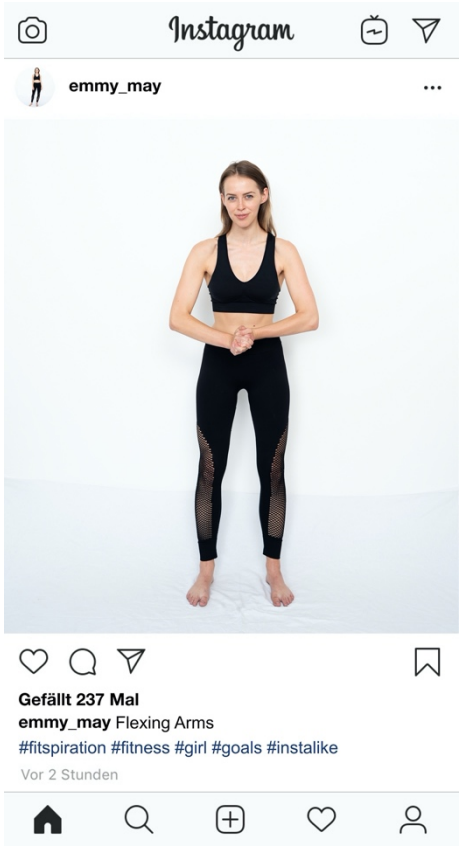
5_frontal_Arm Huefte_w

6_frontal_Arm Kopf_m



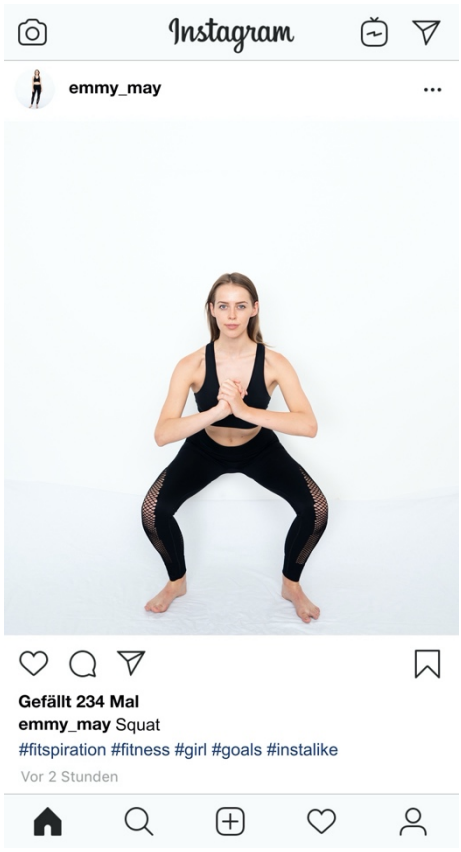
6_frontal_Arm Kopf_w

7_frontal_Arme vorne_m

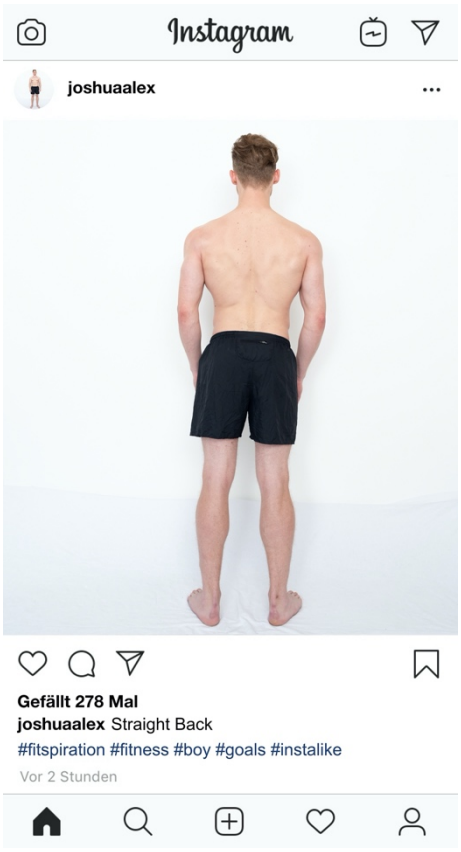


7_frontal_Arme vorne_w

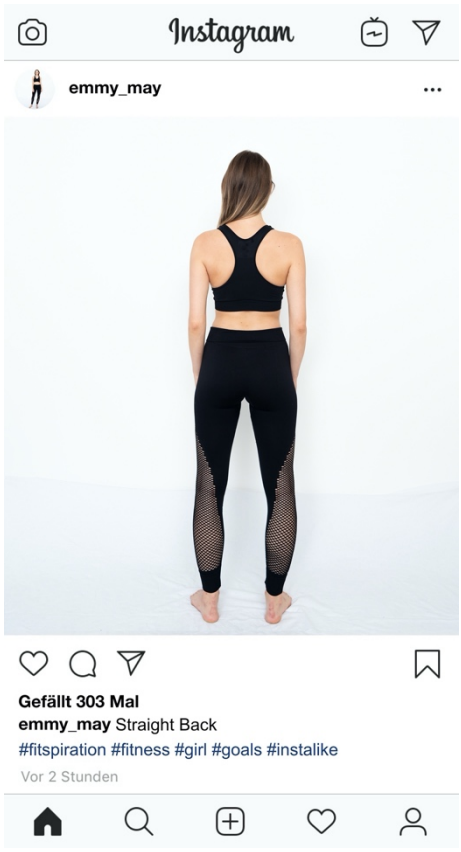
8_frontal_Squat_m



8_frontal_Squat_w

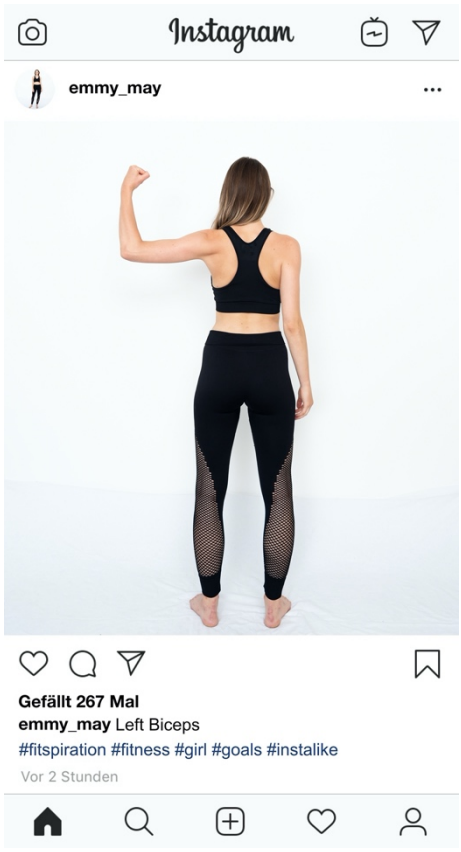


9_rueck_m

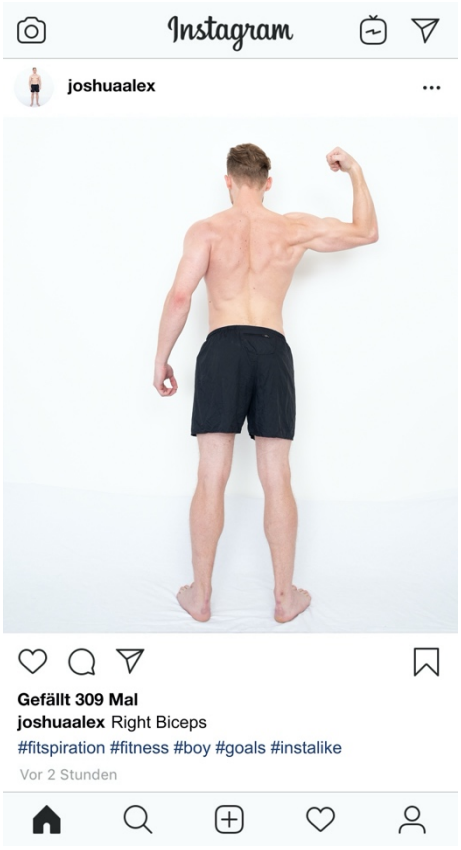


9_rueck_w

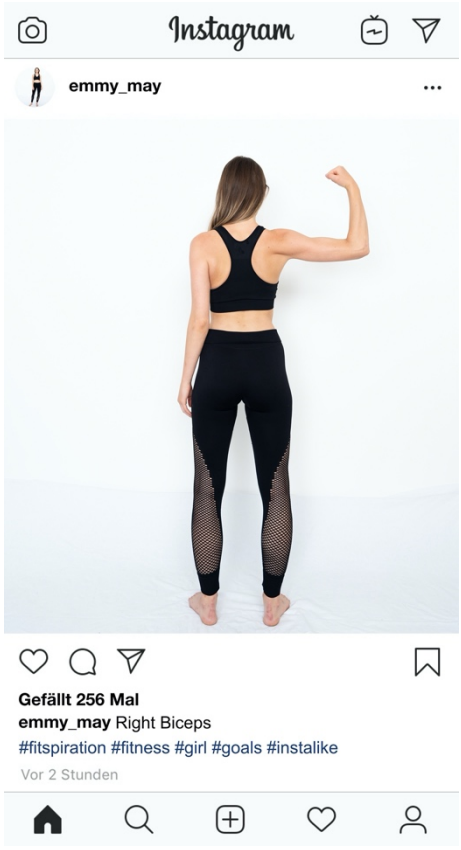
10_rueck_Arm links_m



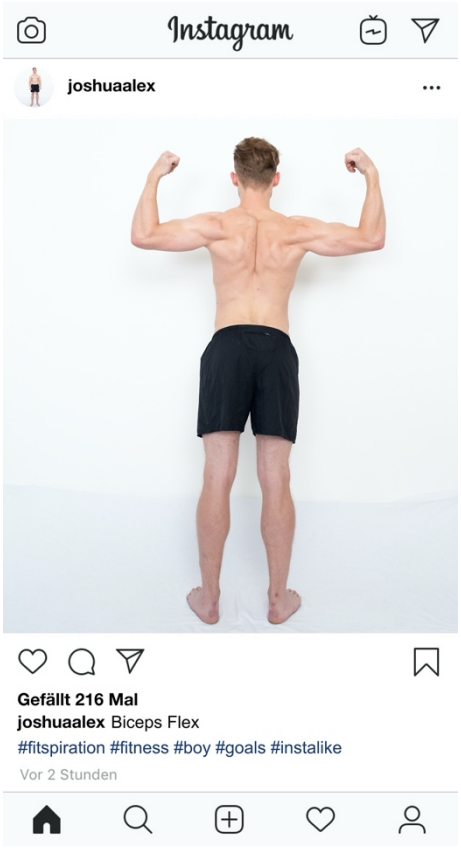
10_rueck_Arm links_w



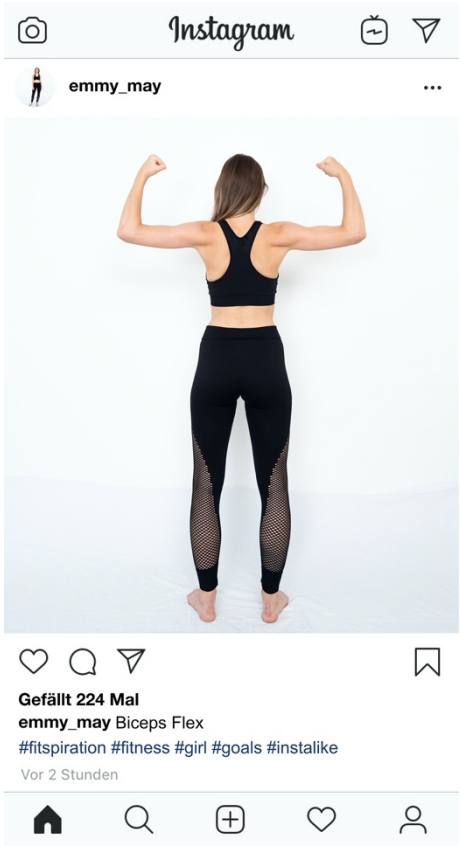
11_rueck_Arm rechts_m



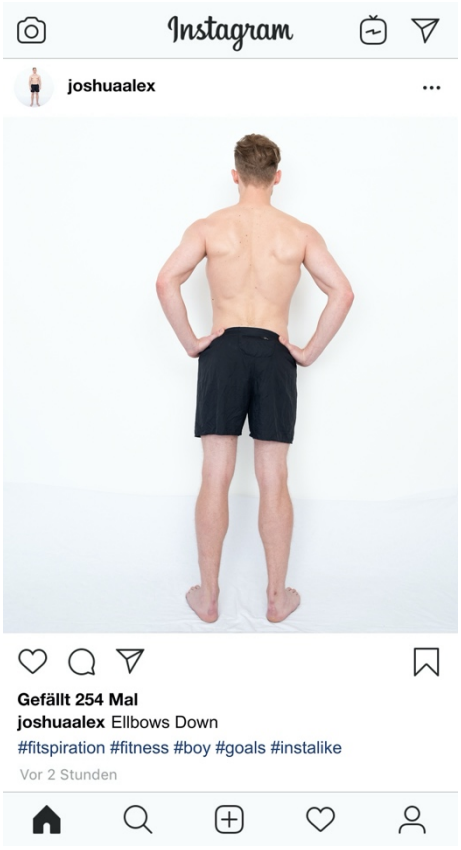
11_rueck_Arm rechts_w



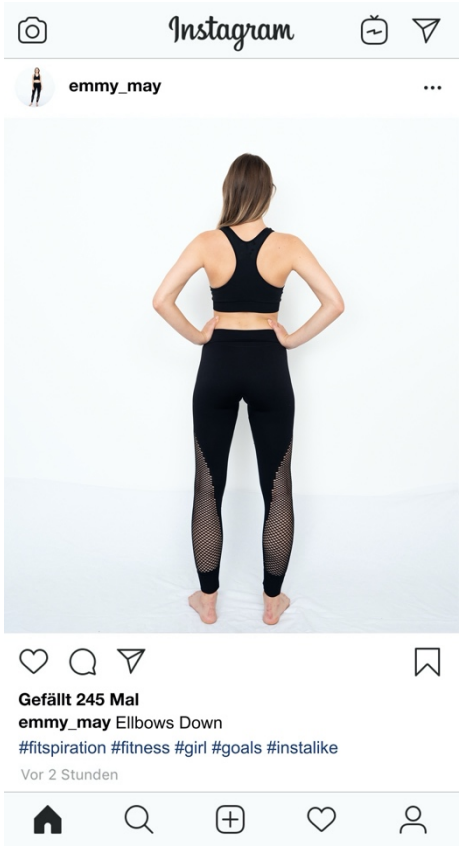
12_rueck_beide Arme_m



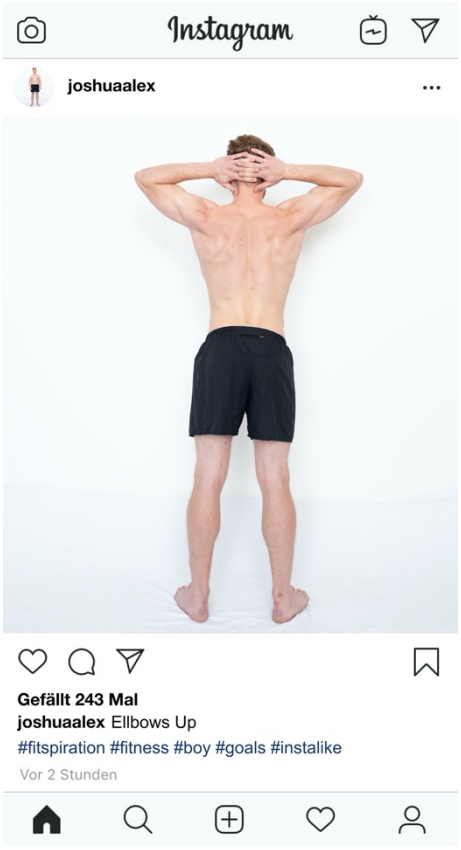
12_rueck_beide Arme_w



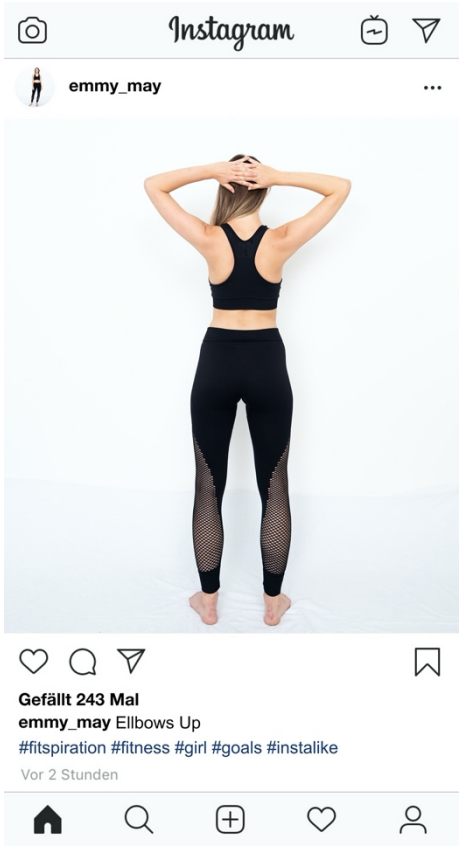
13_rueck_Arm Huefte_m



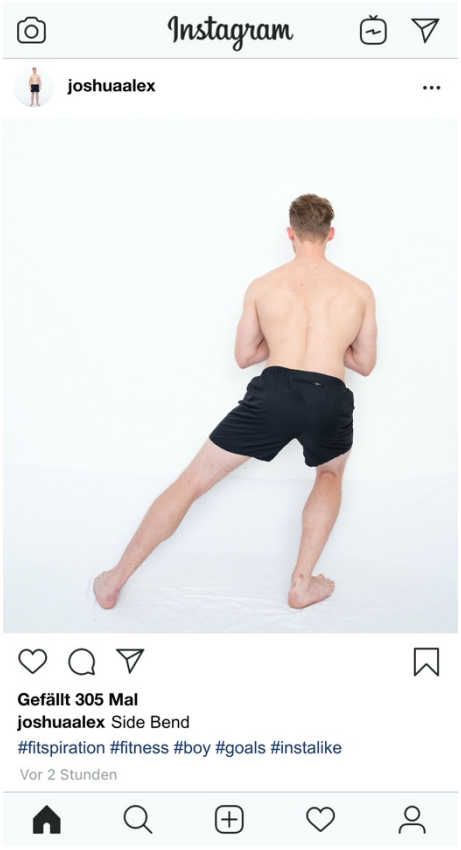
13_rueck_Arm Huefte_w



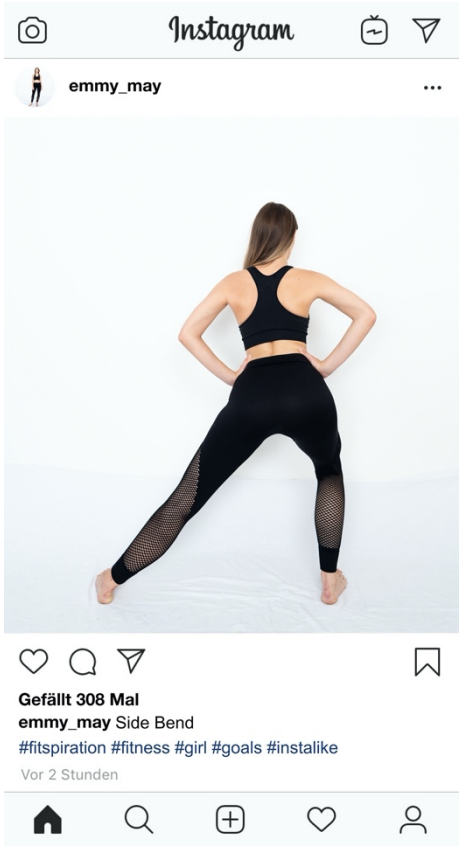
14_rueck_Arm Kopf_m



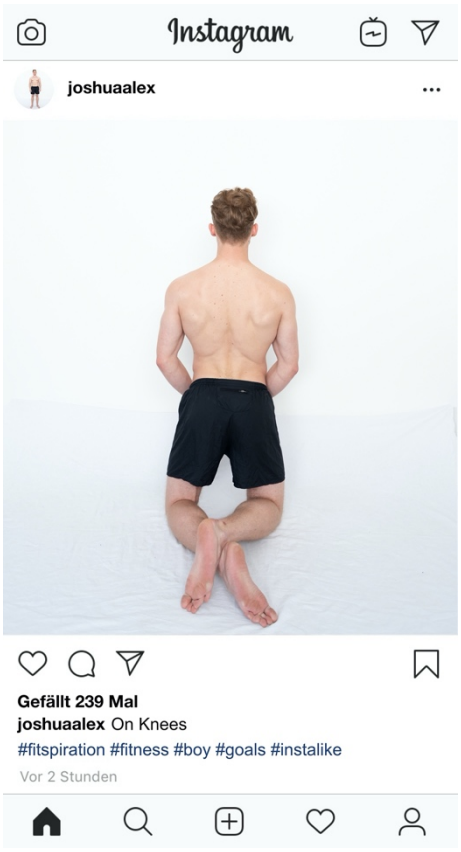
14_rueck_Arm Kopf_w



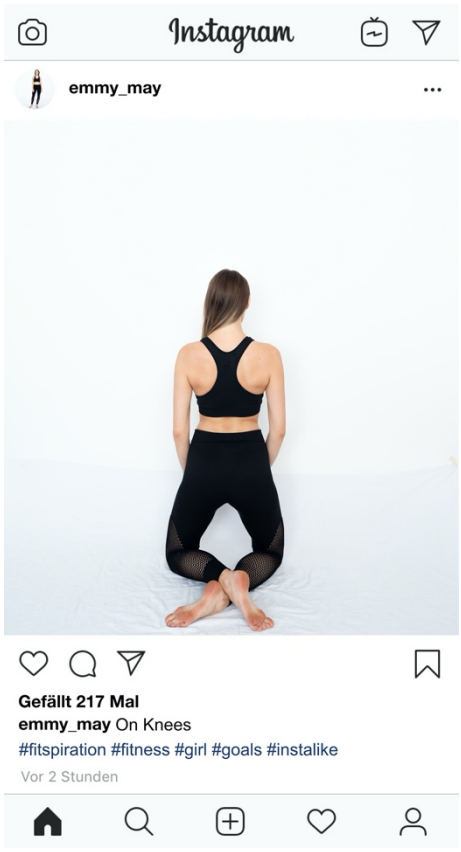
15_rueck_Beuge rechts_m



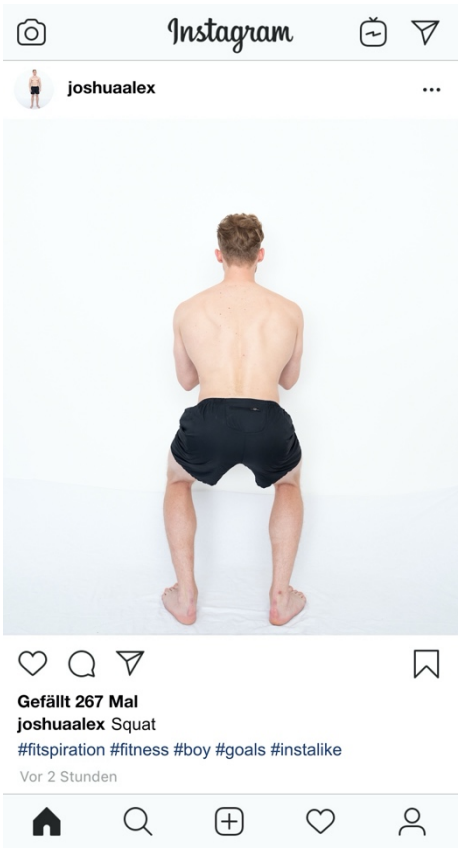
15_rueck_Beuge rechts_w



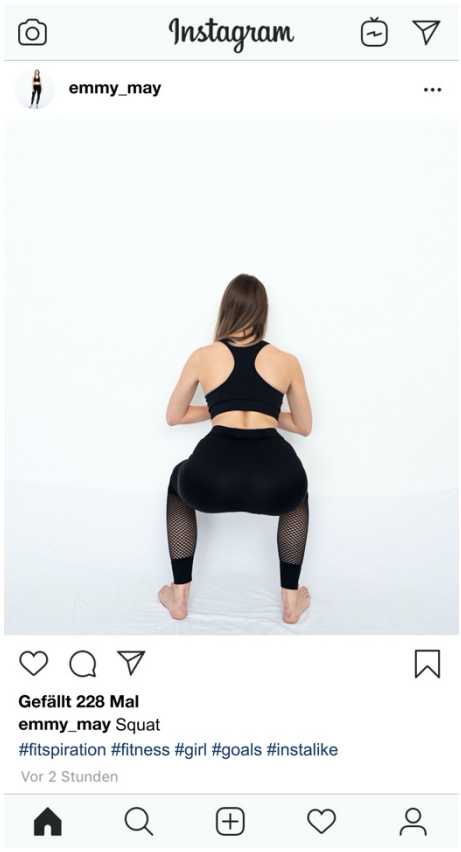
16_rueck_Knie_m



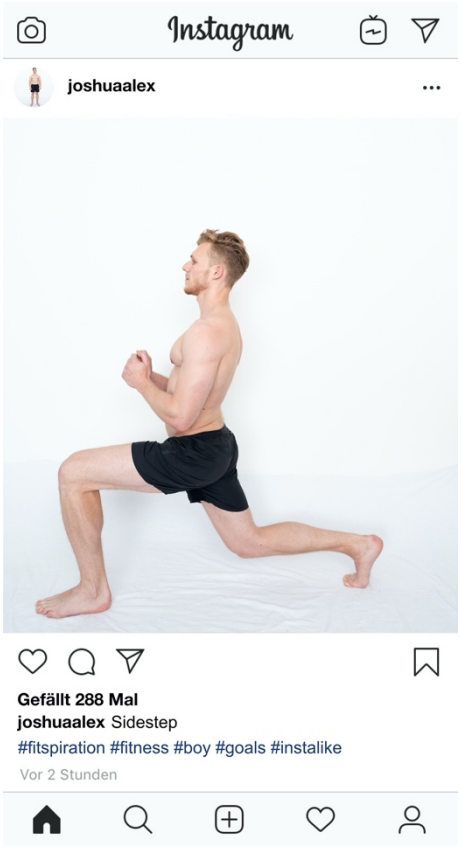
16_rueck_Knie_w



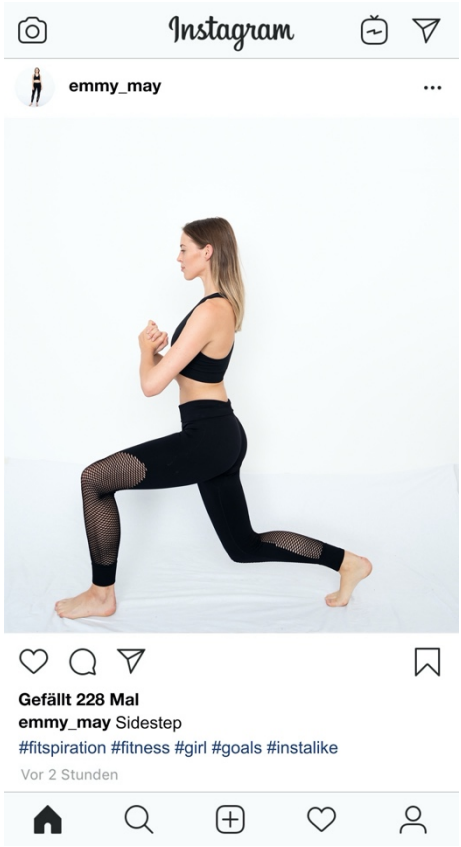
17_rueck_Squat_m



17_rueck_Squat_w

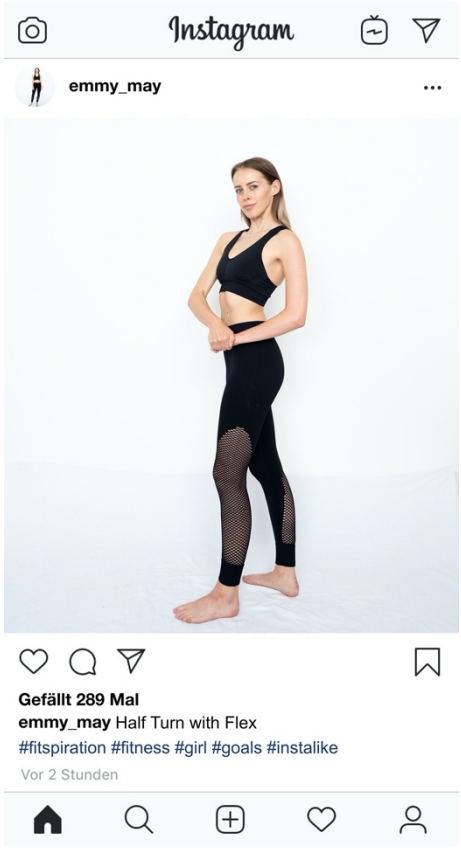


18_seit_Ausfallschritt_m



18_seit_Ausfallschritt_w

19_seit_drehen anspannen_m



19_seit_drehen anspannen_w

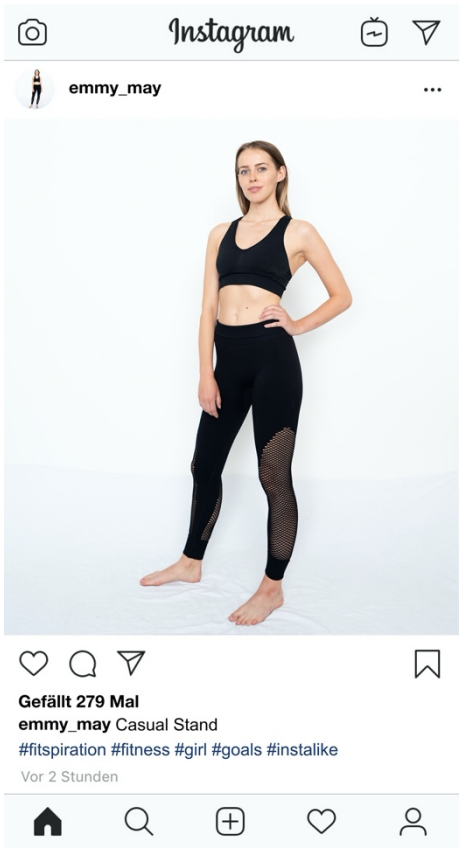
20_seit_Drehung_m

20_seit_Drehung_w

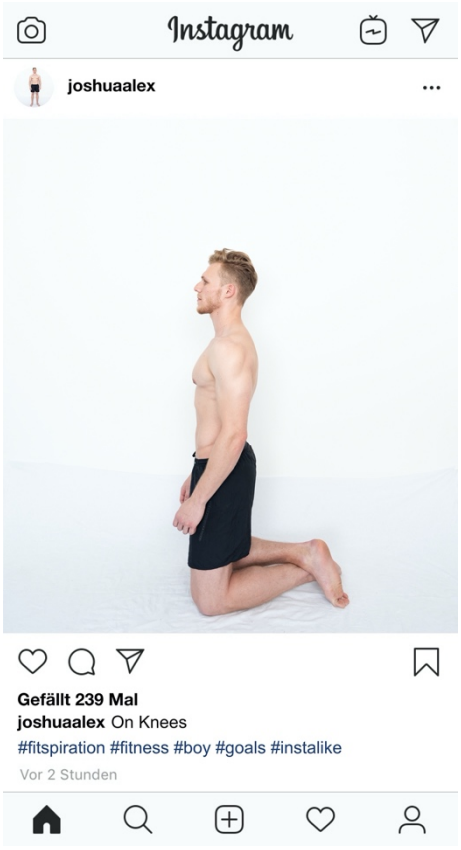
21_seit_Gesicht_m

21_seit_Gesicht_w

22_seit_Hand Huefte_m



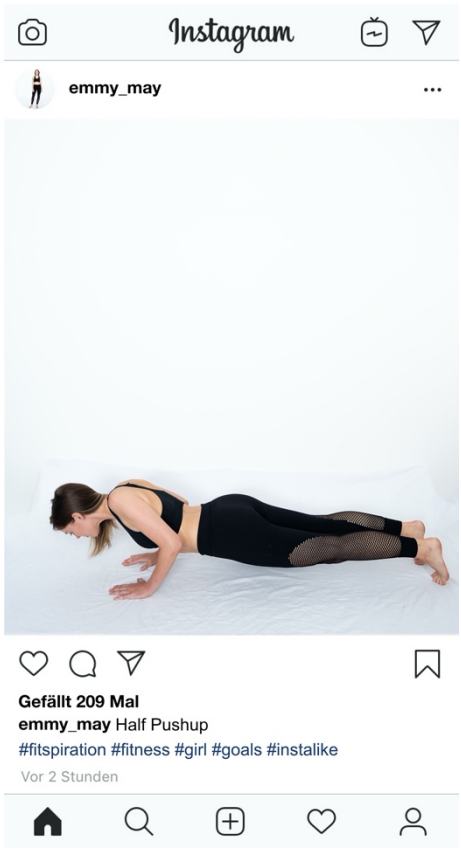
22_seit_Hand Huefte_w



23_seit_Knie_m

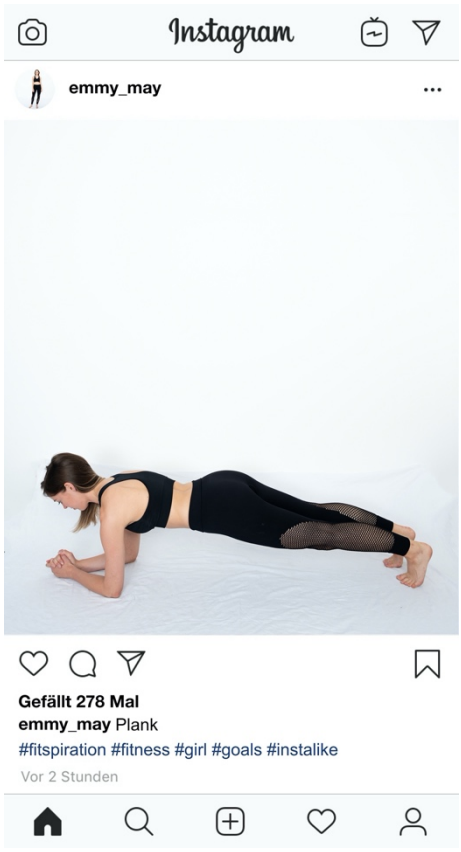
23_seit_Knie_w

24_seit_Liegestütz_m



24_seit_ Liegestütz_w

25_seit_Plank_m

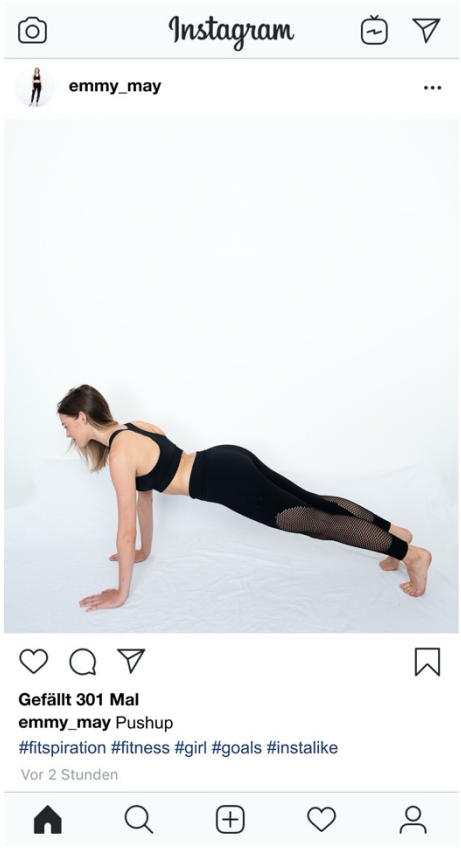


25_seit_Plank_w

26_seit_Rueckplank_m

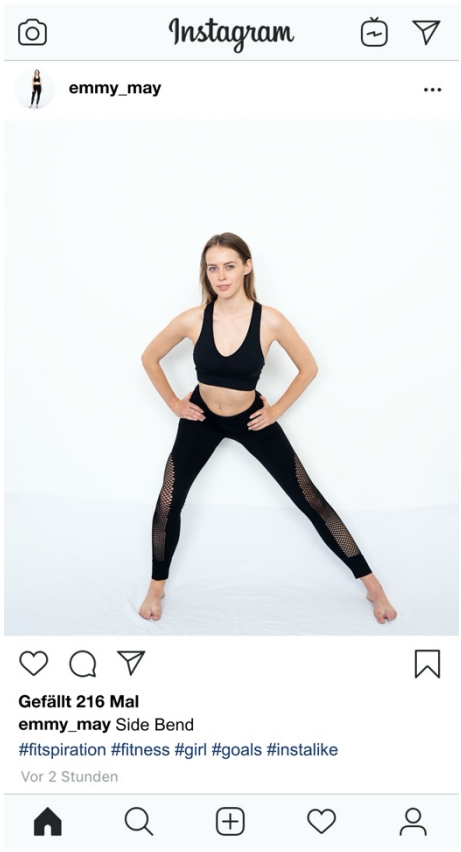
26_seit_Rueckplank_w

27_seit_Stuetz_m

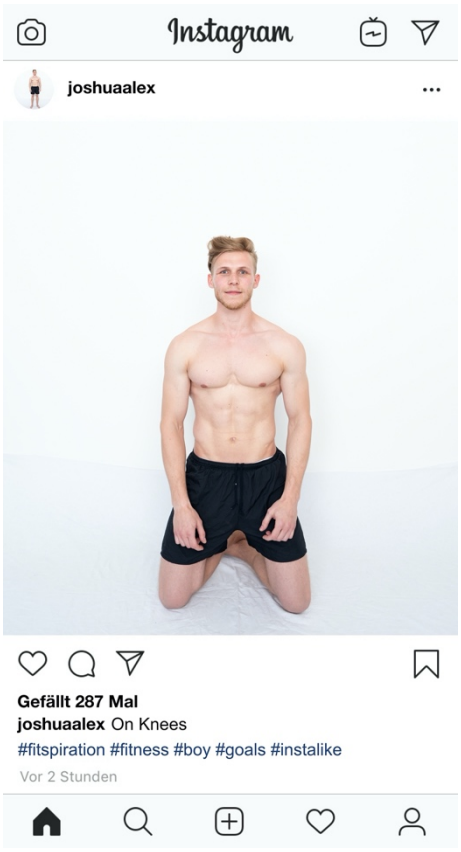


27_seit_Stuetz_w

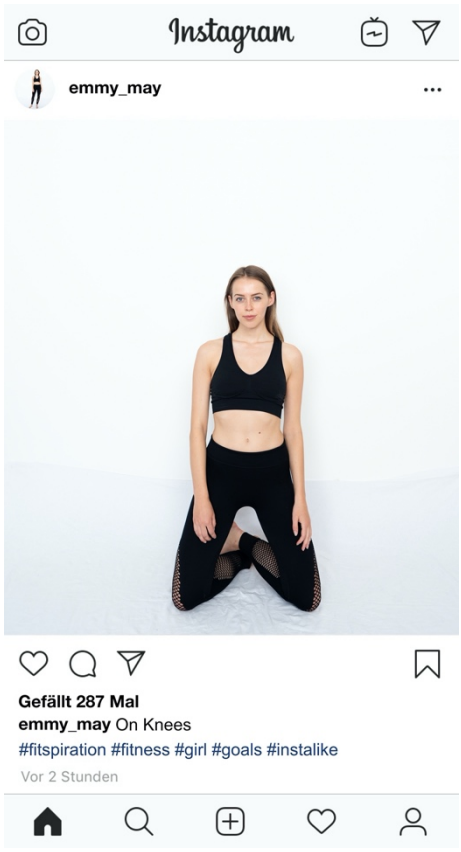
28_frontal_Beuge links_m



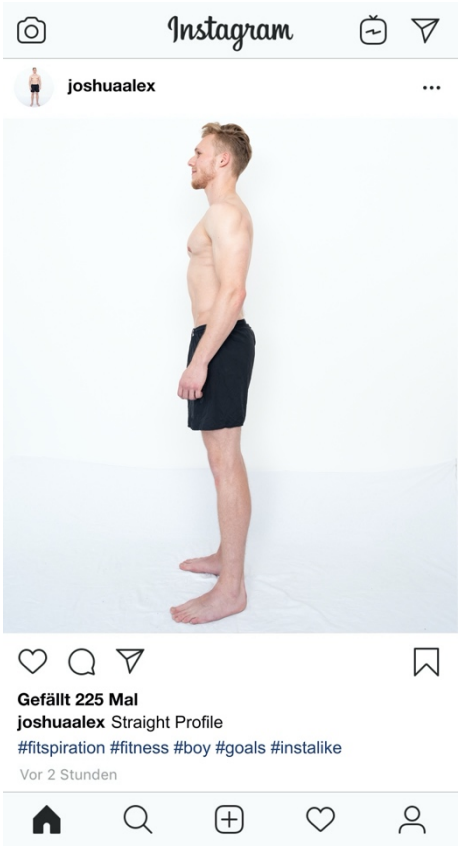
28_frontal_Beuge links_w



29_frontal_Knie_m



29_frontal_Knie_w

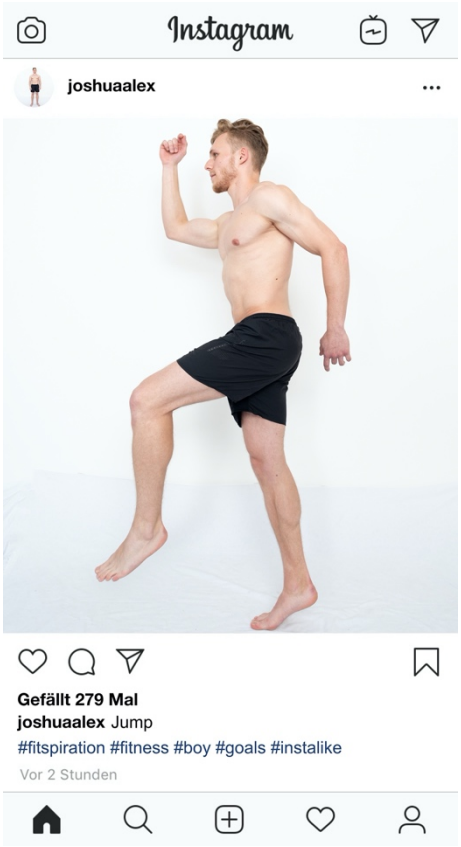


30_seit_Profil_m

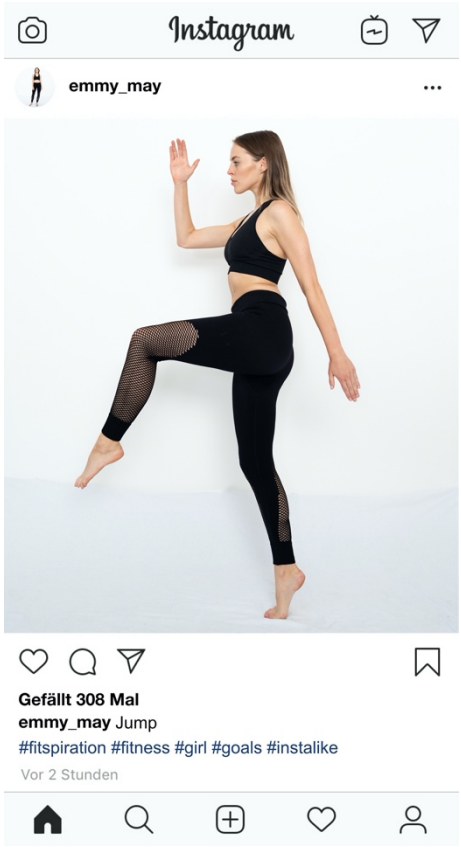
30_seit_Profil_w

31_seit_sitzend_m

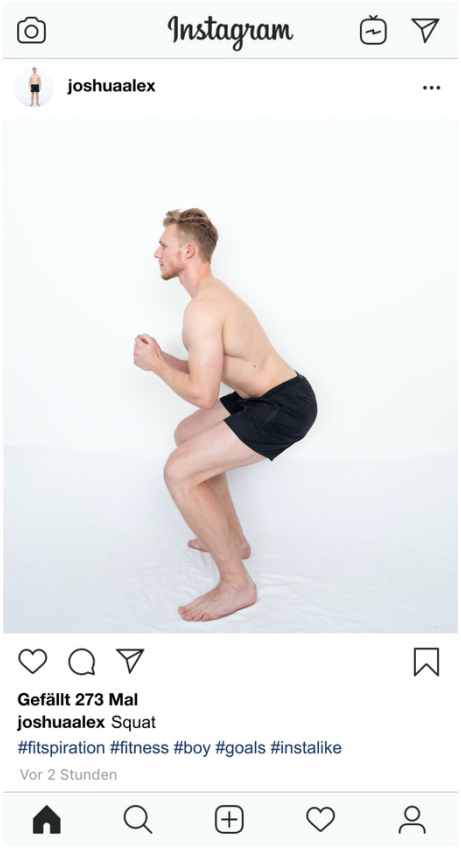
31_seit_sitzend_w



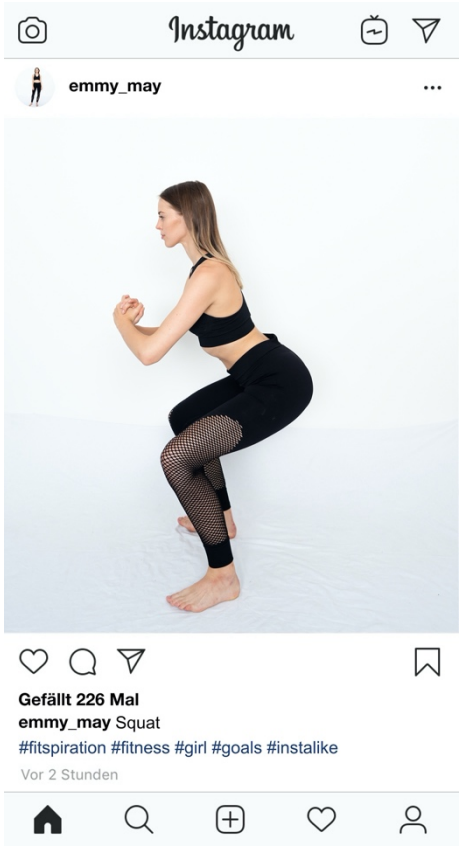
32_seit_Sprung_m



32_seit_Sprung_w

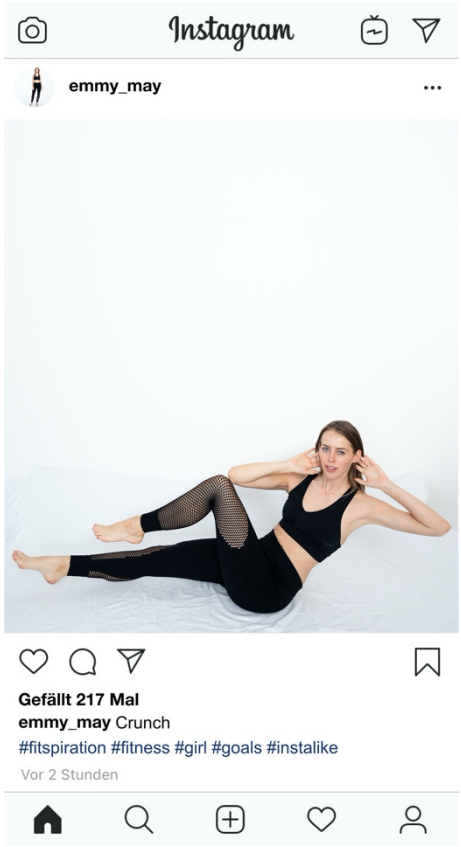


33_seit_Squat_m



33_seit_Squat_w

34_seit_Crunch_m



34_seit_Crunch_w

Declaration of an oath

We declare that we have completed this work independently and only using the specified tools and sources. The submitted work has not been used for other purposes or has been already published in German or another language.

Furthermore, the authors agree to make the present master thesis available for public use.

Jena, June 18, 2020

Mara Hucke

Michelle Sprinz