



Problematic eating behaviour among female university students: applying the sociocultural model

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April 2016

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### ABSTRACT

The present study examined the role of sociocultural pressures, body dissatisfaction and self-esteem, that may influence Problematic Eating Behaviour (PEB) in female university students ( $N = 108$ ), by evaluating the utility of the sociocultural theory to help understand PEB. It explored whether self-control has a unique influence on PEB. Via opportunity sampling, 108 females participated in an online survey comprising of five well-established questionnaires: the EAT-26, BSQ-34; Perceived Sociocultural Pressure Scale Questionnaire; Rosenberg Self-Esteem Scale and 10-Item Self-Scoring Self-Control Scale. Pearson's correlation coefficients and hierarchical regression analyses were computed. Findings indicated significant positive correlations between sociocultural pressures; body dissatisfaction with PEB; significant negative correlations between self-esteem and PEB and significant negative correlation between self-control and PEB. Hierarchical regression analyses did replicate such results; however, self-control and self-esteem were not found to be strong predictors of PEB, while body dissatisfaction and sociocultural pressures were stronger predictors. Therefore, self-control did not indicate a unique influence on PEB. The findings were consistent with previous research, so it can be concluded that such variables were predictive of PEB, thus supporting the utility of the sociocultural theory in explaining PEB. Future research needs to consider self-esteem and self-control as eating domain variables rather than global constructs, which is discussed in future research implications.

<b>KEY WORDS:</b>	<b>PROBLEMATIC EATING BEHAVIOUR</b>	<b>SELF CONTROL</b>	<b>BODY DISSATISFACTION</b>	<b>SELF-ESTEEM</b>	<b>SOCIOCULTURAL PRESSURES</b>
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## Introduction

It is estimated that over 1.6 million people in the United Kingdom suffer from an eating disorder today (Micali et al., 2013). From adolescent years and onwards females are relatively concerned about their weight and shape, which are associated with the high risk of problematic eating behaviour (PEB) and as a result can increase the likelihood of developing an eating disorder (ED) (Lewinsohn, Striegel-Moore and Seeley, 2000).

PEB is determined by appearance related evaluative processes and cognitions, for example own view of one's self, in regards to shape and weight (Spangler, 2002). The sociocultural model is based on the idea that thin-idealisation results in body dissatisfaction and PEB, which increases the likelihood for eating disorder development (Vander Wal, Gibbons and del Pilar Grazioso, 2008). Sociocultural pressures encapsulate social norms: perceived codes that make up appropriate eating behaviour, such as specific amounts of food or food choices among social groups (Higgs, S. 2015). Furthermore, Fitzsimmons-Craft et al., (2014) stated PEB showing symptoms of eating disorders, can be caused by pressure for women to attain the thin-ideal, only if this pressure is internalised will there be a negative impact. The tripartite-influence model suggests sociocultural pressures such as family, peers and media subsidise body dissatisfaction and PEB through the internalisation of impractical societal appearance ideals for example, ultra-thinness for women (Jackson and Chen, 2015). Additional factors such as self-esteem (Courtney, Gamboz and Johnson, 2008) and self-control (Geisler, Kleinfeldt and Kubiak, 2015) also lead to PEB.

The sociocultural model has also been examined by testing sociocultural pressures influencing PEB. Sociocultural pressures to lose weight are motivated by the over-exposure of thin models and celebrities in the media, direct pressures to be thin from peers and family, and more implicitly by involvement with peers who obsess about weight (Stice & Shaw, 2002). Vander Wal, Gibbons and del Pilar Grazioso (2008) stated exposure to Western models of appearance alongside societal change seem to be leading risk factors for ED development. They tested an extended version of the sociocultural model amid a sample of 347 girls in Year 5 and 6 from Guatemala City. Surveys measured disturbed eating attitudes and behaviours, body dissatisfaction, social sensitivity, and thin-ideal internalisation and BMI was calculated following measurement of height and weight. Path analyses indicated, the expanded sociocultural model supported the data perfectly. Both raised adiposity and social sensitivity, which led to amplified body dissatisfaction and thin ideal internalisation. Thin-ideal internalisation led to body dissatisfaction and to problematic eating attitudes and behaviours. Outcomes propose collectivist countries are also vulnerable to the influence of sociocultural risk factors for ED's. The sociocultural model does not account for why girls are most likely to internalise the thin ideal (Striegel-Moore, Silberstein, and Rodin, 1986).

Moreover, it has been found media could be a predominant sociocultural impact in middle-aged women, given their natural endeavour for the thin and youthful ideals of beauty propagated in the media (Saucier, 2004). The media is a highly widespread effective communicator of sociocultural values (Thompson, 1996).

Kim and Lennon, (2007) state individuals are exposed to mass media pictures in the form of ads, television and magazines. Harrison, Taylor and Marske, (2006) carried out two experiments, each consisted of 4 conditions examining the consequences of exposure to ideal-body pictures and text on adolescents eating behaviour. Females watched slides showing pictures of 1) thin female models with no text, 2) with diet and exercise related text, 3) with inappropriate text or 4) no slides. Males saw slides showing images of strong male models in the same four conditions. They found among females, the views of their own body and the body their peers are more likely to have, exposure to images alone and with congruent text resulted in a decrease in the amount eaten in front of female peers. However, for males it was the opposite, they ate more than their male peers. This indicates media exposure can influence the eating behaviour of individuals, thus leading to PEB. These findings correspond with sociocultural pressures, as it demonstrates peers can have an impact on an individuals eating behaviour. In regards to the sociocultural theory, Blowers et al. (2003) provides support for the model, as they found observed media pressure to be thin was merely a substantial predictor (among family, peers and media) related to body dissatisfaction via this notion of thin idealisation.

Females in later adolescence and early adulthood are more prone to eating disorders (Alipoor et al., 2009) as they are more likely to adopt sociocultural norms of attractiveness associated with thin-idealisation, thus resulting in greater level of body dissatisfaction leading to an Eating Disorder (ED) (Cattarin et al., 2000).

Body dissatisfaction can be defined as “the negative subjective evaluations of one’s physical body, such as figure, weight, stomach, and hips” (Stice & Shaw, 2002, p. 985). It is considered damaging to psychological well-being and is associated with reduced self-esteem (Pokrajac-Bulian and Zivcic-Becirevic, 2004).

A general agreement exists indicating body dissatisfaction plays a contributory part in ED development (Polivy and Herman, 2002). Therefore, body dissatisfaction is found to be linked with PEB, due to its high variance of 75.2% in relation to PEB (Fitzsimmons-Craft et al, 2014) it being a coherent and vigorous risk factor for eating pathology (Stice, 2001). Mustapic, Marcinko and Vargek (2015) examined body shame as an arbitrary factor of the relationship between body dissatisfaction and eating behaviours amid female adolescents ( $N=187$ ). They completed self-report measures of demographic, eating behaviours, body satisfaction and body shame. A significant relationship was found between all three. Thus, body dissatisfaction is linked to this profound sense of shame; as being unhappy with one’s body leads to body dissatisfaction. Also, body shame arbitrated the relationship concerning body dissatisfaction and eating behaviour. Additionally, body dissatisfaction is related to a range of damaging and possibly threatening behaviours considered to change one’s body, particularly to lose weight (Stice, 2002).

Low self-esteem has been found to increase the risk of developing ED’s through the influence of PEB (Cervera et al., 2003; McCabe & Vincent, 2003). Self-esteem refers to “the individual’s positive or negative attitude towards the self” (Rosenberg et al. 1995, p.141). Courtney, Gamboz and Johnson, (2008) studied whether low self-esteem is associated with depressive symptoms and PEB. Predictors of low self-

esteem and PEB were administered to adolescent primary care patients ( $N=197$ ). Participants with low self-esteem were at high risk for elevated levels of depressive and PEB. They also found low self-esteem was a potential precursor for the onset of PEB. Tomori and Rus-Makovec (2000) found low self-esteem correlated with body dissatisfaction and PEB in students ( $N=4700$ ). Similarly, Kim and Lennon, (2007) investigated whether media exposure (sociocultural pressure) is related to self-esteem, body image and ED predispositions based on Festinger's (1954) social comparison theory, using female college students ( $N=114$ ). They found ED tendencies negatively correlated with low self-esteem, body dissatisfaction and general appearance dissatisfaction. Zeigler-Hill and Noser, (2013) investigated whether appearance-based dependent self-esteem and actual-ideal body image inconsistencies influence this association. College women ( $N=877$ ) completed predictors of global self-esteem, body image and appearance-based dependent self-esteem and eating behaviours. They found actual-ideal body image inconsistencies mediated the connection between global self-esteem and disordered eating. However, this study was criticised, as White female undergraduate students registered at a particular University in the Midwestern district of the United States were recruited (Zeigler-Hill and Noser, 2013). Thus, the findings are not representative of other populations and ethnic backgrounds (Grabe & Hyde, 2006).

Conversely, the robust cultural importance the sociocultural theory has placed on thinness, particularly for females, unfortunately may influence their attitudes towards their personal appearance (Paquette and Raine, 2004). This may be because the theory sees individuals as passive victims of PEB. Thus, the theory does not provide evidence for this notion of self-control where individuals are active participants in changing their own states, regulating their own behaviour and responses to eating behaviour (Baumeister, 2002). Furthermore, Tangney, Baumeister and Boone (2004) define self control as the ability to override or change individuals' inner responses, disrupt unwanted behavioural tendencies (such as impulses) and abstain from acting on them. They also state low self-control is associated with vulnerability to ED's. Previous studies have measured the level of self-control in ED's. For example, Tiggemann and Raven, (1998) investigated the issues of self-control in ED's, women ( $N=52$ ) with bulimia or anorexia nervosa and 57 comparison women were surveyed concerning their views of control. Women with ED's indicated lower internal control than comparison women, but reported lower desire for control. They reported greater fear of losing self-control, which appeared as the most substantial predictor of ED tendencies for both eating disordered and comparison women. Moreover, low self-control has also been found to be associated with body dissatisfaction, which in turn increases the likelihood of PEB (Garner, Olmstead and Polivy, 1983). However, the findings are outdated and so more research into the levels of self-control and PEB implicating ED's needs to be conducted.

### **Rationale**

PEB is a precursor of ED, thus the present study was conducted in order to look into factors (sociocultural pressures, body dissatisfaction, self-esteem and self-control) influencing PEB and how it can change at an early stage before it potentially progresses into a ED. Due to the limited research on self-control, this study focused on testing the adaptive potential of self-control in order to assess its unique influence on PEB, which adds to The Sociocultural Theory to enhance the understanding on

factors that influence PEB. Also to assess whether it has a unique influence on PEB, which will add to the theoretical understanding of how ED's can develop.

### **Aims/Hypotheses**

This study aimed to examine the role of sociocultural factors; 'sociocultural pressures', 'body dissatisfaction' and 'self-esteem' that may influence PEB in female students and evaluate the utility of the sociocultural theory to help understand PEB. Considering previous theory and research, the present study also examined the adaptive potential of self-control, in order to explore whether it has a unique influence on PEB.

The proposed study hypothesised the following:

Firstly, there will be a significant positive proactive relationship between sociocultural pressure and body dissatisfaction with PEB. Secondly, the levels of self-esteem will decrease as PEB levels increase. Finally, it was anticipated self-control will make a significant unique contribution to these relationships; self-control will influence PEB and in turn there will be implications for ED development.

### **Method**

#### **Design**

A non-experimental cross-sectional design was implemented, in which each participant took part in the same standardised questionnaire comprising of 80 questions from five established questionnaires. Therefore, all questions were received by every participant in the same order. There were a total of four independent variables; sociocultural pressures, body dissatisfaction, self-esteem and self-control, and one dependent variable; PEB.

#### **Participants**

Female university students aged 18+ were recruited opportunistically from social networking sites such as Facebook and Twitter. Female participants were recruited, as the female to male ratio of prevalence for eating disorders is approximately nine to one (Gordon, 1990). 150 participants from the North-West area of England were asked to complete the questionnaire to minimise the risk of sampling bias (Coolican, 2009). The number of participants were recruited according to the criteria by Green (1991), there should be at least 90 participants taking part in a study. This is worked out as  $50 + (8 \times \text{number of participants}) = 50 + 40, = 90$ . Thus, the criterion was satisfied as 108 participants were sampled, however data from 42 participants was removed as 20 or more questions were left unanswered which could have affected the data.

#### **Materials/Apparatus/Measures**

There was a total of eighty closed-ended questions within five individual questionnaires, in order to measure the independent variables (tendencies) of PEB. The questionnaire was accessible electronically through Twitter and Facebook. This

method of recruitment was most appropriate to collect data from university undergraduates as they populate social media.

A questionnaire method was implemented to ensure the independent variables being measured produce data in a quantitative form, in order for it to be analysed statistically which will contribute to the identification of correlations. Coolican (2009) states, questionnaires are found to be the most suitable method for collecting large amounts of data quickly and easily and therefore it is less time consuming and cost-effective.

### **The Eating Attitudes Test–26 (EAT-26)**

The EAT-26 (see appendix 4) measured whether participants have an ED that needs professional attention, however it doesn't provide a particular diagnosis of an ED. EAT-26 is found to be an objective and valid self-report measure for identifying PEB tendencies (Garner and Garfinkel, 1979; Wang et al., 2005). It is particularly reliable in identifying individuals with concerns about their weight and eating habits (Thompson and Schwartz, 1982). Carney and Louw, (2006) reported internal consistency ( $\alpha = .90$ ) on usage of this questionnaire. EAT-26 consists of items that form 3-subscales: Dieting, Bulimia and Food Preoccupation and Oral Control. This questionnaire contains 26 items in a 4 point Likert scale, in which the response format varied from 3: always, 2: usually, 1: often, 0: sometimes, 0: rarely to 0: never.

### **The Body Shape Questionnaire-34 (BSQ-34)**

Body dissatisfaction was measured via the BSQ-34 (see appendix 6) which has been validated in numerous languages for example, French (Lavoisy et al., 2008) and high 3-week test-retest reliability of .88 (Rosen et al., 1995). Cash and Henry (1995) stated internal consistency ( $\alpha = .82$ ). The BSQ-34 measured how participants have been feeling about their appearance over the past four weeks. It constituted main features of ED's such as bulimia nervosa and anorexia nervosa. It also examined body dissatisfaction which may lead to the development, treatment and maintenance of these disorders. The questionnaire consisted of a 6-point Likert scale ranging from "never: 1" to "always: 6".

### **The Perceived Sociocultural Pressure Scale Questionnaire**

The Perceived Sociocultural Pressure Scale Questionnaire (Stice, 2001) (see appendix 8) measured whether socio-cultural pressures and media exposure relate to PEB. It also examined whether individuals are pressurised into this notion of the 'thin ideal' by their peers, family, dating partners and the media (Bearman et al., 2006). Fitzsimmons-Craft et al, (2014) found high internal consistency ( $\alpha = .98$ ), test-retest reliability ( $r = .93$ ) and predictive validity (Stice and Bearman, 2001). It comprised of 10 items and with the use of a 5-point Likert scale ranging from "none:1, 2, some: 3, 4 and a lot: 5" and results were averaged to provide a scale score.

### **The Rosenberg Self-Esteem Scale**

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) (see appendix 9) measured an individual's self-worth by looking at positive and negative feelings about the self. Allison (1995) states Rosenberg's scale as the greatest, widely used measure of self-esteem and has good reliability and validity across a variety of samples. Kelly, Vimalakanthan and Carter, (2014) found moderate internal consistency ( $\alpha = 0.81$ ). It included 10 items with the response layout including a 4-point Likert scale ranging from "strongly agree = 3 to strongly disagree = 0". This scale was used to help identify whether the level of self-esteem correlates with PEB, by comparing the scores with the socio-cultural tendencies and the overall influence on PEB. Items 2, 5, 6, 8 and 10 were reverse scored and the responses of all items were summed together to give a score of self-esteem, ranging from 0-36.

### **The 10-Item Self-Scoring Self-Control Scale**

The 10-Item Self-Scoring Self-Control Scale (see appendix 11) developed by Tangney, Baumeister and Boone (2004) found the scale has high test-retest reliability. Researchers have also found good internal consistency  $\alpha = .94$  (Cash, Santos and Williams., 2005). The questionnaire measured whether an individual has low self-control or high self-control. The 10 item scale consisted of a 5-point Likert scale for example, "not at all like me", "a little like me", "somewhat like me", "mostly like me" and "very much like me". Items 1, 2, 3, 7, 8, 9 and 10 were reverse scored and the remaining responses of all items were summed to provide an overall score of self-control.

Full consent was received for the EAT-26 (See Appendix 5), BSQ-34 (See Appendix 7) and Rosenberg Self-Esteem Scale (See Appendix 10). However, the remaining questionnaires did not require permission.

### **Procedure**

Once the definite idea of the study was decided upon, ethical approval had been granted for this survey by the ethics committee of Manchester Metropolitan University (see Appendix 12). The present study followed The British Psychological Society's Code of Ethics and Conduct. The survey was created on Qualtrics (online survey tool) where a participation sheet, consent form and debrief sheet were produced as well as the five well established questionnaires.

A pilot study was conducted including 5 participants via opportunity sampling. This was delivered to ensure all questions included in the survey were clear to understand, the predicted time frame for completing the survey was correct (10 to 15 minutes) and any mistakes in the information were discarded. The expected time to complete the questionnaire was accurate and there were no raised issues on the information provided.

Following this, female undergraduate university participants ( $N = 150$ ) were recruited through the use of social networking sites such as Facebook and Twitter where a brief explanation of the survey was included along with the website link. A participant sheet (see appendix 1) was provided briefing participants on the content of the questionnaire, their right to withdraw from the study at any time or withdraw any data

within four weeks of participation and requested their demographics of age, gender and weight (this option was optional). In addition to this consent (see appendix 2) was also obtained. All responses were recorded on a Likert scale relating to each individual questionnaire. Once reaching the end of the questionnaire participants were debriefed (see appendix 3) explaining the full purpose of the study and were asked for a Personal identification code to ensure anonymity of the participant. The MMU counselling service contact details were also provided for those who felt as though they need support or counselling once the survey had been completed.

Once the data had been collected, the results were analysed using SPSS-21 (IBM Corp, 2012). Descriptive statistics were computed for each questionnaire measuring a specific variable. Pearson's correlation coefficient was carried out in order to assess the relationship between the variables. A hierarchical regression was also computed where the three predictor variables (self-esteem, sociocultural pressures and body dissatisfaction) were entered at level one and self-control was entered at level two along with the other variables. These were measured against the dependent variable of PEB. This provided a model summary which included information on the  $R^2$  values of both levels and also  $R^2$  change values. Finally, coefficients were also calculated providing Beta scores and Standard Error Beta values.

## **Results**

### **Descriptive statistics**

Descriptive statistics computed for each variable measured by the individual scales from the overall scores obtained are displayed in Table 1.

The mean score for PEB ( $M = 70.78$ ) was moderately high. The alpha score ( $\alpha = .94$ ) indicated greater internal consistency than the findings from Garner et al., (1982) who found  $\alpha = .90$ . Thus, suggesting an increase in PEB among the sample group.

The mean score of self-control ( $M = 29.09$ ) which was measured by The 10-Item Self-Scoring Self-Control Scale was high. The alpha score ( $\alpha = .81$ ) was significantly high, showing great internal reliability.

Body dissatisfaction measured using the BSQ-34 was found to have the highest mean ( $M = 94.80$ ) compared to the other variables, thus suggesting majority of the sample were highly dissatisfied with their bodies. The alpha score ( $\alpha = .98$ ) was far greater than found by Cash and Henry (1995) ( $\alpha = .82$ ), thus showing the scale possessed higher internal consistency in the present study.

With regards to the Rosenberg Self-Esteem Scale, the mean calculated for self-esteem ( $M = 28.27$ ) which was increasingly high. The alpha score ( $\alpha = .90$ ) was found to be far greater than the alpha score ( $\alpha = 0.81$ ) found by Kelly, Vimalakanthan and Carter, (2014). Thus, demonstrating high internal consistency.

The Perceived Sociocultural Pressure Scale Questionnaire measured which found a high mean of  $M = 22.61$ . The alpha score ( $\alpha = .94$ ) was very high and matched the alpha score of PEB. This supports the socio-cultural theory as the sample group indicated high pressures from peers, family, partners and the media (sociocultural pressures) into the idea of thin-idealisation. Therefore, suggesting those influenced by sociocultural pressures are more likely to develop PEB. Additionally, all variables provided high internal consistency, as the alpha scores were significantly above .7 ( $p < .001$ ) which is recommended threshold.

**Table 1**

**Cronbach's alpha ( $\alpha$ ), Means ( $M$ ) and standard deviations ( $SD$ ) for both independent variables and dependent variable**

Variable	$\alpha$	$M$	$SD$
Problematic eating	.94	70.78	25.44
Self-control	.81	29.09	7.21
Body dissatisfaction	.98	94.80	42.53
Self-esteem	.90	28.27	6.16
Sociocultural pressures	.94	22.61	11.37

### **Pearson's correlation coefficient**

Pearson's correlation coefficient was used to examine whether there was a linear relationship between all of the variables (Coolican, 2013). This test of correlation disclosed both positive and negative significant correlations (see Table 2).

The correlations for each of the variables have been found to be significant at the 0.01 level (2-tailed). PEB was significantly positively correlated with Body dissatisfaction ( $r = .76, p = <.001$ ) and PEB was also significantly positively correlated with sociocultural pressures ( $r = .75, p = <.001$ ). Thus, indicating people who have higher levels of PEB also have higher levels of body dissatisfaction and higher levels of sociocultural pressures (positive relationship). Also, those with high sociocultural pressures and body dissatisfaction are more likely to engage in PEB.

There was a significant negative correlation between PEB with both self-esteem ( $r = -.59, p = <.001$ ) and self-control ( $r = -.38, p = <.001$ ). This suggests people who have high levels of PEB, also have lower levels of self-control and lower levels of self-esteem. The results also indicate the more self-control you have the more self-esteem you have. Correspondingly, as body dissatisfaction and sociocultural pressures increase, self-control decreases. Interestingly, the negative relationship between PEB and self-control shows, self-control didn't have a unique influence on PEB.

Additionally, intercorrelations between the predictor variables were also checked as to whether there way any issues of multicollinearity amongst the predictor variables. Tests to examine if the data met the assumption of collinearity demonstrated that there were no issues of multicollinearity as there was no .9 or greater difference between the predictors.

**Table 2**  
**Pearson's correlation coefficients between all variables**

Variable	1	2	3	4	5
1 Problematic eating		-.38**	.76**	.75**	-.59**
2 Self-control			-.40**	-.45**	.41**
3 Body dissatisfaction				.78**	-.66**
4 Sociocultural pressures					-.58**
5 Self-esteem					

Note. \* $p < .05$       \*\* $p < .001$

### **Hierarchical Regression Analysis**

The Hierarchical correlation for predicting PEB is highlighted in both columns one and two of the model summary showing an R value of .806. This represents the simple correlation and therefore indicates a good degree of correlation between the variables.

A one-way ANOVA was conducted to explore any significant differences between sociocultural pressures, body dissatisfaction and self-esteem with PEB. Significant differences did occur ( $f(3, 104) = 14995.80, p < .001$ ). A further one-way ANOVA was conducted where self-control was entered along with the other three variables, to establish any significant differences with PEB. Significant differences were found ( $f(4, 103) = 11247.40, p < .001$ ). This indicates all four independent variables can predict PEB among female university students, as the ANOVA was found to be significant.

A hierarchical regression analysis was performed to test the extent to which the variables 'body dissatisfaction', 'sociocultural pressures', 'self esteem' and self-control were predictive of PEB among female university students. This was examined over two stages.

At stage one, the three predictor variables 'body dissatisfaction', 'self-esteem' and 'sociocultural pressures' were entered to examine whether they influenced PEB. Using the standard methods, a significant model emerged  $F(3,104) = 64.33, p < 0.001$ . The relationship between the variables was strong ( $r = 0.81$ ) and the model could explain 65% (adjusted  $R^2 = 64\%$ ) variance in PEB scores.

At stage two, the predictor variable 'self-control' was introduced to test the additional contribution of self-control on PEB. A significant model emerged  $F(4,103) = 47.79, p < 0.001$ . The relationship between the variables was the same as stage 1 ( $r = 0.81$ ) with the model explaining 65% (adjusted  $R^2 = 64\%$ ) variance in PEB scores. This indicates, self-control did not have a unique influence on PEB as there was only .01 of a change between the variables.

The coefficient for self-esteem changes between Stage 1 ( $B = -.46$ ) and Stage 2 ( $B = -.45$ ), which shows self-control had an effect on self-esteem when it was entered during the second stage. As shown below both body dissatisfaction ( $\beta = .39, p < .001$ ) and sociocultural pressures ( $\beta = .38, p < .001$ ) significantly predicted PEB at both stages. At stage 1 sociocultural pressures was the strongest predictor of PEB ( $t(103) = 4.03, p < 0.001$ ; 95% CI .533 - .677) following ( $t(103) = 3.86, p < .001$ ; 95% CI -.300 - .435). At stage two body dissatisfaction was the strongest predictor of PEB ( $t(103) = 3.84, p < 0.001$ ; 95% CI -.300 - .453) following ( $t(103) = 3.50, p < 0.001$ ; 95% CI .533 - .677). The assumptions of linearity were also examined by looking at the PP Plot and was found the combined linearity results for each predictor clustered quite close to a straight line. Thus, indicating linearity for the data.

The contribution of each predictor variable in accounting for the variance in PEB scores is shown in Table 3. Thus indicating both variables have a significant impact on the criterion variable of 'PEB' scores.

**Table 3**

**Summary of Hierarchical Regression Analysis for the prediction of PEB**

Variable	Stage 1			Stage 2		
	B	SE B	$\beta$ (beta score)	B	SE B	$\beta$ (beta score)
Body dissatisfaction	.24	.06	.39**	.24	.06	.39**
Self-esteem	-.46	.32	-.11	-.45	.33	-.11
Social pressures	.84	.21	.38**	.84	.22	.38**
Self-control				-.02	.24	-.01
$R^2$	.65**			.65**		

<i>R</i> <sup>2</sup> change	.65	.01
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Note. \**p* < .05; *p*\*\* < .001

## Discussion

The present study aimed to investigate the influence of sociocultural factors (body dissatisfaction; self-esteem; and sociocultural pressures) on PEB, with the use of the sociocultural theory to help understand PEB. It also examined the role of self-control, to reconnoiter the unique influence it may have on PEB. The hypotheses to be assessed were; firstly, there will be a significant positive proactive relationship between sociocultural pressure and body dissatisfaction with PEB. Secondly, the levels of self-esteem will decrease as PEB levels increase. Finally, it was anticipated self-control will make a significant unique contribution to these relationships; self-control will influence PEB and in turn there will be implications for ED development.

Results indicated that the internal consistency was high for all five scales measuring the predictor variables and the criterion variable. Interestingly, Pearson's correlation coefficients indicated a significant positive correlation between both body dissatisfaction and sociocultural pressures with PEB. This finding is consistent with previous research suggesting those with high levels of PEB also have high levels of body dissatisfaction and sociocultural pressures (e.g. Fitzsimmons-Craft et al, 2014; Mustapic, Marcinko and Vargek, 2015; Stice, 2002; Vander Wal, Gibbons and del Pilar Grazioso, 2008). This result further supports the research into the sociocultural theory, as body dissatisfaction and sociocultural pressures such as media exposure and peers, are both found to be influential sociocultural factors, as a strong relationship was found with PEB (Blowers et al., 2003; Harrison, Taylor and Marske, 2006).

Self-esteem was a significant negative predictor of PEB, indicating those with high levels of PEB have lower levels of self-esteem. This finding is coherent with Courtney, Gamboz and Johnson, (2008) indicating low self-esteem is associated with high levels of PEB. Self-control was also found to have a significant negative relationship with PEB; in other words, as the level of PEB increases the level of self-control decreases, which supports the findings by Tiggemann and Raven (1998). Conversely, Will Crescioni et al., (2011) found those with low-self control ate more calories, exercised less and gained weight. This contradicts the findings in the present study, as the study mainly focused on low self-control and under-eating in terms of PEB that may lead to ED development such as anorexia. It was also found as self-control decreases, the level of body dissatisfaction (Garner, Olmstead and Polivy, 1983) and sociocultural pressures increases. Additionally, a link was found between self-control and self-esteem, suggesting the more self-control you have the more self-esteem you have, which hasn't been found before in PEB research.

The links between the predictor variables as well as the criterion variable also ties in with previous research. As self-esteem decreased, body dissatisfaction (Tomori and Rus-Makovec, 2000) and sociocultural pressures increased (Kim and Lennon, 2007). Similarly, as self-control decreased, body dissatisfaction (Garner, Olmstead and Polivy, 1983) and sociocultural pressures increased. The positive relationship between both sociocultural pressures and body dissatisfaction corresponds with

Harrison, Taylor and Marske, (2006). An explanation for this relationship may be that sociocultural pressures are predictive of body dissatisfaction (Harrison and Cantor, 1997) and body dissatisfaction has been found to be predictive of PEB (Coughlin, 2002). As well as the sociocultural theory, this finding also corresponds with the Tripartite influence model who found that sociocultural pressures did have a direct influence on body dissatisfaction (van den Berg et al., 2002).

Following hierarchical regression analyses, a strong relationship between three predictors at stage 1 emerged, however when self-control was entered at stage 2 no unique influence was added as the variance remained the same. Nevertheless, sixty-five percent of the variance in PEB scores could be explained by the predictor variables. It was found that sociocultural pressures were the strongest predictor of PEB at stage one, however at stage two when self-control was entered the scores altered, which indicated body dissatisfaction was the strongest predictor. This supports the Sociocultural Theory as these variables were found to be more prominent predictors of PEB than self-control and self-esteem. This implies, although self-control had no unique influence on PEB alone, it did have a somewhat influence on the other predictors. However, although there was a significant relationship between the variables it appears from the regression analysis that self-control was not a valuable predictor of PEB. Hence, the hypothesis was partially supported.

The present findings support Sociocultural Theory as a helpful approach in understanding the predictors of PEB. The data provides a good fit to the idea that body dissatisfaction and sociocultural pressures including family, peers and media have a direct relationship with thin-ideal internalisation (Fitzsimmons-Craft et al., 2014; Stice, 1994). This can be explained as those with high body dissatisfaction are relatively unhappy about their bodies and the reason for this may be because of sociocultural pressures that arise in their daily lives. Thus, leading to this notion of thin-ideal internalisation which is the main focus of the Sociocultural Theory. Such factors have been found to influence people's attitudes on eating behaviour and increase thin-ideal, as they may begin to compare themselves to others whom they believe to be thinner, eat less or participate in more physical activity (Cash, 2008). This is usually the case in females who tend to believe looking thin is achievable through physical activity and dieting (Levine, Smolak and Hayden, 1994). This corresponds with Festinger's (1954) social comparison theory, reason being people who do compare themselves to others can also affect their self-evaluations (Kim and Lennon, 2007). Thus, the normative nature of body dissatisfaction mirrors the internalisation of such messages (Polivy and Herman, 1987). Overall, the sociocultural theory does provide an explanation of PEB implicating ED development, which reflects the findings of this study. In contrast, Feininger's (1954) theory does however provide an understanding as to how low self-esteem is associated with PEB, which the sociocultural theory fails to do so. (Suls and Wills, 1991) illustrated upward comparisons and comparisons with others who are of particular interest are usually associated with a decrease in self-esteem. Therefore, given that self-esteem did not add anything to the sociocultural theory, using Feininger's theory in regards to self-esteem may have been a better approach.

### **Strengths, Limitations and Future directions**

Although significant results were found supporting previous literature, limitations of the present study also need to be considered. Firstly, despite a cross-sectional design was conducted to observe the predictor variables and criterion variable as they occur naturally, it precludes strong cause and effect interpretations. Thus, this study cannot sufficiently consider the temporal associations between these variables. However, given the nature of the sociocultural theory is composed of factors such as peers, family and media exposure, it is very unlikely that an experimental design would be able to test causative relationships between sociocultural factors and PEB. Thus, this study was able to evaluate the utility of the theory and also help test its reliability in explaining PEB.

Self-administered questionnaires were used in order to distribute a large number of people and to ensure anonymity (McNabb, 2002). Self-report measures were carried out rather than interviews, as researchers examining factors influencing PEB have found it to be the most effective method in identifying factors leading to PEB and in turn an eating disorder (Fairburn & Beglin, 1994; Mustapic, Marcinko and Vargek, (2015). Also it is quick and easy method to gather large quantities of data about a samples attitudes and beliefs (Mitchell and Jolley, 1988). However, when construing the data care must be taken as social desirability bias may arise whereby individuals wish to be seen in a favourable light and so may not answer truthfully. This risk was minimised with the use of online questionnaires, as it is unlikely that others would be completing or discussing the questionnaire. Irrespective of this, research has found that even those who complete questionnaires alone can be affected by social desirability, implying participants' responses may have been affected (Wright, 2006). Also, out of 150 participants only 108 had completed the survey, but this was still considered a decent sized sample. However, this may have been because of the survey itself as it consisted of 80 questions and it was found most participants left the survey half way through, possibly because they found it too long to complete.

Although this study illustrated that those with increased levels of body dissatisfaction and sociocultural pressures would internalise the thin-ideal, a set of mediators could have been included. For instance, including body surveillance and social comparison as mediators of thin-idealisation internalisation in relation to body dissatisfaction and sociocultural pressures help expand on the sociocultural theory (Fitzsimmons-Craft et al., 2014). In comparison to Fitzsimmons-Craft, Bardone-Cone and Harney, (2012), social comparison has been found to be a unique mediator for PEB. Thus, the use of mediators should have been considered.

Moreover, Self-control and self-esteem were used in the present study to extend the sociocultural theory in explaining PEB. However, these variables were found to be weak predictors of PEB and didn't really add anything to the understandings of the model. This may be because they were looked at within a general theory, therefore theory, research and measurement of these predictors need to be considered in a domain specific way. Another reason could be body dissatisfaction and sociocultural pressures are more important predictors of PEB.

Another drawback of this study would be because the scales (10-Item Self-Scoring Self-Control Scale and The Rosenberg Self-Esteem Scale) used to measure both self-esteem and self-control were too general and did not actually measure the variables in terms of PEB but rather a personality. Future researchers could change this by looking at both self-control and self-esteem as more eating controlled variables such as 'body-esteem' rather than global constructs. In other words, the measures of these variables need to be specifically designed for eating self-control and self-esteem variables. For instance, how do you view yourself in terms of your eating habits? Or I feel that I am in control of what I eat?

Although the scales; EAT-26 and BSQ-34 looked at symptoms of different ED's such as anorexia nervosa and bulimia, the sociocultural model itself did not account for dissimilarities between different types of PEB's leading to a ED. Thus, given that ED is a very broad term, this study can be amended by focusing on specific dimensions of PEB leading to the development of ED.

Female university students in the UK were used as they are more prone to developing ED's (Alipour et al., 2009) and are more likely to internalise the thin-ideal which results in greater levels levels of sociocultural pressures and body-dissatisfaction leading to PEB (Cattarin et al., 2000). Therefore, the sample was not generalisable to the wider population. Future researchers should consider using diverse samples in age, gender and ethnicity. This will help provide a healthier understanding on the effects of PEB tendencies, PEB in minorities and males. In contrast, longitudinal research should also be considered among females, as little research has been conducted on examining PEB across the entire female lifespan (Slevec and Tiggemann, 2011). Additionally, this study should have considered the fact that individuals have different types of personality and some may be influenced by sociocultural factors differently. Future studies, should therefore examine different sides of personality for example, perfectionism that may influence individuals to developing PEB (Courtney, Gamboz and Johnson, 2008).

### **Practical implications**

This study can provide real word applications for settings such as Universities, Schools and also health programmes. Such bodies can draw awareness by introducing prevention programmes to minimise the influences of sociocultural pressures, body dissatisfaction and to improve both self-control and self-esteem, in order to reduce PEB. A dissonance-based educational approach; cognitive-behavioural; and other assimilated treatments for instance, virtual reality, can be put in place to decrease the prominence of appearance and thin-ideal internalisation to reduce PEB (Dakanalis, 2014). Given that sociocultural pressures were found to be predictive of PEB, the findings can be applied to introducing internet-based interventions, as females are found to be highly influenced by media. Zabinski et al., (2004) evaluated an internet-delivered intervention to help improve eating habits and body-image in female students, who were at increased risk of ED. They found such the programme did reduce PEB that may result in ED development among female students.

## **Conclusion**

The present study has explored the influence of several factors among female university students on PEB. Positive significant correlations were found between sociocultural pressures and body dissatisfaction with PEB. A negative positive correlation was found between self-esteem and PEB. However, although self-control was significantly negatively correlated with PEB, it did not provide a unique influence and so didn't add any further understanding to the sociocultural theory. Also, sociocultural factors and body dissatisfaction were found to be stronger predictors of PEB, thus this finding did support the theory. Further recommendations have been proposed and it is determinedly suggested that if these are put in action, researchers will be able to reconnoitre more comprehensively the adaptive potential of the effects of both self-control and self-esteem on PEB.

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