The Effect of Attention on Body Size Adaptation and Body Dissatisfaction

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BACKGROUND

- Attending towards smaller bodies is associated with higher rates of body dissatisfaction and the tendency to perceive smaller bodies as "normal" sized (Moussally et al., 2016; Stephen et al, 2018). Attentional bias towards thinner bodies may therefore contribute to pathological levels of body dissatisfaction and body size misperception that are diagnostic symptoms of eating disorders (American Psychiatric Association, 2013).
- This study investigates whether two attentional bias modification tasks can train people to attend towards different body sizes and whether this influences body size perception and body dissatisfaction.
- Hypotheses: After the attention training, participants trained to attend towards low (high) fat body stimuli will exhibit a greater attentional bias to low (high) fat body stimuli, perceive lower (higher) fat body stimuli as "normal", and exhibit higher (lower) body dissatisfaction.

METHODS

Design

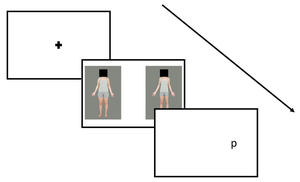
Participants had their attention trained towards either high or low fat body stimuli using a Dot Probe task (Experiment 1) or a Visual Search task (Experiment 2). The dependent variables were change in attentional bias (ΔAB), change in point of subjective normality (ΔPSN), and change in body dissatisfaction (ΔBD).

Participants

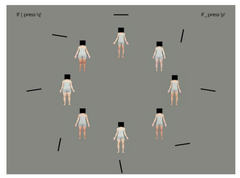
300 Caucasian women aged 18-35 completed the experiments online (150 participants per experiment) and 130 completed the experiments in a laboratory setting (Experiment 1, N = 70; Experiment 2, N = 60).

Measures and Procedure

In Experiment 1, participants had their attention trained using a Dot Probe task (Dondzilo et al., 2018), in which participants identified a probe that replaced either a high or low fat body as quickly as possible. For participants trained to attend towards low (high) fat bodies, the probe replaced the low (high) fat body on 100% of the trials. In Experiment 2, participants had their attention trained using a Visual Search task (Talbot et al., 2019), in which participants identified the orientation of a target bar as quickly as possible. For participants trained to attend towards low (high) fat bodies, the target bar was paired with a low (high) fat body stimulus on 100% of the trials. For each experiment, pre- and post-training measures were used to calculate ΔAB, ΔPSN, and ΔBD by subtracting participants' pre-training scores from their post-training scores. ΔAB was measured using reaction times on assessment versions of the Dot Probe task (Experiment 1) and Visual Search task (Experiment 2). ΔPSN was measured by asking participants to cycle through 13 images of a person and select the most "normal"-sized body (see example body stimuli below). ΔBD was measured using a modified version of the body shape satisfaction scale (Pingitore et al., 1997). Experiments were completed by participants on the Gorilla Experiment Builder (www.gorilla.sc; Anwyl-Irvine et al., 2019).



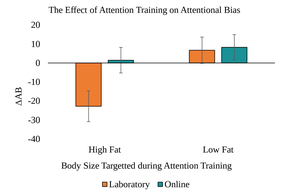
Dot Probe trial

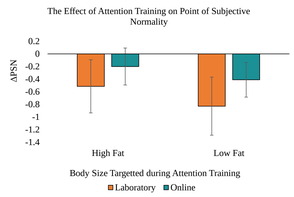


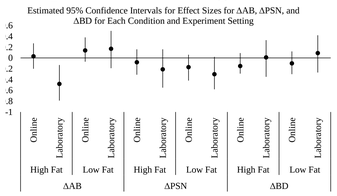
Visual Search trial

RESULTS: EXPERIMENT 1

Bootstrapped one sample t-tests compared ΔAB, ΔPSN, and ΔBD against a value of 0 for each condition and experiment setting. Participants trained to attend towards high fat body stimuli in the laboratory experiment demonstrated a significantly negative ΔAB (p = .001), indicating they directed more attention to high fat bodies after the training than before. After correcting for multiple comparisons, the remaining results for the laboratory experiment and all results for the online experiment were non-significant, indicating the Dot Probe attention training did not affect attentional bias, perceptions of a "normal" body size, or body dissatisfaction. Bootstrap resampling showed that estimated 95% confidence intervals for effect sizes in the online experiment did overlap with those for the laboratory experiment, indicating minimal effect of experiment setting on results.

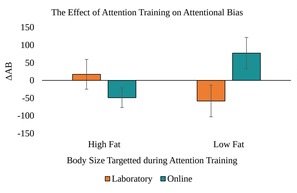


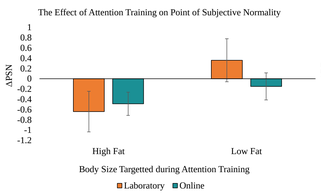


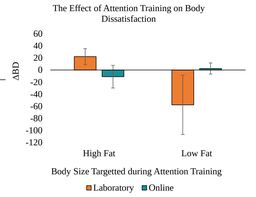


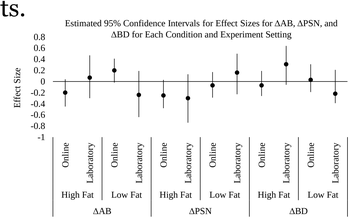
RESULTS: EXPERIMENT 2

Bootstrapped one sample t-tests compared ΔAB, ΔPSN, and ΔBD against a value of 0 for each condition and experiment setting. After correcting for multiple comparisons, the results for the online experiment and laboratory experiment were all non-significant, indicating the Visual Search attention training did not affect attentional bias, perceptions of a "normal" body size, or body dissatisfaction. Bootstrap resampling showed that estimated 95% confidence intervals for effect sizes in the online experiment did overlap with those for the laboratory experiment, indicating minimal effect of experiment setting on results.









CONCLUSION

- Both experiments generally showed the tasks were ineffective at increasing attention towards people of different body sizes and, as a result, did not affect perceptions of a "normal" body size or body dissatisfaction.
- The only significant results showed that the Dot Probe task did effectively increase participants' attention towards high fat bodies in the laboratory setting. For this condition, the attention training may not have sufficiently increased attention enough to modify perceptions of a "normal" body size or body dissatisfaction. Alternatively, given the same result was not significant in the online experiment, the significant result in the laboratory experiment may a Type 1 error caused by random noise in the data.
- The results support criticisms of the Dot Probe task for poor reliability and replicability (Schmukle, 2005) and suggest the task is unsuitable for modifying body size attentional biases. However, the Visual Search task is less well researched in this context and modifications may improve its effectiveness. Researchers could modify the number and ratio of high and low fat bodies and test an "odd-one-out" style Visual Search task.