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FULL-LENGTH REPORT

Emotional difficulties mediate the impact of adverse childhood experiences on compulsive buying-shopping problems

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ABSTRACT

Background: Compulsive buying-shopping is recognised as a significant mental health concern, yet its aetiology is largely understudied. A known risk factor for compulsive buying-shopping is adverse childhood experiences (ACEs). ACEs are also associated with greater problems regulating emotions, as well as depression and anxiety. These factors are also known to be associated with compulsive buying-shopping problems. In this study, we aimed to test a serial mediation model in which ACEs were associated with compulsive buying-shopping problems via emotion dysregulation, and then emotional psychopathology (depression, anxiety). *Methods:* We tested this model cross-sectionally in two large samples (N = 1,868 & 4,742) to evaluate the robustness of the model. Both samples completed self-report measures of ACEs, emotional dysregulation, compulsive buying, depression, and anxiety symptoms. *Results:* We found support for indirect effects, and all results were consistent for both samples. ACEs predicted greater emotion dysregulation, which then predicted greater depression and anxiety. In turn, anxiety (but not depression) predicted compulsive buying symptoms. *Discussion and conclusions:* Emotion dysregulation and anxiety consistently mediated the relationship between ACEs and compulsive buying symptoms. Both emotion dysregulation and anxiety represent malleable targets in clinical interventions for compulsive buying-shopping problems. Our findings also suggest that anxiety may be a stronger predictor of compulsive buying compared to depression, which may be an important avenue for future researchers to investigate.

KEYWORDS

adverse childhood experiences, compulsive buying-shopping disorder, emotion dysregulation, depression, anxiety

INTRODUCTION

Approximately 5% of the population are estimated to experience clinical levels of compulsive buying-shopping (Maraz, Griffiths, & Demetrovics, 2016), a problem characterised by overspending and poor control over shopping impulses, leading to financial strain, deceitful behaviour, relationship conflict, and clinically significant distress (Mueller et al., 2019;

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Müller et al., 2021). Compulsive buying-shopping disorder has been recognised as an other-specified impulse control disorder in the 11th revision of the International Classification of Diseases (ICD-11; World Health Organization, 2022), though there is growing evidence suggesting it should be framed as a behavioural addiction, like gambling disorder (Mueller et al., 2019). Consequently, further research is needed to examine how an addiction to shopping develops by investigating the vulnerabilities and personality risk factors that have been linked to established behavioural addictions (Brand et al., 2019).

The Interaction of Person-Affect-Cognition-Execution (I-PACE) model has been used to explain the development of a range of behavioural addictions, including compulsive buying-shopping (Brand et al., 2016, 2019). The I-PACE model posits that genetic factors and adverse childhood experiences (ACEs) make individuals vulnerable to develop addictions and mental health issues in general. Indeed, there is cross-sectional evidence that compulsive shopping in adults is associated with several forms of ACEs, such as witnessing domestic violence, physical abuse, sexual abuse, emotional neglect, and psychological abuse (Kaur & Mearns, 2021; Sansone, Chang, Jewell, & Rock, 2013). However, these results could be explained by the strong association between ACEs and difficulties with depression and anxiety (Daníelsdóttir et al., 2024; McLaughlin et al., 2010; Tan & Mao, 2023; Watt, Ceballos, Kim, Pan, & Sharma, 2020), which are also suggested to be risk factors for developing compulsive buying-shopping problems (Brand et al., 2019; Lawrence, Ciorciari, & Kyrios, 2014; Mueller et al., 2010).

Problems with emotional regulation may be an important pathway through which ACEs lead to depression, anxiety, or compulsive buying-shopping problems. Emotion regulation is multifaceted in that it is comprised of several related abilities, such as being aware of and accepting one's emotions, managing emotions to achieve goals, and controlling impulses when experiencing negative emotions (Gratz & Roemer, 2004). Emotional dysregulation is when there is a deficit in any one of these abilities (Gratz & Roemer, 2004). The I-PACE model also suggests that a poor ability to cope with negative emotions (e.g., sadness, stress) leads to compulsive buying-shopping problems (Brand et al., 2016, 2019). Many studies have also found strong links between emotional dysregulation and compulsive buying-shopping problems (Claes et al., 2010; Estévez et al., 2020; Russell, Russell, & Harris, 2023; Williams & Grisham, 2012), suggesting that shopping becomes a maladaptive coping strategy (i.e., retail therapy) for vulnerable individuals who have not developed healthier ways of coping with negative emotions. Indeed, a recent study found that the relationship between ACEs and compulsive buying is mediated by emotion dysregulation and impulsivity (Richardson, Egglishaw, & Sood, 2024). In other addictions, previous research has shown that emotional dysregulation mediates the relationship between ACEs and gambling (Poole, Kim, Dobson, & Hodgins, 2017), video gaming (Kim et al., 2023), and food addiction (Hoover, Yu, Duval, & Gearhardt, 2022). A large body of research has also shown that emotional dysregulation also mediates the relationship between ACEs and emotional problems, such as depression and anxiety (Cole & Diaz, 2024; Schierholz, Krüger, Barenbrügge, & Ehring, 2016; Ye, Wei, Zhang, Li, & Cao, 2024). Therefore, it may be that some individuals with a history of ACEs first develop difficulties with depression or anxiety before compulsive shopping problems, but research is needed to test this hypothesis.

The aim of the current study was to examine the mechanisms through which adverse childhood experiences result in compulsive buying-shopping problems. Based on the extant literature, we hypothesised that ACEs would be associated with compulsive buying-shopping problems. Second, we hypothesised that this association would be mediated first by emotional dysregulation and then emotional psychopathology (depression, anxiety; see Fig. 1). To our knowledge, no prior study has tested this model. Because compulsive buying-shopping is associated with younger age and being female (for meta-analysis, see Maraz et al., 2016), we also added these demographic variables as covariates into our model. We tested our hypothesised model with data that were collected cross-sectionally rather than longitudinally. Given the known limitations of inferring temporal processes from mediation models on cross-sectional data (Shrout, 2011), we assessed the robustness of our model by testing our findings in two separate samples from studies of self-reported mental health comorbidity. The two samples used different measures of compulsive buying problems.

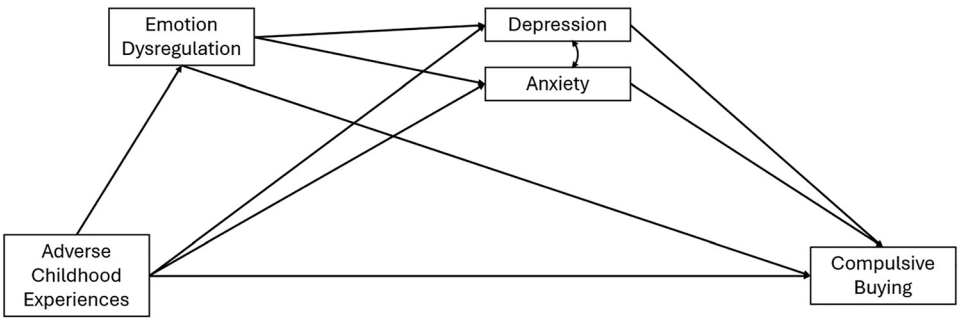

Fig. 1. Hypothesised mediation model

METHODS

Participants

Sample 1. A total of 2,369 participants were recruited through the undergraduate psychology pool at five Canadian universities (n = 1,723), Reddit advertisements (n = 155), and Prolific Canada (n = 491). Participants were excluded from analyses if they failed an attention check item (n = 166). We then removed participants who had missing data for any study variables (n = 335); most of these participants (n = 297) had missing data for our compulsive buying measure because it was only administered if participants answered "yes" to shopping for non-essential items in the last 30 days. Thus, our final sample had N = 1,868 participants.

Sample 2. A total of 5,990 participants were recruited through the undergraduate psychology pool at six Canadian universities (n = 4,902) and Prolific Canada (n = 1,088). Participants were excluded from analyses if they did not pass an attention check item (n = 668) or reported that their data were poor quality/dishonest (n = 347). We then removed participants who had missing data for any study variables (n = 337). Our final sample had N = 4,742 participants.

Measures

Screener for Substance and Behavioural Addictions – Shopping Subscale (SSBA-Shop; Schluter, Hodgins, Wolfe, & Wild, 2018). The SSBA is a self-report questionnaire that assesses four substance and six behavioural addictions, with four self-report questions asked for each substance/behaviour over the past 12 months ("I did it too much", "Once I started, I couldn't stop", "I felt I had to do it in order to function", and "I continued to do it, even though it caused problems"). Only the Shopping subscale was used in the current study. Participants were instructed to score items on a 5-point Likert scale from 0 (*None of the time*) to 4 (*All of the time*), with reference to the previous 12 months. Items are summed to create a total score, with higher scores suggesting greater problems with compulsive shopping. The SSBA-Shop has previously shown good convergent validity (Schluter et al., 2018) and research has suggested a cut off of 4 or greater indicating clinical significance (Hodgins, Wilson, & Schluter, 2023). The SSBA-Shop demonstrated good internal consistency in Sample 1 (ω = 0.86).

Compulsive Buying Scale (CBS; Faber & O'Guinn, 1992). The CBS includes seven items and assesses compulsive shopping symptoms. Participants responded to each item on a 5-point Likert scale from 1 (*very often*) to 5 (*never*). Items are scored by multiplying them by regression weights and summing them, as in Faber and O'Guinn's original study (1992). We then decided to reverse the total score (multiply by −1) such that higher scores indicate greater compulsive shopping severity, to more easily compare to Sample 1. The CBS has previously shown good convergent validity and reliability as well as sensitivity in discriminating between individuals who did/did not self-identify as compulsive shoppers (Faber & O'Guinn, 1992; Tarka & Babaev, 2020). The CBS demonstrated good internal consistency in Sample 2 (ω = 0.81).

Adverse Childhood Experiences Questionnaire (ACE; Dong et al., 2004). The ACE is comprised of 29 items and asks about exposure to 10 forms of ACEs, including emotional abuse, physical abuse, sexual abuse, physical neglect, emotional neglect, witnessing domestic violence, parental marital separation, household substance use, household mental illness, and household crime. Participants responded to each item on the following scale: "Never", "Once or twice", "Sometimes", "Often", or "Very often". Consistent with Dong et al. (2004), items were coded to produce dichotomous scores (0 = No, 1 = Yes) on each of the 10 subscales, with greater scores indicating exposure to more types of adverse experiences. The ACE demonstrated adequate internal consistency in Sample 1 (ω = 0.91) and Sample 2 (ω = 0.92).

Brief Version of the Difficulties in Emotion Regulation Scale (DERS-18; Victor & Klonsky, 2016). The DERS-18 is an 18-item measure which assesses six components of emotional dysregulation: lack of emotional awareness, lack of emotional clarity, non-acceptance of emotional responses, limited emotion regulation strategies, difficulty in goal-directed behaviour, and impulse control difficulties. Participants rated items on a 5-point Likert scale from 1 (*Almost never*) to 5 (*Almost always*), with higher scores indicating greater difficulties in emotional regulation. The DERS-18 has demonstrated excellent convergent and concurrent validity (Victor & Klonsky, 2016). The DERS-18 total score was used in the current study and demonstrated excellent internal consistency in Sample 1 (ω = 0.89) and Sample 2 (ω = 0.91).

Depression Anxiety Stress Scales – Short Form (DASS-21; Lovibond & Lovibond, 1995). This questionnaire has 21 items and measures symptoms of depression, anxiety, and stress in the past week (though we only used the depression and anxiety subscales in this study). Participants rated items on a 4-point Likert scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). The DASS-21 has previously demonstrated excellent convergent and divergent validity (Antony, Bieling, Cox, Enns, & Swinson, 1998; Henry & Crawford, 2005; Lovibond & Lovibond, 1995). Internal consistency was good for the depression and anxiety subscales in Sample 1 (ω = 0.91 & 0.84, respectively) and Sample 2 (ω = 0.92 & 0.84, respectively).

Procedure

All participants in Samples 1 and 2 consented to the online self-administered surveys as part of larger studies on substance and behavioural addictions. Sample 1 completed the SSBA-Shop while Sample 2 completed the CBS. Both samples completed the ACE, DERS-18, and DASS-21. In both samples, undergraduate students were compensated with course credit. Prolific participants from Sample 1 were paid 3.50GBP (for a 30-minute study) and Prolific participants from Sample 2 were paid 7.50GBP (for a 60-minute study).

Reddit participants were entered into a raffle draw to win one of five 100USD Amazon gift cards.

Statistical analyses

Analyses were performed using R version 4.3.2 (R Core Team, 2023) and RStudio (Posit Team, 2024), and were repeated for Sample 1 and Sample 2. We first checked scatterplots to make sure the assumption of linearity was met for all bivariate relationships between study variables. We then obtained frequencies, means, standard deviations, and Pearson correlations for all study variables. Then we tested our serial mediation model using the *lavaan* package (Rosseel, 2012). ACE total score was the independent variable, DERS-18 total score was the first mediator, the two DASS-21 subscales were entered in parallel as the second mediators, and compulsive buying symptoms were entered as the dependant variable (SSBA-Shop for Sample 1, and CBS total for Sample 2). We also specified a covariance between the DASS-21 subscales, as depression and anxiety are known to be highly correlated (e.g., Henry & Crawford, 2005). We reran the model with age and gender entered as covariates to see if outcomes changed. We report the χ^2 test for each model, though we did not evaluate model fit based on this index because it is sensitive to large sample sizes (Kline, 2016). We used the following indices to evaluate model fit: comparative fit index (CFI), root-mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Model fit was considered acceptable if CFI was 0.95 or more, RMSEA and SRMR were 0.05 or less, and all residual correlations were below $r = |0.1|$ (Hu & Bentler, 1998; Kline, 2016). Bootstrapping (10,000 draws) was used to estimate indirect effects based on 95% confidence intervals (CI). According to Fritz and MacKinnon (2007), mediation is present if the 95% CI for an indirect effect does not contain zero.

Ethics

The study procedures were carried out in accordance with the Declaration of Helsinki. All participants were informed about the study and provided consent before participating. Ethics approval for Sample 1 was provided by the Research Ethics Boards at Toronto Metropolitan University, York University, Mount Saint Vincent University, University of Manitoba, and University of Calgary. Ethics approval for Sample 2 was provided by the Research Ethics Boards at Toronto Metropolitan University, York University, Mount Saint Vincent University, University of Calgary, Carleton University, and the University of British Columbia.

RESULTS

Descriptives

See Table 1 for demographic characteristics for Sample 1 and 2. We found that 78.6% of Sample 1 and 73.6% of Sample 2 reported experiencing at least one ACE before the age of 18.

Table 1. Demographic characteristics for samples 1 and 2

Variable	Sample 1 (N = 1,868) *M (SD)*	Sample 2 (N = 4,742) *M (SD)*
Age	22.96 (8.22)	23.11 (8.17)
	n (%)	*n* (%)
Gender		
Women	1,347 (72.1)	3,394 (71.6)
Men	461 (24.7)	1,180 (24.9)
Non-Binary	26 (1.4)	123 (2.6)
Transgender Man	7 (0.4)	23 (0.5)
Transgender Woman	2 (0.1)	6 (0.1)
Other	25 (1.4)	16 (0.3)
Race/Ethnicity		
Caucasian/White	791 (42.3)	1,741 (36.7)
East Asian	400 (21.4)	1,432 (30.2)
South Asian	220 (11.8)	651 (13.7)
Middle Eastern	95 (5.1)	236 (5.0)
Black	120 (6.4)	203 (4.3)
Latino/Hispanic	47 (2.5)	145 (3.1)
Indigenous	30 (1.6)	71 (1.5)
Other/Mixed	165 (8.9)	263 (5.5)
Employment		
Not working	693 (37.1)	2,218 (46.8)
Part-time	838 (44.9)	1,891 (39.9)
Full-time	337 (18.0)	633 (13.3)
Education		
Less than high school	8 (0.4)	13 (0.3)
High school diploma	756 (40.5)	1,473 (31.1)
Trade/professional diploma	20 (1.1)	54 (1.1)
Some college/university education	667 (35.7)	2,063 (43.5)
Bachelor's degree	327 (17.5)	928 (19.6)
Post graduate work	23 (1.2)	28 (0.6)
Post graduate degree	67 (3.6)	183 (3.9)

In Sample 1, 765 (41.0%) participants met the clinical cut-off (4 or higher) for compulsive buying using the SSBA-Shop (Hodgins et al., 2023). In Sample 2, 347 (7.3%) participants met the clinical cut-off for compulsive buying using the CBS (Faber & O'Guinn, 1992). The increased prevalence of clinical compulsive buying in Sample 1 is partially because participants who answered "no" to buying non-essential items in the past 30 days, were automatically not directed to complete the SSBA-Shop and were excluded from the sample. When accounting for these participants (n = 297), 35.3% met the clinical cut-off using the SSBA-Shop.

Bivariate correlations

See Table 2 for means, standard deviations, and correlations for study variables, stratified by sample. As hypothesized, number of ACEs was related to greater compulsive buying symptoms in both Sample 1 (using the SSBA-Shop; r = 0.21) and Sample 2 (using the CBS-R; r = 0.30). In both samples, Compulsive buying was also related to greater emotion dysregulation, depression, and anxiety symptoms.

Mediation

In both samples, we found excellent model fit when covariates (i.e., age and gender) were not included (Sample 1:

Table 2. Means, standard deviations, and correlations for study variables

Sample	Variable	*M*	*SD*	1	2	3	4	5	6
Sample 1	1. ACE	2.34	2.26	–					
	2. DERS-18	47.49	13.32	0.26***	–				
	3. DASS21-Depression	16.30	10.76	0.30***	0.68***	–			
	4. DASS21-Anxiety	12.48	9.11	0.27***	0.60***	0.64***	–		
	5. SSBA-Shop	3.77	3.68	0.21***	0.28***	0.26***	0.31***	–	
	6. Age	22.96	8.21	0.11***	−0.21***	−0.17***	−0.24***	−0.09***	
	7. Gender	–	–	−0.08**	−0.18***	−0.15***	−0.23***	−0.23***	0.19***
Sample 2	1. ACE	2.24	2.32	–					
	2. DERS-18	45.10	13.20	0.26***	–				
	3. DASS21-Depression	12.63	10.03	0.27***	0.59***	–			
	4. DASS21-Anxiety	9.90	8.24	0.24***	0.50***	0.65***	–		
	5. CBS-R	−1.60	1.76	0.30***	0.28***	0.26***	0.29***	–	
	6. Age	23.11	8.17	0.10***	−0.17***	−0.06***	−0.17***	0.08***	–
	7. Gender	–	–	−0.06***	−0.12***	−0.07***	−0.16***	−0.12***	0.14***

Note. ACE = Adverse Childhood Experiences Questionnaire, CBS-R = Compulsive Buying Scale (reverse scored), DERS-18 = Brief Version of the Difficulties in Emotion Regulation Scale, DASS21 = Depression Anxiety Stress Scales – Short Form, SSBA-Shop = Screener for Substance and Behavioural Addictions – Shopping Subscale. Gender was coded as (1) Woman and (2) Man and other genders were removed for this variable to allow clear interpretation. Positive correlations indicate associations with men whereas negative correlations indicate associations with women. $^{**}p < 0.01$. $^{***}p < 0.001$.

$\chi^2[10] = 2768.92$, $p < 0.001$, CFI = 1.00, RMSEA < 0.001, SRMR < 0.001, all residual *r*s < |0.1|; Sample 2: $\chi^2[10] = 6090.09$, $p < 0.001$, CFI = 1.00, RMSEA < 0.001, SRMR < 0.001, all residual *r*s < |0.1|). Model fit was also excellent with covariates included (Sample 1: $\chi^2[18] = 2981.31$, $p < 0.001$, CFI = 1.00, RMSEA < 0.001, SRMR < 0.001, all residual *r*s < |0.1|; Sample 2: $\chi^2[18] = 5988.89$, $p < 0.001$, CFI = 1.00, RMSEA < 0.001, SRMR < 0.001, all residual *r*s < |0.1|). In both samples, the significance nor magnitude of parameter estimates did not change substantially when adding covariates, so for brevity, we only report parameters for the models with covariates. In both samples, we found that ACEs predicted emotion dysregulation, depression, anxiety, and compulsive buying symptoms. As hypothesised, emotion dysregulation also predicted depression, anxiety, and compulsive buying symptoms. Contrary to hypotheses, only anxiety, and not depression, predicted compulsive buying symptoms. Approximately 15–17% of variance in compulsive buying symptoms were explained by the models, whereas 28–40% of anxiety symptoms, 37–48% of depressive symptoms and 11–14% of emotion dysregulation were explained by the models. See Figs 2 and 3 for illustrations of the models with standardised path estimates and variance explained for outcome and mediator variables.

Based on bootstrapped 95% CIs, we found support for the same three hypothesised indirect effects in both samples. Specifically, the following indirect paths from ACEs to compulsive buying symptoms had 95% CIs that did not include zero: emotion dysregulation alone, anxiety alone, and emotion dysregulation and anxiety. The indirect paths involving depression were not significant. See Table 3 for standardised estimates for direct and indirect effects, as well as 95% CIs, for both samples.

DISCUSSION

The aim of this study was to examine whether emotional dysregulation and depression and anxiety symptoms

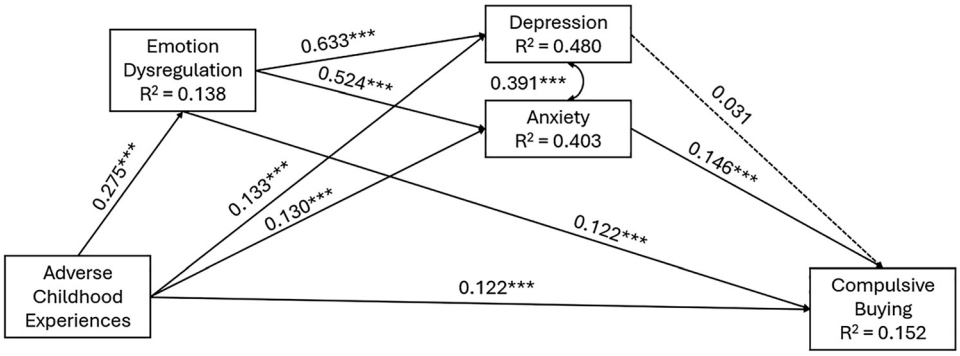

Fig. 2. Standardised Path Coefficients for Serial Multiple Mediation Model – Sample 1
Note. $^{***}p < 0.001$.

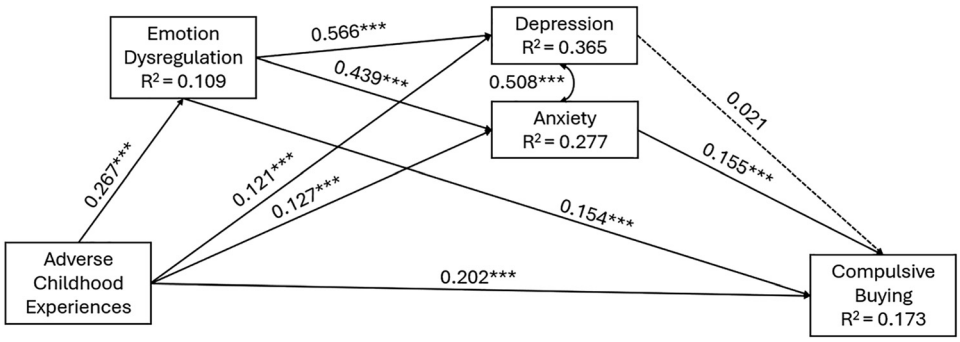

Fig. 3. Standardised Path Coefficients for Serial Multiple Mediation Model – Sample 2
Note. $^{***}p < 0.001$.

Table 3. Standardized direct and indirect effects of adverse childhood experiences on compulsive buying

Sample	Path	*B*	*SE*	*z*	*p*	95% CI
Sample 1	Direct	0.122	0.026	4.708	<0.001	0.071, 0.172
	DERS-18, DASS21-Depression	0.005	0.006	0.931	0.352	−0.006, 0.017
	DERS-18, DASS21-Anxiety	0.021	0.005	4.130	<0.001	0.011, 0.031
	DASS21-Depression	0.004	0.005	0.930	0.352	−0.005, 0.013
	DASS21-Anxiety	0.019	0.005	3.636	<0.001	0.009, 0.029
	DERS-18	0.034	0.009	3.668	<0.001	0.016, 0.052
Sample 2	Direct	0.202	0.016	12.322	<0.001	0.170, 0.235
	DERS-18, DASS21-Depression	0.003	0.003	0.991	0.322	−0.003, 0.009
	DERS-18, DASS21-Anxiety	0.018	0.003	6.973	<0.001	0.013, 0.023
	DASS21-Depression	0.003	0.003	0.980	0.327	−0.003, 0.008
	DASS21-Anxiety	0.020	0.003	5.896	<0.001	0.013, 0.026
	DERS-18	0.041	0.005	7.949	<0.001	0.031, 0.051

Note. DERS-18 = Brief Version of the Difficulties in Emotion Regulation Scale, DASS21 = Depression Anxiety Stress Scales – Short Form.

mediate the effect of adverse childhood experiences on compulsive buying-shopping problems. We found evidence of indirect effects and replicated our model in two large samples, with two different measures of compulsive buying. As hypothesised, exposure to more ACEs was related to greater compulsive buying in adulthood. Number of ACEs was also related to greater emotional dysregulation in adulthood, and also greater levels of depression and anxiety. In turn, emotional dysregulation and anxiety mediated the relationship between ACEs and compulsive buying in both samples. When accounting for other variables in the model, depression was not uniquely related to compulsive buying in either sample.

Our study findings add to the clinical picture of compulsive buying-shopping problems and how they develop. It may be that individuals with ACEs are more likely to engage in compulsive shopping later in life because they become unable to effectively regulate their emotions, or because they develop excessive anxiety, or both. Thus, our research supports these pathways posited by the I-PACE model (Brand et al., 2019). This is consistent with prior literature on ACEs and other behavioural addictions such as gambling and video gaming (e.g., Kim et al., 2023; Poole et al., 2017), and importantly suggests that compulsive buying-shopping problems are not fully explained by unique forms of psychopathology such as depression or anxiety. Given that previous research has also established ACEs and emotional dysregulation to be risk factors for a variety of other psychopathologies (e.g., Bradley et al., 2011), including substance and behavioural addictions, our findings support ACEs and emotional dysregulation as general, non-specific risk factors. This is also in line with the I-PACE model, because it categorises early childhood experiences and coping styles as general predisposing factors for all behavioural addictions (Brand et al., 2019).

It is interesting that depression was not a statistically significant mediator in our model. This may suggest that depressive symptoms do not lead to compulsive buying-shopping problems, perhaps because depressive symptoms are characterised by lack of activation and decreased excitement in activities that are usually exciting, which may lead to less motivation to engage in shopping. This opposes research which has found a consistent link between clinical depression and compulsive buying (e.g., Lawrence et al., 2014; Lejoyeux, Haberman, Solomon, & Adès, 1999; Mueller et al., 2011; Müller et al., 2014). Given that we did find depression to be related to compulsive buying on the bivariate level, it is more likely that it was not statistically significant on the multivariate level due to the shared variance with anxiety symptoms. Regardless,

our findings do suggest that anxiety may be a stronger predictor of compulsive buying compared to depression, which may be an important avenue for future researchers to investigate. Future research should examine whether shopping also reduces state anxiety, and not only improves mood in the short-term as other research has found (Faber & Christenson, 1996; Kellett & Totterdell, 2008; Müller et al., 2012). If such relationships between anxiety and compulsive buying-shopping are replicated in other studies, it could also be useful to examine the kinds of thoughts that precede and accompany shopping behaviours (e.g., uncertainties about needing products, or worries about other life stresses); this information may become useful when developing (or improving on existing) clinical interventions for compulsive buying-shopping.

Our study may have important clinical and practical implications. Although we found a large proportion of our samples (approx. 70–80%) reported at least one type of ACE, our study suggests that, although these adverse experiences cannot be changed, emotional regulation and anxiety problems may be modifiable targets for clinical interventions. For example, helping individuals find more adaptive ways of coping with negative emotions, or helping them to overcome worries and feelings of uncertainty may add to interventions for compulsive buying-shopping problems.

Although we replicated our study findings in two large samples, across two different measures of compulsive buying, our study comes with a handful of limitations to consider. First, our data was collected cross-sectionally, so we cannot infer causation. Although some temporal precedence has been established with the ACEs self-report measure because it asked about ACEs before the age of 18, and compulsive shopping symptoms were asked about the last year (for the SSBA-Shop only), depressive and anxiety symptoms were asked about the past week, and the measure for emotional dysregulation did not ask participants to think about a particular timeframe. Therefore, this limits the conclusions we can make. Future research could collect data longitudinally to establish the temporal associations between ACEs, emotional dysregulation, depressive and anxiety symptoms, and development of compulsive buying-shopping problems. Second, we did not interview participants to obtain clinical diagnoses, so we cannot be certain whether findings are relevant to clinical samples. Relatedly, Sample 1 evidenced a higher rate of clinical compulsive buying compared to Sample 2, which could either be attributed to differences in sample representativeness or differences in the measures used. Given that clinical cut-off for the SSBA-Shop was derived through distinguishing between university students who self-identified as having a problem with shopping (39.2%) from those who did not, our prevalence rate in Sample 1 is thus similar to that found in the validation study (Hodgins et al., 2023). Future research should aim to replicate our findings in clinical samples, though this will require the establishment of a formal set of diagnostic criteria and a validated diagnostic interview for compulsive buying-shopping disorder (Müller et al., 2021). Third, we only used the total score for the measures emotional dysregulation in our model, which limits us from making any conclusions about specific aspects of emotion regulation in relation to compulsive buying-shopping problems. Including these subscales in our model would likely have made it too complex for clear interpretation. Future research should find ways to examine whether specific aspects of emotion regulation are more strongly related to the development of compulsive buying-shopping problems. Similarly, we were not able to examine specific forms of ACEs and how they may relate to compulsive buying-shopping problems (i.e., physical neglect vs emotional neglect). Given that ACEs are an important risk factor for a multitude of psychopathologies, investigating which specific factors that relate to compulsive buying could help answer the question of why some individuals seem to have the same risk factors but then develop different disorders (Nolen-Hoeksema & Watkins, 2011). Another future direction may be to focus on individuals who have been exposed to ACEs but have not developed clinical levels of compulsive buying-shopping. Given that these individuals made up a large majority of our samples, it may be worth examining their psychological profiles to see what separates these individuals from those who develop compulsive buying-shopping problems. This may give further insights into how compulsive buying-shopping develops and would likely reveal targets for clinical interventions.

CONCLUSIONS

We found that the relationship between adverse childhood experiences and compulsive buying-shopping in adulthood was mediated through emotional dysregulation and anxiety symptoms. Our study findings support the I-PACE model and are consistent with the literature linking adverse childhood experiences to other behavioural addiction problems (e.g., gambling, video gaming). While our findings should be replicated in longitudinal studies and with measures to obtain clinical diagnoses, they highlight the strong links between compulsive buying-shopping problems with emotional dysregulation and anxiety symptoms, which could be targets in clinical interventions.

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