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Dissemination of evidence-based body image interventions: A pilot study into the effectiveness of using undergraduate students as interventionists in secondary schools.

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### **Abstract**

Dissonance-based body image interventions are among the most effective interventions for adolescent girls. However, dissemination of these interventions remains challenging. In addition, the emerging field of positive body image suggests that interventions should promote body appreciation as well as reduce pathology. The current study examines whether undergraduate students can effectively deliver a dissonance-based intervention to secondary school girls. In addition, it examines whether this intervention can increase body appreciation. Sixty-two adolescent girls were randomly allocated to the intervention or control condition. In the intervention group, body dissatisfaction was significantly reduced and body appreciation was significantly improved from pre- to post-intervention. There were no changes in body dissatisfaction or body appreciation in the control group. There was a reduction in thin-ideal internalization for all participants. These preliminary findings suggest that undergraduate students can be effective interventionists for dissonance-based programs in schools and dissonance-based interventions can promote body appreciation.

*Keywords:* dissonance-based interventions, peer-leaders, body appreciation, body dissatisfaction, adolescent girls

Dissemination of evidence-based body image interventions: A pilot study into the effectiveness of using undergraduate students as interventionists in secondary schools.

Body image concerns are reported by 50-70% of adolescent girls and have numerous negative consequences (Wertheim & Paxton, 2011). Effective intervention programs to reduce body dissatisfaction among 12-18 year old girls do exist (Yager, Diedrichs, Ricciardelli, & Halliwell, 2013; Stice, Shaw, & Marti, 2007) but the dissemination these programs remains a challenge. For example, it is difficult to recruit clinicians with expertise or time to deliver the interventions (Stice, Rohde, Durant, Shaw & Wade, 2013) and teachers are often reluctant to take on this task (Ricciardelli et al., 2010). Recent evidence of psychological health benefits associated with positive body image suggests that, in addition to alleviating distress associated with body dissatisfaction, interventions should strive to promote body appreciation (Tylka, 2011). This pilot study investigates whether undergraduate students are effective interventionists in a secondary school settings and whether the impact of cognitive dissonance-based interventions (CDI) extend to body appreciation.

Schools present an ideal location for the delivery of body image interventions because they allow access to a large and inclusive group of adolescents (Diedrichs & Halliwell, 2012). CDIs have been found to be the most effective targeted interventions to date for girls aged 14 and above (Stice et al., 2007). For girls with pre-existing body image issues, CDI lead to reductions in thin-ideal internalization, body dissatisfaction, negative affect, psychosocial impairment and risk for onset of eating disorders (Stice, et al., 2007) with effects maintained up to three years post-intervention (e.g., Stice, Rohde, Shaw & Gau, 2011). There is also evidence that a universal delivery of a 90 minute CDI reduces body dissatisfaction and thin-ideal internalization among secondary school girls (Halliwell & Diedrichs, 2014).

However, the majority of effective body image lessons in secondary schools have been delivered by body image experts (Stice et al., 2007, Yager et al, 2013). Reliance on specialists limits the dissemination of effective programs and, therefore, alternative methods of dissemination need to be explored. Teachers are ideally placed to deliver body image interventions, yet many do not feel confident in delivering this material (Ricciardelli et al., 2010). In peer-led trials undergraduate students with between 13 and 16 hours of training have been shown to be effective interventionists for undergraduate women (Becker, Wilson, Williams, Kelly, McDaniel, & Elmquist, 2010; Stice, Rohde, Durant, Shaw & Wade, 2013). The scripted nature of CDIs means that they are well-suited for this method of dissemination (Stice et al., 2013). Moreover, CDIs can also be effective as single session interventions further improving dissemination (Matusek, Wendt & Wiseman, 2004). Matusek and colleagues found a single session 1-hour CDI successfully reduced thin ideal internalization, drive for thinness and disordered eating among university woman at 4-week follow up. However, to date no research has examined whether undergraduate students can also effectively deliver CDIs in secondary schools.

Recently, there has been a shift in the body image literature to move away from a primary focus on pathology to incorporate positive body image (Tylka, 2011). Body appreciation, the operationalization of positive body image, is positively associated with multiple measures of well-being (self-esteem, optimism, life-satisfaction, self-compassion) and negatively associated with pathology (Tylka & Kroon Van Diest, 2013; Wasyliw, MacKinnon, & MacLellan, 2012). Furthermore, body appreciation is distinct from body satisfaction and predicts additional variation in well-being after accounting for body satisfaction (Avalos, Tylka, & Wood-Barcalow, 2005). Therefore, to foster well-being and health among adolescent girls it is important to reduce levels of body dissatisfaction and also increase levels of body appreciation. Before developing interventions specifically to target

positive body image, it is helpful to examine whether existing body image interventions that reduce body dissatisfaction also increase body appreciation.

The aims of the current study were two-fold: Firstly, to examine whether undergraduate students could effectively deliver a CDI to adolescent girls in a secondary school setting and secondly, to examine whether CDIs improve body appreciation among adolescent girls.

## Method

### Participants

Participants were 62 girls aged 14 and 15 years ( $M_{\text{age}} = 14.84$ ,  $SD_{\text{age}} = 0.37$ ,  $M_{\text{BMI}} = 20.39$ ,  $SD_{\text{BMI}} = 2.35$ ), recruited from one mixed-sex secondary school in the south-west of England. The school was slightly smaller than average, with an above average proportion of pupils receiving government funding and additional support with their learning. The majority of participants were White (97%). Participants were assigned to the intervention condition (girls  $n = 29$ ) or to the control (girls  $n = 33$ ).

### Materials

The activities in the 1-hour CDI are described in table 1.

### Measures

**Body dissatisfaction.** The Body Areas Satisfaction Scale from the *Body-Self Relations Questionnaire* (Brown, Cash & Mikulka, 1990) was used to assess body dissatisfaction. Participants rate their dissatisfaction with seven body areas on a 5-point rating scale ranging from *very dissatisfied* (1) to *very satisfied* (5). The scale has good validity and reliability with adult women (Brown, et al., 1990). Cronbach's alpha was .90 at baseline and .94 post-intervention.

**Positive body image.** The Body Appreciation Scale-2 (Tylka & Wood-Barcalow, in press) was used to assess positive body image. Participants responded to 10 items on a 5-point scale ranging from *never* (1) to *always* (5). The scale has good internal consistency, test-retest reliability, and construct validity with college women (Tylka & Wood-Barcalow, 2014). Cronbach's alpha was .94 at baseline and .95 at post-intervention.

**Thin-ideal internalization.** The internalization subscale of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4; Schaefer et al., 2014) was administered. Participants indicated their agreement with nine statements on a 5-point Likert-type scale, ranging from *definitely disagree* (1) to *definitely agree* (5). Construct validity and internal consistency of this measure have been demonstrated for young women (Schaefer et al., 2014). Cronbach's alpha was .93 at baseline and .94 at post-intervention.

**Intervention evaluation.** Participants were asked: "How relevant was the body image lesson?" and "How interesting was the body image lesson?" They responded to each question on a 5-point scale from *not at all* (1) to *very* (5). Participants were also given the opportunity to provide open-ended feedback on the sessions.

## **Procedure**

This research project was designed when the school approached the first author to request a body image lesson for year 10 students. A study design was created around the constraints set by the school. Within the school, students were grouped into tutorial groups, which met each morning for registration, and teaching groups for Personal, Social and Health Education (PSHE); each PSHE group was made up of a random selection of students from different tutorial groups. The school wanted all students to receive the body image intervention during the same week. We had to develop a method of randomization and a control group that was consistent with this. We used the tutorial groups for data collection and the PSHE groups for intervention delivery. By randomly allocating tutorial groups into

the control or intervention condition we created a random selection of students in each PHSE body image lesson allocated to the control or the intervention group. Moreover, the groups used as the basis for randomization were not meaningful groups in relation to the students' experience of lessons or of the intervention. Students in the control group completed baseline questionnaires on Monday and post questionnaires on Friday the week before the body image lesson. Students in the intervention group completed baseline questionnaires on Monday and post-questionnaires on Friday of the intervention week. All students received a 1-hour dissonance-based body image intervention on the Tuesday or Wednesday of the second week in single-sex groups of between 10 and 15 students, the boys completed a different body image lesson. Therefore, for the intervention group, post-intervention measures were collected 2 or 3 days after the intervention. The contact from the school came towards the end of the academic year so there was no opportunity for follow-up data collection. Instead we used benchmarking to compare the effectiveness of the current intervention to results from other trials (Marchand, Stice, Rohde, & Becker, 2011).

The study was approved by the university ethics committee. Passive parental consent, parents were given the option to withdraw their child from the research, and active participant consent was obtained for 62 girls in year 10. All data collection was supervised by one of the authors. The CDI was delivered by two female, White, 2<sup>nd</sup> year psychology students aged 20. Both had responded to an advert at University to train as peer leaders 9 months prior to running these sessions. They had attended a 16-hour training program for peer-leaders run by graduate level psychologists and had experience of delivering 10 CDI groups to fellow students.

## **Results**

At baseline a MANOVA revealed that there were significant differences between the girls assigned to each condition,  $\lambda = .71$ ,  $F(3, 58) = 8.10$ ,  $p < .001$ , partial  $\eta^2 = .30$ .



Univariate analysis revealed that girls in the control condition reported higher body appreciation than girls in the intervention condition,  $F(1,60) = 7.71, p < .01$ , partial  $\eta^2 = .11$ . There was no significant difference between levels of body dissatisfaction,  $F(1,60) = 1.20, p = .28$ , partial  $\eta^2 = .02$ , thin-ideal internalization,  $F(1,60) = 3.32, p = .07$ , partial  $\eta^2 = .05$ , or BMI,  $t(26) = -0.23, p = .82$ . Baseline body appreciation was controlled for in subsequent univariate analysis.

To examine the impact of the body image lessons, we conducted mixed-design MANOVAs with time as the within-subject factor (Time 1, Time 2) and condition as the between-subject factor (intervention, no intervention). There was a significant main effect of condition,  $\lambda = .30, F(3, 51) = 7.43, p < .01$ , partial  $\eta^2 = .30$  and a significant main effect of time,  $\lambda = .17, F(3, 51) = 3.50, p < .05$ , partial  $\eta^2 = .17$ . However, this was qualified by a significant interaction between time and condition,  $\lambda = .15, F(3, 51) = 3.03, p < .05$ , partial  $\eta^2 = .15$ .

Univariate level analysis of thin-ideal internalization found no significant interaction effect,  $F(1, 53) = 0.03, p = .96$ , partial  $\eta^2 = .00$ . Instead, there was a reduction in thin-ideal internalization for all participants from pre-,  $M = 2.91, SD = .90$ , to post-testing,  $M = 2.68, SD = .99, F(1, 53) = 4.33, p < .05$ , partial  $\eta^2 = .08, d = 0.23$ . There was a significant univariate interaction effect for body dissatisfaction  $F(1, 53) = 6.70, p < .05$ , partial  $\eta^2 = .11$  and for body appreciation,  $F(1, 53) = 4.03, p < .05$ , partial  $\eta^2 = .07$ .

The means and standard deviations are reported in table 2. In the control group there were no statistically significant differences across time for body dissatisfaction,  $t(30) = 1.23, p = .12, d = 0.23$ , or body appreciation,  $t(30) = .63, p = .26, d = 0.11$ . In the intervention group there was a significant decrease in body dissatisfaction,  $t(24) = -3.91, p < .01, d = -0.73$ , and a significant increase in body appreciation,  $t(24) = -2.50, p < .05, d = -0.51$ .

The intervention was rated positively by participants, 70% of girls rated the lessons as “somewhat” or “very” relevant and 92% of girls rated the lesson as “somewhat” or “very” interesting.

### **Discussion**

The findings of this pilot study suggest that undergraduate students can be effective body image interventionists for secondary school students. A 1-hour CDI led to reduction in body dissatisfaction and improved body appreciation. Moreover, the effect sizes were moderate to large and are comparable to the effect sizes reported in peer-led intervention studies among university women (Becker et al., 2010).

Contrary to expectations, there was a trend for reduced thin-ideal internalization in both conditions. The reasons for this are not clear. Knowing that the intervention was running may have prompted discussions about societal attitudes toward appearance and these discussions may have reduced thin-ideal internalization. Typically in the dissonance literature thin-ideal internalisation is assessed using the Ideal Body Stereotype Scale-Revised (Stice, Ziemba, Margolis & Flick, 1996) in which participants report their endorsement of dominant appearance stereotypes. The measure used here (SATAQ-4; Schaefer et al., 2013) includes an additional focus on striving towards sociocultural appearance ideals. It may be that the difference in measurement has impacted on the results. However, considering the results across the three outcome measures, it is clear that the student-led intervention did have a positive impact for adolescent girls.

To our knowledge, this is the first study to examine the impact of an evidence-based body image intervention on body appreciation. These preliminary findings are very encouraging and suggest that the impact of CDIs go beyond reducing pathology and also promote positive experience of the body. Clearly, these findings need replication and extension.

In the current study we had to make some compromises in study design to fit the demands of the school setting. This is typical of applied research and acceptable in effectiveness trials (Marchand, et al., 2011). However, it is important to consider the implications of these design issues. The method of randomization employed here sits between individual and cluster randomization. However, as the groups used for randomization were not meaningful groups in relation to lesson or intervention delivery and the method produced a random selection of participants from each teaching group in the control or intervention condition.

It is preferable to include follow-up assessments to examine whether the intervention effects persist over time. The timing of the current study at the end of the academic year did not allow this. However, benchmarking against other trials, the pre to post change in body dissatisfaction found here,  $d = .73$ , is comparable to pre to post effect sizes reported for body satisfaction in other studies using peer-led intervention among university women,  $d = .50$ , (Becker et al., 2010) and  $d = .84$ , (Stice, Rohde, Durant, Shaw & Wade, 2013). The majority of the research in this area assesses immediate post-intervention effects collecting questionnaires directly after the intervention session (Yager et al., 2013). In this study the post-intervention data was collected two days later. Given this, it is particularly encouraging that the effect sizes for body dissatisfaction produced here are comparable to other research.

It is also a limitation that we did not assess adherence to the intervention program. The school would not allow the sessions to be recorded. However, adherence to the intervention script was emphasized in the training and the students had already delivered a number of audio-recorded CDI and shown high levels of adherence in these sessions.

Although, this evidence suggests that undergraduates can be effective interventionists in a school setting, we do not know how they would compare to expert interventionsists. Recent evidence suggests clinicians produce greater and more prolonged change than

undergraduates for CDI with university students (Stice et al., 2013). Future research should directly compare the impact of CDI delivered by undergraduates and body image experts in school settings.

Despite its limitations, the current study does suggest that CDIs can be successfully delivered in schools by undergraduate students. A peer-led method of intervention delivery is already being used to reach undergraduate women in the USA and in the UK. The current findings suggest that training undergraduate students is also a potentially fruitful method of dissemination to reach younger adolescent girls through schools.

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Table 1

*The content of the intervention was selected and adapted from the Succeed Body Image Program (Becker & Stice, 2011, a UK translation of Reflections (Becker & Stice, 2012).*

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1. Introduction to the program and voluntary commitment.
  2. Defining and exploring the origins of the thin-ideal of female beauty.
  3. Cost of pursuing the thin ideal.
  4. Challenging Negative Body Talk\*. This activity was an extended version of the Succeed 'Fat talk' activity. Participants discussed whether appearance comments had to be negative to reinforce the thin-ideal and discussed the impact of these comments. They then practiced alternative ways of talking, for example giving non-appearance-based compliments.
  5. Role plays\*. The role play activity from the Succeed Body Image Programme was adapted for this session. Participants came up with three points to persuade their friend not to pursue the thin-ideal.
  6. Body activism list.
  7. Self-affirmation exercise.

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\*Adapted activities



Table 2

*Mean Body Dissatisfaction, Body Appreciation and Thin-ideal Internalization by Condition and time point.*

	Body Dissatisfaction <i>M (SD)</i>	Body Appreciation <i>M (SD)</i>	Thin-ideal Internalization <i>M (SD)</i>
<b>Intervention</b>			
Baseline	2.81 (0.82)	2.60 (0.98)	2.74 (0.91)
Post intervention	2.98 (0.81)	2.78 (0.88)	2.47 (0.88)
<b>No Intervention</b>			
Baseline	3.07 (0.74)	3.19 (0.66)	3.05 (0.90)
Post intervention	2.99 (0.74)	3.15 (0.76)	2.89 (1.04)