

# Body matters : interventions and change techniques designed to improve body image

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# Summary

Negative body image affects a sizeable percentage of women and men at all stages of the lifespan (Smolak, 2011; Tiggemann, 2004; Tiggemann, 2011). It is a problem in and of itself, but also because it can have serious consequences. For example, negative body image is associated with unhealthy eating behaviour, physical inactivity or (at the other extreme) excessive exercise, low self-esteem, depression, obesity, and the development and maintenance of an eating disorder (Cafri et al., 2005; Grabe, Hyde, & Lindberg, 2007; Grogan, 2006; Johnson & Wardle, 2005; Levine & Piran, 2004; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006; Paxton, Neumark-Sztainer, & Hannan, & Eisenberg, 2006; Tiggemann, 2005). Considering the prevalence and potential consequences of negative body image, it is important to investigate how negative body image can be treated. Therefore, the overarching aim of this thesis was to answer the question: How can body image be improved? This question was divided into the following three sub-questions that guided the research conducted during the PhD project: (1) how is negative body image currently treated – and are existing interventions effective?; (2) how can we improve the way that individuals feel about their own body?; and (3) how can we improve the way that individuals feel about their own body in relation to the social environment?

**Chapter 1** described the concept of negative body image as well as its consequences. The central aim of the thesis was presented, along with the three sub-questions that motivated the studies (as aforementioned). Thereafter, the background pertaining to each sub-question was briefly introduced, along with a specification of how it was addressed by the research. At the end of the chapter, an outline of the remainder of the thesis was given.

**Chapter 2** concerned research that was carried out to address the first sub-question: How is negative body image currently treated – and are existing interventions effective? The chapter described a meta-analytic review that we conducted both to evaluate the overall effectiveness of extant stand-alone interventions to improve body image, and to identify the *specific change techniques* that improve body image. To do so, we created a taxonomy of 48 change techniques used in stand-alone interventions to improve body image. Studies were only selected if they met strict inclusion criteria, and risk of bias within individual studies (e.g., attrition bias) and across studies (e.g., publication bias) was assessed.

Overall, interventions seemed to produce reliable and small-to-medium improvements in body image. However, evidence was found for bias both within and across studies and, when accounting for these sources of bias, it appeared that interventions produced reliable but *small* improvements in body image. Although interventions appeared to produce reliable reductions in internalisation of the beauty ideal and the tendency to make social comparisons, the effects were no longer reliable once sources of bias were accounted for. In addition, 12 specific change techniques were associated with improvements in body image, and three techniques were contra-indicated. Several features of the sample, intervention, and methodology moderated intervention effects.

The main conclusions of the meta-analytic review were that efforts must be taken to tackle sources of bias in the field of body image research, and the 12 change techniques that were associated with improved body image warrant consideration in designing the content of future interventions. It was also concluded that, in general, interventions must be strengthened to engender larger improvements in body image and to affect secondary outcomes such as internalisation of the beauty ideal and social comparison tendencies.

**Chapter 3** described two studies that were conducted to answer the second sub-question: How can we improve the way that individuals feel about their own body? Drawing from the *objectification theory* (Fredrickson & Roberts, 1997), we reasoned that focusing on the functionality of the body (i.e., everything the body can *do*) – rather than on physical appearance – would lead to improvements in body image. Given that prior studies had only demonstrated a correlation between focusing on body functionality and indicators of a healthier body image, it was first necessary to demonstrate that focusing on body functionality can *cause* improvements in body image. To this end, we conducted two experiments with female and male undergraduates (Study 1) and 30 to 50-year-old women (Study 2). Participants in both studies completed a writing assignment wherein they either described the functionality of their body, the appearance of their body, or the route that they take to the university or shopping centre (as an active control). Questionnaires assessing body image (namely, functionality satisfaction and appearance satisfaction) and self-esteem were administered at pretest, posttest, and one-week follow-up.

In Study 1, male undergraduates who described the functionality of their body experienced an improvement in functionality satisfaction from pretest to posttest. In contrast, female undergraduates who described the functionality of their body did not experience any improvements. However, female undergraduates who described the *appearance* of their body felt less satisfied with their body functionality both at posttest and follow-up. In Study 2, 30 to 50-year-old women who described the functionality of their body experienced an increase in functionality satisfaction from pretest to follow-up. In both Study 1 and Study 2, no changes in self-esteem were found. The main conclusion of these studies was that focusing on body functionality can indeed cause improvements in at least one aspect of body image.

**Chapter 4** also concerned research that was related to the second sub-question. In the study described in this chapter, we created a one-week intervention programme, called *Expand Your Horizon*, which was designed to train women to focus on the functionality of their body using three structured writing assignments. In contrast to the research described in Chapter 3, this study was conducted in women with a negative body image. Half of the participants completed the *Expand Your Horizon* programme, and the other half completed an active control programme. Functionality satisfaction, appearance satisfaction, body appreciation, and self-objectification were measured at pretest, posttest, and one-week follow-up. Compared to participants in the control

programme, participants in the *Expand Your Horizon* programme experienced greater improvements in functionality satisfaction, appearance satisfaction, and body appreciation, as well as a greater reduction in self-objectification, at posttest and follow-up. The findings demonstrated that focusing on body functionality may be a fruitful technique for improving body image and reducing self-objectification. Future investigations are needed to explore the underlying mechanisms of this approach and to determine the persistence of the effects.

**Chapter 5** pertained to research that was conducted to address the last sub-question: How can we improve the way that individuals feel about their own body in relation to the social environment? It is important to consider this question because body image is shaped not only by how individuals feel about their own body, but also by how they think *others* feel about their body (Tantleff-Dunn & Lindner, 2011). Drawing predominantly from the *cognitive-behavioural perspective* of body image (Cash, 2011), it was theorised that individuals may display distortions in cognitive processing that serve to reinforce and maintain negative body image. In particular, the study described in Chapter 5 investigated *covariation bias*: the tendency to overestimate the contingency between a particular stimulus and an aversive outcome (Chapman & Chapman, 1967). We hypothesised that women with a more negative body image would demonstrate a covariation bias for the relationship between their own body (the stimulus) and negative social feedback (the aversive outcome). Such a cognitive bias would reinforce and maintain negative body image, and could thus be a potential target for intervention.

In the first session of the study, participants (female undergraduates) filled in a questionnaire to assess their body image and were photographed from the front and both sides. In the second session, participants completed a computer task wherein pictures of their own body (taken at the first session), a control woman's body, and a neutral object were followed by 'facial crowds' consisting of equal proportions of negative, positive, and neutral social feedback. At the end of the computer task, participants estimated the relation between each category of pictures and the different types of social feedback. As predicted, the results showed that women with a more negative body image estimated higher levels of negative social feedback for their own body, but not for the control woman's body or the neutral object. Unexpectedly, women with a more negative body image also estimated lower levels of *neutral* social feedback for their own body. In sum, the findings provided initial evidence that women with a more negative body image display a covariation bias for the relation between their own body and negative social feedback.

**Chapter 6** described a study that was also conducted to address the last sub-question. The aim of this study was to develop a more fine-grained understanding of the covariation bias established in Chapter 5, and to determine whether it could be diminished. The first session of this study was identical to the first session described in Chapter 5. In the second session, participants (female undergraduates) completed a

computer task that was based on a computer task developed by Pauli, Montoya, and Martz (2001). Pictures of the participant's own body, a control woman's body, and a neutral object were followed by negative social feedback (a picture of a frowning face) or nothing (a white screen). Throughout the computer task, participants estimated the relation between each category of picture and the negative social feedback, and filled in a measure of state body evaluation (i.e., state appearance satisfaction or dissatisfaction).

Before the start of the computer task, women with a more negative state body image expected that their body would be followed by higher levels of negative social feedback (demonstrating *a priori* covariation bias). Moreover, when the relationship between the categories of pictures and negative social feedback was random, women with a more negative trait and state body image estimated both at the present moment (online covariation bias) and retrospectively (*a posteriori* covariation bias) that their own body was followed by higher levels of negative social feedback. When contingencies were manipulated so that pictures of the participants' own body were only rarely followed by negative social feedback, covariation bias was temporarily diminished. All participants experienced improvements in state body evaluation from before to after manipulation of the covariation bias. It was concluded that covariation bias exists *preexperimentally* and seems resistant to disconfirming situational information (as evidenced by online and *a posteriori* covariation bias). It was also concluded that diminishing covariation bias could be a useful technique for improving body image, but future research will need to confirm the present findings and strengthen the effects of the computer task.

**Chapter 7** provided a general discussion of the research presented in Chapter 2 to Chapter 6. For each sub-question, and its subsequent line of research, the key findings were first summarised. Important discussion points as well as the main limitations and future directions pertaining to each sub-question were then presented. Chapter 7 concluded with a summary of the answers that the PhD project provided to the question of how body image can be improved. In brief, it was concluded that the 12 effective change techniques identified in the meta-analytic review should be considered when designing the content of future stand-alone interventions to improve body image, and that the additional moderating features should also be considered. Furthermore, it was also concluded that the way that individuals feel about their own body can be improved by training them to focus more on the functionality of their body. Lastly, our research revealed that women with a more negative body image overestimate the relation between their own body and negative social feedback. Therefore, the way that individuals feel about their own body in relation to others can potentially be improved by targeting this bias.