

## **Shop ‘til you Drop: A Coping Mechanism for Stressed University Students?**

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### **Abstract**

*Compulsive buying is a concerning problem affecting university students who are particularly vulnerable to experiencing anxiety and stress due to academic workloads, financial difficulties, and social isolation. The current study explores the relationship between compulsive buying behaviour, gender differences, anxiety, stress, and coping styles among university students. As expected, findings revealed female university students reported significantly higher levels of compulsive buying behaviour compared to male students, and students engaging in compulsive buying behaviours were significantly younger than non-compulsive buying students. Compared to university students who reported regular purchasing behaviours, university students who engaged in compulsive buying also reported significantly higher disengaged coping and stress levels, and significantly lower use of engaged coping. Disengaged coping also accounted for a significant amount of variance in compulsive buying behaviour. The findings suggest coping is a significant factor in the development of compulsive buying behaviour in university students who experience moderate levels of stress.*

**Keywords:** compulsive buying, stress, anxiety, disengaged coping, university students

### **1. Introduction**

Compulsive buying is chronic and repetitive purchasing behaviour characterised by an inability to resist buying urges, loss of control over buying behaviours, and an inability to cease the behaviour despite negative consequences (Dittmar, 2005). Compulsive buying behaviour is distinct from ordinary consumer behaviour in terms of its high frequency, subjective importance, and disproportionate amount of time devoted to the behaviour or thoughts related to the behaviour. Compulsive buying behaviour has attracted considerable research interest in recent years due to the significant proportion of individuals affected and the negative consequences to individuals and their families, including financial debt, social/relationship impairment, occupational disruption, and psychological distress (Dittmar, Long, & Bond, 2007). Compared to non-compulsive buyers, individuals who engage in compulsive buying behaviours have reported lower quality of life, poor psychological well-being, impaired social and occupational functional, and greater subjective distress (Harvanko et al., 2013). University students who report compulsive buying behaviour are particularly vulnerable to the effects of psychological distress, reporting poor academic achievement, lower grade point averages, increased levels of stress, and poorer physical health, compared to students who report normal buying patterns (Harvanko et al., 2013). While the motivations underlying compulsive buying are not entirely clear, there appears to be a general consensus in literature that compulsive buying primarily serves to regulate negative emotional states resulting from stress, anxiety, and/or depression (Kellest & Bolton, 2009). However, little is known about the impact of coping styles on compulsive buying tendencies, particularly in university students who typically experience considerable anxiety and stress as a result of competing academic and social demands. The present study aims to address this limitation by examining differences in stress, anxiety, and coping strategies in university students who report compulsive or non-compulsive buying behaviours.

### **1.1 Prevalence of Compulsive Buying**

The prevalence of compulsive buying remains unclear. In 2001, the occurrence of compulsive buying was estimated to range between 1.8 to 8.1 percent (Black, 2001). More recently, however, prevalence rates have ranged from 5.8 percent in the United States (US) (Koran, Faber, Aboujaoude, Large, & Serpre, 2006) to 6.9 percent in Germany (Mueller et al., 2010). Prevalence rates for compulsive buying in university students have also ranged between 1.9 to 5.2 percent (Claes, Bitjttebier, Mitchell, de Zwaan, & Mueller, 2011). Researchers in the area have suggested the inconsistencies in prevalence rates are likely due to differences in research methodology, sampling limitations, and limitations associated with psychometric instruments (e.g., discrepancies in cut-off points used to determine compulsive buying behaviours, differences cognitive and behavioural symptoms assessed).

### **1.2 The Impact of Gender on Compulsive Buying Behaviours**

Research suggests 80 to 95 percent of individuals displaying compulsive buying are women (Black, 2001). In college students at two American universities, compulsive buying was found to affect significantly more women (2.6%) than men (0.4%) (Odlaug & Grant, 2010). Several researchers have also concluded women have significantly greater compulsive buying tendencies, as women typically obtain higher scores on compulsive buying measures (Ridgway, Kukar-Kinney & Monroe, 2008). However, these findings must be considered within a social context, where traditional gender roles typically dictate women act as the primary purchasers of household goods and therefore are exposed to a greater number buying opportunities than males (Brennan, 2009). Interestingly, other nationwide studies in the US (Koran et al., 2006) and Germany (Mueller et al., 2010) have found no significant gender differences in compulsive buying behaviours.

### **1.3 The Impact of Age on Compulsive Buying Behaviours**

Findings relative to age and compulsive buying have also been inconclusive. Some studies have revealed elevated prevalence rates among younger age groups, with researchers attributing this finding to the mediating effect of materialistic values in younger individuals, (Dittmar, 2005). Mueller et al. (2010) also found age to be inversely related to compulsive buying behaviour ( $N = 2,350$ ), with the highest prevalence (11.4%) of compulsive buying found in 25 to 34 year olds. Other studies, however, have observed compulsive buying behaviour to occur evenly across age groups (Harvanko et al., 2013).

### **1.4 The Impact of Stress and Anxiety on Compulsive Buying Behaviours**

Individuals who report compulsive buying behaviour also report experiencing mood disorders such as depression, anxiety disorders, substance use disorders, eating disorders, and impulse control disorders (Koran, Bullock, Hartson, Elliott, & D'Andrea, 2002). Empirical evidence also indicates a higher prevalence of these comorbid disorders in individuals who report compulsive buying behaviour, compared to those engaging in normal purchasing patterns (Mueller et al., 2009). In particular, stress and anxiety have been found to serve as key precipitating and perpetuating factors for compulsive buying behaviour. According to escape theories, compulsive buying serves to regulate negative affect such as anxiety and stress, by way of temporary mood elevation experienced during buying episodes (Müller et al., 2012). Studies have demonstrated an association between anxiety disorders and compulsive buying (Koran et al., 2002), with some researchers suggesting anxiety triggers impulsiveness within an individual and encourages the consumer to reduce anxious tension by engaging in compulsive buying (Valence, D'Astous, & Fortier, 1988). This suggestion is supported by research, with individuals who engage in compulsive buying behaviours reporting anxiolytic effects post-purchasing (Christenson et al., 1994). Therefore, it has been argued escape from anxiety serves as a primary motivation for individuals to engage in compulsive buying behaviour.

A review of literature, however, indicated no direct link between anxiety and compulsive buying has been established and that anxiety experienced by an individual can be attributed as both a cause and effect of compulsive buying (Gupta, 2013). Some studies have suggested anxiety may be indirectly related to compulsive buying. For example, high levels of anxiety have been shown to moderate the relationship between disengaged coping and compulsive buying (Flight, Rountree, & Beatty, 2012). That is, when an individual experiences a high level of anxiety, the influencing effect of disengaged coping on compulsive buying is increased significantly. As a result, researchers have suggested anxiety may serve as a primary trigger for compulsive buying behaviour via use of disengaged coping strategies (Otero-Lopez & Villardefrancos, 2014).

Stress is also suggested to impact compulsive buying behaviour, with research examining life-event induced stress and compulsive buying behaviour in a community sample ( $N= 785$ ) revealing a significant relationship between stress levels and compulsive buying behaviour, and stress accounting for more than 10 percent of the variance in compulsive buying. Stress is also thought to act as an immediate antecedent; however, to date, findings have been mixed. For example, a recent study found a significantly greater number of stressful events on days when compulsive buying episodes occurred, compared to days where there was an absence of the behaviour (Silbermann, Henkel, Müller, & deZwaan, 2008), yet other studies have found no differences in the levels of stress between days with or without compulsive buying episodes (Müller et al., 2012). Compared to community samples, university students experience significantly higher levels of stress due to a range of academic and personal demands (Stallman, 2010). This elevated level of stress has the potential to negatively impact the psychological well-being of university students and their academic performance (Bayram & Bilgel, 2008). Given the relationship between stressful events and the development of compulsive buying, in addition to the younger age of students, it seems warranted to investigate compulsive buying in this population (Roberts & Roberts, 2012).

To our knowledge, only one study has examined the relationship between stress and anxiety in an American university sample ( $N = 2,108$ ). Results revealed students who scored in the compulsive buying range reported significantly higher levels of perceived stress than students in the non-compulsive buying range (Harvanko et al., 2013). Academic stress and compulsive buying has also been examined in adolescents aged 12 to 13 years (Roberts & Roberts, 2012). Results of the study revealed a significant relationship between academic stress and compulsive buying, with the researchers concluding compulsive buying was a common coping strategy for young high school students experiencing high academic stress. Given the considerable changes in cognitive development between adolescence and young adulthood, it is difficult to generalise these findings to a university population; however, it has been hypothesised this coping mechanism of compulsive buying in adolescence may continue into adulthood, particularly in the absence of opportunities to learn and acquire adaptive coping strategies.

### **1.5 The Impact of Coping on Compulsive Buying Behaviours**

Surprisingly, there is a paucity of literature investigating coping and compulsive buying, particularly given the clinical utility of this construct. Within coping literature, diverse coping activities have been identified, commonly referred to as 'primary' coping strategies, which have been organised into two tertiary coping domains: engaged and disengaged coping. Engaged coping is suggested to comprise of four primary coping strategies related to active coping including active problem solving, cognitive restructuring, increased social contact, and increased emotional expression. Conversely, disengaged coping is comprised of four primary coping strategies related to avoidant coping including problem avoidance, wishful thinking, self-criticism and social withdrawal (Tobin, Holroyd, Reynolds, & Wigal, 1989). The relationship between stress and coping is supported by empirical evidence. For example, the use of avoidant coping in managing perceived stress has been shown to increase the likelihood of mental illness and increase the severity of psychological distress, whereas engaged (approach) coping has been associated with greater physical and mental health (Penley, Tomaka, & Wiebe, 2002). Furthermore, while disengaged (avoidant) coping may be effective in reducing distress in the short-term, the use of these strategies long-term is associated with poorer outcomes including increased anxiety and stress (Littleton, Horsley, John, & Nelson, 2007).

Research has described compulsive buying a mechanism to modulate emotions. For example, Kyrios, Frost, and Steketee (2004) revealed compulsive buyers believed the acquisition of objects would compensate, reward, or neutralise negative feelings. Consistent with escape theories, Villarino, Lorenzo, González, Fernández, and Foltz (2006) also demonstrated a significant association between disengaged coping and compulsive buying, with use of disengaged coping strategies increasing as compulsive buying behaviour increased. Based on these findings, it was suggested compulsive buying could be considered a form of disengaged coping. Interestingly, studies have also noted individuals exhibiting compulsive buying behaviours have less desire to possess material objects and obtain the greatest mood modulation effect from the purchasing process itself (e.g., a positive social interaction with a salesperson, distraction for emotions), providing further support for specific form of disengaged coping known as problem avoidance. To date, there have been very few studies that have examined coping as a significant variable in the relationship or predictability of compulsive buying behaviour and no studies have utilised a university student sample in Australia.

Additionally, many studies have examined at materialism and low self-esteem in university samples; however, none have considered a skill such as coping strategies in understanding and hopefully managing compulsive buying. Research has highlighted adaptive coping is a behaviour that can be fostered and has been proven to improve outcomes for individual's dealing with stress and anxiety.

## **2.0 The Current Study**

The primary goal of the current study was to add to the body of compulsive buying literature by examining whether university students who report compulsive buying behaviour, differ significantly in levels of stress and anxiety and use of coping strategies, compared to students who do not engage in compulsive buying; in addition to examining the ability for anxiety, stress, and coping to predict compulsive buying. To avoid measurement limitations noted in previous research (i.e., under detection of compulsive buying), the current study also sought to utilise a measure of compulsive buying that focused on cognitions and urges that accompany compulsive buying, as opposed to consequences only. Based on previous research and theory, it was hypothesised that:

1. Positive relationships would exist between compulsive buying and disengaged coping, stress and anxiety. A negative relationship would exist between compulsive buying behaviour and engaged coping.
2. Age and gender would be significantly associated with compulsive buying. Specifically, female university students would report significantly greater compulsive buying behaviours than male university students, and university students who reported compulsive buying behaviour would be significantly younger than university students who reported normal buying behaviours
3. Levels of anxiety and stress would be significantly greater in university students reporting compulsive buying behaviours compared to university students reporting no compulsive buying.
4. Use of disengaged coping would be significantly higher and the use of engaged coping significantly lower, in university students reporting compulsive buying behaviour compared to university students reporting no compulsive buying.
5. Disengaged coping would account for a significant amount of the variance in compulsive buying behaviour.

## **3.0 Method**

### **3.1 Participants**

Participants were university students ( $N = 136$ ) from an Australian University, ranging from 18 to 56 years of age ( $M = 24.00$ ,  $SD = 7.42$ ). Males comprised 17.6 percent of the sample ( $n = 24$ ), while females comprised 82.4 percent ( $n = 112$ ). The research was approved by the human research and ethics committee at the authors' institution.

### **3.2 Measures**

#### **3.2.1 Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995)**

The DASS-21 consisting of 21-items designed to measure symptoms of depression, anxiety and stress. For the purpose of the current study, only the Anxiety and Stress scales were utilised, with higher scores on each scale indicative of greater symptom severity. Research indicates the DASS is a valid and psychometrically sound instrument, with high internal consistencies ranging from .91 to .97 for Depression, .81 to .92 for Anxiety, and .88 to .95 for Stress, a replicable three-factor structure, and good sensitivity to treatment effects (Antony et al., 1998; Brown et al., 1997; Clara et al., 2001).

#### **3.2.2 Richmond Compulsive Buying Scale (RCBS; Ridgway et al., 2008)**

The RCBS is a six item measure of compulsive buying behaviours in adults in the general population (e.g., "*Much of my life centres around buying things*"). A total score was utilised for analysis, with scores greater than 25 indicative of compulsive buying behaviour.. Previous research has indicated the RCBS is a valid and psychometrically sound instrument, with internal consistencies for the total scale ranging from .81 to .84 (Ridgway et al., 2008). Convergent validity with the Compulsive Buying Scale ( $r = .62$ ) has also been established and the RCBS has demonstrated predictive validity with actual purchasing behaviour (Ridgway et al., 2008).

#### **3.2.3 Coping Strategies Inventory – Short Form (CSI-SF; Tobin et al., 1989)**

The CSI-SF is a 32-item self-report questionnaire designed to assess coping thoughts and behaviours in response to a specific stressor.

Participants were asked to indicate for each item the extent to which they performed a particular coping response in dealing with a stressful event (e.g., “I worked on solving problems in the situation”). Responses were scored on a five-point Likert scale ranging from one (*not at all*) to five (*very much*). Although the CDI-SF can be analysed at various levels, the present study elected to perform analyses at the tertiary subscale level as this level has yielded a high internal consistency of .90 (Tobin, 1995). The tertiary level is comprised of two subscales: engaged coping (active problem solving, cognitive restructuring, increased social contact, and increased emotional expression) and disengaged coping (problem avoidance, wishful thinking, self-criticism, and social withdrawal). In addition to high internal consistency, the CSI-SF has demonstrated good temporal stability (.67 to .83), particularly considering the difficulties associated with measuring coping (Addison et al., 2007).

#### 4.0 Procedure

Participants were recruited via an information sheet on a university research board. Potential participants were then contacted via email and provided with a link to the online questionnaire. After completing a range of demographic questions, participants were asked to complete items from a range of psychometric instruments (e.g., DASS-21, RCBS, CSI-S).

#### 5.0 Results

The data were analysed using SPSS version 22. An alpha level of .05 was used to determine the statistical significance of all results. A one-way multivariate analysis of variance (MANOVA) was conducted to determine whether any significant differences between the two levels of buying behaviour existed across the four dependent variables. A hierarchical multiple regression analysis was performed to examine the specific associations between anxiety, stress, coping (engaged and disengaged) and compulsive buying behaviour. A standard multiple regression analysis was conducted to identify the variance in compulsive buying as predicted by four common disengaged coping strategies.

##### 5.1 Preliminary Analyses

As can be seen in Table 1 below, approximately a quarter of the sample obtained a score greater than 25 on the RCBS, classifying them as a compulsive buyers. As expected, of these 33, 91% percent ( $n = 30$ ) were female. Overall, participants in the compulsive buyer group reported mild to moderate stress and moderate anxiety, where as participants in the non-compulsive buyer group obtained scores on the normal range for stress and mild range for anxiety. Individual  $t$ -tests and chi-square analyses were also performed to determine whether compulsive buying versus non-compulsive buying groups of university students differed on the demographic variables of age and income. Results indicated a significant difference between the groups in average age ( $t(130) = -1.44, p = .002$ ). As expected, individuals in the non-compulsive buying group were older ( $M = 24.39, SD = 8.28$ ), than individuals in the compulsive buying group ( $M = 22.22, SD = 3.44$ ). Chi-square analyses indicated there were no statistically significant differences in income levels between non-compulsive buying and compulsive buying students ( $\chi^2(3, 128) = 3.42, p = .331$ ).

**Table 1: Means and Standard Deviations for the Dependent Variables between Groups**

	Compulsive Buyer ( $n = 33$ )	Non-Compulsive Buyer ( $n = 130$ )
<i>Variable</i>	<i>M(SD)</i>	<i>M(SD)</i>
Disengaged Coping	31.67 (13.16)	25.68 (10.09)
Engaged Coping	31.97 (12.68)	37.63 (9.87)
Stress	9.79 (5.04)	7.62 (4.75)
Anxiety	6.21 (4.88)	4.65 (4.42)

Pearson's bivariate correlations were also performed to examine the simple relationships amongst the key variables of interest. As predicted, there was a significant relationship between use of disengaged coping and compulsive buying behaviour ( $r = .45, p = .009$ ). No significant associations between compulsive buying, stress, and anxiety were observed. As expected, there was a negative relationship between compulsive buying and engaged coping ( $r = -.20$ ), however this did not reach significance.

## 5.2 Main Analyses

A one-way between-subjects MANOVA was conducted to determine whether the buying behaviour of university students (compulsive vs non-compulsive) differed on the four dependent variables combined (engaged coping, disengaged coping, stress, anxiety). With the use of Wilk's criterion, a significant multivariate main effect for Group (compulsive vs non-compulsive) was observed  $F(4, 132) = 3.09, p = .016, \eta^2 = .09, \text{power} = .80$ . The means and standard deviations for each group can be found in Table 1.

### 5.2.1 Disengaged coping

Univariate analyses revealed a significant difference between groups on disengaged coping  $F(1, 131) = 7.46, p = .007, \eta^2 = .05, \text{power} = .77$ . As expected, university students who exhibited compulsive buying behaviour reported significantly higher levels of disengaged coping compared to students who reported no compulsive buying behaviour.

### 5.2.2 Engaged coping

Univariate analyses revealed a significant difference between groups on engaged coping  $F(1, 131) = 7.04, p = .009, \eta^2 = .05, \text{power} = .75$ . As predicted, university students who exhibited compulsive buying behaviour reported significantly lower levels of engaged coping than students who reported no compulsive buying behaviour.

### 5.2.3 Stress

Univariate analyses revealed a significant difference between groups on levels of stress  $F(1, 131) = 5.01, p = .027, \eta^2 = .04, \text{power} = .60$ . As hypothesised, university students who reported compulsive buying behaviour reported significantly higher levels of stress compared to students who reported no compulsive buying behaviour.

### 5.2.4 Anxiety

While students with compulsive buying behaviours appeared to obtain higher anxiety scores than students with non-compulsive buying behaviours, this difference was non-significant. No significant difference was observed between groups. To determine the predictive ability of disengaged coping, stress, and anxiety on compulsive buying behaviour, a hierarchical multiple regression was performed. Predictor variables were entered into the regression equation based on previous research and theory. Anxiety was entered on Step 1, Stress on Step 2, and Disengaged Coping on Step 3. Results of the hierarchical multiple regression analysis are summarised in Table 2. After Step 3, when all variables were entered into the regression equation, 34% of the variance in compulsive buying was accounted for. On Step 1, anxiety accounted for a non-significant 1.6 percent of the variance in compulsive buying behaviour  $F_{\text{change}}(1, 31) = .50, p = .485$ . After controlling for the effects of anxiety, stress accounted less than one percent of additional variance in compulsive buying behaviour; however, this contribution was non-significant  $F_{\text{change}}(1, 30) = .03, p = .872$ . After controlling for the effects of anxiety and stress, disengaged coping accounted for a statistically significant 32.3% of additional variance in compulsive buying behaviour  $F_{\text{change}}(1, 29) = 14.21, p = .001$ . Higher scores on disengaged coping were related to greater compulsive buying, with a one-point standard deviation increase in compulsive buying resulting in a .66 standard deviation increase in disengaged coping. At Step 3, with all three predictors entered into the regression equation, disengaged coping was the only significant predictor. In terms of unique variance, disengaged coping contributed 32.5 percent of unique variance to compulsive buying.

**Table 2: Hierarchical Multiple Regression Analyses Predicting Compulsive Buying from Anxiety, Stress and Disengaged Coping**

Predictor	$\Delta R^2$	$\beta$	B	SE B
Step 1	.02			
Constant			31.21	1.36
Anxiety		-.13	-.12	.17
Step 2	.00			
Constant			31.01	1.87
Stress		.04	.04	.23
Step 3	.32***			
Constant			26.43	1.97
Disengaged coping		.66***	.24***	.06
Total $R^2 = .34$ ***				

Note.  $N = 33, * p < .05, ** p < .01, *** p \leq .001$

To determine the relative predictive abilities of the four components of disengaged coping to engagement in compulsive buying, a standard multiple regression analysis was performed. Problem avoidance, wishful thinking, self-criticism, and social withdrawal served as the predictors, while compulsive buying behaviour served as the criterion. As can be seen in Table 3, the model accounted for 28.3 percent of the variance in compulsive buying behaviours  $F_{\text{change}}(4, 28) = 2.77, p = .047$ . The regression coefficient for problem avoidance was significantly different from zero, with a one-point standard deviation increase in compulsive buying resulting in a .42 standard deviation increase in problem avoidance. The regression coefficients for daily hassles and social support satisfaction did not differ significantly from zero. Specific use of problem avoidance contributed 14.4 percent unique variance to compulsive buying.

**Table 3: Standard Multiple Regression predicting Compulsive Buying from Disengaged Coping Strategies**

Predictor	$\beta$	<i>B</i>	<i>SE B</i>
Constant		25.10	2.03
Problem avoidance	.42*	.49*	.21
Wishful thinking	.11	.12	.22
Self-criticism	.15	.14	.21
Social withdrawal	.03	.04	.24
$R^2 = .28^*$			

Note.  $N = 33$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

## 6.0 Discussion

Previous research had revealed individuals who reported compulsive buying behaviour exhibited higher levels of anxiety and stress, compared to individuals with regular purchasing pattern. It is therefore evident the manner by which individuals manage their anxiety and stress has a considerable impact on whether or not compulsive buying behaviour is engaged in. Existing literature has supported associations between anxiety, stress, gender, and compulsive buying in a range of samples; however, there was little research examining differences in coping strategies between compulsive and non-compulsive buying groups of university students. Furthermore, no studies, to our knowledge, had examined the relationship between compulsive buying behaviour and use of disengaged coping. Our study added to the current body of literature by examining anxiety, stress, and coping in university students. Overall, our findings partially supported hypotheses. As expected, female university students reported significantly higher levels of compulsive buying behaviour compared to male students, with 27 percent of females scoring within the compulsive buying range compared to only 13 percent of males. This finding is consistent with gender differences demonstrated in previous research (Harvanko et al., 2013). Significant differences in the age of compulsive buying and non-compulsive buying students were also revealed, with students engaging in compulsive buying behaviours being significantly younger. Although our sample was derived from a university student population, 17.3 percent of the sample was aged over 25 years old and the majority of participants the compulsive buying range were between 18 and 25 years of age. Considered in combination, these findings indicate young female university students are at particular risk for engaging in compulsive buying and it would benefit from adequate counselling and education regarding the behaviour.

Students who reported compulsive buying behaviour were also found to have significantly higher levels of stress (moderate severity stress scores) compared to students reporting non-compulsive buying (normal range stress scores). These findings are consistent with the findings of Harvanko et al (2013) which found American university students who scored in the compulsive buying range reported significantly higher levels of perceived stress than non-compulsive buying students. Based on these results, it could be suggested elevated stress serves as an important trigger for university students engaging in compulsive buying behaviour. While a difference in the anxiety levels of compulsive buying and non-compulsive buying students was also observed, this difference was not statistically significant. This finding is inconsistent with previous research, which has reported an elevated level of anxiety among compulsive buying individuals, although sampling differences (e.g., psychiatric versus community samples) are likely to account for this difference. Our findings were, however, consistent with Mitchell et al. (2002) which found that although anxiety disorders appeared to be twice as common in compulsive buying individuals to non-compulsive individual, this difference was not statistically significant. As expected, a significant moderate positive correlation between disengaged coping and compulsive buying was revealed.

Disengaged coping was also found to be a significant predictor of compulsive buying and accounted for a significant amount of the variance in this behaviour. This finding is consistent with, and extends upon, previous research (e.g., Villarino et al., 2006), providing novel and potentially important theoretical and therapeutic insight for the occurrence of compulsive buying behaviour in university students. It also provides further support for the suggestion compulsive buying could be considered a form of disengaged coping. The exploratory nature of the current study also allowed for investigation into the predictive abilities of specific disengaged coping strategies (e.g., problem avoidance, wishful thinking, social withdrawal, self criticism). Results revealed only problem avoidance significantly predicted compulsive buying behaviour; a finding consistent with escape theory, which proposes escape from negative affect is a primary motivator of compulsive buying (Faber, 2004). Unexpectedly, anxiety and stress did not significantly predict compulsive buying behaviour and correlations between these variables did not reach research significance and were in the opposite direction to predictions. This finding seems inconsistent with escape theory; however, our findings were consistent with et al. (2012) which found no significant difference in levels of stress experienced by compulsive buying participants between days with or without compulsive buying episodes. One possible explanation for this finding is that students engaging in compulsive buying may be experiencing short-term benefits of stress reduction, which could account for the negative correlation observed. It is also possible, anxiety and stress have an indirect relationship with compulsive buying behaviour. For example, Edwards (1992) revealed anxiety was only a significant predictor of compulsive buying when coping was added as a mediating variable to the equation. In other words, a person may suffer from anxiety and stress, but only be at risk for compulsive buying when they begin to use disengaged coping

Despite the novel findings of the study, certain limitations must be noted. First, the generalisability of findings to non-university population is limited; however, our findings provide an important preliminary insight into a population particularly vulnerable to engaging in compulsive buying behaviour. As the sample from the current study was limited to a single institution, future research should attempt to rectify this sampling limitation by employing a larger and more diverse sample to improve the internal and external validity of future results. As in any correlational research, ascertaining causal relationships is difficult; therefore, future research may benefit from utilising an experimental design to investigate predictors of compulsive buying behaviour. Similarly, compulsive buying was identified exclusively by means of a screening instrument, potentially resulting in measurement error (e.g., false positives or negatives). Future research should attempt to combine both a screening instrument and structured clinical interview to confirm diagnoses and establish the validity of screening measures. Overall, our findings contribute to the existing body of compulsive buying literature, highlighting the potential use of compulsive buying as a form of disengaged coping among university students. While certain sampling limitations are noted, our findings suggest young female university students are particularly vulnerable to engaging compulsive buying behaviour, which may be triggered by moderate levels of stress. It well known how one copes with stress has important implications for his/her psychological well-being and adaptive coping behaviours can be fostered in adults. Given the considerable stress university students often experience, it is important we continue to investigate disengaged coping and compulsive buying in university students and ensure adequate resources and support are available for this vulnerable population who typically have limited parental supervision. It is therefore suggested prevention programs targeting unhealthy consumer behaviours in high-school and university health programs are employed and therapeutic interventions designed to managed obsessive thoughts and compulsive buying patterns (i.e., exposure and response prevention), alleviate anxious and depressive symptomatology, promote adaptive stress management, and encourage functional problem solving, are developed.

## **References**

- Addison, C. C., Campbell-Jenkins, B. W., Sarpong, D. F., Kibler, J., Singh, M., Dubbert, P., . . . Taylor, H. (2007). Psychometric evaluation of a Coping Strategies Inventory Short Form (CSI-SF) in the Jackson Heart Study Cohort. *International Journal of Environmental Research and Public Health*, 4, 289-295. doi:10.3390/ijerph200704040004
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, 10, 176-181. doi:10.1037/1040-3590.10.2.176

- Bayram, N., & Bilgel, N. (2008). The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Social Psychiatry and Psychiatric Epidemiology*, 43, 667-672. doi:10.1007/s00127-008-0345-x
- Black, D. W. (2001). Compulsive buying disorder: Definition, assessment, epidemiology and clinical management. *CNS Drugs*, 15, 17–27. doi:10.2165/00023210-200115010-00003
- Brennan, B. (2009). *Why she buys: The new strategy for reaching the world's most powerful consumers*. New York: Crown Publishing Group.
- Brown, T. A., Chorpita, B. F., Korotitsch, W., & Barlow, D. H. (1997). Psychometric properties of the Depression Anxiety Stress Scales (DASS) in clinical samples. *Behaviour Research and Therapy*, 35, 79-89. doi:10.1016/S0005-7967(96)00068-X
- Christenson, G. A., Faber, R. J., de Zwaan, M., Raymond, N. C., Specker, S. M., Ekern, M. D., Mackenzie, T. B., Crosby, R. D., Crow, S. J., & Eckert, E. D. (1994). Compulsive buying: Descriptive characteristics and psychiatric comorbidity. *Journal of Clinical Psychiatry*, 55, 5-11.
- Claes, L., Bijttebier, P., Mitchell, J. E., de Zwaan, M., & Mueller, A. (2011). The relationship between compulsive buying, eating disorder symptoms, and temperament in a sample of female students. *Comprehensive Psychiatry*, 52, 50-55. doi:10.1016/j.comppsy.2010.05.003
- Clara, I. P., Cox, B. J., & Enns, M. W. (2001). Confirmatory factor analysis of the Depression Anxiety Stress Scales in depressed and anxious patients. *Journal of Psychopathology and Behavioral Assessment*, 23, 61-67.
- Dittmar, H. (2005). Compulsive buying—a growing concern? An examination of gender, age, and endorsement of materialistic values as predictors. *British Journal of Psychology*, 96, 467-491. doi:10.1348/000712605X53533
- Dittmar, H., Long, K. & Bond, R. (2007). When a better self is only a button click away: Associations between materialistic values, emotional and identity-related buying motives, and compulsive buying tendency online. *Journal of Social and Clinical Psychology*, 26, 334-361. doi:10.1521/jscp.2007.26.3.334
- Faber, R. J. (2004). Self-control and compulsive buying. In: Kasser, T & Kanner, A.D. (Ed). (2004). *Psychology and consumer culture: The struggle for a good life in a materialistic world* (pp. 169-187). Washington, DC: American Psychological Association.
- Faber, R. J., & O'Guinn, T. C. (1992). A clinical screener for compulsive buying. *Journal of Consumer Research*, 19, 459-469. doi:10.1086/209315
- Flight, R. L., Rountree, M. M., & Beatty, S. E. (2012). Feeling the urge: Affect in impulsive and compulsive buying. *Journal of Marketing Theory and Practice*, 20, 453-466. doi:10.2753/MTP1069-6679200407
- Gupta, S. (2013). A literature review of compulsive buying - A marketing perspective. *The Journal of Applied Business and Economics*, 14, 43-48.
- Harvanko, A., Lust, K., Odlaug, B. L., Schreiber, L., Derbyshire, K., Christenson, G., & Grant, J. E. (2013). Prevalence and characteristics of compulsive buying in college students. *Psychiatry Research*, 210, 1079-1085. doi:10.1016/j.psychres.2013.08.048
- Kellett, S., & Bolton, J. V. (2009). Compulsive buying: A cognitive-behavioural model. *Clinical Psychology and Psychotherapy*, 16, 83-89. doi:10.1002/cpp.585
- Koran, L. M., Bullock, K. D., Hartston, H. J., Elliott, M. A., & D'Andrea, V. (2002). Citalopram treatment of compulsive shopping: An open-label study. *Journal of Clinical Psychiatry*, 63, 704–708. doi:10.4088/JCP.v63n0808
- Koran, L. M., Faber, R. J., Aboujaoude, E., Large, M. D., & Serpe, R. T. (2006). Estimated prevalence of compulsive buying in the United States. *American Journal of Psychiatry*, 163, 1806–1812. doi:10.1176/appi.ajp.163.10.1806
- Kyrios, M., Frost, R. O., & Steketee, G. (2004). Cognitions in compulsive buying and acquisition. *Cognitive Therapy and Research*, 28, 241-258. doi:10.1023/B:COTR.0000021543.62799.32
- Littleton, H., Horsley, S., John, S., & Nelson, D. V. (2007). Trauma coping strategies and psychological distress: A meta-analysis. *Journal of Traumatic Stress*, 20, 977-988. doi:10.1002/jts.20276
- Lovibond, S.H. & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2<sup>nd</sup> Ed.) Sydney: Psychology Foundation.

- Mitchell, J. E., Redlin, J., Wonderlich, S., Crosby, R., Faber, R., Miltenberger, R., . . . Lancaster, K. (2002). The relationship between compulsive buying and eating disorders. *International Journal of Eating Disorders*, 32, 107–111. doi:10.1002/eat.10053
- Müller, A., Mitchell, J. E., Crosby, R. D., Cao, L., Johnson, J., Claes, L., & de Zwaan, M. (2012). Mood states preceding and following compulsive buying episodes: an ecological momentary assessment study. *Psychiatry Research*, 200, 575-580. doi:10.1016/j.psychres.2012.04.015
- Mueller, A., Mitchell, J. E., Crosby, R. D., Gefeller, O., Faber, R. J., Martin, A., & de Zwaan, M. (2010). Estimated prevalence of compulsive buying in Germany and its association with sociodemographic characteristics and depressive symptoms. *Psychiatry Research*, 180, 137-142. doi:10.1016/j.psychres.2009.12.001
- Mueller, A., Mühlhans, B., Silbermann, A., Müller, U., Mertens, C., Horbach, T., Mitchell, J. E., & de Zwaan, M. (2009). Compulsive buying and psychiatric comorbidity. *Psychotherapie, Psychosomatik, Medizinische Psychologie*, 59, 291–299.
- Otero-López, J. M., & Villardefrancos, E. (2014). Prevalence, sociodemographic factors, psychological distress, and coping strategies related to compulsive buying: A cross-sectional study in Galicia, Spain. *BMC Psychiatry*, 14, 101-113. doi:10.1186/1471-244X-14-101
- Penley, J. A., Tomaka, J., & Wiebe, J. S. (2002). The association of coping to physical and psychological health outcomes: A meta-analytic review. *Journal of Behavioural Medicine*, 25, 551-603.
- Ridgway, N. M., Kukar-Kinney, M., & Monroe, K. B. (2008). An expanded conceptualization and a new measure of compulsive buying. *Journal of Consumer Research*, 35, 622-639. doi:10.1086/591108
- Roberts, J. A., & Roberts, C. (2012). Stress, gender, and compulsive buying among early adolescents. *Young Consumers*, 13, 113-123. doi:10.1108/17473611211233440
- Silbermann, A., Henkel, A., Müller, A., de Zwann, M. (2008). The application of ecological momentary assessment to the study of compulsive buying. *Psychotherapie Psychosomatik Medizinische Psychologie*, 58, 454-461
- Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, 45, 249-257. doi:10.1080/00050067.2010.482109
- Tobin, D. L. (1995). Coping Strategies Inventory: Short form. Unpublished scale.
- Tobin, D. L., Holroyd, K.A., Reynolds, R. V., & Wigal, J.K. (1989). The hierarchical factor structure of the Coping Strategies Inventory. *Cognitive Therapy and Research*, 14, 343–361. doi:10.1007/BF01173478
- Valence, G., D'Astous, A., & Fortier L. (1988). Compulsive buying: Concept and measurement. *Journal of Consumer Policy*, 11, 419–433. doi:10.1007/BF00411854