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To cite this article: Kim Woodward, Doris McIlwain & Jonathan Mond (2019) Feelings about the self and body in eating disturbances: The role of internalized shame, self-esteem, externalized self-perceptions, and body shame, *Self and Identity*, 18:2, 159-182, DOI: [10.1080/15298868.2017.1403373](https://doi.org/10.1080/15298868.2017.1403373)

To link to this article: <https://doi.org/10.1080/15298868.2017.1403373>



Published online: 26 Nov 2017.



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Feelings about the self and body in eating disturbances: The role of internalized shame, self-esteem, externalized self-perceptions, and body shame

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ABSTRACT

Objective: To investigate the roles of feelings of low self-worth (internalized shame and low self-esteem), externalized self-perceptions (self-objectification and body surveillance), body shame, and depressive symptoms in directly and indirectly explaining variance in eating disorder (ED) pathology across two studies. **Study 1:** In 403 women, internalized shame and self-esteem were found to each be independently associated with ED pathology, over and above one another, depressive symptoms, age and BMI. Further, body shame fully mediated the relationships between ED pathology and internalized shame and self-esteem, controlling for one another, depressive symptoms, age and BMI. **Study 2:** In a different sample of 548 women, Structural Equation Modeling (SEM) revealed that a path model in which internalized shame predicts ED pathology both directly and indirectly via self-objectification, body surveillance, body shame, and depressive symptoms demonstrated very good fit for the data and explained 68% of the variance in ED pathology. **General conclusions:** Results support an understanding of EDs as disorders of self, in which negative feelings about the self (internalized shame and low self-esteem) are displaced onto the body (in the form of externalized self-perceptions and body shame) and are associated with increases in depressive symptoms and ED pathology, both directly and indirectly.

ARTICLE HISTORY

Received 15 March 2017
Accepted 5 November 2017
Published online 27
November 2017

KEYWORDS

Eating disorder; internalized shame; body shame; externalized self-perceptions; self-esteem

Self-concept deficits and difficulties with emotions have long been implicated in the development and maintenance of eating disorders (EDs) (Bruch, 1962, 1973). From a developmental perspective framed in attachment theory, EDs are seen to result from and be maintained by disturbances in self-development (Amianto, Northoff, Abbate Daga, Fassino, & Tasca, 2016). The fundamental principle underlying this conceptualization is that ED symptoms are used as maladaptive means of managing the painful internal experiences emanating from deficits in the self (Amianto et al., 2016). Such a self-deficit understanding of EDs accords with emotion-regulation theories of ED pathology, such as the escape model (Heatherton & Baumeister, 1991), whereby binge eating is said to serve the function of an

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escape from painful self-awareness via a narrowing of attention to an unreflective focus on immediate sensations and stimuli.

Closely aligned with self-development deficit and emotion-regulation conceptualizations of EDs, Bruch (1973, 1978) proposed a displacement theory of emotion in EDs, which argues that unexpressed or undifferentiated emotions and negative feelings about the self are displaced onto the body in the form of “feeling fat.” In this view, ED symptoms (e.g., extreme weight-control behaviors) are seen to function as maladaptive attempts to avoid or reduce feelings of shame and enhance feelings of pride (Goss & Allan, 2009). As such, the displacement of core feelings of worthlessness or an underdeveloped self involves the redirection of ego-threatening feelings to a less threatening and more concrete and controllable target, namely, body weight and shape (Schupak-Neuberg & Nemeroff, 1993).

Evidence to support a combined self-deficit, emotion-regulation, and displacement theory model (a “self/emotion-regulation model”) of ED pathology can be found in research investigating the associations between such pathology and the constructs of self-esteem, internalized shame, body shame, and externalized self-perceptions.

Self-esteem may be defined as confidence in one’s overall worth or abilities or as self-respect (Rosenberg, 1965). It has been found to be inversely associated with body dissatisfaction and ED pathology in both community (Fredrick & Grow, 1996) and clinical (Beato, Rodriguez Cano, & Belmonte, 2003) samples and in children, adolescents, and adults (Cervera et al., 2003; Gual et al., 2002). Improvements in self-esteem may also be integral in recovery from EDs, as individuals with active EDs or partially recovered EDs have been found to have lower self-esteem than fully recovered and healthy individuals, whom did not appear to differ with respect to levels of self-esteem (Bardone-Cone et al., 2010).

Alternatively, negative self-evaluation may be linked to ED pathology via reference to the construct of *internalized shame* (Cook, 1991). Within a self/emotion regulation model of ED pathology, one of the key emotions displaced onto the body is that of shame, a self-conscious emotion characterized by an experience of the self as being flawed, worthless and powerless (Tangney, 1995; Tangney, Wagner, & Gramzow, 1992). ED sufferers frequently identify themselves as feeling inherently worthless, deficient, or disgusting and often report experiences of feeling trapped in and ashamed of their bodies (Rortveit, Astrom, & Severinsson, 2009). Indeed, EDs have been described as “disorders of shame” (Kaufman, 1996, p. 129).

Displacement theory proposes that such ego-threatening feelings (shame and painful sense of self) may be redirected to a less threatening, more discrete target, namely, body weight and shape and the control of this (Schupak-Neuberg & Nemeroff, 1993). Redirection of this kind serves the dual functions of avoiding aversive self-awareness and attempting to enhance feelings of self-worth (Button, 1990; Goss & Allan, 2009). Associations between internalized shame and ED pathology have been found in both non-clinical (Sanftner, Barlow, Marschall, & Tangney, 1995) and clinical (Troop, Allan, Serpell, & Treasure, 2008) samples, and controlling for depressive symptoms (Gee & Troop, 2003; Hayaki, Friedman, & Brownell, 2002). Further, inpatient women with anorexia nervosa (AN) and bulimia nervosa (BN) have been found to have higher levels of internalized shame than inpatient women with anxiety and mood disorders (Grabhorn, Stenner, Stangier, & Kaufhold, 2006).

Whilst there is considerable evidence supporting the link between both low self-esteem and internalized shame and ED pathology individually, the relative merits of these constructs as alternate conceptualizations of low self-worth within ED research is unclear. Feelings of low self-worth associated with internalized shame may be seen to relate to feeling that one

is fundamentally “not good enough”, unlovable, or defective as a person. Self-esteem, by contrast, may be seen to relate to feelings of competency or capability in specific ways, for instance, self-evaluation as this relates to actions, abilities, attributes, or specific parts of the self (Goss & Gilbert, 2002). Thus, an individual might believe that they are good at something or even talented or special in some unique way, yet still feel that they are not “good enough” and deep-down fundamentally defective or unlovable.

Researchers have also explored the association between ED pathology and shame specifically related to the body (Troop & Redshaw, 2012). *Body shame* entails experiencing one’s physical body as undesirable or unattractive and as a source of the shamed self (Gilbert, 2002). Internalization of prevailing cultural standards of beauty (i.e., the “thin-ideal”) position women to perceive a disparity between their actual and ideal-body and to experience body shame (McKinley & Hyde, 1996) and women who associate achievement of idealized standards of beauty and body weight/shape with their identity may be particularly susceptible to this experience (McKinley & Hyde, 1996). Associations between body shame and ED pathology have been found in both community and clinical samples (Burney & Irwin, 2000; Swan & Andrews, 2003; Troop & Redshaw, 2012). Although, findings of whether internalized shame and body shame are independently associated with ED pathology over and above one another are less consistent (e.g., Doran & Lewis, 2012).

According to a displacement theory-based self/emotion-regulation model of ED pathology, negative feelings about the self (internalized shame and low self-esteem) should be associated with both ED symptoms and body shame and body shame should mediate the association between negative feelings about the self and ED pathology. Recent findings, in both community and clinical samples, support these hypotheses (Duarte, Pinto-Gouveia, & Ferreira, 2015; Duarte, Pinto-Gouveia, Ferreira, & Batista, 2015; Iannaccone, D’Olimpio, Cella, & Cotrufo, 2016). While only a minority of women who report preoccupation with weight or shape and/or disturbed eating behaviors develop clinically significant eating disturbances, shame-based negative evaluations of the self may be one factor distinguishing those who develop clinically significant ED pathology from those who do not (Goss & Gilbert, 2002).

Finally, women’s experiences of feelings of worthlessness, body shame, and ED pathology may be linked via the occurrence of *externalized or objectified self-perceptions* (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998). The theory that negative feelings about the self may be externalized and displaced onto the body accords with various sociocultural models that highlight externalized self-perceptions as a risk factor for ED pathology, including silencing-the-self theory (Jack, 1991), objectified body consciousness (McKinley & Hyde, 1996), and objectification theory (Fredrickson & Roberts, 1997).

Objectification theory suggests that day-to-day life exposes women to sexually objectifying experiences which lead women to internalize an observer’s perspective of themselves (i.e., self-objectification; Calogero, Tantleff-Dunn, & Thompson, 2011). Objectification entails being treated – and evaluated – as an object rather than as a subject. According to objectification theory, self-objectification leads to habitual body monitoring (body surveillance), body shame, depressive symptoms, and ED pathology (Fredrickson & Roberts, 1997). Findings from a broad range of studies, in both community and clinical samples, support associations between self-objectification, body surveillance, body shame, and ED pathology (e.g., Calogero, 2009; Calogero, Davis, & Thompson, 2005; Peat & Muehlenkamp, 2011). One factor that may increase self-objectification is the tendency to displace negative feelings about the self onto the body. Consistent with this suggestion, research in college women found

that low self-esteem is associated with both body surveillance and body shame (Mercurio & Landry, 2008) and that externalized self-perceptions predict ED pathology over and above the impact of shape and weight-based self-esteem (Frank & Thomas, 2003) and self-esteem and body shame (Tylka & Sabik, 2010).

The present research

The current research seeks to explore, in two mixed undergraduate/community samples of women, a displacement theory-based self/emotion-regulation model of ED pathology. Study 1 seeks to elucidate the distinction between low self-esteem and internalized shame as related but distinct aspects of low self-worth giving rise to ED pathology and to investigate the role of body shame in mediating the associations between each of these constructs and ED pathology. Study 2 aims to explore, using structural equation modeling (SEM), a path model that seeks to extend displacement theory of ED pathology by including self-objectification and body surveillance as additional mediators of the associations among internalized shame, body shame, depressive symptoms, and ED pathology.

Study 1

Whilst evidence of an association between internalized shame and ED pathology over and above the impact of low mood is mounting, the precise role played by shame – whether it is an etiological factor, a consequence, or part of the phenomenology of EDs – is less clear. Whether the role of internalized shame is independent of the effects of self-esteem and body shame is similarly unclear. A displacement theory of ED pathology, whereby negative feelings about the self are externalized and displaced onto the body, implies an etiological role of internalized shame and predicts that body shame will mediate the relationship between internalized shame and ED pathology.

With these considerations in mind, the aims of Study 1 were, first, to investigate the individual relationships among ED pathology and internalized shame, low self-esteem, and body shame, and whether each is associated with ED pathology over and above depressive symptoms; second, given the conceptual similarity between the constructs of internalized shame and self-esteem, to determine whether internalized shame and low self-esteem overlap or are independent in explaining variance in ED pathology, when controlling for depressive symptoms; and third, to determine whether internalized shame is externalized and focused on the body, such that the association between shame and ED pathology is mediated by body shame, when controlling for depressive symptoms and low self-esteem. Specifically, it was hypothesized that, first, internalized shame, low self-esteem, and body shame will each individually be associated with ED pathology, controlling for depressive symptoms; second, the variance in ED pathology explained by low internalized shame and low self-esteem, when fitted together, will be overlapping, such that the independent effects of each in explaining variance in ED pathology will be reduced, but that internalized shame will remain independently significantly associated with ED pathology, controlling for depressive symptoms; and third, body shame will mediate the associations between internalized shame and/or self-esteem and ED pathology, controlling for depressive symptoms and one another.

Method

Participants

Participants were 403 women aged 18 years or older ($M_{\text{age}} = 23.9$, $SD = 6.9$, age range: 18–62 years; the “full sample”). Of these, 102 were first year psychology students who participated in return for course credit (the “student sample”), 126 were recruited via flyers displayed around Macquarie University campus and via email invitation to participate forwarded to prospective participants by family and friends of the researchers (the “community sample”), and 175 were recruited via advertisements displayed on eating disorder support websites (the “web sample”). Inclusion criteria were being female and aged 18 years or older, in order to control for potential gender and maturational influences. Of the 405 respondents, two were excluded on the basis of being under the age of 18 years. No inclusionary or exclusionary criteria were applied regarding body mass index (BMI), ED diagnosis, or comorbidity.

Measures

Eating Attitudes Test (EAT-26)

ED pathology was assessed using the EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982), a 26-item scale that includes items assessing *dieting, bulimia and food preoccupation, and oral control*. Participants are instructed to select a response from *never to always* for each item, responses of *never, rarely, and sometimes* being scored = 0, *often* = 1, *usually* = 2, and *always* = 3. One negatively worded item is reverse scored and items summed to yield a total score ranging from 0 to 78, with higher scores indicating higher levels of ED pathology and scores of 20 or above indicating eating disorder risk (Garner et al., 1982). The EAT-26 is widely used as a measure of ED pathology in population-based samples of women and has been found to have high reliability and validity (Garner et al., 1982; Mintz & O'Halloran, 2000). Cronbach's alpha in the current study for this and other study measures are presented in Table 1.

Depression, Anxiety and Stress Scale (DASS-21) depression subscale

Depressive symptoms were measured using the 7-item depression subscale of the DASS-21 (Lovibond & Lovibond, 1995a). Each item is answered on a 4-point scale (from 0 = *did not apply to me at all* to 3 = *applied to me very much, or most of the time*) and items summed and then multiplied by two to yield a total score ranging from 0 to 42, with higher scores indicating higher symptom levels. The depression subscale has been found to have adequate internal consistency (Cronbach's $\alpha = .81$) and good construct validity (Lovibond & Lovibond, 1995b).

The Feelings about Self Scale (FASS)

The FASS (McIlwain & Warburton, 2004) was used to measure participants' feelings of internalized (trait) shame. The FASS is a 20-item self-report measure of feelings of shame, containing items such as: “Sometimes I just want to hide,” “It's only a matter of time before people discover that I am a fake,” and “If I let people know what I'm really like, they would reject me.” Participants rate items on a 6-point scale (where 1 = *completely untrue of me* and 6 = *describes me perfectly*). Negatively worded items are reverse scored and items summed to yield a total

score ranging from 20 to 120, with higher scores indicating higher levels of internalized shame. High internal consistency and construct validity have been reported in undergraduate samples ($\alpha = .91-.93$; Warburton, Edwards, Hossieny, Pieper, & Yip, 2008; Warburton & McIlwain, 2005).

Rosenberg Self-Esteem Scale (SES)

Self-esteem was measured using the SES (Rosenberg, 1965), a 10-item self-report measure of global self-esteem, answered on a 4-point scale (from 1 = *strongly disagree* to 4 = *strongly agree*). Negatively worded items are reverse scored and items summed to provide a total score ranging from 10 to 40, with higher scores indicating higher self-esteem. The SES is a widely used measure of global self-esteem and has excellent psychometric properties in a broad range of study populations including young adult women (Rosenberg, 1965).

Body Shame subscale of the Objectified Body Consciousness Scale (OBCS)

The OBCS (McKinley & Hyde, 1996) is a 24-item scale designed to measure the three dimensions of body surveillance, body shame, and control beliefs. The Body Shame subscale contains 8-items and assesses feelings of shame associated with one's body not conforming to cultural standards rated on a 6-point scale (from 1 = *strongly disagree* to 6 = *strongly agree*). Negatively worded items are reverse scored and items averaged to provide mean score ranging from 1 to 6, with higher scores indicating greater body shame. The body shame subscale has been found to have acceptable test-retest reliability, internal consistency ($\alpha = .84$ & $.70$, for undergraduate and middle-aged women, respectively), and construct validity in non-clinical samples of women (McKinley & Hyde, 1996).

Procedure

Data were collected as part of a 30-min online survey constructed using Qualtrics software. Participants were provided a brief description of the research and invited to indicate their informed consent to participate prior to commencement of the survey. Participants were asked their age (to the nearest year), height (to nearest cm), weight (to nearest kg), and gender and were then presented the study measures in randomized order, with the order of presentation of items within scales also randomized (so as to minimize order effects). Participants in the student sample received course credit in return for participation, whilst those in the community and web samples were eligible to enter a prize draw for one of five AUD\$50 iTunes gift vouchers. The Macquarie University Human Research Ethics Committee approved all aspects of the study design and methods.

Statistical analysis

All analyses were undertaken using IBM Statistical Package for Social Sciences (SPSS) version 22 and missing data were excluded pairwise. Preliminary analysis comparing samples across the various recruitment methods was performed using General Linear Models Analysis of Variance (GLM ANOVA) with simple contrast tests (using a Bonferroni adjusted p -value of $<.017$ for significance). Pearson bivariate correlations were used to determine the strength and direction of the associations between study variables. Multiple linear regression analysis was used to determine the relative importance of the independent variables (IVs), namely,

self-esteem, internalized shame, and body shame in accounting for variance in ED pathology. Consistent with previous research, age and BMI were included as covariates in each multi-variable analysis. Mediation analysis was conducted using the PROCESS tool in SPSS, with 10,000 bootstrap samples to estimate the size of the total, direct, and indirect effects and to provide 99% confidence intervals (CIs) around each effect. Given the number of analyses, a conservative alpha level of .01 was employed for significance testing.

Results

Preliminary analysis

GLM ANOVA indicated that the web sample scored significantly higher than both the community and student samples (which did not differ from one another) on each of the study variables, with the exception of Body Mass Index (BMI), which did not vary across any groups), as would be expected given recruitment of the web sample from ED self-help websites. There were, however, no significant interactions between recruitment method and any IVs in predicting ED pathology. Hence it was deemed appropriate to pool data across recruitment methods.

As would also be expected, in a population-based sample, EAT-26 data were found to be significantly positively skewed. A square-root transformation (EAT-26-Sqrt) yielded an approximately normal distribution of the dependent variable (DV), with no violation of the relevant analytic assumptions. Hence the transformed variable was used in subsequent analysis. Assessment of multicollinearity among predictor variables indicated tolerance statistics in the range of .236–.936 ($>.2$) and variance inflation factor (VIF) statistics in the range of 1.126–4.230 (<7) for all predictors (Keith, 2006). Finally, given that age and BMI have been identified in past research as inversely associated with ED pathology, age and BMI (calculated via self-reported body weight and height) were included as covariates in all analyses.

Descriptive statistics and correlations among study variables are given in Table 1. Approximately half (46.3%) of participants in the total sample were classified as being “at risk” of an ED (EAT-26 score ≥ 20).

Regression analysis

To test the hypothesis that internalized shame, self-esteem, and body shame, would each individually be associated with increased ED pathology over and above depressive symptoms, a series of hierarchical regression analyses were conducted with age, BMI, and depressive symptoms entered in Block 1 and each predictor variable in Block 2. As can be seen in Table 2, each predictor was significantly associated with ED pathology, controlling for age, BMI, and depressive symptoms. Hierarchical multiple regression analysis was similarly employed to test the hypotheses that the variance in ED pathology explained by internalized shame and self-esteem, when fitted together, would be overlapping. Results revealed that both internalized shame and self-esteem were independently associated with ED pathology, over and above one another, age, BMI, and depressive symptoms (Table 2).



Table 1. Study 1: Descriptive statistics and correlations among study variables.

	1	2	3	4	5	6	7	8	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max	Stat	Skewness	<i>SE</i>
1 Age	—								403	23.90	6.88	18	62	2.197	.122	.122
2 BMI	.262**	—							400	22.28	4.99	13.3	52.7	2.191	.122	.126
3 ED pathology (EAT-26)	.040	-.157*	.96 ^a						373	22.91	19.76	0	75	.696	.126	.125
4 ED pathology (EAT-26-Sqrt)	.053	-.104	.972**	—					378	16.44	12.94	0	42	.456	.125	.126
5 Depressive symptoms	-.028	-.096	.520**	.504**	.94 ^a				378	69.86	22.37	24	118	-.272	.126	.125
6 Internalized shame	.088	-.084	.564**	.560**	.731**	.93 ^a			379	15.62	6.99	0	30	-.374	.125	.126
7 Self-esteem	.054	.103	-.572**	-.560**	-.723**	-.831**	.93 ^a		379	15.62	6.99	0	30	-.374	.125	.126
8 Body shame	.039	.066	.717**	.730**	.546**	.693**	-.705**	.87 ^a	379	3.72	1.19	1	6	-.086	.126	.126

Notes: BMI = Body Mass Index. EAT-26 = Eating Attitudes Test (ED pathology). EAT-26-Sqrt = Square root transformation of EAT-26 scores.

^aCronbach's α in the present study.

*Correlation significant at $p < .01$ (2-tailed);

**Correlation significant at $p < .001$ (2-tailed).

Table 2. Study 1: Comparison of standardized regression coefficients and unique variance in ED concerns explained by each variable when fitted individually and fitted individually, controlling for depressive symptoms.

DV: EAT-26-Sqrt	Internalized shame, self-esteem, and body shame fitted individually, controlling for depression ^a			Internalized shame & self-esteem fitted simultaneously, controlling for depression ^a			Internalized shame, self-esteem and body shame fit simultaneously, controlling for depression ^a					
	β	t	p	Unique R ²	β	t	p	Unique R ²	β	t	p	Unique R ²
Depressive symptoms	.496 ^b	10.935 ^b	<.001 ^b	.244 ^b	.144	2.181	.030	.008	.163	3.036	.003	.011
Internalized shame	.401	6.239	<.001	.072	.222	2.626	.009	.017	-.033	-.461	.645	<.001
Self-esteem	-.407	-6.536	<.001	.079	-.265	-3.228	.001	.018	.036	.502	.616	<.001
Body shame	.666	16.045	<.001	.308	-	-	-	-	.695	13.353	<.001	.217

Notes: β = Standardized Regression Coefficients. EAT-26-Sqrt = Square root transformation of Eating Disorder Test (EAT-26) scores (ED pathology).

^aControlling for age and Body Mass Index (BMI).

^bDepressive symptoms fitted alone controlling for age and BMI.

Mediation analysis

Results of the PROCESS (mediation) analyses, testing the hypothesis that the effects of internalized shame and/or self-esteem on ED pathology would be mediated by body shame are summarized Table 3. As can be seen, full mediation was observed in analysis of both the mediating role of body shame on the association between internalized shame and ED pathology (controlling for age, BMI, depression, and self-esteem) and the mediating role of body shame on the association between self-esteem and ED pathology (controlling for age, BMI, depression, and internalized shame).

Discussion

In a diverse sample of young adult women, Study 1 aimed to investigate the individual and independent associations between ED pathology and low self-esteem, internalized shame, and body shame, controlling for depressive symptoms and one another; and to determine whether the association between shame and/or low self-esteem and ED pathology is mediated by body shame, controlling for depressive symptoms. It was hypothesized, first, that low self-esteem, internalized shame, and body shame would each be individually associated with ED pathology over and above the contribution of depressive symptoms. This hypothesis was supported, confirming previous findings of the associations between ED pathology and internalized shame (e.g., Troop et al., 2008), low self-esteem (e.g., Fredrick & Grow, 1996), and body shame (e.g., Burney & Irwin, 2000), over and above depressive symptoms.

It was further hypothesized that the variance in ED pathology explained by low self-esteem and internalized shame, when fitted together, would be reduced but that internalized shame would remain independently associated with ED pathology, controlling for depressive symptoms. This hypothesis was also supported. While the individual variance explained in the ED pathology was reduced when fitting internalized shame and self-esteem together, both variables remained independently associated with ED pathology, also controlling for depressive symptoms. This provides important new evidence that while internalized shame and low self-esteem may be highly correlated; they each contribute uniquely to variance in ED pathology even after controlling for depressive symptoms.

Table 3. Study 1: Summary of mediation analyses testing the indirect effect of internalized shame and self-esteem on ED pathology via body shame, controlling for depressive symptoms.

Hypothesis	Total effect		Direct effect		Indirect		Result
	<i>B</i> (99% CI)	<i>p</i>	<i>B</i> (99% CI)	<i>p</i>	<i>B</i> (99% CI)	<i>p</i> ^c	
Shame → Body shame → ED ^a	.022 (.000, .044)	.009	-.003 (-.022, .041)	.645	.025 (.012, .041)	<.001	Full mediation
Self-esteem → Body shame → ED ^b	-.084 (-.152, -.017)	.001	.011 (-.047, .070)	.616	-.095 (-.146, -.050)	<.001	Full mediation

Notes: *B* = Unstandardized Effect Coefficient. 99% CI = Bootstrapped 99% Confidence Intervals around Unstandardized Effect. *p* = Two-tailed significance. Shame = Internalized shame. ED = Eating disorder pathology (EAT-26-Sqrt: Square root transformation of Eating Attitude Test [EAT-26] scores).

^aControlling for depressive symptoms, age, Body Mass Index (BMI), and self-esteem.

^bControlling for depressive symptoms, age, BMI, and internalized shame.

^cNormal Theory Test *p*-value.

Finally, it was hypothesized that the effects of low self-esteem and/or internalized shame on ED pathology would be mediated by body shame, over and above the contribution of depressive symptoms. The results supported this hypothesis in that body shame fully accounted for the associations between both internalized shame and low self-esteem and ED pathology, controlling for depressive symptoms and one another. These findings converge with those of a recent study suggesting that body shame mediates the association between self-esteem and ED pathology (Iannaccone et al., 2016), while extending this evidence to the association between ED pathology and internalized shame. These findings provide important evidence concerning one of the processes by which negative feelings about the self (in the forms of both internalized shame and low self-esteem) may influence ED pathology, namely, via increases in body shame, and provide preliminary support for the view that negative feelings about the self that are displaced onto the body contribute to ED pathology.

Study 2

Building on the results of study 1, study 2 aims to extend objectification theory by considering externalized self-perceptions (self-objectification and body surveillance) within a displacement theory-based self/emotion-regulation model of ED pathology and to test a path model exploring the direct and indirect effects of internalized shame, self-objectification, body surveillance, body shame, and depressive symptoms on ED pathology. It is hypothesized, first, that the association between internalized shame and ED pathology will be mediated by self-objectification, body surveillance, body shame, and depressive symptoms, such that a path model including these variables will demonstrate good fit for the data; second, that body shame will mediate the association between internalized shame and both depressive symptoms and ED pathology; third, that internalized shame will have a direct effect on both self-objectification and body surveillance; fourth, that, in accordance with objectification theory, the association between each of self-objectification and body surveillance and ED pathology will be mediated by body shame; and fifth, that depressive symptoms will mediate the association between body shame and ED pathology, in addition to a direct effect of body shame on ED pathology.

Method

Participants

Participants were 548 women aged between 18 and 62 years ($M_{\text{age}} = 22.94$, $SD = 6.85$; the “full sample”). Of these, 230 were first year psychology students (“student sample”), 161 were recruited via email invitation to participate forwarded by family and friends of the researchers to prospective participants and via flyers displayed on Macquarie University campus (“community sample”), and 157 were recruited via advertisements displayed on eating disorder support websites (“web sample”). As in Study 1, and for the same reasons, inclusion criteria were being female and aged 18 years or older.

Measures

Study 2 used several measures described in Study 1, namely, EAT-26, FASS, OBCS body shame subscale, and the DASS-21 depression subscale (see above for descriptions and see Table 4 for Cronbach's α for each in Study 2). Additional measures used in Study 2 were:

Eating Disorder Diagnostic Scale (EDDS)

In the current study ED pathology was assessed using two measures, namely the EAT-26 and the EDDS (Stice, Telch, & Rizvi, 2000). The EDDS is a 22-item self-report measure that can be used to generate probable DSM-IV (American Psychiatric Association, 1994) ED diagnoses. It contains items assessing the attitudinal symptoms of AN and BN (answered on a 7-point Likert scale), frequency of key eating disorder behaviors, namely, bingeing behavior, experiential elements of binge episodes, frequency of purging behaviors (vomiting, use of diuretics or laxatives, fasting, or excessive exercise), height, weight, number of missed menstrual periods and contraceptive pill use. Items can be standardized and summed to obtain a composite score (EDDS-SC) that can be used as a continuous measure of global ED pathology. The EDDS (and EDDS-SC, when used as a global measure of ED pathology) has been found to have good psychometric properties in non-clinical and clinical samples of adolescent girls and women, including good criterion validity with interview-based diagnoses, convergent validity with other measures of ED pathology, test–retest reliability and internal consistency (Krabbengborg et al., 2012; Stice, Fisher, & Martinez, 2004; Stice et al., 2000). In the current study EAT-26 total score and EDDS-SC score were each used as indicators of an ED pathology latent variable in the SEM models, in order to reduce measurement error.

Self-Objectification Questionnaire (SOQ)

The SOQ (Noll & Fredrickson, 1998) asks participants to rank order (from *greatest* to *least*) 10 body attributes in terms of their impact on physical self-concept. Five of these attributes are appearance-based (*weight, sex appeal, physical attractiveness, firm/sculpted muscles, and measurements*), the remaining five competence-based (*physical coordination, health, strength, energy level, and physical fitness level*). The SOQ does not assess participants' level of satisfaction with their body attributes, but rather measures concern with appearance independent of an evaluative component. Scores are calculated by summing the ranking for the appearance and competence attributes separately and then computing a difference score (ranging from –36 to 36). The SOQ has been shown to have adequate construct validity (Noll & Fredrickson, 1998).

Body Surveillance subscale of the Objectified Body Consciousness Scale (OBCS)

The Body Surveillance subscale of the OBCS (McKinley & Hyde, 1996; see description above) contains 8-items (e.g., "I rarely think about how I look" [R]) designed to measure the extent to which the body is viewed by oneself as an outside observer, rated on a 6-point scale (from 1 = *strongly disagree* to 6 = *strongly agree*). Negatively worded items are reverse scored and items averaged to provide a mean score ranging from 1 to 6, with higher scores indicating greater body surveillance. It has been shown to have good test–retest reliability, acceptable internal consistency (surveillance scale, $\alpha = .79$ & $.76$ for undergraduate and middle-aged women, respectively), and construct validity (McKinley & Hyde, 1996).

Table 4. Study 2: Descriptive statistics and correlations among study variables.

	1	2	3	4	5	6	7	8	9	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max	Stat	Skewness	<i>SE</i>
1 Age	—									548	22.94	6.85	18	62	2.31		.104
2 BMI	.199**	—								548	22.43	4.75	14.6	51	1.79		.104
3 EAT-26	.042	-.101*	—							548	19.55	17.82	0	72	.93		.104
4 EDDS-SC	.068	.108	.95 ^a	—						548	29.81	19.14	0	111	.99		.104
5 Depressive symptoms	.037	-.002	.562**	.523**	.93 ^a	—				548	15.27	12.49	0	42	.590		.104
6 Internalized shame	.054	-.015	.579**	.522**	.738**	.94 ^a	—			548	68.18	22.34	22	116	-.037		.104
7 SO	-.089*	.053	.308**	.267**	.255**	.293**	—			548	.99	13.39	-26	31	-.073		.104
8 Body Surveill	-.059	.053	.429**	.368**	.314**	.343**	.404**	.82 ^a		548	4.36	.95	1	6	-.545		.104
9 Body shame	.115**	.157**	.682**	.669**	.554**	.627**	.337**	.548**	.88 ^a	548	3.56	1.26	1	6	.029		.104

Notes: BMI = Body Mass Index. EAT-26 = Eating Attitudes Test (ED concerns). EDDS-SC = Eating Disorder Diagnostic Scale symptom composite score (ED symptoms). SO = Self-objectification. Body Surveill = Body surveillance.

^aCronbach's α in the present study.

*Correlation significant at $p < .05$ (2-tailed);

**Correlation significant at $p < .01$ (2-tailed).

Procedure

Data were obtained via an online survey using Qualtrics software. A brief description of the research was presented to participants prior to commencement and informed consent to participate was obtained. The survey first asked participants demographic questions (age, height, and weight) before presenting the study measures (and items within measures) in randomized order (so as to minimize order effects). Participants in the student sample participated in return for course credit, while those in the web and community samples could enter a prize draw for one of ten AUD\$100 ColesMyer Gift Cards and one of five AUD\$30 iTunes gift vouchers. The Macquarie University Human Research Ethics Committee approved all aspects of the study design and methods.

Statistical analysis

Samples obtained across the different recruitment methods were first compared using GLM ANOVA (with a Bonferroni adjusted p -value of $<.05/7 = .007$ for significance testing) and follow up simple contrast tests (using a Bonferroni adjusted p -value of $<.05/3 = .017$ for significance). Pearson bivariate correlations were used to evaluate the strength and direction of associations among study variables. Analyses were undertaken using IBM Statistical Package for Social Sciences (SPSS) version 22 and missing data were excluded pairwise.

Mediation effects and path model fit were tested via SEM using the maximum likelihood (ML) method in IBM SPSS AMOS (version 22) and using 10,000 bootstrap samples to estimate the size of the total, direct, and indirect effects and to yield 95% confidence intervals (CIs) around each effect. Use of this method pre-empts the requirement of multivariate normality required by SEM and has the additional advantages of greater power and more accurate Type I error rates (Byrne, 2010); hence the use of an alpha level of .05 for significance testing. Given that inclusion of BMI and age as covariates in the analyses performed in Study 1 did not result in any variation in the statistical significance of any results, and given the number of variables included and complexity of the models tested in the structural models, BMI and age were not included as covariates in SEM analyses in AMOS.

Overall goodness-of-fit of structural models was assessed using the Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), root mean square error of approximation (RMSEA) and RMSEA closeness of fit (PCLOSE) fit indices. According to commonly accepted recommendations (Byrne, 2010; Schreiber, Stage, King, Nora, & Barlow, 2006), a priori standards of acceptable goodness-of-fit chosen were TLI greater than .95, CFI greater than .95, RMSEA less than .08, and PCLOSE greater than .05. Chi-square difference ($\Delta\chi^2$) tests were used to compare nested models.

Results

Preliminary analysis

GLM ANOVA indicated that the student and community samples did not differ significantly on any study variables, but that the web sample scored significantly higher than both of these with respect to age, ED pathology, internalized shame, body shame and depressive symptoms, and higher than the student sample on body surveillance. There were no

significant interactions between recruitment method and any IVs in predicting ED pathology, hence pooling of data across recruitment methods was considered appropriate.

Descriptive statistics for and intercorrelations among variables are given in Table 4. Of the total sample, 38.5% were classified as being “at risk” of an ED (EAT-26 ≥20).

SEM analysis of mediation effects

Model fit

To test the hypothesis that the association between internalized shame and ED pathology would be mediated by self-objectification, body surveillance, body shame, and depressive symptoms, the hypothesized model with all possible direct and indirect effects included (Model 1) was fitted first (see Figure 1). While this model (Model 1) demonstrated good fit for the data, a number of non-significant paths existed. As such, a second model (Model 2) (Figure 2), which constrained to zero all non-significant paths from Model 1, was fitted. This model had equivalent overall goodness of fit as Model 1 ($\Delta\chi^2_{(df)} = 6.34_{(5)}, p > .05$), demonstrated very good fit for the data and explained 69% of the variance in ED pathology.

Mediation

Testing of the indirect effects of internalized shame on ED pathology via self-objectification, body surveillance, body shame, and depressive symptoms in the final model (Model 2) indicated that internalized shame had a significant direct effect on self-objectification, body surveillance, body shame, depressive symptoms, and ED pathology, and significant indirect effects on ED pathology via self-objectification, body surveillance, body shame, and depressive symptoms (Table 5). Further, the association between each of self-objectification and body surveillance and ED pathology was fully mediated by body shame and depressive symptoms. Finally, body shame had a significant direct effect on ED pathology and a significant indirect effect via depressive symptoms (partial mediation).

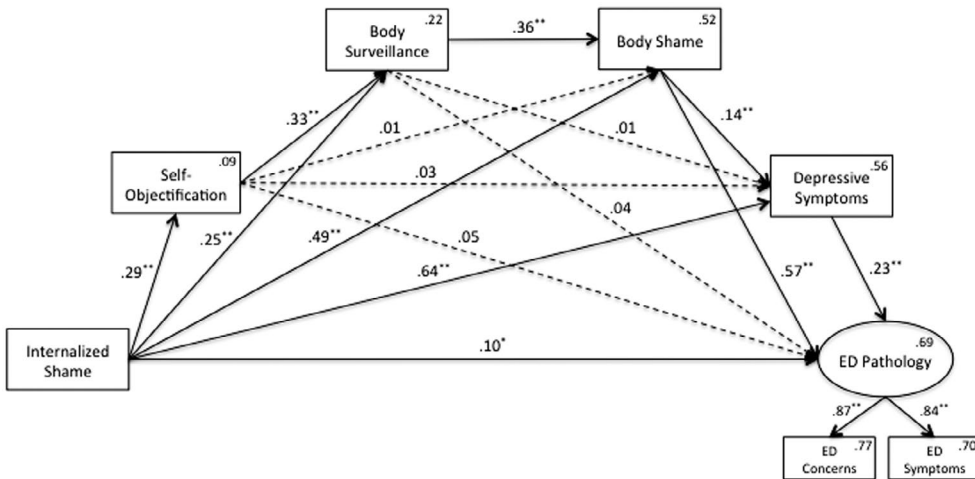


Figure 1. The hypothesized mediation model (Model 1).

Notes: Model 1 explains 69% of the variance in ED Pathology. Model fit: $\chi^2 = 7.671, df = 4, p = .104, CMIN/df = 1.918, CFI = .998, TLI = .990, RMSEA = .041$ (90% CI: <.001, .072, PCLOSE = .568). Dashed line = path not significant ($p > .05$). * = $p < .05$. ** = $p < .001$.

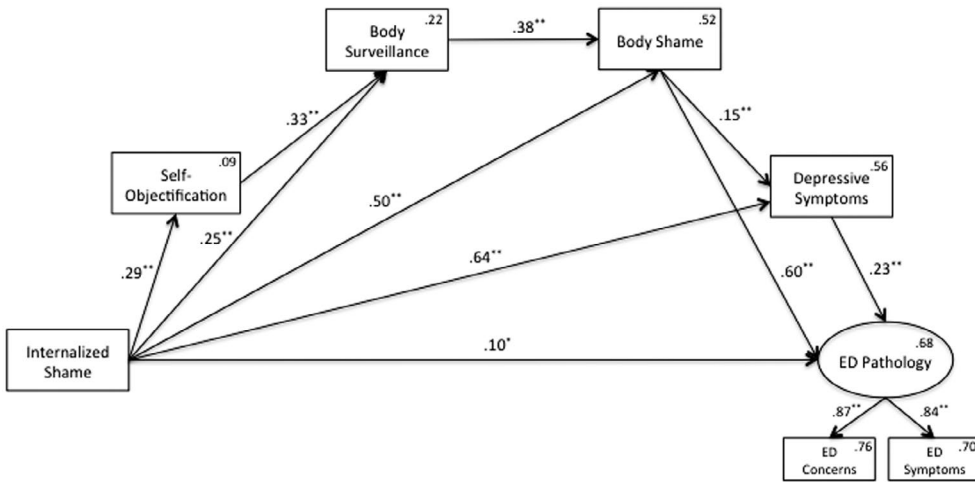


Figure 2. The final model (Model 2).

Notes: All possible indirect effects statistically significant ($p < .001$). The Final Model explains 68% of the variance in ED Pathology. Model fit: $\chi^2 = 14.011$, $df = 9$, $p = .122$, $CMIN/df = 1.557$, $CFI = .997$, $TLI = .994$, $RMSEA = .032$ (90% CI: $<.001, .063$, $PCLOSE = .810$). Model 1 v 2: $\Delta\chi^2(df) = 6.34(5)$; $p > .05$ (ns). * = $p < .05$. ** = $p < .001$.

Discussion

Study 2 sought to combine elements of objectification theory and displacement theory and test a path model exploring the direct and indirect effects of internalized shame, externalized self-perceptions (self-objectification and body surveillance), body shame, and depressive symptoms on ED pathology. It was hypothesized, first, that the association between internalized shame and ED pathology would be mediated by self-objectification, body surveillance, body shame, and depressive symptoms. Results supported this hypothesis providing evidence of partial mediation and good model fit, with the removal of non-significant paths to create a more parsimonious model not significantly altering the fit of the model, other than resulting in improvement in several fit indices. These results extend the findings of Tylka and Sabik (2010), whose path model included self-esteem, body surveillance, body comparison, body shame, and ED pathology, to include internalized shame and depressive symptoms.

It was further hypothesized that body shame would mediate the relationship between internalized shame and depressive symptoms and ED pathology. Results supported this hypothesis, as internalized shame had both a significant indirect effect on ED pathology via body shame (and depressive symptoms) and a small but significant direct effect on ED pathology. These findings support previous evidence in a non-clinical sample that internalized shame was independently associated with ED pathology, over and above body shame (Doran & Lewis, 2012), and that body shame mediates the association between self-esteem and ED pathology (Iannaccone et al., 2016); and are consistent with, and provide preliminary support for a displacement theory-based self/emotion-regulation model of ED pathology. However, these findings diverge somewhat from those of study 1, in which body shame fully mediated the association between internalized shame and ED pathology, and from those of previous research in which internalized shame was not independently associated with ED pathology, over and above body shame (Burney & Irwin, 2000; Troop & Redshaw, 2012).

Table 5. Study 2: Summary of results of mediation analyses.

	Total effect		Direct effect		Indirect		Result
	β (95% CI)	<i>p</i>	β (95% CI)	<i>p</i>	β (95% CI)	<i>p</i>	
<i>Model 2 (Final Model)</i>							
Internalized Shame → SO → Body Surveillance → Body shame → Depression → ED	.646 (.587, .699)	<.001	.103 (.004, .201)	.043	.544 (.466, .628)	<.001	Mediation
SO → Body Surveillance → Body shame → Depression → ED	.079 (.054, .112)	<.001	–	–	.079 (.054, .112)	<.001	Full mediation
Body Surveillance → Body shame → Depression → ED	.239 (.189, .296)	<.001	–	–	.239 (.189, .269)	<.001	Full mediation
Body shame → Depression → ED	.631 (.547, .702)	<.001	.597 (.514, .667)	<.001	.034 (.013, .066)	<.001	Mediation

Notes: β = Standardized Effect Coefficient. 95% CI = Bootstrapped 95% Confidence Intervals around Standardized Effect. *p* = Two-tailed significance. SO = Self-objectification. Depression = Depressive symptoms. ED = Eating disorder psychopathology latent variable (ED concerns & ED symptoms).

Further, the strong independent effect of internalized shame on depressive symptoms, over and above body shame and the other predictors in the model, is somewhat surprising. While there was a significant indirect effect of internalized shame on depressive symptoms via body shame (providing evidence of mediation), there remained a strong direct effect of internalized shame on depressive symptoms and depressive symptoms significantly mediated the association between internalized shame and ED pathology.

Third, it was hypothesized that internalized shame would have a direct effect on both self-objectification and body surveillance. Results supported this hypothesis and extended evidence from previous literature suggesting a possible association between internalized shame and both self-objectification and body surveillance (Goss & Gilbert, 2002; Mercurio & Landry, 2008). Of note is that while internalized shame had a moderate effect on each of self-objectification and body surveillance, internalized shame explained only 9% of the variance in self-objectification and internalized shame and self-objectification together accounted for 22% of the variance in body surveillance. Thus, whilst internalized shame may contribute to both forms of externalized self-perceptions, it seems clear that additional factors not accounted for in the current model likely contribute to self-objectification (e.g., sexual objectification or internalization of the thin ideal). Nevertheless, taken together, these findings provide preliminary support for a modified displacement theory of ED pathology whereby negative feelings about the self are externalized (via increased self-objectification and body surveillance) and displaced onto the body, potentially giving rise to ED pathology both directly and indirectly via an increase in depressive symptoms.

Fourth, it was hypothesized that within the model the associations between both self-objectification and body surveillance and ED pathology would each be mediated by body shame. This hypothesis was also supported, extending evidence from previous research of the mediating role of body shame in the relationship between self-objectification and body surveillance and both depressive symptoms and ED pathology (Tiggemann & Kuring, 2004; Tiggemann & Williams, 2012), as occurring over and above the direct impact of internalized shame. Finally, it was hypothesized that depressive symptoms would mediate the association between body shame and ED pathology, but that body shame would have a significant direct effect on ED pathology. Results again supported this hypothesis and are consistent with previous evidence of the association between body shame and depressive symptoms, over and above self-objectification and body surveillance (Tiggemann & Kuring, 2004) and with the results of study 1, in which depressive symptoms were independently associated with ED pathology, over and above internalized shame and body shame.

General discussion

The current research aimed to test a displacement theory-based self/emotion-regulation model of ED pathology, whereby negative feelings about the self are externalized (via increased self-objectification and body surveillance) and displaced onto the body (in the form of increased body shame), thereby promoting ED pathology. Results of study 1 provided evidence of the independent roles of internalized shame and low self-esteem in accounting for variance in ED pathology, over and above the effects of depressive symptoms and one another, and for full mediation of these associations by body shame. Results of study 2 confirmed the role of internalized shame in independently directly predicting ED pathology, while also providing evidence of indirect effects on ED pathology via self-objectification,

body surveillance, body shame, and depressive symptoms. Taken together, these results provide preliminary support for a displacement theory-based self/emotion-regulation model of ED pathology in which negative feelings about the self are externalized and displaced onto the body in an effort to escape self-awareness and promote feeling of self-worth through the control of body weight or shape (Goss & Gilbert, 2002).

Implications

The results of the current research contribute to theoretical accounts of ED pathology aligning with the view that ED pathology emanates from a disturbance in the sense of self, consistent with both displacement and escape theory models of ED pathology. According to these theories, negative feelings about the self are externalized onto the body and body weight/shape become the focus of self-evaluation and feelings of self-worth. Control of body weight or shape and relentless pursuit of a thin-ideal via control of eating and weight-control behaviors then become a means by which to enhance feelings of self-worth and pride (Goss & Gilbert, 2002), whilst ED behavior also serving as a means to escape from aversive feelings of self-awareness (Heatherton & Baumeister, 1991). Further, the current findings support an expansion of these theories to include elements of objectification theory, and identify the potential role of deficits in self-development and negative feelings about the self in accounting for individual differences in levels of externalized self-perceptions (both self-objectification and body surveillance).

The findings of the current research also have implications for treatment of EDs and suggest that when negative self evaluations and shame are present in individuals with EDs it may be important to specifically explore the origins and function of these in order to enhance the effectiveness of treatments such as CBT (Goss & Gilbert, 2002). To this end, some promising interventions specifically aimed at reducing shame and self-criticism in EDs have emerged, including compassionate-mind training (Gilbert & Procter, 2006), compassion-focused therapy (Gilbert, 2010), and compassion-focused therapy for EDs (Goss & Allan, 2012). Although these interventions are relatively new, evidence of the importance of self-compassion in EDs is beginning to mount. For instance, in college women self-compassion has been found to be negatively associated with body shame and disordered eating (Breines, Toole, Tu, & Chen, 2013) and self-kindness has been positively associated with body-esteem and negatively associated with ED pathology (Geller, Srikameswaran, & Zelichowska, 2015). Further, evidence that body acceptance mediates the association between self-compassion and intuitive eating (Schoenefeld & Webb, 2013) suggests that one of the processes by which self-compassion may alleviate ED pathology is via a reduction in body shame.

Further, interventions that focus on reducing avoidance or escape from painful emotions and internal experiences, such as mindfulness training, may be helpful in reducing ED pathology. For instance, in a study of college women mindfulness was found to moderate the association between distress levels and ED pathology, such that distress severity predicted ED pathology among participants low in mindfulness but not those high in mindfulness (Geller et al., 2015).

Study limitations and directions for future research

At least three limitations of the current research should be noted. First, the research employed a cross-sectional design in each study, which, strictly speaking, cannot be used to establish mediation effects. Nevertheless, Hayes (2013) argues that where a theoretical foundation exists to support the directionality of effects it is appropriate to use PROCESS analyses and path models to test for mediation effects using cross-sectional data. In the current research strong theoretical support for the direction of effects tested in the models is provided by both the displacement theory of EDs and objectification theory. However, in practice there are likely to be complex, bidirectional associations between the variables examined and clearly longitudinal research would be helpful in elucidating these pathways across time.

Second, the current research relied on self-report measures of all study variables. While online surveys are an efficient means of data collection, potential problems associated with the use of self-report measures of ED pathology in particular are well-known (House, Eisler, Simic, & Micali, 2008). The inclusion of interview data and data obtained from multiple sources would clearly be of interest in future research. Finally, the current research was confined to adult women, thus limiting the generalizability of the findings beyond this population. Although this was reasonable for a study designed to extend previous research conducted in this demographic, the inclusion of adolescent females and of males in future research would be of interest, particularly given increasing attention to ED pathology in males in recent years (e.g., Strother, Lemberg, Stanford, & Turberville, 2012).

There were also important strengths of the current research. Firstly, consideration in union of the related, but distinct, constructs of internalized shame and low self-esteem and their relative importance in accounting for variance in ED pathology is novel and addressed a gap in the literature; as did our efforts to elucidate the processes by which negative feelings about the self may contribute to ED pathology, namely, via increases in externalized self-perceptions (self-objectification and body surveillance), body shame, and depressive symptoms. Thereby moving beyond exploration of direct relationships and contributing new evidence in support of a displacement theory-based self/emotion-regulation model of EDs.

A second notable strength of the current research was the recruitment of participants in each study from several different sources (including ED information websites, general community, and undergraduate students). This method ensured adequate variability on key study measures and allowed sufficient numbers for the use of more sophisticated analytic methods (SEM) to be employed. Finally, whilst the study findings suggest important implications for treatment and prevention of ED pathology, replication of the current findings in a clinical sample would nevertheless be of interest in terms of providing clearer implications for clinical practice.

Conclusion

Within the limits of a cross-sectional study design, the current findings support the view that negative feelings about the self (low self worth or internalized shame) are externalized (via increased self-objectification and body surveillance) and displaced onto the body (increasing body shame) and in this way may give rise to ED pathology. The findings are consistent with a self/emotion-regulation conceptualization of EDs and support the role of

therapeutic interventions for ED pathology designed to enhance self-directed compassion and reduce self-objectification.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Amianto, F., Northoff, G., Abbate Daga, G., Fassino, S., & Tasca, G. A. (2016). Is anorexia nervosa a disorder of the self? A psychological approach. *Frontiers in Psychology, 7*, 849. doi:10.3389/fpsyg.2016.00849
- Bardone-Cone, A. M., Schaefer, L. M., Maldonado, C. R., Fitzsimmons, E. E., Harney, M. B., Lawson, M. A., ... Smith, R. (2010). Aspects of self-concept and eating disorder recovery: What does the sense of self look like when an individual recovers from an eating disorder? *Journal of Social and Clinical Psychology, 29*, 821–846.
- Beato, L., Rodriguez Cano, T., & Belmonte, A. (2003). Relationship of dissociative experiences to body shape concerns in eating disorders. *European Eating Disorders Review, 11*, 38–45. doi:10.1002/erv.508
- Breines, J. G., Toole, A., Tu, C., & Chen, S. (2013). Self-compassion, body image, and self-reported disordered eating. *Self and Identity, 13*, 432–448. doi:10.1080/15298868.2013.838992
- Bruch, H. (1962). Perceptual and conceptual disturbances in anorexia nervosa. *Psychosomatic Medicine, 24*, 187–194.
- Bruch, H. (1973). *Eating disorders: Obesity, anorexia nervosa, and the person within*. New York, NY: Basic Books.
- Bruch, H. (1978). *The golden cage: The enigma of anorexia nervosa*. New York, NY: Vintage Books.
- Burney, J., & Irwin, H. J. (2000). Shame and guilt in women with eating-disorder symptomology. *Journal of Clinical Psychology in Medical Settings, 56*, 51–61.
- Button, E. (1990). Self-esteem in girls aged 11–12: Baseline findings for a planned prospective study of vulnerability to eating disorders. *Journal of Adolescence, 13*, 407–413.
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York, NY: Routledge.
- Calogero, R. M. (2009). Objectification processes and disordered eating in British women and men. *Journal of Health Psychology, 14*, 394–402. doi:10.1177/1359105309102192
- Calogero, R. M., Davis, W. N., & Thompson, J. K. (2005). The role of self-objectification in the experience of women with eating disorders. *Sex Roles, 52*, 43–50. doi:10.1007/s11199-005-1192-9
- Calogero, R. M., Tantleff-Dunn, S., & Thompson, J. K. (2011). Objectification theory: An introduction. In R. M. Calogero, S. Tantleff-Dunn, & J. K. Thompson (Eds.), *Self-objectification in women: Causes, consequences, and counteractions* (pp. 3–21). Washington, DC: American Psychological Association.
- Cervera, S., Lahortiga, F., Martinez-Gonzalez, M. A., Gual, P., de Irala-Estevez, J., & Alonso, Y. (2003). Neuroticism and low self-esteem as risk factors for incident eating disorders in a prospective cohort study. *International Journal of Eating Disorders, 33*, 271–280.
- Cook, D. R. (1991). Shame, attachment, and addictions: Implications for family therapists. *Contemporary Family Therapy, 13*, 405–419.
- Doran, J., & Lewis, C. A. (2012). Components of shame and eating disturbance among clinical and non-clinical populations. *European Eating Disorders Review, 20*, 265–270. doi:10.1002/erv.1142
- Duarte, C., Pinto-Gouveia, J., & Ferreira, C. (2015). Ashamed and fused with body image and eating: Binge eating as an avoidance strategy. *Clinical Psychology and Psychotherapy, 24*, 195–202. doi:10.1002/cpp.1996
- Duarte, C., Pinto-Gouveia, J., Ferreira, C., & Batista, D. (2015). Body image as a source of shame: A new measure for the assessment of the multifaceted nature of body image shame. *Clinical Psychology and Psychotherapy, 22*, 656–666. doi:10.1002/cpp.1925

- Frank, J. B., & Thomas, C. D. (2003). Externalised self-perceptions, self-silencing, and the prediction of eating pathology. *Canadian Journal of Behavioural Sciences, 35*, 219–228.
- Fredrick, C. M., & Grow, V. M. (1996). A mediational model of autonomy, self-esteem, and eating disordered attitudes and behaviors. *Psychology of Women Quarterly, 20*, 217–228.
- Fredrickson, B. L., & Roberts, T.-A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly, 21*, 173–206.
- Fredrickson, B. L., Roberts, T.-A., Noll, S. M., Quinn, D. M., & Twenge, J. M. (1998). That swimsuit becomes you: Sex difference in self-objectification, restrained eating and math performance. *Journal of Personality and Social Psychology, 75*, 269–284.
- Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine, 12*, 871–878.
- Gee, A., & Troop, N. A. (2003). Shame, depressive symptoms and eating, weight and shape concerns in a non-clinical sample. *Eating and Weight Disorders, 8*, 72–75.
- Geller, J., Srikaneswaran, S., & Zelichowska, J. (2015). Resilience to shape and weight concerns and disordered eating: The role of self-compassion. *Advances in Eating Disorders, 3*, 4–12. doi:10.1080/21662630.2014.945604
- Gilbert, P. (2002). Body shame: A biopsychosocial conceptualisation and overview with treatment implications. In P. Gilbert & J. Miles (Eds.), *Body shame: Conceptualisation, research and treatment* (pp. 3–54). London: Routledge.
- Gilbert, P. (2010). *Compassion focused therapy*. East Sussex: Routledge.
- Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology and Psychotherapy, 13*, 353–379. doi:10.1002/cpp.507
- Goss, K., & Allan, S. (2009). Shame, pride and eating disorders. *Clinical Psychology and Psychotherapy, 16*, 303–316. doi:10.1002/cpp.627
- Goss, K., & Allan, S. (2012). An introduction to compassion-focused therapy for eating disorders (CFT-E). In J. R. Fox & K. Goss (Eds.), *Eating and its disorders* (pp. 303–314). West Sussex: Wiley-Blackwell.
- Goss, K., & Gilbert, P. (2002). Eating disorders, shame and pride: A cognitive-behavioural functional analysis. In P. Gilbert & J. Miles (Eds.), *Body shame: Conceptualisation, research and treatment* (pp. 219–255). London: Routledge.
- Grabhorn, R., Stenner, H., Stangier, U., & Kaufhold, J. (2006). Social anxiety in anorexia and bulimia nervosa: The mediating role of shame. *Clinical Psychology and Psychotherapy, 13*, 12–19. doi:10.1002/cpp.463
- Gual, P., Perez-Gaspar, M., Martinez-Gonzalez, M. A., Lahortiga, F., de Irala-Estevez, J., & Cervera-Enguix, S. (2002). Self-esteem, personality, and eating disorders: Baseline assessments of a prospective population-based cohort. *International Journal of Eating Disorders, 31*, 261–273.
- Hayaki, J., Friedman, M. A., & Brownell, K. D. (2002). Shame and severity of bulimic symptoms. *Eating Behaviors, 3*, 73–83.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press
- Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin, 110*, 86–108.
- House, J., Eisler, I., Simic, M., & Micali, N. (2008). Diagnosing eating disorders in adolescents: A comparison of the eating disorder examination and the development and well-being assessment. *International Journal of Eating Disorders, 41*, 535–541. doi:10.1002/eat.20528
- Iannaccone, M., D'Olimpio, F., Cella, S., & Cotrufo, P. (2016). Self-esteem, body shame and eating disorder risk in obese and normal weight adolescents: A mediation model. *Eating Behaviors, 21*, 80–83. doi:10.1016/j.eatbeh.2015.12.010
- Jack, D. C. (1991). *Silencing the self: Women and depression*. New York, NY: Harper Collins Publishers Inc.
- Kaufman, G. (1996). *The psychology of shame: Theory and treatment of shame-based syndromes* (2nd ed.). New York, NY: Springer Publishing Company.
- Keith, T. Z. (2006). *Multiple regression and beyond*. Boston, MA: Pearson.
- Krabbenborg, M. A., Danner, U. N., Larsen, J. K., van der Veer, N., van Elburg, A. A., de Ridder, D. T., ... Engels, R. C. (2012). The Eating Disorder Diagnostic Scale: Psychometric features within a clinical

- population and a cut-off point to differentiate clinical patients from healthy controls. *European Eating Disorders Review*, 20, 315–320. doi:10.1002/erv.1144
- Lovibond, S. H., & Lovibond, P. F. (1995a). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Sydney: Psychology Foundation.
- Lovibond, S. H., & Lovibond, P. F. (1995b). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scale (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33, 335–343.
- McIlwain, D. F., & Warburton, W. A. (2004). *The Feelings About Self Scale (FASS)*. Unpublished questionnaire.
- McKinley, N. M., & Hyde, J. S. (1996). The Objectified Body Consciousness Scale: Development and validation. *Psychology of Women Quarterly*, 20, 181–215.
- Mercurio, A. E., & Landry, L. J. (2008). Self-objectification and well-being: The impact of self-objectification on women's overall sense of self-worth and life satisfaction. *Sex Roles*, 58, 458–466. doi:10.1007/s11199-007-9357-3
- Mintz, L. B., & O'Halloran, M. S. (2000). The Eating Attitudes Test: Validation with DSM-IV eating disorder criteria. *Journal of Personality Assessment*, 74, 489–503.
- Noll, S. M., & Fredrickson, B. L. (1998). A mediational model linking self-objectification, body shame, and disordered eating. *Psychology of Women Quarterly*, 22, 623–636.
- Peat, C. M., & Muehlenkamp, J. J. (2011). Self-objectification, disordered eating, and depression: A test of mediational pathways. *Psychology of Women Quarterly*, 35, 441–450. doi:10.1177/0361684311400389
- Rortveit, K., Astrom, S., & Severinsson, E. (2009). The feeling of being trapped in and ashamed of one's own body: A qualitative study of women who suffer from eating difficulties. *International Journal of Mental Health Nursing*, 19, 231–239.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Sanftner, J. L., Barlow, D. H., Marschall, D. E., & Tangney, J. P. (1995). The relation of shame and guilt to eating disorder symptomatology. *Journal of Social and Clinical Psychology*, 14, 315–324.
- Schoenefeld, S. J., & Webb, J. B. (2013). Self-compassion and intuitive eating in college women: Examining the contributions of distress tolerance and body image acceptance and action. *Eating Behaviors*, 14, 493–496. doi:10.1016/j.eatbeh.2013.09.001
- Schreiber, J. B., Stage, F. K., King, J., Nora, A., & Barlow, E. A. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99, 323–338.
- Schupak-Neuberg, E., & Nemeroff, C. J. (1993). Disturbances in identity and self-regulation in bulimia nervosa: Implications or a metaphorical perspective of "body as self". *International Journal of Eating Disorders*, 13, 335–347.
- Stice, E., Fisher, M., & Martinez, E. (2004). Eating Disorder Diagnostic Scale: Additional evidence of reliability and validity. *Psychological Assessment*, 16, 60–71. doi:10.1037/1040-3590.16.1.60
- Stice, E., Telch, C. F., & Rizvi, S. L. (2000). Development and validation of the Eating Disorder Diagnostic Scale: A brief self-report measure of anorexia, bulimia, and binge-eating disorder. *Psychological Assessment*, 12, 123–131. doi:10.1037//1040-3590.12.2.123
- Strother, E., Lemberg, R., Stanford, S. C., & Turberville, D. (2012). Eating disorders in men: Underdiagnosed, undertreated, and misunderstood. *Eating Disorders*, 20, 346–355. doi:10.1080/10640266.2012.715512
- Swan, S., & Andrews, B. (2003). The relationship between shame, eating disorders and disclosure in treatment. *British Journal of Clinical Psychology*, 42, 367–378.
- Tangney, J. P. (1995). Recent advances in empirical study of shame and guilt. *American Behavioral Scientist*, 38, 1132–1145.
- Tangney, J. P., Wagner, P., & Gramzow, R. (1992). Proneness to shame, proneness to guilty, and psychopathology. *Journal of Abnormal Psychology*, 101, 469–478.
- Tiggemann, M., & Kuring, J. K. (2004). The role of body objectification in disordered eating and depressed mood. *British Journal of Clinical Psychology*, 43, 299–311.
- Tiggemann, M., & Williams, E. (2012). The role of self-objectification in disordered eating, depressed mood, and sexual functioning among women: A comprehensive test of objectification theory. *Psychology of Women Quarterly*, 36, 66–75. doi:10.1177/0361684311420250
- Troop, N. A., Allan, S., Serpell, L., & Treasure, J. L. (2008). Shame in women with a history of eating disorders. *European Eating Disorders Review*, 16, 480–488. doi:10.1002/erv.858

- Troop, N. A., & Redshaw, C. (2012). General shame and bodily shame in eating disorders: A 2.5-year longitudinal study. *European Eating Disorders Review*, 20, 373–378. doi:10.1002/erv.2160
- Tylka, T. L., & Sabik, N. J. (2010). Integrating social comparison theory and self-esteem within objectification theory to predict women's disordered eating. *Sex Roles*, 63, 18–31. doi:10.1007/s11199-010-9785-3
- Warburton, W. A., Edwards, P., Hossieny, T., Pieper, L., & Yip, T. (2008). Factors that mediate the narcissism-aggression link. In S. Boag (Ed.), *Personality down under: Perspectives from Australia* (pp. 213–231). New York, NY: Nova Science Publishers.
- Warburton, W. A., & McIlwain, D. F. (2005). *Control-aggression links: Evidence for mechanisms, a possible etiology and contributing personality factors*. Paper presented at the 34th Annual Meeting of the Society of Australasian Social Psychologists, Townsville, Australia.