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Body Dissatisfaction and Surveillance, Exercise Frequency, Depression and Self-Esteem in a University Population

Peta Stapleton BA, PGDipPsy, PhD and Natalie Dzodz, BAPsych, PGDipPsy

Abstract

The purpose of the present study was to explore the relationship between body dissatisfaction and body surveillance, exercise frequency, depression and self-esteem in 121 university students from various Australian tertiary institutions aged between 17 to 45 years old population. This study also aimed to observe gender differences in the experience of body dissatisfaction. Inconsistent with previous research and the present hypothesis, no significant relationship was found between body dissatisfaction and exercise frequency or body surveillance. However, a significant relationship was found between body dissatisfaction and depression, as well as with self-esteem. Gender was also found to significantly predict body dissatisfaction, with females reporting a higher degree of body dissatisfaction than males. Results of the current study indicate that interventions and resilience programs for eating disorders and those who are at risk would benefit from focusing on younger student females, particularly those who report lower self-esteem, higher depression and body dissatisfaction.

Keywords: body dissatisfaction, exercise, mood, self-esteem, depression, university population

Introduction

Eating disorders are extremely prevalent in western society (Watson, Elphick, Dreher, Steele, & Wiksch, 2010) and even more so in student populations (Dworin, 2011). Various factors have been explored in order to determine what exactly contributes to the high prevalence of eating disorder symptomology found in students. Of these factors, body dissatisfaction has been one of the highest contributors (Cash & Szymanski, 1995). Other important factors that have been found to contribute to the onset and maintenance of eating disorders in students include body surveillance (Mercurio & Rima, 2011), exercise frequency (LePage & Crowther, 2010), depression (Johnson & Wardle, 2005), and self-esteem (Svaldi, Zimmermann, & Naumann, 2012). Previous studies have observed these variables at an independent level, but none to date have looked at the impact of these variables combined, in association with body dissatisfaction. Observation of all of these variables may lead to the identification of factors that lead to and sustain body dissatisfaction, which in turn contributes to eating disorder onset and maintenance. This can aid in the prevention and treatment of eating disorders, particularly in student populations (Svaldi, et al., 2012).

Body dissatisfaction describes negative self-evaluations of body size, shape, muscle tone and weight. It commonly encompasses a discrepancy between people's self-evaluation and their perceived ideal body (Cash & Szymanski, 1995). Body dissatisfaction is one of the most empirically validated causes and maintenance factors of eating disorders (Cash & Szymanski, 1995). Because of this, the identification of the various factors that lead to and sustain body dissatisfaction is a major goal for prevention and interventions of eating disorders (Svaldi, et al., 2012). As body dissatisfaction is attributed to eating disorder development and maintenance, the present study aimed to investigate the relationship between body dissatisfaction and other contributing factors, as well as whether there are other factors that may predict the experience of body dissatisfaction. Findings in relation to this may then highlight fundamental and central information regarding prevention strategies in the development of eating disorder.

In western culture, a slim body is thought to represent health and fitness and is very highly regarded within this culture (Grogan, 2008). This is also strongly highlighted in the visual media and advertising, where the slender, svelt female and male of athletic build are the most frequently featured images. Exercise plays a primary role in health and fitness, however exercise behavior is also implicated in the development of body dissatisfaction (LePage & Crowther, 2010). Behaviors that foster body dissatisfaction are thought to stem from a desire to obtain a thin ideal, which is proposed to be a result of mass media who portray an ideal body as a [twiggy shape]that is highly unattainable for most people, not to mention its being unrealistic and unhealthy (Rodgers, Chabrol & Paxton, 2011). Homan's recent (2010) longitudinal study that explored whether internalization of thinness and athleticism predicted body dissatisfaction, dieting and compulsive exercise found that internalisation of a thin body as a personal ideal predicted maladaptive exercise behaviors, specifically in the form of compulsive exercise. Body dissatisfaction is often then the result of the internalisation of this highly unattainable thin ideal regularly featured through the mass media (Rodgers, et al. 2011).

Behaviors such as body dissatisfaction and surveillance (hyper-vigilance about one's appearance) are also highly associated with depressive symptoms (Johnson & Wardle, 2005) and low self-esteem (Rodgers et al., 2010), which are also risk factors when considering the development of eating disorder symptomology (Rodgers, Salès & Charbrol, 2009). It has further been suggested that body dissatisfaction can contribute to elevated depression levels more so than other risk factors such as such as body mass (Benas, Uhrlass, & Gibb, 2010), and that there is a significant relationship between self-esteem and depression (Jagannath, Unnikrishnan, Hegde, Ramapuram, Rao, Achappa, Madiv & Kotian, 2011; Michalak, Teismann, Heidenreich, Ströhle & Vocks, 2011).

The focus of the present study

The purpose of this study was to explore the relationship between body dissatisfaction and exercise frequency, body surveillance, depression and self-esteem in a student population. As existing research has mostly examined these variables individually, the current study aimed to observe these variables in combination, in order to develop an understanding of variables that may increase the likelihood of body dissatisfaction. Additionally, as prior research has looked primarily at body dissatisfaction in female subjects, the proposed study also observed gender differences in body dissatisfaction. Considering research that has indicated a high association between body dissatisfaction and self-esteem in females of differing weight (Van Den Berg, et al., 2010), the present study also examined participants' Body Mass Index in order to observe whether weight status had any predictive ability on body dissatisfaction and related factors.

Hypotheses

1. It was expected that increased frequency of self-weighing and exercise would predict great body dissatisfaction

2. Those who report a higher the degree of body dissatisfaction were expected to indicate higher levels of depression as well as to report lower levels of self-esteem.
3. Students who self-report higher frequency of self-weighing and higher depression scores would also report lower levels of self-esteem.
4. Females would report a higher degree of body dissatisfaction than males.

Method

Participants

The participants in this study consisted of 121 students, 17 to 45 years old ($M = 23.65$, $SD = 5.93$) from various tertiary institutions across Australia. There included 94 (77%) female participants and 29 (23%) males. Originally, 134 students participated in this research, however data from 13 people was excluded due to an excessive amount of missing data, and also due to not meeting the inclusionary criteria for participation, which was current enrolment in tertiary study. Regarding marital status, 65.9% of the participants were single, 9.8% were married, 3% were divorced, 18.2% were in a defacto relationship and 0.8% of the participant pool was widowed.

Measures

Demographics information was collected, including height and weight measures (for Body Mass Index (BMI) calculations).

Compulsive Exercise

As research has indicated that those who engage in compulsive exercise tend to display higher degrees of body dissatisfaction, exercise frequency was measured in order to observe whether there was a significant positive correlation between body dissatisfaction and exercise frequency. Participants of the current study were asked about how often they engage in exercise with the option to respond on a five point Likert scale. On this scale, $0 = \text{never}$, $1 = \text{once a week or less}$, $2 = \text{2-3 times a week}$, $3 = \text{3-6 times a week}$, and $4 = \text{every day or more}$.

Body Surveillance

Data was also collected on how frequently participants weighed themselves in order to observe the variable of body surveillance and its relationship with participants' degree of body dissatisfaction. Participants were asked about how often they self-weighed, with the option to respond on a five point Likert scale, with $0 = \text{never}$, $1 = \text{a few times a year}$, $2 = \text{a few times a month}$, $3 = \text{weekly}$, $4 = \text{more than weekly}$, and $5 = \text{everyday}$.

Image Avoidance

The 19-item *Body Image Avoidance Questionnaire* (BIA-Q; Rosen, Srebnik, Saltzberg, & Wendt, 1991) was used, as it assesses behavioral tendencies that are associated with body-image disturbance and avoidance. Participants are asked to respond to each item on a 6 point Likert scale ranging from $0 = \text{never}$, $1 = \text{rarely}$, $2 = \text{sometimes}$, $3 = \text{often}$, $4 = \text{usually}$, and $5 = \text{always}$. Scores are calculated by the summing of each response and can range from a value of 0 to 95 (Collings, 2005).

Self Esteem

The *Rosenberg Self-esteem Scale* (RSES; Rosenberg, 1965) was used to measure the trait of global self-esteem (Lecomte, Corbiere, & Laisne', 2006) through 10 items related to positive and negative feelings towards the self (Chedraui, Pérez-López, Mendoza, Leimberg, Martinez, Vallarino & Hidalgo, 2010). Participants were asked to rate the extent to which they agree with each statement on a four-point Likert scale from $3 = \text{strongly agree}$, $2 = \text{agree}$, $1 = \text{disagree}$, and $0 = \text{strongly disagree}$.

Depression, anxiety and stress

The 21-item Depression Anxiety and Stress Scale (DASS-21) comprises three self-report scales intended to measure the severity of depression, anxiety and stress in adults (Lovibond & Lovibond, 1995). The Depression subscale was of interest in this study.

Social desirability

The short eight-item version of the Marlowe-Crowne Social Desirability Scale (MC-SDS) (Ray, 1981; 1984) was used in order to control for social desirability biases. Johnson and Wardle (2005) identified social desirability biases as a limitation to their research that also focused on body image related variables. They recommended that future research on body image related variables collect data on social desirability in order to control for this possible confounding variable. The decision to include this scale in the present study was based on this recommendation.

After ethical approval was obtained from the authors' institution, an electronic questionnaire package was distributed to volunteer students.

Results

Analyses were conducted using the Statistical Package for the Social Sciences (SPSS), for windows (version 19.0). In total, 13 of the participant's data were excluded from the current study.

The present study involved observing multiple predictor variables in relation to a single outcome variable, therefore hierarchical multiple regression analysis was conducted. In the first model with body dissatisfaction as the criterion, predictor variables were entered in 6 steps. In the first step, social desirability scores, age, and gender were added together. BMI was added in step 2, exercise frequency scores were added in step 3, self-weighing frequency scores were added in step 4, self-esteem scores were added in step 5, and depression scores were added in step 6. The plots in the results of this regression indicated that the assumptions of normality, linearity, and homoscedasticity were all met, and the correlations table indicated that there was an absence of multicollinearity. A descriptive analysis was conducted in order to ensure data quality and the means and standard deviations from this are reported in Table 1.

Table 1. Descriptive Statistics for Each Variable

Variable	Mean	SD
Body dissatisfaction	1.60	.51
Age	23.65	5.93
Social desirability	1.79	.44
BMI	22.47	4.50
<u>Exercise freq</u>	2.07	1.05
Weigh freq	1.96	1.60
Self-esteem	2.00	.54
Depression	7.16	7.62

Hypothesis 1, that students with higher degrees of body dissatisfaction will self-report more frequent self-weighing and exercise than those who report a lower degree of body dissatisfaction, was not supported as there was not a significant association between body dissatisfaction, self-weighing and exercise frequency.

Age, gender and social desirability combined scores significantly predicted student's degree of body dissatisfaction, accounting for 13.30% of the variance in body dissatisfaction scores ($R^2 = .133$, Adjusted $R^2 = .111$, $F(3,117) = 5.97$, $p < .001$). BMI also contributed significantly to the variance in body dissatisfaction scores, accounting for 16.2% of the variance ($R^2 = .162$, Adjusted $R^2 = .133$, $F(3,116) = 4.00$, $p < .05$). Furthermore, BMI significantly predicted body dissatisfaction as demonstrated in Table 2. Self-esteem scores significantly accounted for 29.50% of the variance in body dissatisfaction scores when added to the model in the 5th step ($R^2 = .295$, Adjusted $R^2 = .251$, $F(1,113) = 18.07$, $p < .000$). Scores from the depression subscale of the DASS-21 significantly predicted students' degree of body dissatisfaction, and accounted for an additional 34.30% of the variance in body dissatisfaction ($R^2 = .343$, Adjusted $R^2 = .296$, $F(1,112) = 8.17$, $p < .01$).

Table 2. Hierarchical Multiple Regression Analysis Predicting Body Dissatisfaction from Gender, Age and Social Desirability, BMI, Exercise Frequency, Self-weighing Frequency, Self-esteem, and Depression.

Predictor	R ² Change	B	Beta	t	95% CI for B
Constant		1.441**		3.071	(.511, 2.371)
Age		.012	-.360	-4.321	(-.003, .026)
Gender		-.438***	.137	1.617	(-.639, -.216)
Social Desirability	.133	-.089	-.076	-.917	(-.280, .103)
BMI	.029	.021*	.181	2.217	(.002, .039)
Exercise Freq	.012	-.083*	-.170	-2.132	(-.159, -.006)
Self-weigh Freq	.008	.019	.059	.738	(-.032, .070)
Self-esteem	.113	-.168	-.176	-1.633	(-.371, .036)
Depression	.048	.020**	.301	2.858	(.006, .034)

Note. *** $p < .001$, ** $p < .01$, * $p < .05$

Hypothesis 2, that students who report a higher the degree of body dissatisfaction will report higher levels of depression, as well as lower levels of self-esteem was partially supported. Results indicated that as depression scores increased, body dissatisfaction also increased and this relationship was significant, as reported in Table 2. Lower self-esteem scores occurred when there was higher body dissatisfaction, however this result was not significant.

In the second model, with self-esteem as the criterion, predictor variables were entered in 5 steps. In the first step, social desirability scores, age, and gender were added together as they were considered confounding factors that were not of great interest in terms of the current research question and hypotheses. BMI was added in step 2, exercise frequency scores were added in step 3, self-weighing frequency scores were added in step 4, and depression scores were added in step 5.

The results of the second regression model indicated that the assumptions of normality, linearity, and absence of multicollinearity were all met. The scatter plot indicated some degree of heteroscedasticity therefore, despite the robustness of regression analysis, results should be interpreted with some caution.

Hypothesis 3, that participants who self-report a higher frequency of self-weighing as well as higher depression scores, will also report lower levels of self-esteem, was supported. Higher depression scores significantly predicted lower self-esteem, as depicted in Table 3, and accounted for 49.6% of the variance in self-esteem scores ($R^2 = .496$, Adjusted $R^2 = .465$, $F(1,113) = 72.60$, $p < .000$). More frequent self-weighing also significantly predicted lower levels of self-esteem and accounted for 17.3% of the variance in scores however this variance accounted for was not significant ($R^2 = .173$, Adjusted $R^2 = .129$, $F(1,114) = 3.35$, $p < .07$). Table 3 depicts that gender was another significant predictor of low self-esteem. Gender also accounted significantly to 13.7% of the variance in self-esteem scores together with age and social desirability scores ($R^2 = .137$, Adjusted $R^2 = .115$, $F(3,117) = 6.22$, $p < .001$).

Table 3. Hierarchical Multiple Regression Analysis Predicting Self-esteem from Gender, Age and Social Desirability, BMI, Exercise Frequency, Self-weighing Frequency, and Depression

Predictor	R ² Change	B	Beta	t	95% CI for B
Constant		2.60***		7.36	(1.90, 3.30)
Age		.00	.05	.69	(-.00, .02)
Gender		.18*	.14	1.99	(.00, .36)
Social Desirability	.13	-.13	-.10	-1.49	(-.30, .04)
BMI	.00	-.00	-.03	-.42	(-.02, .01)
Exercise Freq	.01	-.01	-.02	-.39	(-.08, .05)
Self-weigh Freq	.02	-.04*	-.14	-2.13	(-.09, -.00)
Depression	.32	-.04***	-.61	-8.52	(-.05, -.03)
<i>Note. *** $p < .001$, ** $p < .01$, * $p < .05$</i>					

Discussion

The purpose of the current study was to explore the relationship between body dissatisfaction and exercise frequency, body surveillance, depression and self-esteem in a student population. Body dissatisfaction has been attributed to the development and maintenance of eating disorders therefore exploring factors that lead to body dissatisfaction may then highlight central information that could contribute to the development of fundamental eating disorder prevention and treatment strategies. The results of the current study found a strong association between body dissatisfaction and depression, self-esteem, and gender. There was no significant relationship found between body dissatisfaction and body surveillance and exercise frequency. This was inconsistent with prior research and unexpected in the current study. Low self-esteem was significantly predicted by gender,

body surveillance, and depression, which supported the hypothesis of the current study and was also consistent with stated theories and previous research.

Results of the current study did not support the first hypothesis, that students with higher degrees of body dissatisfaction would self-report more frequent self-weighing and exercise than those who reported a lower degree of body dissatisfaction. This was inconsistent with the research of LePage and Crowther (2010) who reported that fitness and health motivations were related to higher degrees of body dissatisfaction and that more frequent exercise may predict higher levels of body dissatisfaction. It was also inconsistent with the finding of Anton et al., (2000) who found that there was a significant relationship between body dissatisfaction and exercise behaviors, and that compulsive exercise may indicate a higher degree of body dissatisfaction. Homan (2010) also found that body dissatisfaction predicted maladaptive exercise behaviors, specifically in the form of compulsive exercise, however this was not reflected in the results of the current study.

These inconsistencies may be due to the manner in which the question regarding exercise frequency was entered into the data set. Previous research has stated that compulsive exercise may predict body dissatisfaction, however the current study looked at exercise frequency as a continuous variable. Perhaps if this variable was categorised into levels of severity (e.g. those who report an exercise frequency of more than everyday are categorised as compulsive), then it may have been more evident if those who were compulsive exercisers had higher levels of body dissatisfaction. The use of a structured questionnaire that assesses exercise frequency and categorises the participants in regards to their level of compulsivity would be very useful in future research and would resolve this limitation in the current study. Additionally, due to the small sample size of the current study, a type II error cannot be disregarded. Repeating this study with a much larger sample would be expected to yield more accurate results.

The two main theories of body dissatisfaction that were discussed in the current study, objectification theory and social comparison theory, can also be considered in regards to these results. These theories focus on body surveillance leading to body dissatisfaction and eating disorder symptomology, rather than concern with exercise frequency. When these theories refer to individuals striving to alter their physical state in order to be consistent with the ideal, it may be assumed that they are referring to eating disorder symptoms detached from the symptom of compulsive exercise. However, if exercise frequency were to be observed in terms of level of compulsiveness as measured by a structured questionnaire, the results of the current study would have tested this hypothesis in a more clear and accurate manner.

The results in relation to hypothesis 1 were inconsistent with the above-mentioned theories as well as with the research of Mercurio and Rima (2011), who found that those who self-weighed more frequently reported more body dissatisfaction than those who self-weighed less frequently (Mercurio & Rima, 2011). Fitzsimmons-Craft et al. (2012), also had contradicting findings as their results indicated that body surveillance may act as means to individuals realizing the discrepancy between their current and ideal selves, which can then result in body dissatisfaction. As the results of the current study are evidently inconsistent with results yielded by most other studies observing the same variables, it can be assumed that the current study must have some design flaws that require attention in future research. This again could have been improved by creating levels of the self-weighing variable in regards to low frequency self-weighing and high frequency self-weighing, which could have been determined through use of a structured measure. These two levels of this variable may have been enough of a change to the design in order to observe the impact of this variable more accurately, however further research would be required in order to determine what exactly constitutes low and high frequency self-weighing.

As expected in hypothesis three, more frequent self-weighing did significantly predict lower levels of self-esteem. This may be an indication that these individuals who reported more frequent self-weighing and lower self-esteem scores, were in the stage of realizing the discrepancy between their current and ideal selves as discussed by Fitzsimmons-Craft et al., (2012). This may be part of the process predicted by objectification theory, which hypothesizes that this realization of a discrepancy could then lead to body dissatisfaction at a later date. Considering this, an extension of the current study would be to re-assess the participants in the areas of body dissatisfaction, self-weighing frequency, and self-esteem after an interval of time has passed (e.g. pre-and post- a six-month period). Further research would be required in order to determine the required interval between testing periods in order to accurately determine whether low self-esteem, due to more frequent self-weighing, can manifest into body dissatisfaction.

Hypothesis 2, that students who report a higher degree of body dissatisfaction would report higher levels of depression, as well as lower levels of self-esteem, was supported by the results of the current study. A significant positive correlation was found between depression and body dissatisfaction, and a negative correlation was found between body dissatisfaction and self-esteem. These results were not surprising, as it is expected that if a person is experiencing dissatisfaction with their body and appearance, they would also be experiencing lowered confidence and self-esteem levels, which in turn may cause them to feel low in mood. These results are consistent with that of Rodgers, Salès and Charbrol (2009) who found that depression was significantly and positively correlated with body dissatisfaction, and that body dissatisfaction can contribute to elevated depression levels. The present results are also consistent with previous research such as that of Davis and Katzman (1997) who reported a significant relationship between body dissatisfaction and high depression levels. The results of the present study add further support for the implication of depression in body dissatisfaction. Stice, Marti and Durant (2011) highlighted that eating disorder onset increased from 15% to 43% in those who displayed high body dissatisfaction and severe depressive symptoms. Therefore the need for intervention strategies that focus on reducing depression levels as a form of early intervention to prevent eating disorder onset and maintenance is essential.

The expectation that participants who self-report higher depression scores would also report lower levels of self-esteem was also supported by the current results, and is consistent with research by Johnson and Wardle (2005) who found that higher levels of depression and lower levels of self-esteem were both associated with body dissatisfaction. This is not surprising, as it would have appeared unusual for an individual to have low self-esteem, yet not be depressed. The present study's results are similar to that of Van Den Berg, et al., (2010), Michalak, et al., (2011); and Jagannath, et al., (2011) who found a strong and significant relationship between depression and low self-esteem, suggesting that these two variables together predict body dissatisfaction. This strong association found in the present study can be explained by the common comorbidity of these variables, evident in aforementioned research, as well as in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) in regards to mood disorders.

The current research demonstrated that gender also significantly predicted students' degree of body dissatisfaction, and a post hoc independent t-test revealed the females reported higher degrees of body dissatisfaction than males. As expected, these results were consistent with previous research by Neighbors and Sobal (2007), Lokken, et al., (2003), and Bardone-Cone, et al. (2008). These results lead to the consideration that perhaps females are more exposed to thin ideal imagery than males, and therefore they may be more at risk than males for developing a thin ideal internalization that then manifests into body dissatisfaction. Additionally, females are more likely to be engaged in various activities where body shape and size is scrutinized, such as attending a gym and wearing clothes that highlight their body features. If females of the current sample were engaged in activities of this nature, then this may have contributed to a higher degree of females being subjected to society's

thin ideal, and hence more at risk of developing body dissatisfaction. It would be very worthwhile for future research in this area to collect information about the activities and hobbies participants engage in, and to observe whether this has any impact on their experience of body dissatisfaction.

The current research further suggests that age significantly predicted student's degree of self-esteem when depression levels were not considered. A post-hoc independent t-test examining the mean scores of body dissatisfaction above and below the mean age of 23.65 years, revealed that participants who were aged below the mean, reported lower levels of self-esteem than those above the mean age. These results may have resulted from the notion that as people age, they encounter more life experiences and tend to learn more about themselves, who they want to be and what they want to achieve in their life. Through this learning, people may begin to understand more about their personal values and strengths, and grow to like who they are as a person, hence having more confidence and self-esteem. This finding is consistent with the theory behind Erikson's developmental stages which argues that the process of social comparison is not as prominent in later life, suggesting that as people grow older, they become more accepting of who they are (Dietz, 1996). It is interesting however, that when depression levels were added to the model, age was no longer a significant predictor of low self-esteem. This may be due to the higher depression levels often found in older people (Wolkowitz, Epel, Reus, & Mellon, 2010) and, as suggested by previous research by Johnson and Wardle (2005), there is an association between depression and low self-esteem.

An interesting finding of the current study, that was not considered when developing hypotheses, was that BMI significantly predicted body dissatisfaction. As BMI increased, body dissatisfaction scores also increased. Future research into this area could observe the different categories of BMI, such as underweight, normal, overweight and obese, to find out which category has the highest level of body dissatisfaction. Research by Van Den Berg, et al., (2010), recently indicated that body dissatisfaction and low self-esteem were significant in females who were of average weight, overweight and obese, however it was insignificant for those who were underweight. The results of the current study support these findings. An explanation for these results may be that the individuals who are underweight may have reached their perceived thin ideal and therefore do not feel dissatisfied with their bodies. It should also be considered that perhaps there is a fine line between these underweight individuals being satisfied with their bodies, and those who may in fact meet the criteria for a certain eating disorder. An additional consideration is in regards to the experience of body dissatisfaction in those who are in the normal weight range. These individuals may observe a discrepancy between their body and the thin ideal, and therefore they are dissatisfied. It is evident that society's thin ideal is one that may be in the underweight BMI range as this ideal is thought to be unattainable by the general population (Rodgers, et al., 2011), and therefore it is not surprising that underweight individuals are satisfied, and that those in the normal weight range experience body dissatisfaction.

Conclusion

In conclusion, the results of the current study supported previous research regarding the strong association between body dissatisfaction, depression and self-esteem. This significant relationship, specifically that of depression, has been found in previous research to impact significantly on the aetiology of eating disorders. Body dissatisfaction is one of the most powerful predictors of eating disorder onset, and together with depressive symptoms has been found to correlate with an increase in eating disorder onset (Stice, et al., 2011). Considering the risk of individuals suffering from both body dissatisfaction and depression developing an eating disorder, research outcomes such as in the current study highlights the crucial need for the development of early intervention strategies targeted at reducing and managing depressive symptoms in those who are at risk of developing an eating disorder. Intervention at this stage may significantly improve the prognosis for individuals who develop an eating disorder.

The results of the current study indicated that future research and interventions for eating disorders and resilience programs for those who are at risk of eating disorders, needs to focus on younger females, particularly those who report lower self-esteem, higher depression and body dissatisfaction, in addition to focusing on those experiencing both body dissatisfaction and depression. This combination of variables has not been examined before and was found in the current study to predict body dissatisfaction.

References

- Anton, S. D., Perri, M. G., & Riley, J. R. (2000). Discrepancy between actual and ideal body images Impact on eating and exercise behaviors. *Eating Behaviors*, *1*, 153-160.
- Bardone-Cone, A. M., Cass, K. M., & Ford, J. A., (2008). Examining body dissatisfaction in young men within a biopsychosocial framework. *Body Image*, *5*, 183–194. doi:10.1016/j.bodyim.2007.12.004
- Benas, J.S., Uhrlass, D.J, & Gibb, B. (2010). Body dissatisfaction and weight-related teasing: A model of cognitive vulnerability to depression among women. *Journal of Behavior Therapy and Experimental Psychiatry*, *41*(4): 352-6.
- Cash, T. F., & Szymanski, M. L. (1995). The development and validation of the Body- Image Ideals Questionnaire. *Journal of Personality Assessment*, *64*, 466-477.
- Chedraui, P., Pérez-López, F. R., Mendozab, M., Leimberg, M. L., Martinez, M. A., Vallarino, V., & Hidalgo, L. (2010). Assessment of self-esteem in mid-aged women. *Maturitas*, *66*, 77–82. doi:10.1016/j.maturitas.2010.01.008
- Collings, A. S. (2005). The relationship between body image and weight maintenance in community women enrolled in weight-loss programs. *Masters Theses and Doctoral Dissertations*. Paper 124. Retrieved from <http://commons.emich.edu/theses/124>
- Davis, C., & Katzman, M. (1997). Charting new territory: Body esteem, weigh satisfaction, depression, and self-esteem among Chinese males and females in Hong Kong. *Sex Roles*, *36*, 449-459.
- Dietz, B. E. (1996). The relationship of aging to self-esteem: The relative effects of maturation and role accumulation. *International Journal of Aging and Human Development*, *43*, 249–266.
- Dworin, C. H. (2011). *Eating disorders on campus get scrutinized: With more students dabbling in unhealthy weight-loss methods, such as "drunkorexia," some experts wonder whether schools could do more to intervene*. Newsweek Web Exclusives. Newsweek, Inc. and Newsweek Budget Travel, Inc. NY: USA.
- Fitzsimmons-Craft, E. E., Harney, M. B., Koehler, L. G., Danzi, L. E., Riddell, M. K., & Bardone-Cone, A. M. (2012). Explaining the relation between thin ideal internalization and body dissatisfaction among college women: The roles of social comparison and body surveillance. *Body Image*, *9*, 43–49. doi:10.1016/j.bodyim.2011.09.002
- Grogan, S. (2008). *Body image: understanding body dissatisfaction in men, women and children*. Psychology Press: Sussex, Great Britain.
- Homan, K. (2010). Athletic-ideal and thin-ideal internalization as prospective predictors of body dissatisfaction, dieting, and compulsive exercise. *Body Image*, *7*, 240–245. doi:10.1016/j.bodyim.2010.02.004
- Jagannath, V., Unnikrishnan, B., Hegde, S., Ramapuram, J. T., Rao, S., Achappa, B., Madi, D., & Kotian, M. S. (2011). Association of depression with social support and self-esteem among HIV positives. *Asian Journal of Psychiatry*, *4*, 288–292. doi:10.1016/j.ajp.2011.10.006
- Johnson, F., & Wardle, J. (2005). Dietary Restraint, Body Dissatisfaction, and Psychological Distress: A Prospective Analysis. *Journal of Abnormal Psychology*, *114*(1), 119–12. doi: 10.1037/0021-843X.114.1.119

- Lecomte, T., Corbie`re, M., & Laisne´, F. (2006). Investigating self-esteem in individuals with schizophrenia: Relevance of the Self-Esteem Rating Scale-Short Form. *Psychiatry Research, 143*, 99–108. doi:10.1016/j.psychres.2005.08.019
- LePage, M. L., & Crowther, J. H. (2010). The effects of exercise on body satisfaction and affect. *Body Image, 7*, 124–130. doi:10.1016/j.bodyim.2009.12.002
- Lokken, K., Ferraro, F. R., Kirchner, T., & Bowling, M. (2003). Gender difference in body size dissatisfaction among individuals with low, medium or high levels of body focus. *Journal of General Psychology, 130*(3), 305–310.
- Lovibond, S.H. & Lovibond, P.f. (1995). *Manual for the Depression anxiety Stress Scales*. (2nd Ed) Sydney: Psychology Foundation.
- Mercurio, A., & Rima, B. (2011). Watching My Weight: Self-Weighing, Body Surveillance, and Body Dissatisfaction. *Sex Roles, 65*, 47–55. doi:10.1007/s11199-011-9980-x
- Michalak, J., Teismann, T., Heidenreich, T., Ströhle, G., & Vocks, S. (2011). Buffering low self-esteem: The effect of mindful acceptance on the relationship between self-esteem and depression. *Personality and Individual Differences, 50*, 751–754. doi:10.1016/j.paid.2010.11.029
- Neighbors, L. A., & Sobal, J. (2007). Prevalence and magnitude of body weight and shape dissatisfaction among university students. *Eating Behaviors, 8*, 429–439. doi:10.1016/j.eatbeh.2007.03.003
- Ray, J. J. (1984). The reliability of short social desirability scales. *The Journal of Social Psychology, 123*, 133–134.
- Ray, J. J. (1981). Do authoritarian attitudes or authoritarian personalities reflect mental illness? *South African Journal of Psychology, 11*(4), 153–157.
- Rodgers, R., Chabrola, H., & Paxton, S. J. (2011). An exploration of the tripartite influence model of body dissatisfaction and disordered eating among Australian and French college women. *Body Image, 8*, 208–215. doi:10.1016/j.bodyim.2011.04.009
- Rodgers, R. F., Salès, P., & Chabrol, H. (2010). Psychological functioning, media pressure and body dissatisfaction among college women. *Revue Européenne de Psychologie Appliquée, 60*, 89–95. doi:10.1016/j.erap.2009.10.001.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Stice, E., Marti, C.N., & Durant, S. (2011). Risk factors for onset of eating disorders: Evidence of multiple risk pathways from an 8-year prospective study. *Behavior Research and Therapy, 49*(10), 622–7.
- Svaldi, J., Zimmermann, S., & Naumann, E. (2012). The impact of an implicit manipulation of self-esteem on body dissatisfaction. *Journal of Behavior Therapy and Experimental Psychiatry, 43*, 581–586. doi:10.1016/j.jbtep.2011.08.003.
- Watson, H., Elphick, R., Dreher, C., Steele, A., & Wiksch, S. (2010). *Eating Disorders prevention, treatment and management: An evidence review*. Canberra: Commonwealth Department of Health and Aging.
- Wolkowitz, O. M., Epel, E. S., Reus, V. I., & Mellon, S. H. (2010). Depression gets old fast: Do stress and depression accelerate cell ageing? *Depression and Anxiety, 27*, 327–338.
- Van den berg, P.A., Mond, J., Eisenberg, M., Ackard, D., Neumark-Sztainer, D. (2010). The link between body dissatisfaction and self-esteem in adolescents: Similarities across gender, age, weight status, race/ethnicity, and socioeconomic status. *Journal of Adolescent Health, 47*(3): 290–296.

Peta Stapleton BA, PGDipPsy, PhD Dr Peta Stapleton has 20 years' experience as a registered Clinical and Health Psychologist in Queensland, Australia and as a Certified Practitioner of Neuro-Linguistic Programming, Time Line Therapy and EFT. Peta works fulltime as Assistant Professor in Psychology at Bond University and has been awarded many honours including the Australian Psychological Society Elaine Dignan Award for research into women's issues. Peta has recently investigated the impact of EFT in the treatment of food cravings (Association of Comprehensive Energy Psychology Seed Grant 2007), and is currently comparing EFT against Cognitive Behavioural Therapy for food cravings (Association of Comprehensive Energy Psychology Seed Grant, 2012). See www.foodcraving.com.au.



All correspondence to Dr Peta Stapleton
 Assistant Professor
 School of Humanities (Psychology)
 Bond University
 Gold Coast, Queensland, 4229, Australia
 Telephone: +617 55952 515,
 Fax: +61 7 55952 540
peta_stapleton@bond.edu.au

Natalie Dzodz, BAPsych, PGDipPsy Graduated Bond University 2012. Rehabilitation Consultant/ Provisional Psychologist at Strive Occupational Rehabilitation, Brisbane.



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