



Take a look at the bright side: Effects of positive body exposure on selective visual attention in women with high body dissatisfaction



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ABSTRACT

Women with high body dissatisfaction look less at their 'beautiful' body parts than their 'ugly' body parts. This study tested the robustness of this selective viewing pattern and examined the influence of positive body exposure on body-dissatisfied women's attention for 'ugly' and 'beautiful' body parts. In women with high body dissatisfaction ($N = 28$) and women with low body dissatisfaction ($N = 14$) eye-tracking was used to assess visual attention towards pictures of their own and other women's bodies. Participants with high body dissatisfaction were randomly assigned to 5 weeks positive body exposure ($n = 15$) or a no-treatment condition ($n = 13$). Attention bias was assessed again after 5 weeks. Body-dissatisfied women looked longer at 'ugly' than 'beautiful' body parts of themselves and others, while participants with low body dissatisfaction attended equally long to own/others' 'beautiful' and 'ugly' body parts. Although positive body exposure was very effective in improving participants' body satisfaction, it did not systematically change participants' viewing pattern. The tendency to preferentially allocate attention towards one's 'ugly' body parts seems a robust phenomenon in women with body dissatisfaction. Yet, modifying this selective viewing pattern seems not a prerequisite for successfully improving body satisfaction via positive body exposure.

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1. Introduction

Body dissatisfaction is considered a key factor underlying the development, maintenance, and relapse of eating disorders (e.g., Johnson & Wardle, 2005; Stice & Shaw, 2002). Consequently, addressing body dissatisfaction seems a crucial starting point for prevention, treatment, and long-term recovery of eating disorders. A critical question is how exactly body satisfaction can be effectively enhanced (e.g., Alleva, Sheeran, Webb, Martijn, & Miles, 2015; Jarry & Berardi, 2004). To develop effective interventions, it seems important to unravel the underlying processes maintaining body dissatisfaction and to directly tackle these processes in treatment. One of the processes that has been proposed to be critically involved in the persistence of body dissatisfaction is the tendency to preferentially allocate attention to one's 'ugly' body parts (e.g., Jansen, Nederkoorn, & Mulken, 2005; Smeets, Jansen, & Roefs, 2011). The major aim of the current study is to test whether this

selective viewing pattern can be successfully modified by means of a positive mirror exposure intervention (Jansen et al., 2016; Smeets et al., 2011).

Although not all findings are consistent (Von Wietersheim et al., 2012), overall, the available evidence converge to the conclusion that women high in body dissatisfaction tend to look less at their 'beautiful' body parts and more at their 'ugly' body parts compared to women with low body dissatisfaction (Janelle, Hausenblas, Ellis, Coombes, & Duley, 2009; Jansen et al., 2005; Roefs et al., 2008). Such a selective viewing pattern might maintain or even increase a negative evaluation of one's body. The potentially detrimental influence of selective visual attention on people's body satisfaction has been elegantly demonstrated in an experimental study in which healthy female students were trained for 20 min to look at either their unattractive or their attractive body parts on a computer screen. Participants became more dissatisfied with their bodies only in the condition where they were trained to look at their unattractive body parts (Smeets et al., 2011). In line with the idea that selective viewing patterns towards one's body contribute to the persistence of body dissatisfaction, it was proposed that treatment for eating disorder patients might benefit from training

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patients to attend more to their 'beautiful' body parts (cf. Jansen et al., 2016; Smeets et al., 2011).

A class of interventions that seems to most directly target the way in which individuals look at their body is mirror exposure. Several studies already showed positive effects of mirror exposure on body satisfaction (Delinsky & Wilson, 2006; Díaz-Ferrer, Rodríguez-Ruiz, Ortega-Roldán, Moreno-Domínguez, & Fernández-Santaella, 2015; Hilbert, Tuschen-Caffier, & Vogeles, 2002; Hildebrandt, Loeb, Troupe, & Delinsky, 2012; Jansen et al., 2016, 2008; Key et al., 2002; Luethcke, McDaniel & Bekker, 2011; Moreno-Domínguez, Rodríguez-Ruiz, Fernández-Santaella, Jansen, & Tuschen-Caffier, 2012; Trentowska, Svaldi, & Tuschen-Caffier, 2014). However, it is still unknown how mirror exposure exactly works and whether a change in biased spontaneous viewing patterns is indeed an important mechanism of action driving the effects of mirror exposure. Therefore, the main goal of the present study is to investigate whether the efficacy of multiple session mirror exposure to improve body satisfaction in body-dissatisfied women is associated with its efficacy to modify their tendency to preferentially allocate attention to 'ugly' body parts in the context of a free-viewing task. In the present study we employ mirror exposure in the context of so-called positive body exposure (cf. Jansen et al., 2016). In positive body exposure, individuals are specifically trained to look at their attractive body parts.

In the present study, a group of normal weight women with high body dissatisfaction and a comparison group of normal weight women with low body dissatisfaction were exposed to pictures of their own body and bodies of other women. Eye movement registration was used to assess participants' spontaneous viewing behavior in the context of a free-viewing tasks. In line with previous studies, we examined differential viewing patterns for 'beautiful' and 'ugly' body parts (cf. Jansen et al., 2005). Then, body-dissatisfied women were randomly assigned to 5 weeks of positive body exposure (cf. Jansen et al., 2016) in which they were trained to look at their most attractive body parts in the mirror, or to a no-training control condition. After 5 weeks, both groups were assessed again. First, we will test whether we can replicate prior findings that before the training women with high body dissatisfaction will show a spontaneous tendency to look less at their 'beautiful' body parts and more at their 'ugly' body parts than women with low body dissatisfaction (cf. Jansen et al., 2005). Second, we will critically extend previous research by testing whether positive body exposure reduces body-dissatisfied women's preference for looking at their 'ugly' body parts, and whether such a change in viewing behavior would be related to an increase in body satisfaction.

2. Method

2.1. Participants

As part of an online survey, 252 first year female psychology students of the University of Groningen filled in the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 2008) as well as their length and weight. The 33% highest scoring participants and the 20% lowest scoring participants on the subscales weight and shape concerns of the EDE-Q and with a healthy weight (BMI > 18.5 and <25) were invited to participate in the current study. Participants scoring high on the Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 2002) were excluded from the study, because we expected that they might not be able to complete the whole study. Of the 45 interested participants, two dropped-out after the baseline assessment and 1 participant could not attend the body exposure training. The final sample consisted of 28 women with high body dissatisfaction and a comparison group of

14 women with low body dissatisfaction. Participants with high body dissatisfaction were stratified according to their scores on the EDE-Q and subsequently randomly assigned to either the active intervention group that received positive body exposure ($n = 13$), or the no-training control group ($n = 15$).

2.2. Materials

2.2.1. Eating disorder pathology

Eating disorder symptoms were measured with the most recent version of the EDE-Q (EDE-Q 6.0; Fairburn & Beglin, 2008). The EDE-Q is the questionnaire version of the Eating Disorder Examination interview and is used to assess eating disorder psychopathology during the last 28 days. The scale consists of four subscales (range 0–6): restraint, eating concern, weight concern, and shape concern. The total EDE-Q score provides a global measure of the severity of eating disorder pathology. Items are answered on a scale between 0 (no days) and 6 (every day). The EDE-Q has demonstrated good internal consistency, temporal stability, and reliability (Berg, Peterson, Frazier, & Crow, 2012; Luce & Crowther, 1999). Also in the current sample the EDE-Q showed high internal consistency (restraint: $\alpha = 0.88$; eating concern: $\alpha = 0.83$; weight concern: $\alpha = 0.92$; shape concern: $\alpha = 0.96$).

2.2.2. Selective viewing pattern

We used a free-viewing task that was designed according to Jansen et al. (2005) to measure participants' spontaneous viewing behavior when exposed to images of one's own body and of other people's bodies. At the start of the task, participants were told that they would first see a picture of someone else's body ('control' body), then a picture of themselves, and then a picture of a different control body. The pictures were presented for 30 s each, during which the eye movements were registered. In between the pictures there was an interval of 5 s to give participants the opportunity to blink their eyes.

2.2.3. Equipment

Visual attention was measured with an EyeLink 1000 Desktop Mount eye tracking system (SR Research, Mississauga, Ontario, Canada). The camera was set at a sampling rate of 500 Hz and an illuminator power of 75%. Participants were seated on an adjustable chair with their head resting on a headrest that was placed 56 cm in front of the computer screen. Stimuli were displayed on a LED-LCD (24 inch Iiyama ProLite) monitor with a resolution of 1920 × 1080 pixels and the free-viewing task was programmed in E-prime 2.0 software (Psychology Software Tools, Pittsburgh, PA). Before the task started, the camera was focused on the dominant eye and a standardized 5-point calibration was conducted. Both the percentage dwell time and the number of fixations (>100 ms; cf. Janelle et al., 2009) were registered.

2.2.4. Stimuli

Participants were photographed in a photo studio. The background color of the pictures was "lagoon blue" and all participants wore similar skin-colored underwear which was provided by the researchers. Participants were photographed from the front with their arms loosely beside their body and their face outside the picture. During the free-viewing task these pictures were used as own stimulus and as control stimuli for other participants. When participants were recognizable for example because of tattoos or scars, these pictures were not used as control stimuli.

2.2.5. Body evaluation

After the free-viewing task we asked the participants to indicate on each of the three pictures which area they considered most

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