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Ph.D. THESIS

ADVERSE CHILDHOOD EXPERIENCES, CLUSTER C PERSONALITY DISORDERS AND EMOTION REGULATION

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- A software was used to check for the academic writing (see at http://www.plagiarismdetector.com/); the thesis has passed the critical test;
- A copy of the research dataset/database was delivered at the Department/Graduate School.
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Keywords: childhood adversity; childhood maltreatment; cluster C personality disorders; psychopathology; emotion regulation.

CHAPTER I. THEORETICAL BACKGROUND

Cluster C personality disorders (PDs) consist of avoidant (AVPD), dependent (DPD) and obsessive-compulsive (OCPD) personality disorders (American Psychiatric Association [APA], 2013). These disorders present as rigid, persistent and pervasive cognitive, emotional, interpersonal and impulse control patterns, characterized by fear and anxiety, that diverge from socio-cultural conventions, and cause significant impairment in day to day life (APA, 2013). Cluster C stands out as being the most prevalent among PDs, with a rate of approximately 5% of the global population (APA, 2013; Winsper et al., 2020). The costs associated with these disorders range from interpersonal dysfunction (social avoidance, interpersonal dependency, or intimacy avoidance) to occupational impairments (related to performance and productivity), to increased comorbidity with other physical or mental health conditions (mood and anxiety disorders, substance abuse, eating disorders, obesity, sleep disturbances, or recurrent headaches) (Bornstein, 2012; Diedrich & Voderholzer, 2015; Dixon-Gordon et al., 2018; Skodol et al., 2005; Soeteman et al., 2008; Weinbrecht et al., 2016).

Some theories (such as the Cognitive Behavior Theory or Schema Theory; Beck et al., 2015; Young et al., 2003) suggest that adverse childhood events (ACEs) play an important part in the development and course of this cluster, by maladaptively shaping the way individuals perceive the self, the world and others (i.e., cognitive schemas). More specifically, through repeated negative childhood experiences, these schemas contribute to increased emotional distress and maladaptive coping behaviors, which, in turn, might lead to increased vulnerability to AVPD, DPD, and OCPD symptomatology, in the absence of occurrences that contradict the maladaptive schemas (e.g., Beck et al., 2015; Birgenheir & Pepper, 2011; Young et al., 2006).

Childhood adversities are defined as exposure to a variety of stressful and adverse events that takes place during childhood or adolescence (up to the age of 18) (Felitti et al., 1998; Reuben et al., 2016). Studies indicate that approximately 40-50% of the general population report exposure to at least one type of adversity during childhood (Fanslow et al., 2021; Merrick et al., 2018). ACEs can be a risk factor for a wide array of public health issues, including mental health disorders (Infurna et al., 2016; Liu, 2017; McLaughlin et al., 2014; Smith & Pollak, 2021; Tottenham et al., 2010). In the case of cluster C, however, the data is heterogeneous (e.g., Dejong et al., 1995; Hageman et al., 2015; Hock et al., 2018; Zhao et al., 2021), pointing to the necessity of meta-analytic studies to clarify the magnitude and direction of the association between ACEs and cluster C.

Even though there are important theories that clarify the conceptualization and intervention strategies for cluster C, empirical research is still lacking in what concerns the risk factors and the cognitive or transdiagnostic mechanisms associated with these disorders. A plethora of evidence points to emotion regulation difficulties as a possible transdiagnostic mechanism in the relationship between childhood adversity and psychopathology (e.g., Kim & Cicchetti, 2010; McLafferty et al., 2020; Miu et al., 2022). Emotion regulation implies attempting to influence emotions, their experience and their expression (Gross, 1998; 2015). One of the most widely used models in the literature in trying to explain emotion regulation refers to the process model of emotion regulation (Gross, 1998; 2015; McRae & Gross, 2020; Sheppes & Gross, 2012). This model highlights the steps involved in the emotion generation

and valuation process, and the potential emotion regulation stages in attending to emotional responses.

Research in the field of emotion regulation pertaining to cluster C is still in its early stages. Investigating emotion regulation as an underlying mechanism in the case of the association between ACEs and cluster C can lead to a better understanding of these mental health issues, and to the tailoring of more effective prevention, assessment and psychological interventions efforts.

1.1. Relevance And Impact Of The Research

This thesis aims to investigate the associations between childhood adversities and cluster C PDs, focusing on emotion regulation as an important variable at play in this relationship. Investigating the associations between these variables could lead to important theoretical, methodological and clinical implications.

Primarily, this thesis will aim towards exploring the magnitude of the associations between ACEs and cluster C. Depending on whether these associations are significant, the results could underline the role of childhood adversities as a possible transdiagnostic risk factor for cluster C. Furthermore, if results are significant, this could provide empirical support to existing theories that conceptualize these PDs. Results obtained in this regard could also guide future research by providing evidence for the necessity of investigating possible mechanisms that underlie these associations. If the obtained results are not significant, this could discount previous theories, by undermining the role of childhood adversity in the case of cluster C.

Secondly, a step in clarifying the role of emotion regulation in the association between ACEs and cluster C would be investigating the factors and processes involved in regulating emotions (such as emotion regulation goals, strategies, choosing, implementing and monitoring emotion regulation, and neural markers of emotion regulation). Moreover, this thesis will also investigate whether these processes fare as a factor in the relationship between ACEs and cluster C. If our hypotheses are supported by the data, results could provide further evidence for the importance of emotion regulation processes in the case of psychopathology. Moreover, this could underline the role of emotion regulation as a possible mechanism involved in the association between childhood adversities and cluster C.

Consequently, the impact of an emotion regulation strategy (i.e., cognitive reappraisal) on Cluster C symptomatology will be explored. The impact of ACEs and comorbid PDs on cluster C outcomes following a cognitive reappraisal training will also be investigated. Examining the impact of specific emotion regulation strategies in the case of cluster C could provide more evidence into the efficacy of reappraisal as a means of promoting health behaviors, and could provide more insight into the underlying mechanisms involved in psychological interventions based on cognitive theories for cluster C. Although existing psychological interventions present increased effectiveness in reducing cluster C symptomatology, the mechanisms underlying these interventions are not entirely clear. Investigating the factors that are associated with and impact cluster C symptomatology outcomes could lead to tailoring more specific and cost-effective intervention strategies.

CHAPTER II. OBJECTIVES AND GENERAL METHODOLOGY

This research proposes to tackle both theoretical and methodological objectives to investigate cluster C PDs. Based on the literature presented above, where studies hint at a possible relationship between ACEs, emotion regulation and cluster C variables, we aim to address three objectives that correspond to one research question. The question that arises based on available data is related to the association between these variables: are childhood adversities, emotion regulation processes and cluster C PDs significantly associated, and if so, how do these variables contribute to explaining cluster C symptomatology?

To answer this question, our first objective was to investigate the association between childhood adversity and cluster C PDs. The necessity for such an analysis comes from mixed results obtained in previous studies concerning the significance and magnitude of the specified associations. Given that available theories on cluster C (i.e., cognitive theories) highlight the importance of childhood adversity in the onset and course of cluster C, the evidence provided by studies so far does not allow for clear or causal inferences about this relationship. Thus, the relevance of ACEs in the clinical picture of cluster C is unclear. In order to achieve this objective, we conducted a quantitative meta-analysis investigating the magnitude of the association between ACEs, overall cluster C, and specific PDs from this cluster, along with possible methodological factors that impact this relationship (Study 1; see Figure 1). This association and the impact of ACEs on cluster C PDs will be explored further throughout this entire thesis.

The second objective of this thesis relates to investigating the role of emotion regulation in the association between childhood adversity and cluster C. So far, studies in the case of cluster C have concentrated on emotion regulation strategies and their consequences. We propose to investigate this objective by firstly researching the associations between ACEs, habitual emotion regulation goals and strategies, and cluster C, along with the role of childhood maltreatment in the association between emotion regulation and cluster C (in Study 2a; see Figure 1). Secondly, in Study 2b (see Figure 1), we explore whether emotion regulation goals and strategies are predictors for cluster C, and whether these aspects of emotion regulation mediate the relationship between emotional distress and cluster C. In this study, the role of childhood maltreatment in the association between emotional distress and cluster C symptomatology will also be explored. Study 2a will include a cross-sectional, correlational design, while Study 2b will include a daily diary method. Our second objective will also be investigated in Study 3 (see Figure 1), employing an experimental and prospective design. In Study 3, we will initially investigate several stages of emotion regulation in the case of individuals with a history of childhood maltreatment, using a novel experimental task of emotion regulation and high-resonance EEG/ERP measures. Then, this study will investigate the role of behavioral choices and neural markers (i.e., late positive potentials; see Luck, 2012 for a review) of emotion regulation in the association between childhood maltreatment and cluster C personality traits.

Finally, the third objective of the thesis involves examining the efficacy of a reappraisal training on cluster C symptomatology. This objective will be explored in Study 4 (see Figure 1), where participants will undergo training on how to apply reappraisal, with and without the explicit activation of emotion regulation goals that motivate toward reducing emotional

distress. In Study 4, we will also investigate whether childhood maltreatment impacts the effect of the reappraisal training on cluster C outcomes. This thesis contributes to existing literature by providing evidence into possible factors and mechanisms that could influence the onset, course and evolution of cluster C symptomatology. The structure of the studies conducted for this thesis is presented in Figure 1.

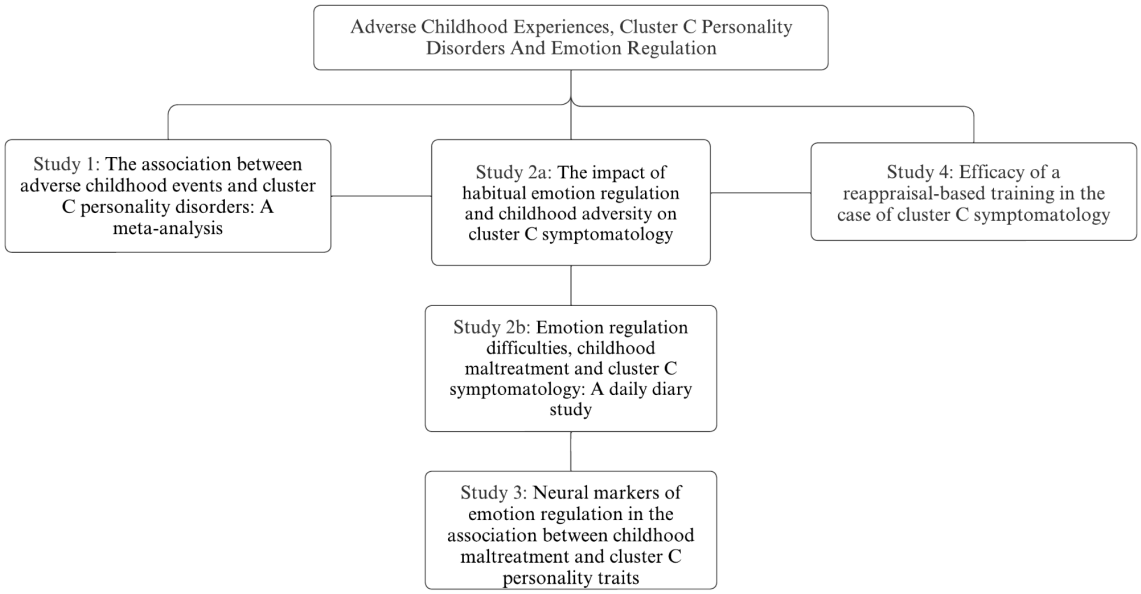

Figure 1. Structure of this thesis.

CHAPTER III. ORIGINAL RESEARCH

3.1. Study 1. The Association Between Adverse Childhood Events And Cluster C Personality Disorders: A Meta-Analysis[1]

3.1.1. Introduction

The present meta-analysis aims to investigate the associations between ACEs and overall cluster C PDs, as well as specific PDs from this cluster. Several studies have investigated the association between ACEs and cluster C PDs, but results are heterogeneous (e.g., Dejong et al., 1995; Haller & Miles, 2004; Morgan et al., 2010; Scheffers et al., 2019; Tan et al., 2016; Zhao et al., 2021). These divergent results raise two outstanding questions: Is there a consistent relation between childhood adversity and cluster C PDs, and what might explain the heterogeneity in effect direction and effect sizes between studies? The authors of a

[1] This study was accepted for publication:
Crișan, Ș., Stoia, M., Predescu, E., Miu, A. C., & Szentágotai-Tătar, A. (2023). The association between adverse childhood events and cluster C personality disorders: A meta-analysis. *Clinical Psychology & Psychotherapy*.

Authors Stefania Crisan, Andrei Miu, and Aurora Szentagotai-Tatar designed the study and wrote the protocol. Authors Stefania Crisan and Maria Stoia conducted literature searches and provided summaries of previous research studies. The statistical analysis was conducted by author Stefania Crisan. Author Stefania Crisan wrote the first draft of the manuscript and all authors contributed to and have approved the final manuscript.

previous systematic review suggested there was limited support for the relation between childhood adversity and cluster C disorders (Birgenheir & Pepper, 2011), but this association has not been quantitatively examined in a meta-analysis until now.

Across adulthood, as individuals age, studies show that, although symptoms associated with cluster C seem to remit, the impairment caused by these disorders remains stable (Chanen & Thompson, 2019; Paris, 2003; Skodol et al., 2005; Skodol et al., 2007). This study will focus on data collected in adults over 18 and examine the potential moderator role of age. Some studies have found that overall cluster C PDs are more prevalent in women (e.g., Gawda & Czubak, 2017; Schulte Holthausen & Habel, 2018; Trull et al., 2010), while others have argued that these disorders are equally prevalent across sexes (e.g., Lenzenweger et al., 2007; Oltmanns & Powers, 2012). The data are heterogeneous in this sense as well (Coid et al., 2006; Grant et al., 2004; Paris, 2004). Gender differences remain an important issue in the literature on this topic and could explain some of the heterogeneity between studies on cluster C PDs.

Another possible source of heterogeneity could refer to the instruments employed in studies to measure ACEs and cluster C. ACEs are assessed using a diversity of questionnaires, clinical interviews, and official records (obtained from schools, hospitals, public courts, or child protective services) (Hardt & Rutter, 2004; Reuben et al., 2016), which could potentially lead to variability in the data, due to measurement inconsistencies (Finkelhor, 2018; Mersky et al., 2017; Reuben et al., 2016). On the other hand, both questionnaires and clinical interviews are usually recommended for the assessment of PDs (Widiger & Samuel, 2005). However, some studies indicate that agreement between these two types of instruments is rather modest (Clark et al., 1997; Klonsky et al., 2002; Perry, 1992). In light of the differences identified in previous studies (Clark, 2007; Finkelhor, 2018; Lenzenweger, 1999; Samuel et al., 2013), we examined the potential moderator role of these types of instruments.

Studies suggest that cultural norms and expectations can influence the sense of identity and the adjustment of the individual (Gawda, 2018; Paris, 2008). Therefore, while it is difficult to put forward a hypothesis, we have examined potential differences between continents in the relation between ACEs and cluster C. Considering that cluster C PDs are frequently comorbid with other mental health disorders (Skodol et al., 2007; Zheng et al., 2019), and that the presence of clinical comorbidities is associated with increased symptom severity (e.g., Farabaugh et al., 2005; Friborg et al., 2013) and greater impairment (e.g., Lenzenweger et al., 2007; Skodol et al., 2002), we also investigated the potential contribution of clinical comorbidities to the heterogeneity of the associations between ACEs and cluster C PDs reported in previous research.

3.1.2. Methods

Systematic searches were conducted in Pubmed, Web of Science, Scopus, and PsychInfo. The search string included terms related both to ACEs (e.g., childhood abuse, neglect, traumatic events) and cluster C PDs (e.g., AVPD, OCPD, DPD diagnosis and symptoms). The meta-analysis was pre-registered in Prospero (ID: CRD42021226401).

Study selection

As the PRISMA flowchart (Figure 1) suggests, we have identified 4252 studies during our systematic search. Following removal of duplicates (1292) and of studies that were either not eligible (2660) or could not be retrieved (3), 297 studies published from 1964 to 2022 were retained for full-text analysis. Studies were included in this meta-analysis if: (1) at least one association was reported between childhood adversities (assessed through official records, interviews, or questionnaires) and cluster C PDs (assessed through clinical interviews or questionnaires); (2) sufficient data were reported for the computation of an effect size; and (3) relevant data were provided from baseline assessments, in experimental and intervention studies. Studies that did not meet the above criteria or had the following exclusion criteria were eliminated: (1) they only examined one of the two constructs (i.e., ACEs or cluster C PDs); and (2) they assessed positive parental behaviors (i.e., parental emotional warmth, indulgent parenting, parental favoring, parental care). Forty-eight eligible articles and 300 effect sizes were included in the analysis. The total number of effect sizes presented above resulted from studies that reported data on overall ACEs and on multiple ACEs subtypes. In line with the assumption of independence of effect sizes, we averaged across multiple effect sizes included in each study.

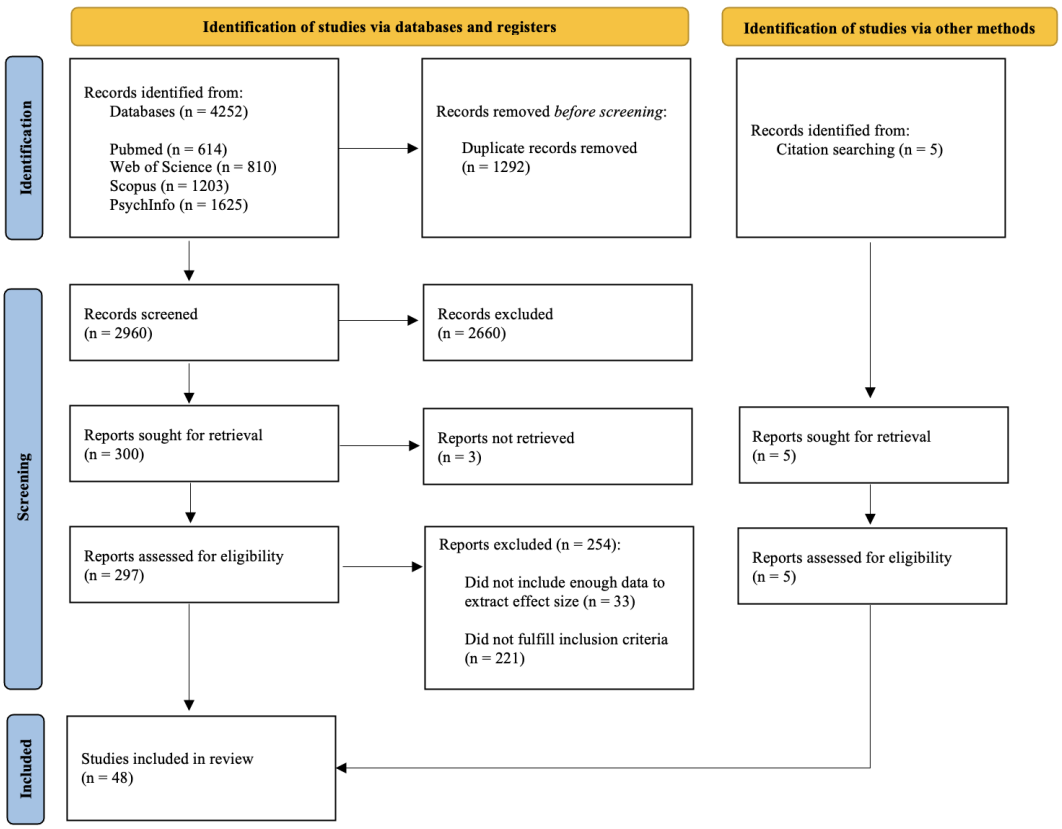

Figure 1. PRISMA flow diagram describing the search results and the selection process.

Procedure

Data were independently coded by the first and second author of the meta-analysis. Considering that we were interested in the association between ACEs and cluster C PDs (both overall and specific disorders in this cluster), we chose the *r* correlation coefficient as the effect

size coefficient. Data pooling was performed using random effects models. Cochran's Q and I^2 provided an estimate of the heterogeneity of effect sizes. Effect sizes were interpreted as recommended by Gignac & Szodorai (2016).

Subgroup analysis was employed for categorical moderators, using a mixed effects model. Following common practice, at least three independent effect sizes per each moderator category were deemed necessary for subgroup analyses. The following potential moderators were investigated: (1) the type of measure used to assess ACEs (i.e., official records vs. clinical interviews vs. questionnaires vs. a combination of these), (2) the type of instrument used to assess cluster C PDs (i.e., clinical interviews vs. questionnaires vs. a combination of these), (3) continent (as a potential proxy of cultural differences), and (4) clinical comorbidities (i.e., reported vs. not reported). Meta-regression was used to examine the relation between putative continuous moderators (i.e., mean age and percentage of women in the sample) and the effect size of the association between ACEs and cluster C PDs.

The quality of studies and risk of bias were evaluated using a modified form of the Newcastle-Ottawa Scale for cross-sectional or cohort studies (Wells et al., 2014). Publication bias was analyzed by first visually inspecting the funnel plot, then using the trim-and-fill method in a random effects model, and conducting Egger's test (Egger et al., 1997; Duval & Tweedie, 2000).

3.1.3. Results

Global effects

The relationship between ACEs and cluster C disorders was significant, with a medium effect size, r = .21, 95% CI [0.136; 0.291], k = 16. Heterogeneity analysis indicated large variability, $Q(15) = 381.6$, $p < .001$, $I^2 = 96.07\%$. Results for the association between ACEs and AVPD indicated a small effect size, r = .16, 95% CI [0.118; 0.200], k = 40. Heterogeneity analysis reflected large variability across studies, $Q(39) = 427.1$, $p < .001$, $I^2 = 90.87\%$. The results for the association between ACEs and DPD indicated a small effect size, r = .12, 95% CI [0.075; 0.171], k = 28. Heterogeneity analysis indicated large variability across studies, $Q(27) = 193.4$, $p < .001$, $I^2 = 86.04\%$. The association between ACEs and OCPD was significant and had a small effect size, r = .12, 95% CI [0.076; 0.180], k = 30. Heterogeneity analysis indicated large variability, $Q(29) = 379.2$, $p < .001$, $I^2 = 92.35\%$.

Subgroup analyses

Moderation by type of instrument used to assess cluster C PDs was significant, and there was a difference between the three subgroups in the case of overall cluster C and AVPD (Table 1), with higher effect sizes having been identified in the case of clinical interviews. Moderation by type of instrument used to assess ACEs was significant for DPD and OCPD (see Table 1), with higher effect sizes identified in the case of questionnaires. No other significant moderators were identified.

Table 1. Results of moderator analyses on cluster C PDs, avoidant personality disorder (AVPD), dependent personality disorder (DPD), and obsessive-compulsive personality disorder (OCPD).

Outcome	Moderator	Moderator subcategory	k	r	95% CI	95% CI	*p*	*Q-statistic (df)*	Q-statistics p-value
Cluster C	Type of instrument ACE							2.719 (1)	.437
		Interview	3	.10*	0.006	0.191	.036		
		Questionnaire	10	.26*	0.089	0.420	.003		
	Type of instrument cluster C							7.182 (2)	.028
		Interview	8	.26**	0.128	0.397	<.001		
		Questionnaire	3	.20**	0.153	0.253	<.001		
		Interview & questionnaire	5	.13**	0.098	0.170	<.001		
	Continent							8.723 (1)	.068
		Europe	4	.47	-0.161	0.834	.136		
		North America	8	.11**	0.069	0.150	<.001		
	Presence of clinical comorbidities							1.797 (1)	.180
		Reported	13	.23**	0.135	0.325	<.001		
		Not reported	3	.16**	0.121	0.200	<.001		
AVPD	Type of instrument ACE							10.005 (1)	.124
		Interview	9	.08**	0.038	0.124	<.001		
		Questionnaire	24	.19**	0.120	0.275	<.001		
	Type of instrument cluster C							6.824 (2)	.033
		Interview	17	.21**	0.141	0.292	<.001		
		Questionnaire	17	.12**	0.084	0.169	<.001		
		Interview & questionnaire	6	.10**	0.071	0.140	<.001		
	Continent							5.467 (3)	.141
		Asia	5	.08	-0.005	0.169	.065		
		Australia and New Zealand	3	.18**	0.105	0.258	<.001		

		Europe	12	.25*	0.066	0.424	.008	
		North America	20	.11**	0.076	0.146	<.001	
	Presence of clinical comorbidities						0.119 (1)	.730
		Reported	24	.15**	0.095	0.206	<.001	
		Not reported	16	.16**	0.124	0.201	<.001	
DPD	Type of instrument ACE						12.472 (1)	.014
		Interview	9	.09*	0.029	0.165	.006	
		Questionnaire	14	.14**	0.070	0.224	<.001	
	Type of instrument cluster C						0.125 (2)	.939
		Interview	12	.13*	0.026	0.248	.016	
		Questionnaire	12	.12**	0.080	0.164	<.001	
		Interview & questionnaire	4	.11**	0.077	0.158	<.001	
	Continent						0.910 (2)	.634
		Asia	5	.11**	0.047	0.178	.001	
		Europe	8	.18*	0.003	0.347	.046	
		North America	15	.09**	0.043	0.146	<.001	
	Presence of clinical comorbidities						0.002 (1)	.963
		Reported	15	.12**	0.049	0.201	.001	
		Not reported	13	.12**	0.086	0.170	<.001	
OCPD	Type of instrument ACE						9.669 (1)	.046
		Interview	6	.06**	0.025	0.098	.001	
		Questionnaire	18	.18**	0.078	0.289	.001	
	Type of instrument cluster C						3.008 (2)	.222
		Interview	15	.16**	0.068	0.254	.001	
		Questionnaire	11	.09**	0.042	0.146	<.001	

	Interview & questionnaire	4	.07**	0.031	0.113	.001		
Continent							5.962 (2)	.113
	Asia	7	.04*	0.012	0.082	.008		
	Europe	9	.19	-0.139	0.488	.253		
	North America	13	.06**	0.037	0.085	<.001		
Presence of clinical comorbidities							0.834 (1)	.361
	Reported	18	.13**	0.056	0.210	.001		
	Not reported	12	.09**	0.059	0.129	<.001		

*$p \leq .05$; **$p \leq .001$.

Meta-regression analyses

Mean age (see Figure 2) presented associations with the effect size in the case of cluster C (B = -.008, 95% CI [-0.016; -0.0004], *Q*model = 4.23, *p* = .039), AVPD (B = -.006, 95% CI [-0.011; -0.001], *Q*model = 7.21, *p* = .007), DPD, (B = -.006, 95% CI [-0.011; -0.0007], *Q*model = 4.95, *p* = .026), and OCPD (B = -.006, 95% CI [-0.012; -0.0005], *Q*model = 4.52, *p* = .033). The percentage of females did not moderate any association.

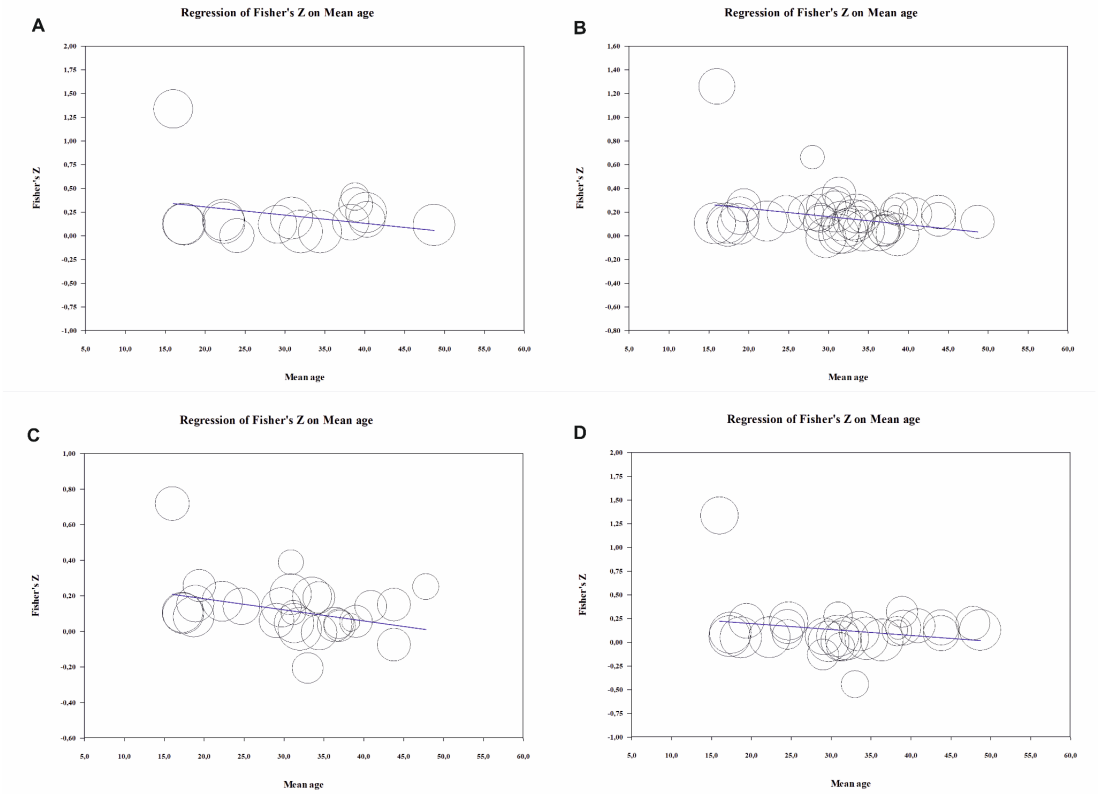

Figure 2. The association between sample mean age and the effect size of the association between adverse childhood events and cluster C (A), avoidant personality disorder (B), dependent personality disorder (C), and obsessive-compulsive personality disorder (D).

Publication bias

The funnel plots suggested asymmetry in the case of all investigated relationships (see Figure 3). The trim-and-fill analysis suggested that studies are missing to the right of the mean for all investigated relationships (6 for cluster C, 15 for AVPD, 7 for DPD, and 13 for OCPD). Egger's test confirmed the presence of publication bias for cluster C (intercept B = 3.38, 95% CI [0.573; 6.203], *p* = .021), AVPD (intercept B = 2.24, 95% CI [1.131; 3.351], *p* < .001), DPD (intercept B = 1.81, 95% CI [0.809; 2.829], *p* = .001), but not for OCPD (intercept B = 1.41, 95% CI [-0.146; 2.985], *p* = .073).

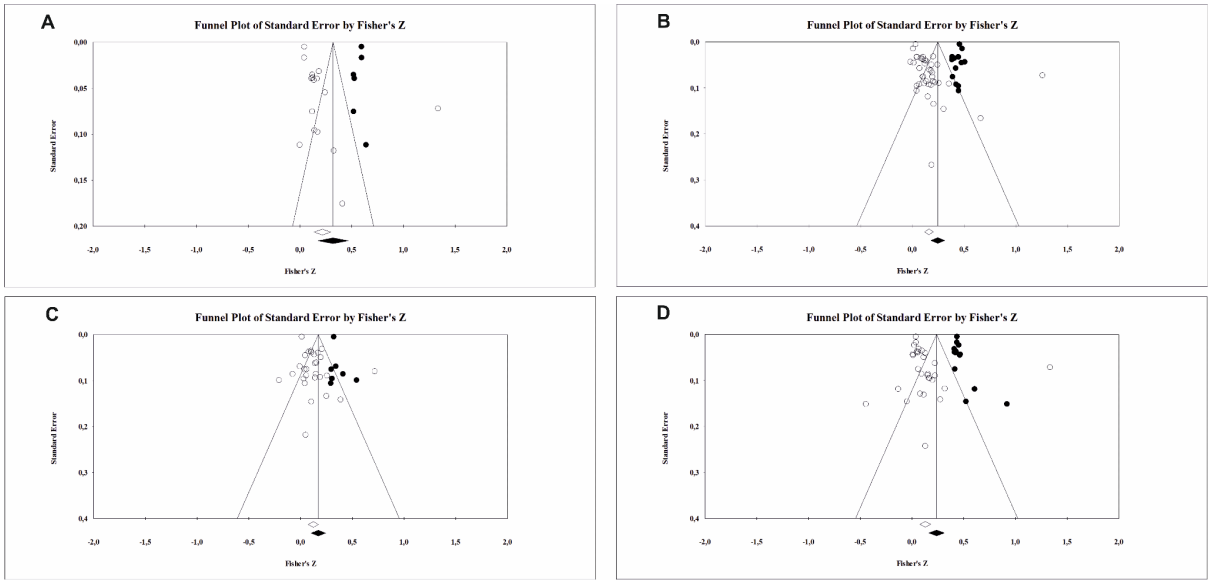

Figure 3. Funnel plots showing the distribution of effect sizes and number of imputed studies in the trim-and-fill analysis: cluster C (A), avoidant personality disorder (B), dependent personality disorder (C), and obsessive-compulsive personality disorder (D).

Study quality

Risk of bias for cross-sectional studies (40 out of 48) was detected in the case of sample representativeness (i.e., only 13 out of 40 studies employed representative samples), and justification of sample size (i.e., no study provided an a priori sample size estimation). The ascertainment of exposure relied solely on personal recall of ACEs exposure (i.e., 45 out of 48 studies). Potential sources of bias for longitudinal studies included demonstration that the outcome of interest was not present at the start of the study (i.e., four out of eight studies did not fulfil criteria), while for three out of eight studies, follow-up was not long enough for outcome to occur (i.e., studies assessed both ACEs and cluster C PDs at the beginning of the study).

3.1.4. Discussion

The present results are in line with theories from cognitive-behavior therapy and schema therapy, which argue that ACEs contribute to maladaptive patterns of thinking and to the onset of PDs (Beck et al., 2015; Young et al., 2006). However, these theories suggest a causal pathway from ACEs to PDs, and this pathway also involves cognitive mechanisms (e.g., early maladaptive schemas, dysfunctional beliefs). Our present results also indicate that the association with ACEs extends to all cluster C PDs, which contributes to the current view that ACEs are a transdiagnostic risk factor for most forms of psychopathology (e.g., Hogg et al., 2022; McLaughlin et al., 2020; Miu et al., 2022).

We have provided evidence that several characteristics of previous studies influenced the effect size of the associations between ACEs and cluster C PDs. One such moderator, specifically in the case of overall cluster C and AVPD, was the type of instrument used to assess cluster C. These results point to the modest level of agreement between clinical interviews and questionnaires (e.g., Groth-Marnat, 2009; Karn & Rosli, 2019; Widiger & Samuel, 2005). In the present analyses, only a small minority of studies used a combination of

interview and questionnaire, and these instruments were used in parallel analyses. Therefore, the small effect size of the association between ACEs and cluster C PDs found in this subgroup may be explained by the limited data and averaging over effects.

Another moderator was the type of instrument used to assess ACEs, with higher effect sizes for questionnaires compared to interviews. There is no general consensus on which type of instrument is superior. One way to interpret the differences found in the present meta-analysis is that questionnaire studies may have underestimated the association between ACEs and cluster C PDs (and consequently, the difference between questionnaire and interview studies could be even larger, in favor of the former). Another possibility is that these results could be due to the relatively small number of studies using interviews and official records.

Even though the continent was not a significant moderator of the effect sizes, some differences between subgroups are worth noting. However, these results should be interpreted with caution considering the small number of studies in at least some of the subgroups in each comparison. Low power may also explain results that are more difficult to interpret through a lens contrasting Western vs. Asian countries. Another explanation for these unexpected results may be related to the limitations of using the continent where the study was conducted as a proxy for cultural differences. Therefore, this issue remains open. The effect size was not significantly different between studies that did or did not report clinical comorbidities. However, these clinical comorbidities were not controlled for in all the studies, which could explain our results.

Meta-regressions also indicated that the associations between ACEs and cluster C PDs decreased with sample mean age. This is in line with previous observations that the symptoms of the PDs in this cluster seem to decrease throughout adulthood (Skodol et al., 2007; Wright et al., 2011; but see Bangash, 2020; Cruitt & Oltmanns, 2018; Wu & Francois, 2021). In contrast, the percentage of females in the sample did not influence any of the associations investigated in this study. However, a direct comparison between the effect sizes in samples comprising only women and only men was not possible, and the sample sex distribution may be a poor proxy of potential sex differences. Therefore, the issue of sex as a moderator of the association between ACEs and cluster C PDs also remains open, in our view. In which study quality is concerned, it would be important for future studies to include representative samples, which could allow for the generalization of results (Robinson et al., 2005).

Although this study has important clinical and theoretical implications, it presents some limitations. Data on maladaptive personality traits associated with cluster C were not included. This could be a limitation in light of data supporting the alternative model of PDs in the DSM-5, which re-conceptualizes some disorders (such as DPD) as maladaptive traits rather than individual disorders (APA, 2013; Skodol et al., 2011). Studies that reported β or R^2 values could not be included in the present analysis, which may have influenced results. Publication bias was detected for the relationships between ACEs and cluster C, AVPD, and DPD, which suggests the presence of the file drawer effect.

Study 2. Emotion Regulation Difficulties In The Relationship Between Childhood Adversity And Cluster C Personality Disorders

A transdiagnostic factor that has previously been investigated as a possible mechanism at play in the link between childhood adversity and psychopathology refers to difficulties in regulating emotions (e.g., Dvir et al., 2014; Miu et al., 2022). It is assumed in the literature that exposure to childhood adversity can influence the development of behavioral and emotional regulatory systems, thus contributing to internalizing or externalizing symptoms, and, in the long term, to vulnerability to psychopathology (e.g., Dvir et al., 2014; Gross & Jazaieri, 2014; Hogg et al., 2022; Werner & Gross, 2010). Gross (2015) theorized that emotion regulation implies several steps: the identification stage (determining whether regulation is necessary); the selection stage (activation of emotion regulation goals and selection of regulation strategy); the implementation stage (implementing the selected strategies); and monitoring of regulation strategies (maintaining, changing or stopping emotion regulation, depending on the results of regulation efforts). This model is not yet entirely validated in the case of cluster C. Studies so far have indicated that cluster C is associated with emotion regulation strategies that have been linked with negative outcomes in the case of psychopathology (see, for example, Aldao et al., 2010; Prefit et al., 2019), research thus focusing on the implementation stage. Furthermore, studies investigating this construct in the case of cluster C have found evidence of emotion dysregulation (e.g., Garofalo et al., 2018; Snir et al., 2017; Steenkamp et al., 2015). How emotion regulation difficulties manifest in the case of these mental health issues, how they impact the course, symptomatology and impairment of cluster C, and how this construct fares as a factor in the association between childhood adversities and these personality problems is still unknown. The purpose of this research is to investigate the links between childhood adversities, emotion regulation and cluster C, with the help of two studies. This research was pre-registered in OSF (https://osf.io/e3b6r).

3.2. Study 2a. The Impact Of Habitual Emotion Regulation And Childhood Adversity On Cluster C Symptomatology

3.2.1. Introduction

A venue that has been investigated in the case of other PDs (Lopez-Perez & McCagh, 2020; Millgram et al., 2020), but received little attention in the case of cluster C refers to emotion regulation goals (Mauss & Tamir, 2014). While emotion regulation strategies refer to the way in which people regulate emotions, emotion regulation goals refer to the reasons why these strategies are employed (Gross, 2015; Mauss & Tamir, 2014). More specifically, emotion regulation goals are defined as representations of a desired emotional state, that motivate the direction of regulatory efforts (Mauss & Tamir, 2014; Millgram et al., 2015).

In this study, we will investigate the associations between ACEs, habitual emotion regulation goals and strategies, cluster C and its associated disturbances in personality functioning. A review conducted by Millgram and collaborators (2020) suggests what emotion regulation goals drive regulatory efforts in the case of psychopathology, and proposes how these regulation goals might manifest in the case of cluster B PDs. Studies indicate that these regulation goals are associated with and predict the use of regulation strategies (Eldesouky & English, 2019b), and that emotion regulation goals and strategies vary as a function of personality (Aldao, 2013; Eldesouky & English, 2019a). It is, however, unclear how emotion

regulation goals and strategies, measured at one point in time, are associated when cluster C symptomatology is present. We expected, based on the available literature, to identify significant associations between emotion regulation goals and emotion regulation strategies.

When it comes to the association between regulation strategies and cluster C, studies show that these disorders have been previously associated with suppression (Borges & Naugle, 2017) and that individuals with AVPD symptoms present anticipatory anxiety when it comes to implementing reappraisal (Denny et al., 2015). Considering that, in the case of other mental health disorders, the use of reappraisal has been negatively associated with psychopathology, while suppression has been positively associated with clinical disorders (Aldao et al., 2010; Miu et al., 2022; Prefit et al., 2019), we expected that AVPD, DPD and OCPD symptomatology be significantly associated with suppression and with reappraisal.

Referring to childhood adversity, studies indicate significant association with cluster C (e.g., Battle et al., 2004; Birgenheir & Pepper, 2011; Johnson et al., 2006), and report that childhood adversity can contribute to impairments in functionality in the case of this cluster (Aleknaviciute et al., 2016; Massaal-van der Ree et al., 2022). The literature is, however, scarce on the association of cluster C with a wider array of ACEs (such as poverty or social support; Finkelhor et al., 2015). We propose to investigate whether extended forms of childhood adversity (such as maltreatment severity and frequency, unpredictability, perceived social support and socio-economic status) are associated with these personality problems. In what concerns the link between childhood adversity and habitual emotion regulation, the literature suggests that hedonic goals are significantly associated with childhood maltreatment, while instrumental goals are not (Ion et al., 2023). Important reports suggest that childhood adversity has also been positively associated with reappraisal, and negatively associated with rumination and suppression (Ion et al., 2023; Miu et al., 2022). We expected that the results of previous studies would be replicated in our study.

Little is known on how childhood adversity and habitual emotion regulation contribute to cluster C symptomatology. We propose to investigate their shared contribution to cluster C, by investigating whether childhood maltreatment moderates the associations between habitual emotion regulation goals (hedonic and instrumental) and strategies (reappraisal, suppression, distraction, selective attention, and situation selection) and cluster C.

3.2.2. Methods

Participants

The sample of this study (N = 141) consisted of 125 females (88.7%) and 16 males (11.3%), with ages ranging from 18 to 55 years old (M = 27.31, SD = 9.13). Participants were included if they had a minimum age of 18 years and if they presented symptoms of cluster C PDs. Participants that registered twice were excluded (N = 1). We excluded participants that presented standalone cluster A (N = 20), cluster B (N = 9), or a mix of clusters A and B (N = 5) PD symptomatology. We also excluded participants that presented no PD symptomatology (N = 149) or that presented ages lower than 18 (N = 1).

Instruments

Childhood adversities. We measured several facets of childhood adversities, including maltreatment severity (using the Childhood Trauma Questionnaire - CTQ; Bernstein et al., 2003), maltreatment frequency (using the Conflict-Tactics Scale. Parent-Child version - CTSPC; Straus et al., 1998), unpredictability (using the Questionnaire of Unpredictability in Childhood - QUIC; Glynn et al., 2019), perceived social support (using an adapted version of the Multidimensional Scale of Perceived Social Support - MSPSS; Zimet et al., 1988), familial risk (Risky Families Questionnaire - RFQ; Taylor et al., 2004), and socio-economic status (MacArthur Scale of Socio-Economic Status; Adler & Stewart, 2007).

Cluster C personality disorders. Cluster C symptomatology was measured using the Schedule for Nonadaptive and Adaptive Personality - 2nd Edition (SNAP-2; Clark et al., 2014). We measured facets of personality dysfunction using the Level of Personality Functioning Scale - Brief Form (LPFS-BF; Bach & Hutsebaut, 2018).

Emotion regulation. Emotion regulation goals were measured using the Emotion Regulation Goals Scale (ERGS; Eldesouky & English, 2019a). Emotion regulation strategies were measured using the Extended Emotion Regulation Questionnaire (E-ERQ; Guassi Moreira et al., 2021).

Procedure

Participants enrolled in the study voluntarily. Informed consent was provided at registration. Enrolled individuals were recruited through advertisements posted on social media. At enrollment, participants provided demographic information, and completed the SNAP-2, LPFS, the instruments measuring childhood adversity (CTQ, QUIC, MSPSS, CTSPC, RFQ, socio-economic status), and the instruments measuring habitual emotion regulation goals and strategies (ERGS and E-ERQ). Cluster C PD symptoms were identified based on scores obtained on the SNAP-2.

3.2.3. Results

Correlation results are presented in Table 1.

Moderation results

No significant overall models were identified for the impact of childhood maltreatment (measured using CTQ) on associations with AVPD and DPD. In the case of OCPD, a significant overall model was identified for the impact of childhood maltreatment on the association with hedonic goals, R^2 = .063, F(3, 137) = 3.11, p = .028, with results indicating that childhood maltreatment moderated this association. Figure 1 presents the regression plot for this analysis.

Table 1. Correlations between variables (N = 141).

	AVPD	DPD	OCPD	LPFS Individ	LPFS Interpers	LPFS Total	SES child	CTQ Total	QUIC Total	MSPSS Total	CTSPC NVD	CTSPC Psych aggress	CTSPC Physical assault	CTSPC Neglect	CTSPC Sexual abuse	RFQ Total	ERGS HG	ERGS IG	E-ERQ R	E-ERQ S	E-ERQ D	E-ERQ SA	E-ERQ SS
AVPD	1																						
DPD	.511**	1																					
OCPD	-.293**	-.281**	1																				
LPFS - Individ	.515**	.552**	-.053	1																			
LPFS - Interpers	.408**	.311**	.065	.479**	1																		
LPFS - Total	.542**	.516**	.000	.891**	.826**	1																	
SES child	.109	-.020	.110	.085	-.017	.046	1																
CTQ - Total	.099	.074	-.052	.153	.310**	.259*	.010	1															
QUIC - Total	.206*	.151	.004	.238*	.231*	.272**	.064	.716**	1														
MSPSS - Total	-.206*	-.120	.086	-.241*	-.371**	-.347**	-.015	-.706**	-.578**	1													
CTSPC - NVD	-.087	-.061	.144	-.124	.083	-.037	.080	.143	.009	-.049	1												
CTSPC - Psych aggress	.103	-.031	.067	.142	.211*	.201*	-.026	.772**	.597**	-.613**	.266**	1											
CTSPC - Physical assault	-.006	-.037	.083	.053	.268**	.173*	.001	.688**	.413**	-.481**	.457**	.728**	1										
CTSPC - Neglect	.105	.142	-.076	.141	.178*	.183*	.023	.684**	.641**	-.597**	.054	.560**	.450**	1									
CTSPC - Sexual abuse	.111	.038	-.031	.105	.129	.135	.144	.404**	.303**	-.191*	.065	.271**	.258*	.253*	1								
RFQ - Total	.135	.149	-.067	.188*	.202*	.225*	.077	.808**	.761**	-.660**	.045	.771**	.559**	.700**	.250*	1							
ERGS - HG	.024	.063	.035	.198*	.191*	.226*	-.051	.015	.006	.022	.207*	-.044	.101	.032	.094	-.099	1						
ERGS - IG	.337**	.339**	-.087	.262*	.081	.210*	.030	.071	.063	.013	.109	.072	.081	.084	.119	.075	.197*	1					
E-ERQ - R	-.224*	-.219*	.110	-.275**	-.080	-.218*	-.098	-.194*	-.134	.206*	.052	-.237*	-.123	-.126	.068	-.221*	.131	.114	1				
E-ERQ - S	.336**	.142	.010	.247*	.336**	.333**	-.047	.133	.173*	-.220*	.097	.129	.127	.096	.063	.099	.169*	.271**	.147	1			
E-ERQ - D	.143	.111	-.008	.106	.175*	.159	-.072	.014	.077	-.011	.060	.032	-.020	-.048	.106	-.011	.130	.323**	.522**	.378**	1		
E-ERQ - SA	.203*	.161	.058	.200*	.313**	.290**	.001	-.051	-.002	.011	.188*	-.040	-.008	-.046	.098	-.095	.210*	.266**	.275**	.387**	.475**	1	
E-ERQ - SS	-.139	-.094	.200*	-.020	.054	.015	-.024	-.097	-.019	.084	.121	-.052	-.062	-.074	-.015	-.123	.287**	.233*	.538**	.111	.461**	.314**	1

**p ≤ .05; **p ≤ .001; AVPD = Avoidant PD; DPD = Dependent PD; OCPD = Obsessive compulsive PD; LPFS Individ = Individual personality dysfunction; LPFS Interpers = Interpersonal personality dysfunction; LPFS Total = Overall personality dysfunction; SES child = SES during childhood; CTQ Total = Childhood maltreatment; QUIC Total = Childhood unpredictability; MSPSS Total = Childhood perceived social support; CTSPC NVD = Non-violent discipline; CTSPC Psych aggress = Psychological aggression; RFQ Total = Family risk; ERGS HG = Hedonic goals; ERGS IG = Instrumental goals; E-ERQ R = Reappraisal; E-ERQ S = Suppression; E-ERQ D = Distraction; E-ERQ SA = Selective attention; E-ERQ SS = Situation selection.*

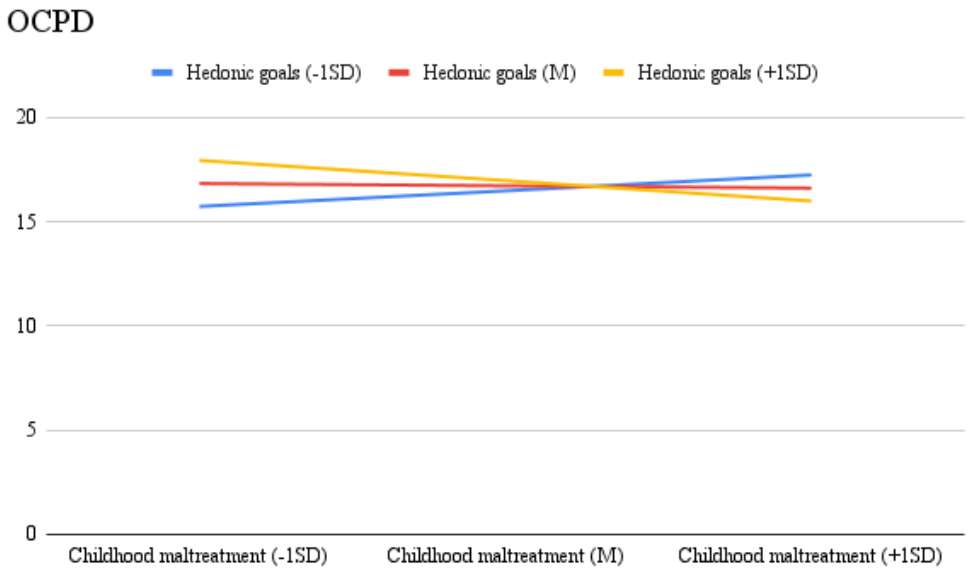

Figure 1. Regression plot for the association between hedonic goals and obsessive-compulsive personality disorder, with childhood maltreatment as a moderator.

3.2.4. Discussion

The present study contributes to current literature by taking into account extensive aspects of childhood adversity, from a continuous, dimensional perspective, as has been underlined and suggested in previous literature (Finkelhor et al., 2015; Glynn et al., 2019; McLaughlin & Sheridan, 2016; Smith & Pollak, 2021). Furthermore, this study contributes to the literature by investigating novel emotion regulation processes (i.e., goals) in the case of cluster C, which have previously been investigated or theorized solely in the case of other PDs (Millgram et al., 2020).

As childhood unpredictability increased, and perceived social support decreased, AVPD symptomatology increased. These results are in line with previous literature suggesting that childhood adversity contributes to the vulnerability for AVPD symptomatology (Beck et al., 2015; Gunay-Oge et al., 2020; Johnson et al., 2006). No other significant associations were found between cluster C and childhood adversity. There have been previous studies that identified no significant associations between these constructs (e.g., Dejong et al., 1995; Mertens et al., 2020; Zhang & Zheng, 2018). These results could reflect the retrospective, self-report nature of the data referring to childhood adversity. We did, however, find significant relationships between childhood adversity and personality impairment, supporting the view that exposure to adversities during childhood could lead to poor personality functioning in the case of cluster C (Chiesa et al., 2016; Massaal-van der Ree et al., 2022).

The associations between AVPD and DPD symptomatology and habitual instrumental goals could suggest that individuals with these types of symptomatology tend to focus on goals beyond hedonic motives, and not on their emotional distress. When they are motivated by goals focused on emotional experiences, these goals could contribute to impairments and maladaptive behaviors, considering the associations between both hedonic and instrumental goals and personality impairments. As AVPD symptomatology increased, so did the use of

habitual suppression and selective attention, while OCPD symptomatology was associated with use of situation selection. Facets of personality dysfunction increased as the use of distraction, suppression and selective attention increased. The use of reappraisal lowered as AVPD and DPD symptomatology increased but increased as impairments in personality decreased.

These results could reflect the emotion regulation difficulties previously identified in the case of cluster C (e.g., Borges & Naugle, 2017; Snir et al., 2017). Lower use of reappraisal and higher use of suppression have been previously associated with negative outcomes, including increases in symptomatology severity and maladaptive behaviors (Aldao et al., 2010; Miu et al., 2022; Seligowski et al., 2015), which could explain present results. The use of situation selection in the case of OCPD, and selective attention in the case of AVPD, respectively, could reflect the experiential avoidance that has been previously identified in the case of these disorders (Lampe, 2016; McMahon & Naragon-Gainey, 2020; Wheaton & Pinto, 2017).

As childhood maltreatment and hedonic goals increased, OCPD symptomatology reduced, suggesting that, when motivated by hedonic goals, individuals with OCPD present reductions in symptomatology, if they were previously exposed to childhood maltreatment. Emotion regulation goals have never been previously investigated in association with cluster C, let alone in the case of OCPD, nor has the impact of childhood maltreatment on this association been tested before. It is possible that these results could reflect that, if individuals with OCPD tend to focus more on their emotional experiences following childhood maltreatment, this could be adaptive, considering the reductions in OCPD symptomatology. Further investigation is necessary to draw conclusions.

We found several associations between childhood adversity, lower habitual use of reappraisal and higher habitual use of suppression, although these associations were not generalized across all investigated types of adversity. Solely one facet of childhood adversity correlated with hedonic goals. These results provide support to the line of research that suggests that childhood adversities are associated with and contribute to difficulties in emotion regulation (e.g., Lavi et al., 2019; McCrory et al., 2012; Miu et al., 2022), but more research is necessary into how this association manifests in the case of individuals presenting cluster C symptomatology.

Hedonic and instrumental goals were also associated with all investigated emotion regulation strategies, except reappraisal. These results support previous studies that suggest that emotion regulation goals motivate regulatory efforts (e.g., Eldesouky & English, 2019b; Tamir, 2016). It is unclear, however, why the emotion regulation goals investigated in this study did not relate to reappraisal, or why hedonic goals did not correlate with distraction. It is possible that the results of this study are due to how these constructs were measured.

Emotion regulation has received less attention in preceding research in the case of cluster C PDs. Further investigation into the processes of emotion regulation (e.g., the selection and implementation stages) and their role in the course and development of cluster C PDs is necessary. Uncovering these processes could lead to a better understanding of this symptomatology and to more efficient interventions strategies. So far, this study provides further evidence of the presence of emotion regulation difficulties in the case of cluster C, by also investigating possible emotion regulation goals that generally motivate regulatory efforts in individuals presenting this type of symptomatology.

Beyond its theoretical and clinical implications, this study presents a series of limitations. We employ cross-sectional, self-reported data. Some results of this study should be interpreted with caution, as some scales presented low internal validity. Participants included in the study were extracted from the community, and the sample consisted mostly of women. Even though we measured personality impairment, these dysfunctions were not taken into account when measuring cluster C PD symptoms, nor did we diagnose participants using clinical interviews.

3.3. Study 2b. Emotion Regulation Difficulties, Childhood Maltreatment And Cluster C Symptomatology: A Daily Diary Study

3.3.1. Introduction

Previous literature suggests that habitual emotion regulation differs from spontaneous emotion regulation (Ion et al., 2023; Koval et al., 2023), as measures of habitual emotion regulation could be subjected to recall biases, or present lower ecological validity (McMahon & Naragon-Gainey, 2020). This line of research underlines the role of context and personality in emotion regulation (Aldao, 2013; Eldesouky & English, 2019a) and the importance of taking within-individual variability into account (Bonanno & Burton, 2013; Ion et al., 2023) when measuring emotion regulation. In the case of cluster C, studies employing these types of designs to measure emotion regulation are lacking in the literature.

We propose to investigate the associations between emotional distress, childhood maltreatment, spontaneous emotion regulation and cluster C symptomatology, using a type of ecological momentary design: the daily diary method (Gunthert & Wenze, 2012; Lischetzke & Konen, 2020). The daily diary method implies the collection of self-reported data in once a day assessment and allows for investigation of the constructs in natural contexts, increasing ecological validity of measures, and reducing the biases that typically accompany retrospective and global reports (Lischetzke & Konen, 2020; Reis, 2012; Robinson & Clore, 2002). This type of methodology would be useful in investigating how the processes related to cluster C symptomatology and emotion regulation unfold over time, taking both within- and between-individual variability into account.

Previous literature has found that the presence of cluster C PDs was associated with increased emotional distress (e.g., Preti et al., 2020; Schoenleber & Berenbaum, 2010), with the use of suppression, and other maladaptive emotion regulation processes (e.g., Borges & Naugle, 2017; Garofalo et al., 2018). Our study set out to investigate negative affect, emotion regulation goals (hedonic and instrumental) and strategies (reappraisal, suppression, distraction, selective attention, and situation selection) once a day, for ten consecutive days, in a sample extracted from the community that presents cluster C (AVPD, DPD, OCPD) symptoms. We focused on examining the associations between these variables, looking both at the within-individual level (i.e., variability in emotion regulation and negative affect from one situation to another) and at the between-individual level (i.e., variability in emotion regulation and negative affect across situations, between participants). The associations between negative affect, emotion regulation and cluster C symptoms were investigated, along with the associations between negative affect and emotion regulation. Expanding on the findings from

Study 2a, in Study 2b we propose to investigate the mediating role of spontaneous emotion regulation goals (hedonic and instrumental goals) and strategies (reappraisal, suppression, distraction, selective attention and situation selection) in the relationship between daily negative emotions and cluster C symptomatology (AVPD, DPD, OCPD).

Even though studies indicate that personality pathology can be substantially associated with daily experiences (Wright et al., 2015; Wright & Simms, 2016), and that emotion regulation seems to vary as a function of personality and social context (Aldao, 2013; Eldesouky & English, 2019a; Ion et al., 2023), it is still unclear how individuals that present cluster C problems manage to adapt their regulatory efforts to their experienced emotional distress. In a previous study that focused on spontaneous emotion regulation, Ion and collaborators (2023) found associations between negative affect and suppression, distraction (both at within- and between-individual levels), and reappraisal (at between-individual level). Based on the available research, we expected that, when individuals with cluster C are exposed to instances of emotional distress, employing maladaptive emotion regulation leads to increases in AVPD, DPD and OCPD symptomatology.

We also set out to investigate the role of childhood maltreatment in the association between emotional distress (operationalized as negative emotions) and AVPD, DPD and OCPD symptomatology. In the same study mentioned above (Ion et al., 2023), the authors indicated that childhood maltreatment was associated with higher negative affect, at a between-individual level. The study reported that childhood maltreatment was associated with reduced use of reappraisal at a between-individual level, with a larger variability in distraction at a within-individual level, while also being associated with reduced use of hedonic goals and reduced perceived success of regulatory efforts (Ion et al., 2023). In our study, we expected that previous exposure to childhood maltreatment would moderate the association between emotional distress and cluster C symptomatology.

3.3.2. Methods

Study design

This study uses a daily diary methodology, employing self-reported, end-of-day assessments, addressing intra- (from one situation to another) and inter-individual (from one participant to another) variability.

Participants

Participants registered in Study 2a were included in Study 2b if they had a minimum age of 18 years, if they presented symptoms of at least one cluster C PD (according to SNAP-2 scores) and if they completed the daily diary. The final sample (N = 109) presented a mean age of 27.71 years (Range: 18 - 55, SD = 9.39), consisting of 96 women (88.1%) and 13 men (11.9%).

Instruments

Childhood adversities. We measured childhood maltreatment as a facet of childhood adversity, using the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003).

Cluster C personality disorders. Cluster C symptomatology was measured using the Schedule for Nonadaptive and Adaptive Personality - 2nd Edition (SNAP-2; Clark et al., 2014).

Daily diary. The daily diary was composed of 9 questions, adapted after the structure employed in Eldesouky & English (2019b). In this analysis, we focused on ratings referring to cluster C PD symptoms (subscales extracted from the Personality Diagnostic Questionnaire-4 - PDQ-4; Bagby & Farvolden, 2004), to negative emotions (measured using the Positive And Negative Affect Scale - PANAS-negative affect subscale; Watson et al., 1988), to emotion regulation goals (measured using Emotion Regulation Goals Scale - ERGS; Eldesouky & English, 2019a), and to emotion regulation strategies (measured using the Extended Emotion Regulation Questionnaire - E-ERQ; Guassi Moreira et al., 2021). All these instruments were completed in a checklist form.

Procedure

Following enrollment and completion of instruments included in Study 2a, participants presenting cluster C symptomatology (based on SNAP-2 scores) were invited to complete the daily diary for 10 days. The daily diary was completed on a mobile app named PIEL Survey. Informed consent was also provided by participants at the beginning of the daily diary ratings. The number of days that participants wrote in this daily diary ranged from 1 to 20 days. Entries where participants mentioned that they did not go through a difficult situation during the day were excluded from the analysis. Following completion of this phase of the study, participants selected with the help of a raffle were rewarded with sale vouchers.

3.3.3. Results

Intraclass correlations (ICC) are presented in Table 1. ICC shows the percentage of variance that is accounted for by each level of analysis (variance between individuals and variance within each individual across time). These results suggest the necessity of deployment of multilevel modeling.

Table 1. Intraclass correlations (N = 109).

Variable	ICC value
Avoidant PD	0.341
Dependent PD	0.193
Obsessive-compulsive PD	0.279
Negative emotions	0.432
Hedonic goals	0.410
Instrumental goals	0.331
Reappraisal	0.401
Suppression	0.260
Distraction	0.183
Selective attention	0.158

Situation selection	0.083

Multilevel modeling results are presented in the following section. Results for the analysis using AVPD symptoms as an outcome are presented in Table 2.

Table 2. Multilevel analysis results for avoidant personality disorder symptoms (N = 109).

Predictor	Level	beta	S.E.	t	df	p	R^2	95% CI	
								LL	UL
Negative emotions	Within	.202**	0.028	6.98	764	<.001	.047	0.025	0.075
	Between	.326**	0.051	6.30	107	<.001	.113	0.080	0.150
Hedonic goals	Within	.125	0.068	1.83	764	.067	.004	0.000	0.014
	Between	.529**	0.128	4.12	107	<.001	.054	0.030	0.082
Instrumental goals	Within	.078*	0.031	2.49	764	.012	.008	0.001	0.021
	Between	.232**	0.065	3.53	107	<.001	.045	0.024	0.072
Reappraisal	Within	.084	0.044	1.88	764	.060	.004	0.000	0.016
	Between	.219*	0.081	2.69	107	.008	.025	0.009	0.046
Suppression	Within	.203**	0.052	3.84	764	<.001	.017	0.005	0.036
	Between	.409**	0.124	3.29	107	.001	.037	0.018	0.063
Distraction	Within	.157**	0.045	3.43	764	<.001	.013	0.003	0.030
	Between	.375*	0.127	2.94	107	.003	.029	0.012	0.051
Selective attention	Within	.038	0.095	0.39	764	.689	.000	0.000	0.006
	Between	.738*	0.275	2.68	107	.008	.028	0.012	0.050
Situation selection	Within	.017	0.074	0.23	764	.814	.000	0.000	0.005
	Between	.923**	0.288	3.20	107	.001	.036	0.017	0.060

*$p \leq .05$; **$p \leq .001$.

Table 3 presents analysis results for DPD symptoms as a dependent variable.

Table 3. Multilevel analysis results for dependent personality disorder symptoms (N = 109).

Predictor	Level	beta	S.E.	t	df	p	R^2	95% CI	
								LL	UL
Negative emotions	Within	.075*	0.029	2.60	764	.009	.011	0.002	0.027
	Between	.184**	0.031	5.78	107	<.001	.061	0.036	0.092
Hedonic goals	Within	.139*	0.056	2.48	764	.013	.007	0.001	0.021
	Between	.159	0.082	1.92	107	.056	.008	0.001	0.023

Instrumental goals	Within	.099**	0.028	3.47	764	<.001	.021	0.007	0.041
	Between	.150**	0.037	3.97	107	<.001	.034	0.016	0.058
Reappraisal	Within	.030	0.040	0.75	764	.452	.001	0.000	0.008
	Between	.089	0.052	1.71	107	.088	.007	0.001	0.020
Suppression	Within	.056	0.045	1.23	764	.216	.002	0.000	0.012
	Between	.250**	0.077	3.21	107	.001	.023	0.009	0.044
Distraction	Within	.060	0.041	1.46	764	.142	.003	0.000	0.014
	Between	.240*	0.078	3.05	107	.002	.020	0.007	0.040
Selective attention	Within	.172*	0.068	2.53	764	.011	.007	0.001	0.021
	Between	.706**	0.160	4.39	107	<.001	.042	0.022	0.069
Situation selection	Within	.106	0.058	1.80	764	.071	.003	0.000	0.014
	Between	.478*	0.180	2.65	107	.009	.016	0.005	0.035

*$p \leq .05$; **$p \leq .001$.

Table 4 presents results for OCPD symptoms.

Table 4. Multilevel analysis results for obsessive-compulsive personality disorder symptoms (N = 109).

Predictor	Level	beta	S.E.	t	df	p	R^2	95% CI	
								LL	UL
Negative emotions	Within	.077*	0.032	2.40	764	.016	.010	0.001	0.025
	Between	.046	0.044	1.04	107	.297	.003	0.000	0.014
Hedonic goals	Within	.027	0.055	0.49	764	.619	.000	0	0.006
	Between	.080	0.105	0.76	107	.447	.002	0	0.011
Instrumental goals	Within	.042	0.022	1.92	764	.055	.003	0.000	0.014
	Between	.203**	0.049	4.13	107	<.001	.049	0.027	0.078
Reappraisal	Within	.016	0.039	0.42	764	.672	.000	0.000	0.006
	Between	.146*	0.063	2.28	107	.024	.016	0.004	0.034
Suppression	Within	-.061	0.044	-1.37	764	.168	.002	0.000	0.012
	Between	.270*	0.097	2.77	107	.006	.023	0.008	0.044
Distraction	Within	.112*	0.037	2.96	764	.003	.009	0.001	0.025
	Between	.149	0.100	1.49	107	.137	.007	0.000	0.020
Selective attention	Within	.161*	0.082	1.95	764	.050	.006	0.000	0.018
	Between	.740**	0.199	3.71	107	<.001	.040	0.020	0.066
Situation selection	Within	.214*	0.069	3.08	764	.002	.012	0.003	0.029

	Between	.791**	0.217	3.64	107	<.001	.039	0.019	0.064

*$p \leq .05$; **$p \leq .001$.

Table 5 presents results for the associations between negative affect and emotion regulation goals (hedonic and instrumental) and strategies (reappraisal, suppression, distraction, selective attention, and situation selection).

Table 5. Multilevel analysis results for emotion regulation variables, using negative affect as a predictor (N = 109).

Outcome	Level	beta	S.E.	t	df	p	R^2	95% CI	
								LL	UL
Hedonic goals	Within	.025	0.021	1.17	764	.241	.002	0.000	0.011
	Between	.160**	0.039	4.10	107	<.001	.069	0.043	0.100
Instrumental goals	Within	.127*	0.043	2.95	764	.003	.009	0.001	0.024
	Between	.279**	0.080	3.48	107	<.001	.041	0.021	0.067
Reappraisal	Within	-.017	0.034	-0.50	764	.612	.000	0.000	0.006
	Between	.259**	0.062	4.13	107	<.001	.067	0.041	0.098
Suppression	Within	.055*	0.024	2.27	764	.023	.005	0.000	0.017
	Between	.136**	0.041	3.25	107	.001	.029	0.013	0.052
Distraction	Within	.160**	0.031	5.11	764	<.001	.035	0.017	0.060
	Between	.175**	0.038	4.57	107	<.001	.041	0.021	0.068
Selective attention	Within	.026	0.013	1.86	764	.063	.003	0.000	0.014
	Between	.057*	0.020	2.78	107	.006	.015	0.004	0.034
Situation selection	Within	.066**	0.017	3.77	764	<.001	.019	0.006	0.038
	Between	.057*	0.018	3.16	107	.002	.014	0.004	0.032

*$p \leq .05$; **$p \leq .001$.

Mediation results

Instrumental goals mediated the association between negative emotions and DPD, with results suggesting significant direct (b = .063, 95% CI [0.008; 0.120]) and indirect (b = .019, 95% CI [0.0002; 0.042]) effects. Path analysis results are presented in Figure 1. No other mediator was identified for the associations between emotional distress and AVPD, DPD, or OCPD symptoms.

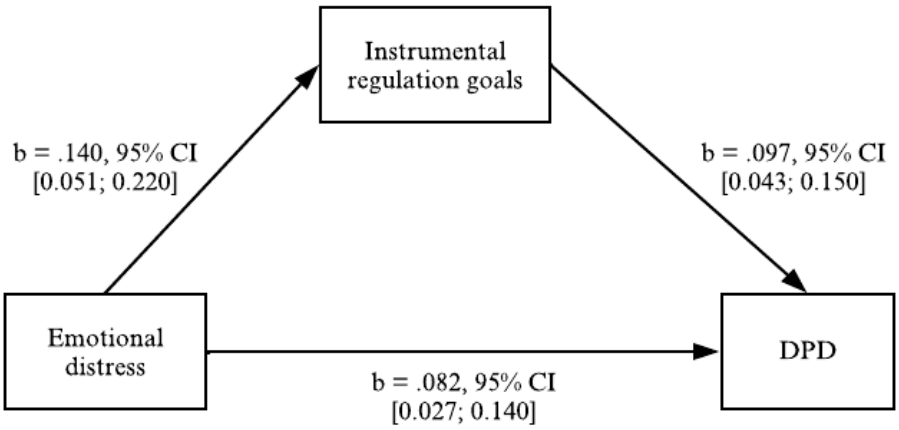

Figure 1. Path analysis for the relationship between emotional distress and dependent personality disorder symptoms, using instrumental goals as a mediator.

Moderation results

We did not find support for the moderating role of childhood maltreatment in the associations between emotional distress and AVPD, DPD, or OCPD symptomatology.

3.3.4. Discussion

This is the first study to investigate how processes related to emotion regulation unfold in the case of cluster C using ecological momentary assessment. The employed methodology allows for a more accurate picture of emotion regulation processes, their association with cluster C and negative affect, and the impact they have on cluster C symptomatology in situations of emotional distress. Taken together with the results from Study 2a, results from Study 2b reflect the previous differences identified in habitual and spontaneous emotion regulation, supporting the view that emotion regulation processes need to be investigated by also employing momentary measures of emotion regulation, beyond global assessments (Ion et al., 2023; Koval & Kalokerinos, 2022; Koval et al., 2023; McMahon & Naragon-Gainey, 2020).

We found that higher reported levels of emotional distress were associated with higher reported severity of all cluster C PD symptomatology, except for OCPD. Moreover, this study highlights that higher levels of cluster C symptomatology were reported in situations that were perceived as entailing increased emotional distress. These results would suggest that, not only do individuals with cluster C present higher levels of negative emotions, but also that, in response to these emotions, cluster C symptomatology scores increase. We found, however, that these increases in symptomatology in response to emotional distress are due to emotion regulation difficulties (i.e., being motivated by goals beyond reducing emotional distress) solely in the case of DPD. We also found that individuals with cluster C tend to focus on both hedonic and instrumental goals. OCPD constitutes an exception, with participants presenting an increased focus on instrumental goals. These results support previous research suggesting that, when difficulties are encountered in regulatory attempts, psychopathology symptom severity increases, providing support for the idea that emotion regulation could be a

transdiagnostic mechanism involved in psychopathology (Aldao et al., 2016; Lincoln et al., 2022), even in the case of cluster C.

One of the findings of this study suggests that individuals with cluster C symptomatology tend to report higher levels of reappraisal use as symptomatology increases. These results are contrary to previous studies reporting that lower use of reappraisal is associated with increases in psychopathology (Aldao et al., 2010; Miu et al., 2022; Prefit et al., 2019). Given the novelty of these findings, more research is necessary. Reappraisal could lead to increases in symptomatology if it is not employed flexibly, according to the requirements of the context (Aldao, 2013; Bonanno & Burton, 2013). There is a line of research suggesting that individuals typically prefer using reappraisal in low emotional intensity contexts, and distraction in high emotional intensity situations, with long term beneficial effects (e.g., Shafir & Sheppes, 2018; Sheppes, 2020). It is possible that individuals with cluster C might present dysregulated preferences, and use reappraisal in high emotional intensity situations, which could lead to increases in severity of symptoms. This line of research and aspects of emotion regulation flexibility (Chen & Bonanno, 2021) warrant investigation in the case of cluster C, to better clarify how emotion dysregulation manifests in the case of these PDs.

In previous ecological assessment reports on emotion regulation goals and strategies, results suggested that instrumental goals could motivate toward all emotion regulation strategies posited by the emotion regulation process model (Eldesouky & English, 2019b, Gross, 1998, 2015). As individuals with cluster C seem to be motivated both by hedonic and instrumental emotion regulation goals, it is possible that the results referring to regulation strategies obtained in this study could reflect the tendencies observed in previous studies (Eldesouky & English, 2019b). Another possible explanation for the associations between emotion regulation strategies and cluster C could be related to the level of engagement these types of strategies entail. Previous studies suggest that strategies such as suppression, distraction, selective attention and situation selection could warrant avoidance of emotions (Andriopoulos, & Kafetsios, 2015; Gross et al., 2019; Ion et al., 2023; McMahon & Naragon-Gainey, 2019). This would also be in line with the characteristics previously observed in cluster C PDs. It is unclear, however, why we did not identify other mediation effects of emotion regulation in the relation between emotional distress and cluster C. Given the novelty of this study, clear conclusions cannot be extracted, and further investigation into how these processes unfold is needed to better understand the dynamics of emotions and emotion regulation in the case of cluster C.

Childhood maltreatment did not impact the association between emotional distress and cluster C, contrary to previous evidence suggesting that emotional distress could be a potential factor in the association between childhood maltreatment and psychopathology (e.g., Ion et al., 2023; Miu et al., 2022). It is not entirely clear why childhood maltreatment did not fare as a factor in the association between emotional distress and cluster C, but one possible explanation could be related to the results of Study 2a, where, in our sample, we could not identify significant associations between childhood maltreatment and the investigated PDs. It is possible that these results could be explained by the type of instruments used to assess childhood maltreatment. It is also possible that other, more extended aspects of childhood adversity (such as unpredictability or social support) (Glynn et al., 2019; Finkelhor et al., 2015)

could be involved in this association. More research into these associations, and the mechanisms underlying them is necessary in order to clarify.

This study contributes to existing literature in the case of cluster C by focusing on spontaneous emotion regulation processes (in the selection and implementation stages), childhood maltreatment and emotional distress in the same theoretical model. It also underlines the potential role of emotion regulation goals as a mechanism in the association between emotional distress and DPD symptomatology. A better understanding of the nature of these relationships, of how these processes and their interactions unfold in the case of cluster C could lead to a better understanding of the onset and development of these PDs, and could help improve prevention, diagnosis and intervention efforts in the case of this type of symptomatology.

However, this study presents a series of limitations. The study employed self-report measures. It is possible that the longer span of time between daily diary completions could influence participants' ratings. Participants' ratings could be influenced by events that happen in between the negative emotional experience and diary completion. Sample size is small, and the mobile app we employed for the study could have contributed to the sample size (the data was accessible to the researchers solely upon submission of the data by participants). The number of days that the diary was completed was not taken into account in the analysis.

The sample was mostly made up of women. Cluster C symptoms were measured based on SNAP-2 scores. Personality impairment was not taken into account at inclusion and assessment, nor were participants diagnosed with a clinical interview. The impact of the other personality symptomatology was not taken into account. We solely focused on childhood maltreatment as an aspect of childhood adversity. We focused solely on the emotion regulation strategies proposed by the process model of emotion regulation (Gross, 1998, 2015), and broad emotion regulation goals (hedonic and instrumental goals). However, these aspects of emotion regulation do not capture the entire picture of emotion regulation processes.

3.4. Study 3. Neural Markers Of Emotion Regulation In The Association Between Childhood Maltreatment And Cluster C Personality Disorders

3.4.1. Introduction

Some investigations suggest that the regulatory strategies from the individual's repertoire are weighed in terms of costs, benefits, context, personality and prior experience, when it comes to choosing the appropriate emotion regulation strategy (Bonanno & Burton, 2013; Eldesouky & Gross, 2019; Hughes et al., 2020; Sheppes et al., 2015; Tamir et al., 2020). It has been found that, in the implementation stage, individuals prefer employing distraction when exposed to high emotional intensity situations and reappraisal when exposed to low emotional intensity situations (Shafir et al., 2016; Sheppes, 2020). The monitoring stage of emotion regulation can also be influenced by the intensity of internal states, by the context and by regulatory preferences (Birk & Bonanno, 2016; Dorman Ilan et al., 2019). In this regard, studies indicate that implementing strategies that are incongruent with the above mentioned preferences leads to higher switching frequency (from distraction to reappraisal in low emotional intensity situations, and from reappraisal to distraction in high emotional intensity situations) (Dorman Ilan et al., 2019). Advances in emotion regulation research have also been made in terms of neural markers. Late positive potentials (LPP), an event-related potential

(ERP), are considered a plausible marker of emotion regulation (Dorman Ilan et al., 2019; Hajcak et al., 2014; Shafir & Sheppes, 2018). ERPs are electrical potentials that appear in the brain as a result of internal or external events/stimuli, and are said to be involved in emotional processing (see Luck, 2012 for a review). LPPs are positive swervings of the ERP wave that usually begin after 300ms of exposure to the stimuli and can be located and measured with the help of high density electroencephalography (EEG) (Hajcak & Foti, 2020; Luck, 2014). Previous literature suggests that the LPP swerve could be an indicator of emotional reactivity, while the modulation of LPP could be considered an indicator of emotion regulation success (e.g., Dorman Ilan et al., 2019; Hajcak et al., 2014; Liu et al., 2012; Shafir & Sheppes, 2018).

Most of the data on the stages involved in regulating emotions in the case of childhood maltreatment are self-reported. Studies concentrate mostly on the implementation stage, with previous reports underlining potential regulation strategies and their consequences (Gross, 1998; Aldao et al., 2010; McRae et al., 2012; Shafir & Sheppes, 2018; Sheppes et al., 2014). Previous research reports that maltreated individuals report lower usage of reappraisal and savoring, and higher usage of suppression, with less regulatory success (Gruhn & Compas, 2022; Ion et al., 2023; Miu et al., 2022). It also seems that previous experiences, such as exposure to childhood adversity, could influence the decision to regulate emotion (Eldesouky & Gross, 2019). The literature has reported that childhood adversities have been associated with emotional lability, difficulties in identifying emotions and with emotional clarity, higher level of negative emotions, lower levels of positive emotions, and automatic negative processing bias in the amygdala (Dannlowski et al., 2013; Ion et al., 2023; Miu et al., 2022; Warmingham et al., 2023). In the selection stage, childhood maltreatment was negatively associated with hedonic goals (Ion et al., 2023). There has been no investigation of possible preferences in terms of regulatory choices up until now in maltreated individuals. No studies have been conducted on the impact childhood maltreatment has on the monitoring stage of emotion regulation. Given the available evidence, we would expect that, when comparing individuals with different histories of exposure to maltreatment, effects on these various stages would be observed.

As a result, this study proposes to analyze the behavioral and neural deficits in emotion regulation in the case of individuals presenting a history of childhood maltreatment, by focusing on two regulatory strategies: reappraisal and distraction. We will be investigating several steps in the emotion regulation process, using a novel experimental measure of emotion regulation. Based on the literature presented above, we hypothesize that childhood maltreatment is associated with lower choice efficacy, as reflected by a non-discriminatory preference to distraction, irrespective of stimuli intensity, in the case of a group presenting high scores of maltreatment, when compared to a group that presents low maltreatment scores. A marker of emotion regulation success would be LPP modulation (Dorman Ilan et al., 2019; Hajcak & Foti, 2020; Sheppes, 2020). There are no studies investigating the impact of childhood maltreatment on these neural markers of emotion regulation and no studies on the effect of reappraisal on LPP modulation in individuals presenting a history of childhood maltreatment. We will explore whether childhood maltreatment is associated with a lower efficacy of reappraisal implementation, as reflected by behavioral choices and neural (LPP modulation) measures, in the case of a group presenting high maltreatment scores, when compared to a group with low maltreatment scores.

As it has been suggested previously that the preferences in regulating emotions influence the monitoring stage of emotion regulation (especially when it comes to switch frequency when choices are incongruent to these preferences) (Dorman Ilan et al., 2019), we also hypothesize that childhood maltreatment is associated with lower monitoring efficacy, reflected by a non-discriminatory switch to distraction, irrespective of stimuli intensity, in the case of a group with high maltreatment scores, when compared to a group with low

maltreatment scores. A secondary objective of this study will relate to investigate the prospective association between childhood maltreatment and cluster C personality pathology, and the potential role of emotion regulation deficits in this association. We propose to investigate whether the deficits involved in the selection, implementation and monitoring stages of emotion regulation (as reflected by behavioral choices and neural measures of emotion regulation) mediate the association between childhood maltreatment and cluster C personality traits.

3.4.2. Methods

Study design

The design of this study employs a 2x3x2 factorial design, using independent, repeated measures (IM). The first independent variable (group) will have two levels (high maltreatment scores group vs. low maltreatment scores group), the second independent variable (regulatory strategies instructions) will have three levels (reappraisal vs. distraction vs. watch), and the third independent variable (negative picture intensity) will have two levels (high vs. low emotional intensity pictures). The study was pre-recorded in OSF (https://osf.io/yzagx).

Participants

The sample size was calculated using MorePower 6.0.4 (Campbell & Thompson, 2012). Results indicated that the sample size should be of at least 72 participants (36 participants/group). The flowchart diagram is presented in Figure 1. The final sample consisted of 79 participants, with ages ranging from 18 to 57 years (M = 29.55, SD = 9.28), and was composed of 57 women (72.2%) and 22 men (27.8%).

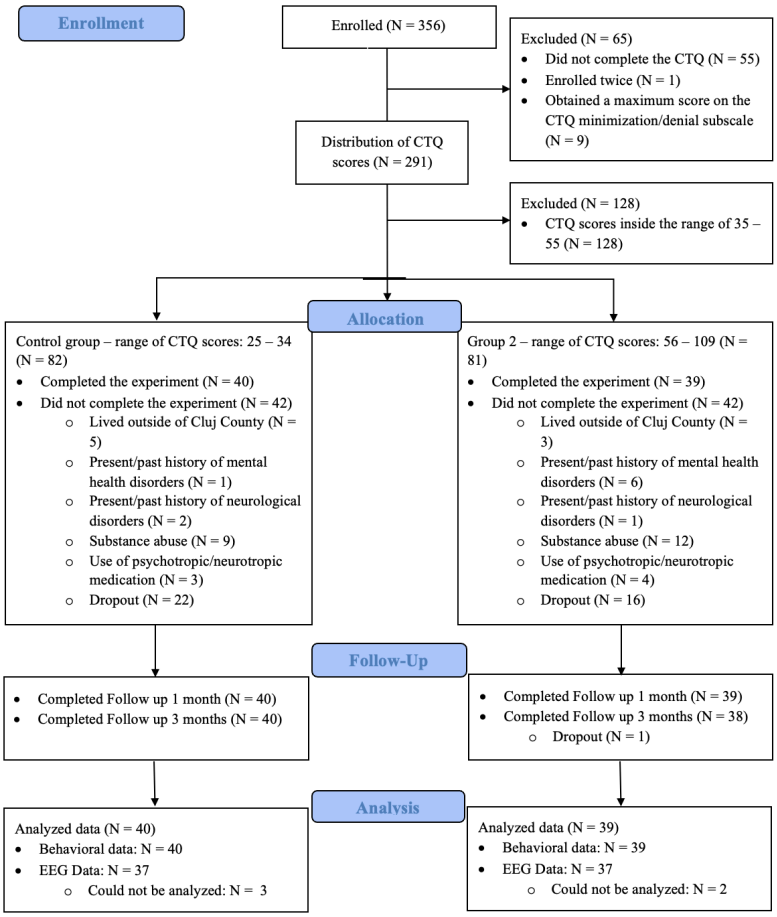

Figure 1. Flowchart diagram describing included participants.

Inclusion criteria. Participants were considered eligible for inclusion if they completed the initial assessment (Childhood Trauma Questionnaire - CTQ; Bernstein et al., 2003), were aged 18 years or older, and if they presented scores that were included in the 25% lower and 25% upper distribution of CTQ total scores. We also included participants that lived in Cluj-Napoca, did not present a history of diagnosed mental or neurological disorders and did not engage in use of neuro/psychotropic medication or drugs (i.e., marijuana, LSD, amphetamines, mephedrone, methadone, psilocybin, ayahuasca, steroids).

Instruments

Childhood adversities. We measured childhood maltreatment as a facet of childhood adversity, using the CTQ (Bernstein et al., 2003).

Cluster C. Cluster C personality traits were measured using the Personality Inventory for DSM-5 - Short Form (PID-5-SF; Maples et al., 2015). AVPD and OCPD scores were obtained by summing scores on pathological personality traits, as specified in the alternative model of PDs (APA, 2013).

Experimental task of emotion regulation. This experimental task measures emotion regulation selection, implementation and monitoring, and was adapted after an experimental task previously created by Dorman and collaborators (2019). The trial structure is presented in Figure 2.

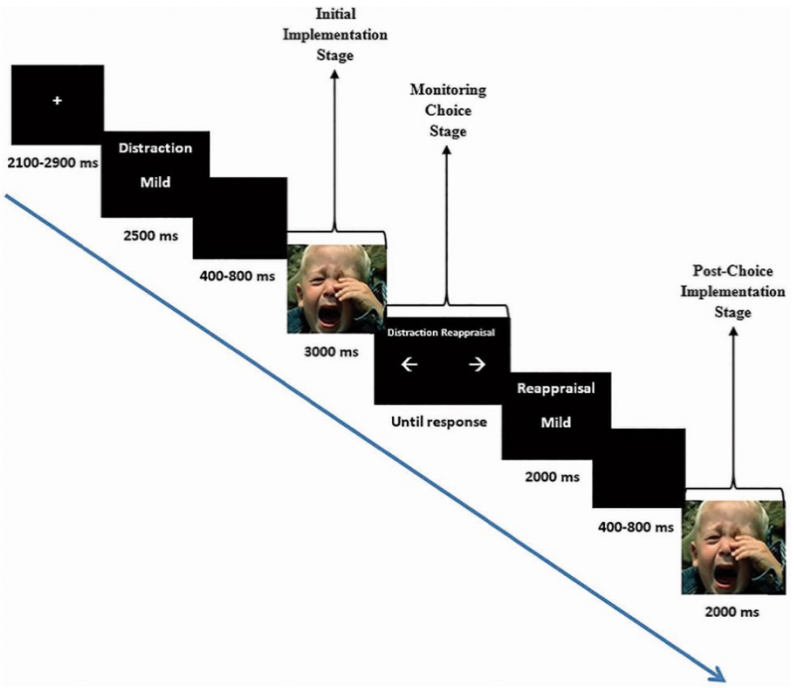

Figure 2. Trial structure of the experimental task, according to Dorman Ilan and collaborators (2019).

The task includes 120 high and low emotional intensity negative pictures. In the first phase of a trial, following the fixation cross, participants were presented with a regulatory strategy (reappraisal, distraction or watch) that had to be applied with the intent of reducing the intensity of both types of negative pictures (implementation phase). In this phase, the image was presented on the screen for 3 seconds. In the second phase of the trial, participants were invited to choose a regulatory strategy (reappraisal vs. distraction) that was effective for them in reducing the intensity of negative pictures. After the choice, the negative pictures presented in the first phase of the trial reappeared on the screen (monitoring phase) for 2 seconds. Following the implementation of the choice, participants rated the intensity of perceived negative emotions on a Likert scale ranging from 1 (Very low emotional intensity) to 9 (Very high emotional intensity). Initially, participants were instructed in regards to the experimental task and regulatory strategies involved in the study. Participants were prompted to provide examples for all three strategies, to test adherence to instructions. Participants were then instructed that they will go through three types of trials: a trial that begins with distraction, where the choice involves maintaining distraction or switching to reappraisal; a trial that begins with reappraisal, and the choice involves maintaining reappraisal or switching to distraction; and a trial that begins with watch, and the choice involves choosing one of the two (distraction or reappraisal) regulatory strategy. Next, participants went through three test trials, in which their adherence to instructions was again tested through examples for every regulatory strategy in the task. Afterwards, participants completed 6 practice trials, in order to get accustomed to the experimental task. Table 1 presents the various stages of emotion regulation measured with this experimental task and the outcomes that can be observed in each stage.

Table 1. Description of emotion regulation stages and outcomes investigated with the help of the experimental task.

Emotion regulation stage	Experimental task	Outcome

Implementation stage	1. Trials initially start with the watch, distraction or reappraisal instructions. 2. Participants implement the instruction as requested on high or low intensity negative pictures.	1. LPP pre-choice (LPP modulation following trials that initially start with the implementation of the distraction, reappraisal or watch instructions).
Selection stage	1. Trials initially start with the watch instruction. 2. Participants implement the watch instruction on high or low intensity negative pictures. 3. The instruction to select a strategy (distraction vs. reappraisal) that helps reduce the negative intensity of pictures comes up. 4. Participants implement the chosen strategy on high or low intensity negative pictures.	1. LPP post-choice (LPP modulation following implementation of participants choice). 2. Distraction choice frequency (how often participants selected distraction). 3. Selection flexibility (the number of trials in which distraction was chosen in high intensity minus the number of trials in which distraction was chosen in low intensity emotional levels).
Monitoring stage	1. Trials initially start with the distraction or reappraisal instruction. 2. Participants implement one of the two instructions, randomly, on high or low intensity negative pictures. 3. The instruction to select a strategy (distraction vs. reappraisal) that helps reduce the negative intensity of pictures comes up. 4. Participants implement the chosen strategy on high or low intensity negative pictures.	1. Switch frequency (how often participants switched from one strategy to the other). 2. Selection flexibility (the number of trials in which distraction was chosen in high intensity minus the number of trials in which distraction was chosen in low intensity emotional levels). 3. Neural consequence (the impact of preferences in the monitoring stage and of emotion regulation implementation on emotional intensity).

LPP = Late positive potentials.

Neural measures and EEG data. Neural data was collected using high-resonance EEG/ERP. After the training and practice trials, participants were set up to a 128 electrode EEG (HydroCel Geodesic Sensor Net) and were invited into a Faraday box, where the EEG headset was hooked up to a Net Amp 400 amplifier. The reference electrode that was utilized was the Cz electrode. Electrode impedances were checked for activity lower than 50 kΩ prior to data recording (Ferree et al., 2001). If problematic electrodes were identified in the recording, the mean signals provided by neighboring electrodes were interpolated. Ocular artifacts were filtered out. The mean of the electrodes placed on the left and right mastoids were considered as a reference for LPP analysis (Moser et al., 2006; Shafir et al., 2015). The data was segmented for each trial. For every trial, a period of 200ms prior to image presentation, 4000ms after stimuli exposure (where trials involved the initial implementation of emotion regulation strategies) and 3000ms after stimuli presentation (in the case of choice trials) were used as time references for LPP. LPP amplitude was calculated for the trials without artifacts, as a mean of the signal extracted from centro-parietal electrodes (Cz, CP1, CP2) (Dorman Ilan et al., 2019; Thiruchselvam et al., 2011).

Procedure

All participants provided informed consent at enrollment. To register, participants completed demographic data and provided their medical history. Following enrollment,

participants were invited to complete the CTQ (initial assessment). The distribution of CTQ scores was then calculated. Participants were separated into the 25% lower distribution (range: 25 - 34) and into the 25% upper distribution (range: 56 - 109) of CTQ total scores. After being distributed into one of the two groups (low and high maltreatment scores, respectively), we invited participants to the Cognitive Neuroscience Laboratory (Babeș-Bolyai University, Cluj-Napoca, Romania) after applying the inclusion criteria. At the laboratory, participants provided informed consent for the procedures and were instructed in regards to the experimental task and EEG data collection procedures. During EEG data analysis, 5 participants were excluded due to technical problems encountered with the data recording. Following completion of the experimental task, participants completed the PID-5. After completion of this instrument, participants were rewarded with sale vouchers. The PID-5 was completed again at one and three months follow-up. One participant dropped out during the three month follow-up. At the end of the study, participants were offered another sale voucher if they completed all stages of the follow-up.

3.4.3. Results

Post hoc comparisons suggested that, when the emotional intensity level is low, LPP pre-choice was lower when distraction was initially implemented, compared to reappraisal, t(6240) = -2.41, p = .016. A significant difference was found when trials that initially started with distraction were compared to trials that started with reappraisal in the case of the high maltreatment group, when emotional intensity was low, t(6240) = -2.09, p = .036, suggesting that distraction resulted in higher LPP pre-choice modulation than reappraisal when emotional intensity was low. Emotional intensity level significantly impacted distraction choice frequency, F(1, 77) = 19.71, p < .001, η_p^2 = .204. Post hoc comparisons suggested that participants chose distraction more frequently when emotional intensity was high, when compared to low intensity, t(77) = -4.44, p < .001. No other significant differences were found in the implementation and selection stages. There was a significant effect of initial strategy implementation*emotional intensity level interaction, F(1,77) = 29.04, p < .001, η_p^2 = .274. When confronted with low emotional intensity images, participants switched more frequently when trials initially started with distraction, compared to trials that started with reappraisal, t(77) = 6.57, p < .001. Participants in the high maltreatment group switched more frequently when emotional intensity was low and trials initially started with distraction, compared to trials that initially started with reappraisal, t(77) = 5.10, p < .001. Participants in the low maltreatment group also switched more frequently when emotional intensity was low. In this case, we compared trials that initially started with distraction to trials that initially started with reappraisal, t(77) = 4.18, p = .002.

Associations with AVPD and OCPD

Table 2 presents detailed results for these analyses. Post hoc analyses suggested that higher scores of AVPD traits were identified in the high maltreatment group, when compared to the low maltreatment group, t(76) = -3.04, p = .003. We found lower scores of OCPD traits at one month, t(76) = 2.77, p = .019, and three months follow-up assessment, t(76) = 3.50, p = .002, when compared to baseline assessment. No differences were found when the two follow-ups were compared, t(76) = 1.35, p = .373. Post hoc comparisons suggested that participants in the high maltreatment group presented higher scores of OCPD traits, when compared to the low maltreatment group, t(76) = -2.29, p = .025. We found no support for the mediation analysis.

Table 2. Associations with cluster C outcomes (N = 78).

Outcome	Factor	Sum of squares	df	df	Mean square	F	p	η_p^2
AVPD traits	Time	1.131	2	152	0.565	0.61	.543	.008
	Group	114	1	76	113.8	9.23*	.003	.108
	Time*Group	0.121	2	152	0.060	0.06	.937	.001
OCPD traits	Time	13.17	2	152	6.587	7.24**	<.001	.087
	Group	49.1	1	76	49.09	5.23*	.025	.064
	Time*Group	1.38	2	152	0.688	0.75	.471	.010

**p <.05; **p <.001; AVPD = Avoidant personality disorder; OCPD = Obsessive-compulsive personality disorder.*

3.4.4. Discussion

Initial implementation stage

Previous research suggests higher LPP modulation is expected when reappraisal is implemented in low emotional intensity situations, and when distraction is implemented in high emotional intensity situations (Shafir & Sheppes, 2018; Shafir et al., 2015; Sheppes, 2020). These results were not replicated in our study. The literature seems to suggest that childhood maltreatment is associated with lower use of reappraisal and with lower emotion regulation success (Ion et al., 2023; Miu et al., 2022). We categorized childhood maltreatment as low or high scores, based on the CTQ score distribution, which could explain our results. As this is the first study employing an experimental measure of emotion regulation to investigate the impact of childhood maltreatment (categorized as low vs. high scores of maltreatment) on strategy implementation, we cannot extract clear inferences related to our results. Given the novelty of this study, more research is necessary concerning the impact of childhood maltreatment on the implementation stage.

Selection stage

Our results are in line with research that suggests that individuals prefer using distraction in high intensity situations (Shafir & Sheppes, 2018; Shafir et al., 2015; Sheppes, 2020). This line of research suggests that reappraisal implies increased cognitive effort (Suri et al., 2015) and that emotional intensity influences the implementation of distraction and reappraisal (Shafir et al., 2015; Sheppes & Gross, 2011). More concretely, distraction implies less cognitive effort than reappraisal, and does not hinder resource allocation, as it entails disengagement from difficult emotions (Shafir et al., 2015; Sheppes, 2020). The two groups did not differ when it comes to the frequency of distraction choice and selection flexibility. As a result, our hypothesis was not confirmed. Taking into account that this is the first study that uses this novel measure of emotion regulation to investigate whether childhood maltreatment (categorized as low or high maltreatment scores) impacts preferences in regulatory strategy use, we cannot extract clear conclusions.

Monitoring stage

In the monitoring stage, participants in both groups tended to switch more frequently in low emotional intensity trials that initially started with distraction. These results replicate previous findings suggesting that, when participants are presented with regulatory options that

might go against preferences to use certain regulatory strategies, switching frequency increases (Dorman Ilan et al., 2019). It is also possible that reappraisal maintenance might be due to participants sticking with the default option, which has been noticed in previous studies (Suri et al., 2015; Dorman Ilan et al., 2019). There were no differences between the two groups in terms of selection flexibility or neural consequence. The monitoring stage has never before been investigated in the case of childhood maltreatment. Given the novelty of these findings, further investigation is necessary.

Associations with AVPD and OCPD personality traits

Existing theories explaining cluster C point to childhood adversity as a possible risk factor. Although there are mixed effects identified in previous literature, some studies point to the association between childhood maltreatment, AVPD, and OCPD, respectively (Klein et al., 2015; Waxman et al., 2014; Zhang & Zheng, 2018; Zhao et al., 2021). However, we did not find support for the mediation model, given that childhood maltreatment scores levels and the moment of assessment did not interact. Previous research suggests that childhood adversity could be a transdiagnostic risk factor for psychopathology (Hogg et al., 2022; Hostinar et al., 2023; McLaughlin et al., 2020), and that emotion regulation could play a role in this association (Miu et al., 2022; Weissman et al., 2019). This is the first study investigating the associations between childhood maltreatment and cluster C pathological personality traits, as specified by the dimensional model of PDs (APA, 2013; Krueger & Markon, 2014). Clear conclusions relating to our results cannot be extracted. But the results of our study underline the need to further investigate childhood maltreatment in the case of cluster C personality pathology, especially when emotion regulation is taken into account.

Overall, our current results could also be explained by categorizing childhood maltreatment into high and low scores levels. We used the upper and lower distribution of maltreatment scores to differentiate between the two groups. However, low scores of maltreatment do not indicate the absence of exposure to such experiences. As such, further studies into the investigated associations are necessary, using control groups that do not have a history of childhood maltreatment or other adversities.

So far, this study contributes to current literature by investigating the impact of childhood maltreatment on several stages of the emotion regulation process. Previous research on emotion regulation and its association with childhood maltreatment comes mostly from self-reported data, and generally concentrates on the implementation stage (e.g., Burns et al., 2010; Ion et al., 2023; Warmingham et al., 2023). We have employed a novel experimental measure of emotion regulation (adapted from Dorman Ilan et al., 2019) in our quest to investigate this association. Moreover, we looked at neural markers of emotion regulation, thus measuring regulatory aspects that are not accessible through self-report assessment. Studies show that emotion regulation is a very important process involved in psychopathology (McLaughlin et al., 2020; Weissman et al., 2019; but see Miu et al., 2022 for a review), and that childhood maltreatment can not only dysregulate affective regulatory systems (e.g., Schweizer et al., 2016; Tottenham et al., 2010), but also contribute to psychopathology risk (McLaughlin et al., 2020; Miu et al., 2022; Smith & Pollak, 2021). Further investigation of these constructs and into how their interactions unfold is necessary. Investigating the stages involved in the process of regulating emotions would lead to a better understanding of the factors that predispose to and maintain psychopathology.

This study also presents a series of limitations. Sample is small, and this could impact results and statistical power. Participants were distributed into the two groups based on high or low scores of childhood maltreatment, which could have biased our results. The directionality and temporality of the associations with childhood maltreatment cannot be established.

Childhood maltreatment was measured using self-report, retrospective questionnaires. We solely focused on maltreatment as a facet of childhood adversity. Cluster C personality traits were also measured using a self-report questionnaire. We did not employ clinical interviews for diagnosis, nor did we take clinical comorbidities into account. Personality impairment was not measured. Cluster C were measured according to the dimensional approach (APA, 2013; Krueger & Markon, 2014). This could be considered a limitation of the study as this approach recategorizes DPD as a trait specified diagnosis (Krueger & Markon, 2014; Skodol et al., 2014).

3.5. Study 4. Efficacy Of A Reappraisal-Based Training In The Case Of Cluster C Symptomatology

3.5.1. Introduction

Reappraisal is considered to be an advantageous emotion regulation strategy, as studies indicate that it promotes health behaviors, and it reduces psychopathology symptomatology, especially when it is employed flexibly, adapted to the requirements of the context (Aldao, 2013; Bonanno & Burton, 2013; Clark, 2022). A previous study investigated the effects of a reappraisal training on AVPD symptomatology, and suggested that reappraisal success increased, while intensity ratings of negative images decreased following 2 sessions of training (Koenigsberg et al., 2019). Another study indicated that individuals with AVPD present anxiety when preparing to implement reappraisal in a task containing social images, although they are marginally successful in employing reappraisal (Denny et al., 2015). Not much else is known on the effect of reappraisal in the case of this cluster. As such, this study proposes to investigate the efficacy of a reappraisal training on cluster C symptomatology.

Studies suggest that people differ in regards to the activation of specific emotion regulation goals, depending on the context or personality traits (Eldesouky & English, 2019a; Hughes et al., 2020). Studies also indicate that early life experiences, especially adversities such as childhood maltreatment, can influence the decision to regulate emotion and the direction of emotion regulation goals (Eldesouky & Gross, 2019; Ion et al., 2023). There is also evidence that emotion regulation goals tend to be dysregulated in psychopathology, and individuals presenting mental health disorders might choose to maintain or increase the intensity of negative emotions, instead of regulating them in a direction that might reduce distress (Millgram et al., 2015; Millgram et al., 2020).

Previous research indicates that reappraisal success might depend on the emotion regulation goals that are activated in the selection stage (Tamir et al., 2019; Tamir & Millgram, 2017). This line of research suggests that emotion regulation goals can be explicitly activated in order to influence both the strategies employed to regulate emotion, and the outcomes of cognitive reappraisal (Eldesouky & Gross, 2019; Tamir et al., 2019). In this study, we hypothesize that cognitive reappraisal training, accompanied by the explicit activation of emotion regulation goals directed toward reducing negative emotions, will be more effective in reducing negative emotions and cluster C symptomatology than cognitive reappraisal training without the explicit activation of emotion regulation goals and a daily monitoring diary.

The literature has previously shown that exposure to ACEs and the presence of clinical comorbidities can negatively influence the course of treatment, compliance to treatment, and can contribute to the persistence of psychopathological symptoms (e.g., Liu, 2017; Ross et al., 2003; Trotta et al., 2015; Tyrka et al., 2013). What is unclear, however, relates to whether the presence of a history of childhood adversities and other PD comorbidities can impact the effect of reappraisal on cluster C symptomatology (Birgenheir & Pepper, 2011). We propose to investigate whether childhood maltreatment and the presence of comorbid PD symptomatology predict the outcomes of the reappraisal training. Moreover, the moderating role of childhood maltreatment on training outcomes will also be investigated.

3.5.2. Methods

The study was pre-recorded in OSF (https://osf.io/z2kan) and received an ethics approval from The Scientific Council of The Babeș-Bolyai University of Cluj-Napoca, Romania (reference number: 370TT / 10.04.2023).

Study design

This study includes independent repeated measures, using a within-between (3x3) design. The time of assessment (baseline, post-test and follow-up) is used as the within factor, and the group is used a between factor. This study included three groups: participants in the first group were instructed to use reappraisal in order to reduce the intensity of negative emotions, participants in the second group were instructed to use reappraisal with the purpose of either increasing, maintaining or reducing the intensity of negative emotions, while the control group was invited to fill in a monitoring diary.

Participants

Initially, the sample size was calculated. G*Power, v 3.1.9.4, indicated that the sample size should be of at least 93 participants (31 participants/group). Figure 1 presents the flowchart diagram of participants. The final sample consisted of 113 participants, aged from 20 to 58 years (M = 35.43, SD = 8.70). The sample consisted mostly of women (N = 108, 95.6%). Participants were included in the study if their age was at least 18, if they presented at least one cluster C PD symptoms, and if they completed baseline, post-test and follow-up assessments. We considered participants as dropouts (N = 62; 35.4%) if they did not install the mobile app that would be used for training (N = 34), if they did not complete the post-test assessment (N = 23), and if they did not complete the follow-up assessment (N = 5).

Instruments

Childhood adversities. We measured childhood maltreatment as a facet of childhood adversity, using the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003).

Cluster C personality disorders. Cluster C symptomatology was measured using the Schedule for Nonadaptive and Adaptive Personality - 2nd Edition (SNAP-2; Clark et al., 2014).

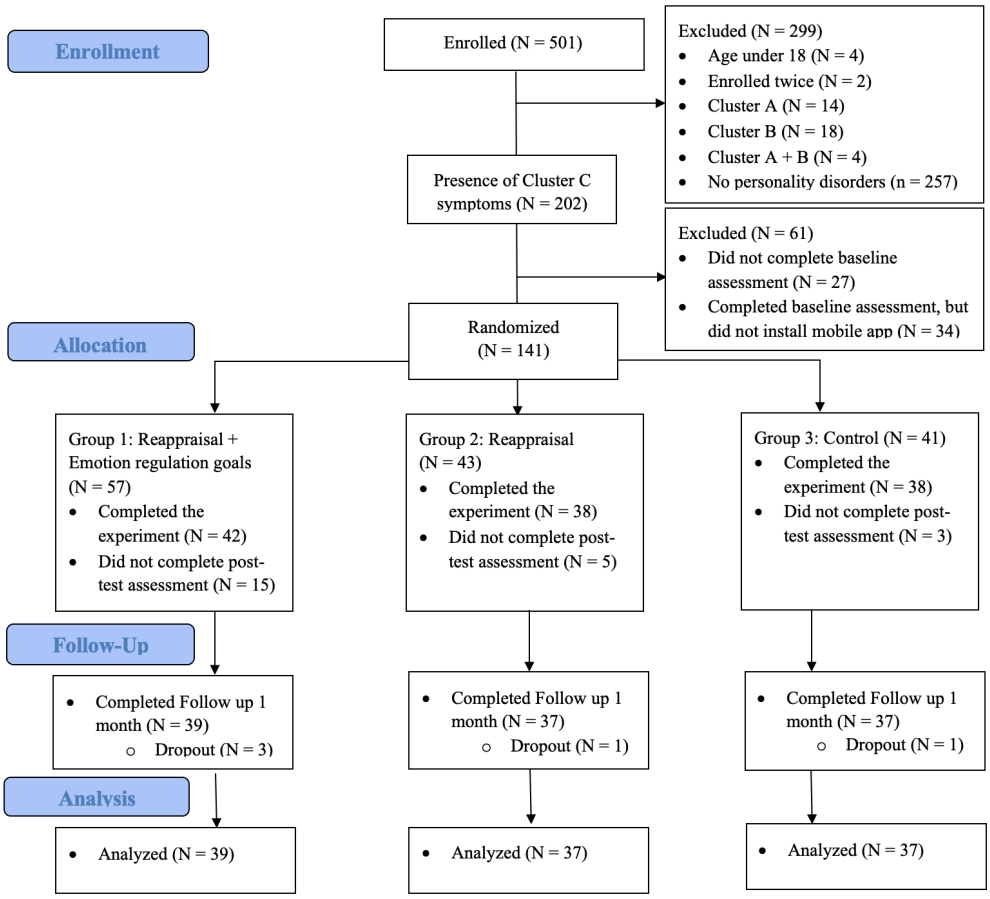

Figure 1. Flowchart diagram describing included participants.

Emotion regulation. Emotion regulation goals were measured using the Emotion Regulation Goals Scale (ERGS; Eldesouky & English, 2019a). Emotion regulation strategies were measured using the Extended Emotion Regulation Questionnaire (E-ERQ; Guassi Moreira et al., 2021).

Negative emotions. We measured negative affect using the Positive And Negative Affect Scale - Negative affect subscale (PANAS-NA; Watson et al., 1988).

Monitoring diary. The training was implemented with the help of a self-monitoring diary. The diary contained five items. The first question asked participants to describe an activating event that happened to them in the past two days. Participants in the experimental groups were invited to refer solely to negative events, while participants in the control group were invited to refer either to positive or to negative events. The second question involved descriptions of the beliefs participants had during the activating events. The third item invited participants to rate their negative emotions, using the PANAS-NA subscale. The last two items asked participants to select items that referred to the motives and strategies used to regulate emotions, using the ERGS and the E-ERQ scales as checklists. The experimental groups completed the last three items prior to and after reappraisal training, while the control group completed these measures once.

Procedure

Recruitment was carried out via advertisement on social media. At enrollment, participants provided informed consent, and completed the SNAP-2. The presence of PD symptomatology was assessed using SNAP-2. Following recruitment, participants were invited to complete the baseline assessment (CTQ, ERGS, E-ERQ, PANAS-NA). Following completion, participants were invited to install a mobile app, where the training was implemented. Participants were randomized into one of the three groups using simple randomization, if they installed the mobile app. If they installed the app, participants had to complete 6 exercises in the span of 2 weeks. Participants in all three groups received notifications on their phones once every two days. The exercises were accompanied by video instructions. The implementation of the experimental tasks was monitored and personalized feedback was provided in order to reduce errors upon implementation of reappraisal. Upon completion of the training, participants completed post-test and follow-up (one month) assessment (SNAP-2 - cluster C subscales, ERGS, E-ERQ, PANAS-NA subscale). At the end of the study, participants were rewarded with sale vouchers, based on a raffle.

Training phase

Participants in the control group completed solely the monitoring diary. For the first two groups, we employed three exercises that repeated twice, accompanied by video instructions, in order to foster reappraisal abilities. Participants in the first group were told that the purpose of these exercises was to decrease the intensity of negative emotions, while participants in the second group were instructed to apply the exercises with the purpose of either increasing, maintaining or decreasing the intensity of negative affect (the choice of emotion regulation goals was left to participants). The following training exercises are extracted from the CBT/REBT umbrella. When employed in therapy, these exercises are accompanied by more extensive cognitive, behavioral and experiential techniques, guided by a therapist (Beck, 2020; Clark, 2014; Leahy & Rego, 2012). The training exercises applied in the case of this study do not substitute CBT/REBT intervention programs, provided and conducted by therapists.

Evidence gathering and consequential analysis (Beck, 2012; Clark, 2014). The first exercise contained 11 questions. This exercise fosters a more balanced evaluation of participants' belief content and helps generate rational explanations of an activating event (Beck, 2012; Clark, 2014).

Reframing or perspective taking exercise (Hayes, 2020). This exercise was extracted from the Acceptance and Commitment Therapy approach (ACT; Hayes et al., 2012).We included this exercise in our training because ACT exercises foster psychological flexibility by promoting acceptance of negative emotions (Hayes et al., 2006). As a result, in the case of the second group, this exercise might promote maintaining negative emotions, implicitly. The purpose of this guided exercise is to focus on current beliefs, emotions and experiences as a moment in time, and situate them within the lifespan time frame, or within the totality of participants' experiences (Clark, 2014; Hayes, 2020).

Positive reappraisal (Clen et al., 2014). The last exercise employed two questions. This exercise promotes reorientation on the positive aspects of a situation in order to identify schema-incongruent information and to promote adaptive personal coping (Clark, 2014).

3.5.3. Results

Little's test indicated that data was MCAR, $\chi^2(36) = 0$, $p = 1$, suggesting that there were no significant differences between dropouts and completers at baseline assessment. One-way ANOVA results indicated no significant differences in terms of other PD symptoms and childhood maltreatment between the three groups. Results are presented in Table 1.

Table 1. One-way ANOVA results (N = 113).

Variable	F	df	df	*p*
Paranoid PD	0.34	2	110	.707
Schizoid PD	0.41	2	110	.661
Schizotypal PD	1.33	2	110	.267
Antisocial PD	2.26	2	110	.108
Borderline PD	1.78	2	110	.172
Histrionic PD	1.12	2	110	.327
Narcissistic PD	0.53	2	110	.585
Childhood maltreatment	0.41	2	110	.658

MANOVA results indicated no significant differences between groups for the set of outcomes at baseline assessment, F(36, 186) = 1.05, $p = .399$, Wilks' $\lambda = .690$, $\eta_p^2 = .169$.

Differences between groups (Primary outcomes)

The descriptive means for the differences between groups are presented in Table 2.

Table 2. Descriptives for primary outcomes in each moment of time, by group (N = 113).

Variable	Moment of time	Group					
		Reappraisal + emotion regulation goals (N = 39)		Reappraisal (N = 37)		Control (N = 37)	
		M	SD	M	SD	M	SD
AVPD	Pre-test	13.71	0.61	14.81	0.63	13.59	0.63
	Post-test	11.17	0.69	12.89	0.71	11.29	0.71
	Follow-up 1	10.87	0.75	12.32	0.77	11.21	0.77
DPD	Pre-test	7.66	0.72	8.62	0.74	7.97	0.74
	Post-test	6.89	0.76	7.73	0.78	7.24	0.78
	Follow-up 1	6.07	0.75	7.56	0.77	6.81	0.77
OCPD	Pre-test	16.59	0.62	17.32	0.64	16.32	0.64
	Post-test	16.43	0.60	16.08	0.62	16.97	0.62
	Follow-up 1	15.61	0.63	15.37	0.64	16.64	0.64
Negative affect	Pre-test	33.38	1.29	35.75	1.32	32.27	1.32

Post-test	29.84	1.43	29.94	1.47	30.37	1.47
Follow-up 1	25.48	1.60	27.13	1.64	27.00	1.64

AVPD = Avoidant personality disorder; DPD = Dependent personality disorder; OCPD = Obsessive-compulsive personality disorder.

AVPD. For AVPD symptoms, results indicated a significant effect of time, F(2, 220) = 43.29, $p < .001$, $\eta_p^2 = .282$, and no significant effect of group, F(2, 110) = 1.51, $p = .224$, $\eta_p^2 = .027$, or time*group interaction, F(4, 220) = 0.26, $p = .900$, $\eta_p^2 = .005$.

DPD. DPD symptomatology did not meet the assumption of sphericity, and we applied the Huynh-Feldt correction. For this variable, we detected an effect of time, F(1.949, 214.430) = 8.23, $p < .001$, $\eta_p^2 = .070$, but no effect of group, F(2, 110) = 0.63, $p = .534$, $\eta_p^2 = .011$, or time*group interaction, F(3.899, 214.430) = 0.22, $p = .922$, $\eta_p^2 = .004$.

OCPD. Regarding OCPD symptomatology, results indicated an effect of time, F(2, 220) = 4.73, $p = .010$, $\eta_p^2 = .041$, and time*group interaction, F(4, 220) = 2.95, $p = .021$, $\eta_p^2 = .051$, but no effect of group, F(2, 110) = 0.17, $p = .836$, $\eta_p^2 = .003$.

Negative emotions. Mauchly's test indicated significance, so we applied the Huynh-Feldt correction. Results showed an effect of time, F(1.962, 215.872) = 32.37, $p < .001$, $\eta_p^2 = .227$, and no effect of group, F(2, 110) = 0.38, $p = .684$, $\eta_p^2 = .007$, or time*group interaction, F(3.925, 215.872) = 1.02, $p = .396$, $\eta_p^2 = .018$.

Impact of comorbid PD symptoms (Primary outcomes)

AVPD. Once comorbid PD symptoms were controlled for, results showed non-significant effects (see Table 3) and indicated that the presence of paranoid PD, F(1, 103) = 5.32, $p = .023$, $\eta_p^2 = .049$, and schizoid PD, F(1, 103) = 7.46, $p = .007$, $\eta_p^2 = .068$, was associated with AVPD symptomatology outcomes.

DPD. Results indicated no significant effects after controlling for comorbid PD symptoms (see Table 3), and suggested that the presence of paranoid PD, F(1, 103) = 4.12, $p = .045$, $\eta_p^2 = .038$, histrionic PD, F(1, 103) = 15.51, $p < .001$, $\eta_p^2 = .131$, and narcissistic PD, F(1, 103) = 18.03, $p < .001$, $\eta_p^2 = .149$, was significantly associated with DPD symptomatology.

OCPD. The significant effect of time*group interaction maintained even after controlling for comorbid PDs (see Table 3). In this instance, results indicated that the presence of antisocial PD, F(1, 103) = 7.44, $p = .007$, $\eta_p^2 = .067$, and narcissistic PD, F(1, 103) = 8.81, $p = .004$, $\eta_p^2 = .079$, was significantly associated with OCPD symptomatology outcomes.

Negative emotions. Results showed non-significant effects once comorbid PD symptoms were controlled for, and no significant associations or interactions were found with negative emotions outcomes (see Table 3).

Table 3. ANCOVA results for primary outcomes using comorbid PD symptoms as a covariate (N = 113).

Variable	Factor	F	df	df	*p*	R^2	Cohen's *d*	Correction
AVPD	Time	2.58	2	206	.078	.024	.512	
	Group	1.02	2	103	.362	.020	.225	

	Time*Group	0.28	4	206	.890	.005	.112	
DPD	Time	0.56	2	206	.567	.005	.144	
	Group	0.29	2	103	.749	.006	.095	
	Time*Group	0.34	4	206	.849	.007	.127	
OCPD	Time	1.20	2	206	.301	.012	.262	
	Group	0.29	2	103	.745	.006	.096	
	Time*Group	2.82*	4	206	.026	.052	.765	
Negative affect	Time	0.21	2	206	.806	.002	.083	Huynh-Feldt
	Group	0.31	2	103	.733	.006	.098	
	Time*Group	1.07	4	206	.368	.021	.337	Huynh-Feldt

**p ≤ .05; **p ≤ .001; AVPD = Avoidant personality disorder; DPD = Dependent personality disorder; OCPD = Obsessive-compulsive personality disorder.*

Impact of childhood maltreatment on outcomes (Primary outcomes)

Cluster C symptomatology. Once childhood maltreatment was controlled for, results showed non-significant effects or associations for AVPD and DPD symptomatology. In the case of OCPD symptomatology, the significant effect of time*group maintained, but childhood maltreatment was not associated with OCPD outcomes (see Table 4).

Negative emotions. No significant effect of childhood maltreatment was found once this variable was controlled for (see Table 4). Childhood maltreatment predicted negative emotions outcomes, F(1, 109) = 10.89, p = .001, η_p^2 = .091.

Table 4. ANCOVA results using childhood maltreatment as a covariate (N = 113).

Variable	Factor	F	df	df	p	R^2	Cohen's d	Correction
AVPD	Time	1.37	2	218	.255	.012	.294	
	Group	1.55	2	109	.216	.028	.324	
	Time*Group	0.23	4	218	.919	.004	.100	
DPD	Time	0.17	1.973	215.021	.836	.002	.077	Huynh-Feldt
	Group	0.67	2	109	.509	.012	.162	
	Time*Group	0.18	3.945	215.021	.946	.003	.088	Huynh-Feldt
OCPD	Time	2.19	2	218	.114	.020	.445	
	Group	0.18	2	109	.835	.003	.077	
	Time*Group	3.03*	4	218	.018	.053	.798	
Negative affect	Time	1.39	2	218	.250	.013	.297	
	Group	0.54	2	109	.582	.010	.138	
	Time*Group	0.97	4	218	.422	.018	.306	

**p ≤ .05; AVPD = Avoidant personality disorder; DPD = Dependent personality disorder; OCPD = Obsessive-compulsive personality disorder.*

Moderation results

No support was identified for the moderating role of childhood maltreatment on the impact of reappraisal training on cluster C at post-test or follow-up assessment. Childhood maltreatment moderated the effect of training on negative emotions at one month follow-up. Figure 2 presents the regression plot of this effect.

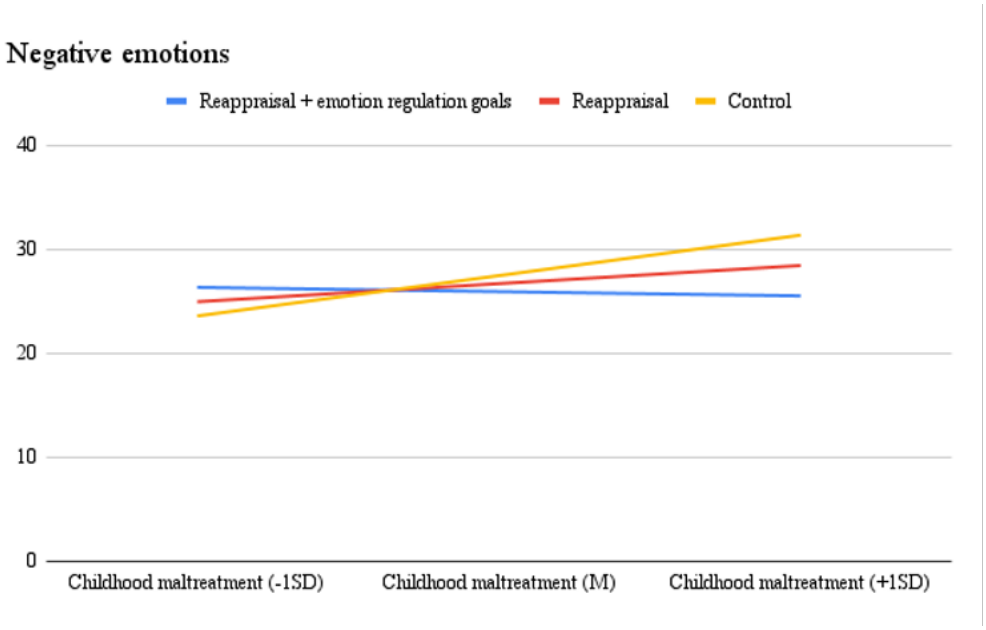

Figure 2. Regression plot for one month follow-up moderation results; Outcome: Negative emotions.

3.5.4. Discussion

Differences between the three groups

The first hypothesis of this study was not confirmed. It is possible that these results could be explained by the usage of a daily self-monitoring journal as a control. Previous literature suggests that self-monitoring can increase insight and self-awareness to possible triggers, maladaptive beliefs, emotional reactions and problematic behaviors, which, in turn, could lead to subsequent changes in behavior (e.g., Avina, 2008; Chen et al., 2017; King & Boswell, 2019; Proudfoot & Nicholas, 2010). This study contributes to the literature by suggesting that a similar effect can be expected when using a self-monitoring diary on cluster C symptomatology and related outcomes. Regarding the differences between groups identified in the case of OCPD, where simple reappraisal was more effective in the long term, it is possible that individuals with OCPD symptomatology might be motivated toward goals that aim at reducing distress when using adaptive strategies, even if that implies solely awareness of triggers, beliefs and emotions, as was the case for the control group. The exercises we employed could also explain these results. Previous literature suggests that the explicit activation of emotion regulation goals could impact the success of reappraisal implementation

(Tamir et al., 2019). We did not identify a similar effect in our study and more research is necessary in order to draw firm conclusions. However, this study contributes to available research by investigating the impact of reappraisal on all cluster C PDs and informs on whether the explicit activation of pro-hedonic emotion regulation goals contributes to reappraisal success in the case of cluster C symptoms.

It seems that reappraisal usage dropped slightly from post-test to one month follow-up assessment when emotion regulation goals were explicitly activated. The outcomes of the training were maintained, however, when emotion regulation goals were not activated and in the case of the control group. The exercises we employed could explain these results. More concretely, it is possible that participants activated goals implicitly in the simple reappraisal group and control group, as regulation goals seem to predict regulatory strategy use (Eldesouky & English, 2019b; Tamir et al., 2019).

It is also possible that results related to selective attention and situation selection could indicate that experiential avoidance increased following the application of the tasks in this study. It has been previously suggested that strategies such as distraction, selective attention and situation selection entail avoidance (e.g., Ion et al., 2023; McMahon & Naragon-Gainey, 2019), which could hinder reappraisal success. Through this lens, the increases in the use of these strategies would indicate that the difficulties that individuals with cluster C symptomatology encounter in emotion regulation are persistent. More research is necessary to clarify.

The impact of childhood maltreatment and comorbid PD symptomatology on outcomes

Comorbid PD symptoms and childhood maltreatment were significantly associated with some of the outcomes of the reappraisal training, but these variables did not impact the effect of this training. As such, our second and third hypotheses are not supported. However, these results support previous research that indicates that the presence of other PD symptoms and the presence of a history of exposure to childhood maltreatment might be associated with intervention outcomes in the case of cluster C symptomatology (Birgenheir & Pepper, 2011; Diedrich & Voderholzer, 2015; Disney, 2013; Lampe & Malhi, 2018; Weinbrecht et al., 2016).

We did find that childhood maltreatment moderated the effect of the training on negative emotions measured at one month follow-up, which partially supports our fourth hypothesis. Some studies suggest that childhood maltreatment is related with heightened negative affect (Ion et al., 2023), especially in the case of other types of psychopathology (e.g., Wonderlich et al., 2007; Yaroslavsky et al., 2022). The findings of this study contribute to the current literature by indicating that this association might also be present for cluster C, and that childhood maltreatment could influence the long term effects of reappraisal on negative emotions. Not much is known, however, on how childhood maltreatment impacts negative emotions in the matter of cluster C. Further investigation is necessary to clarify.

Overall, the results of this study provide empirical support for existing psychological interventions for cluster C symptoms, as all the tasks participants had to complete during involvement in this study were extracted from the REBT/CBT umbrella of strategies (e.g., Beck et al., 2015; Beck, 2020; Hayes et al., 2012). We have explored the effect of a cognitive

reappraisal training on cluster C symptomatology, expanding the investigation beyond AVPD symptomatology. We also take into consideration possible factors that might influence the outcomes of the reappraisal training. This paper could have significant implications in regards to psychological interventions for cluster C, as it underlines the role of emotion regulation in this type of symptomatology, and the importance of assessing possible comorbidities and history of childhood maltreatment when working with cluster C disorders.

However, this study does not come without a series of limitations. The sample size employed in this study is small, which might impact the results presented above. Participants were extracted from the community, the sample was mostly composed of women, and PDs were not clinically diagnosed. PD symptomatology was measured using SNAP-2, and personality impairments were not taken into account at inclusion. The presence of other clinical comorbidities has not been taken into consideration upon enrollment in the study. This study employed solely self-report instruments. Some instruments employed in the study presented low internal validity. Results should be interpreted with caution. We employed solely retrospective accounts of childhood maltreatment, which could undermine the impact of childhood maltreatment on outcomes (Smith & Pollak, 2021). The number of days that participants completed in the diary was not taken into account in the analysis. This could impact our results, as more reappraisal practice could lead to better outcomes.

CHAPTER IV. GENERAL CONCLUSIONS AND IMPLICATIONS

The present thesis focused on investigating the associations between ACEs, emotion regulation and cluster C, and targeted the regulation of emotions as a possible factor in the relationship between ACEs and cluster C.

Previous studies suggest that exposure to childhood adversities could be a transdiagnostic risk factor that contributes to vulnerability to mental health issues (Hogg et al., 2022; Miu et al., 2022). The literature is, however, inconsistent and heterogenous when it comes to the strength and magnitude of these associations with cluster C. Even though theories that emphasize the role of childhood adversity in the case of these PDs do exist, empirical evidence is still necessary to support the assumptions put forward in these theoretical conceptualizations. In order to address the existent gaps in the literature, this research project first aimed to clarify the magnitude of the links between childhood adversity and cluster C in a meta-analysis. As the results of this meta-analysis were significant for all investigated associations, we set out to explore possible mechanisms that could explain this association.

The literature on emotion regulation as a transdiagnostic mechanism that contributes to psychopathology is continuously expanding, and some studies thus far point to difficulties in regulating emotions as a central component of other PDs (i.e., borderline PD) (Chapman, 2019; Krause-Utz et al., 2019). However, when it comes to cluster C, the literature investigating emotion regulation is scarce. The goal of this thesis was to investigate the presence and role of emotion regulation difficulties in the association between ACEs and cluster C, using a multitude of designs: cross-sectional, ecological momentary assessment, experimental and prospective designs. These types of designs allow us to capture multiple stages of the emotion regulation process. The following section highlights the theoretical, clinical and methodological advances that this thesis brings forward.

4.1. Theoretical, Conceptual And Clinical Objectives

This research project presents several theoretical and clinical implications. Most previous studies investigate the association of childhood adversity with cluster C by focusing on disentangling the associations between different types of childhood adversity and different types of PDs (e.g., Carver et al., 2014; Johnson et al., 2006). Much of the previous evidence investigating emotion regulation comes from studies comparing individuals presenting cluster B symptomatology and individuals presenting cluster C symptoms (Baczkowski et al., 2017; Denny et al., 2015; van Zutphen et al., 2018). Other studies have focused on investigating these associations solely concerning AVPD (Gratz et al., 2013; Klein et al., 2015; Meyer & Carver, 2000; Snir et al., 2017). This thesis contributes to the existing literature by focusing on cluster C PDs as standalone disorders.

The meta-analysis investigates the magnitude of the relationships between ACEs and cluster C. The results of this study indicate significant relationships both with overall cluster C, and with each specific disorder included in this cluster. Moreover, it seems like these associations decrease as age increases. A problem that surfaces in the literature is that the theoretical approaches that explain cluster C posit that exposure to childhood adversities entails causal pathways to these PDs. These pathways would involve mechanisms that have not yet been investigated. The present thesis contributes to current research by investigating a possible transdiagnostic mechanism that could play a role in the mentioned associations. The role of emotion regulation has been previously investigated in the case of other types of mental health disorders (Miu et al., 2022; Weissman et al., 2019), but not so much in the case of Cluster C.

In this research project, we contribute to the literature on cluster C by investigating several steps in the emotion regulation process and the possible difficulties that might take place in these stages. Study 2 was composed of two studies that focused on the selection and implementation stages of emotion regulation. In Study 2a, we investigated whether childhood adversity, habitual emotion regulation goals and strategies, and cluster C PDs were associated. We found that individuals with cluster C symptoms focus more on habitual instrumental goals than on goals that tend to their emotional experiences, using habitual regulatory strategies that might entail avoidance of emotions. We also found that experiences of adversity during childhood were associated with AVPD and facets of personality dysfunction. A hypothesis of this study was investigating whether childhood maltreatment moderates the association between emotion regulation (i.e., goals and strategies) and cluster C symptoms. Results suggested that, when motivated by hedonic goals, OCPD symptomatology reduced, if individuals were previously exposed to childhood maltreatment.

The literature highlights the differences between habitual and momentary assessment of emotion regulation (e.g., Koval et al., 2023), and the importance of taking the context and individual variability (Aldao, 2013; Bonanno & Burton, 2013) into account when investigating regulatory processes. In Study 2b, we focused on spontaneous emotion regulation goals and strategies, and their role in the relationship between emotional distress and cluster C symptoms. This study clarifies the associations between different emotion regulation goals and strategies and cluster C symptomatology. In this case, we found that emotional distress leads to increases in DPD symptomatology when individuals are motivated by instrumental goals. Furthermore, it seems that cluster C symptomatology was associated with increased use of strategies that

entail avoidance of emotions. Results also indicated that, when employing reappraisal, individuals with cluster C symptoms present increases in symptomatology severity. Childhood maltreatment did not moderate the association between emotional distress and cluster C problems. Taken together, results from Study 2 contribute to current research by exploring possible emotion regulation goals that motivate individuals with cluster C, and by underlining that individuals with this symptomatology tend to employ regulatory strategies that entail avoidance of emotional experiences. The results related to emotion regulation strategies also contribute to previous research by highlighting the impact these strategies could have on cluster C symptomatology in different situations. This study adds to existing research by accounting for the impact of childhood maltreatment and emotion regulation on cluster C symptomatology in the same theoretical model.

In Study 3, we focused on the selection, implementation and monitoring stages of emotion regulation. We hypothesized that childhood maltreatment would be associated with difficulties identified in these stages, both at behavioral and neural level. In the implementation stage, we found that there was a difference between reappraisal and distraction in LPP modulation at low emotional intensity. Distraction resulted in higher LPP modulation than reappraisal when participants with high maltreatment scores were confronted with low emotional intensity. Results reflected that participants preferred employing distraction in high emotional intensity situations in the selection stage. This is in line with the view that distraction implies less cognitive effort than reappraisal, and does not hinder resource allocation, as it entails disengagement from difficult emotions (Shafir & Sheppes, 2018; Shafir et al., 2015; Sheppes, 2020). Corresponding to the monitoring stage, we found that participants in both groups tended to switch more frequently in trials where distraction was initially implemented in low emotional intensity. These results reflect previous literature, where switching frequency increases when participants implement strategies that go against the preference to use distraction when emotional intensity was high (Dorman Ilan et al., 2019).

Although not all our hypotheses were supported, this is the first study that explores the impact of childhood maltreatment on several stages of the emotion regulation process. As most evidence on emotion regulation and its association with childhood maltreatment comes from self-reported data, and generally concentrates on the implementation stage (e.g., Burns et al., 2010; Ion et al., 2023; Warmingham et al., 2023), this study contributes to the current literature by employing a novel experimental measure of several emotion regulation stages. We also expected that the identified difficulties in emotion regulation would mediate the prospective association between childhood maltreatment and cluster C personality traits. Associations between high scores of childhood maltreatment, AVPD and OCPD personality traits were identified in Study 3. However, we did not find support for the proposed mediation model. Further exploration into the prospective association between childhood adversity and cluster C personality traits (according to the dimensional approach; Krueger & Markon, 2014) is necessary to clarify these results.

Study 4 tested the efficacy of a cognitive reappraisal training on cluster C symptomatology. Previous research suggests that emotion regulation goals motivate the direction of regulatory strategies (Eldesouky & English, 2019b) and could be a factor at play in reappraisal success (Tamir et al., 2019). We have contributed the literature by investigating whether the explicit activation of pro-hedonic goals, combined with the use cognitive

restructuring, could be more efficient in reducing cluster C symptomatology and negative emotions than the use of simple reappraisal (i.e., without the activation of emotion regulation goals) and the use of a monitoring diary. We found significant differences solely in the case of OCPD, with higher reductions in symptomatology having been identified in the case of simple reappraisal. This study contributes to current research by taking into account whether the presence of comorbid PD symptoms or childhood maltreatment could impact the investigated outcomes. Results suggested that comorbid PD symptoms were associated with but did not predict the outcomes related to cluster C symptomatology severity. Childhood maltreatment was associated with negative affect and impacted the effect of reappraisal on emotional distress measured at one month follow-up.

Overall, the results of this research project support the previous literature that underlines the role of childhood adversities as a possible transdiagnostic risk factor for psychopathology, expanding this approach to cluster C PDs. The results of this thesis contribute to existing theoretical models (i.e., REBT/CBT and Schema Therapy) (Beck et al., 2015; Young et al., 2003) by providing empirical support for the link between childhood adversities in the case of cluster C PDs. Moreover, this thesis advances the existing literature by highlighting the role that emotion regulation plays in this association. The contributions that this thesis brings to emotion regulation research refer to providing empirical support for the stages (i.e., the selection, implementation and monitoring stages) described in the extended process model of emotion regulation in the case of cluster C. This thesis also brings about important contributions to clinical practice. Practitioners should be taking the history of exposure to adversities during childhood and emotion regulation into account when working with individuals presenting cluster C symptomatology. Identifying the factors that impact the emergence, development and evolution of cluster C would give way to the development of more efficient and cost-effective modalities of prevention, assessment and intervention in the case of this type of symptomatology.

4.2. Methodological And Practical Objectives

This thesis also brings about several methodological implications. All the studies included in this thesis were pre-registered. The first study, employing a meta-analytic design, gives way to firmer conclusions on the investigated association. The results of our meta-analysis indicate that most identified studies investigating this association are cross-sectional. This research project contributes to the current literature by investigating this association, and the possible mechanisms at play, through the use of a variety of designs. For example, the use of ecological momentary assessment (i.e., the daily diary design) allows for a better understanding of how spontaneous aspects of emotion regulation unfold in time, across situations, in individuals presenting cluster C symptoms. The analysis typically employed to analyze ecological momentary assessment (i.e., multilevel analysis) has never been previously employed in studies investigating emotion regulation in individuals with cluster C symptoms. Given that most of the data investigating these associations is correlational or comparative, the use of experimental designs allowed us to test whether these associations apply in different contexts (e.g., high intensity situations vs. low intensity situations). The use of this type of design also contributes to current research by allowing to test the efficacy of several emotion

regulation strategies (i.e., reappraisal and distraction) on cluster C symptomatology in individuals that have previously been exposed to childhood maltreatment. Our experimental studies included control groups, and one study involved a randomization procedure, which increases the validity of our results. The results of the meta-analysis also suggested that few studies utilized longitudinal or prospective designs when investigating this association. The utilization of prospective designs (as was the case for Studies 3 and 4) allows for a better understanding of the nature of the associations between the interest constructs.

A meta-analytic design also allows for the investigation of possible moderating factors and can direct future efforts in researching the impact of childhood adversity on cluster C. Results from the meta-analysis contribute to current literature by suggesting that the types of instruments usually employed to measure both adversities, and cluster C, can impact the magnitude of their association. These results reflect the limitations identified previously in the literature for questionnaires and clinical interviews (in the case of ACEs assessment) or point to the level of agreement between available types of instruments (in the case of cluster C assessment). Even though we initially focused on cluster C as measured from the categorical assessment standpoint, this thesis employs assessment instruments that focus both on pathological personality traits specific to AVPD and OCPD (corresponding to the dimensional approach), and on specific symptoms of AVPD, DPD, and OCPD (corresponding to the categorical approach). In regards to childhood adversity, we employed instruments that focused on a broader array of childhood adversity exposure (i.e., the severity and frequency of childhood maltreatment, unpredictability, perceived social support and socio-economic status). Childhood adversities were measured from a continuous, dimensional perspective, as it has been suggested in previous reports (McLaughlin & Sheridan, 2016; Smith & Pollak, 2021).

This thesis also contributes to emotion regulation research. We have employed a novel experimental measure of emotion regulation (adapted from Dorman Ilan et al., 2019) that allows for the measurement of several stages in the emotion regulation process (i.e., the selection, implementation, and monitoring stages). This research thesis also employs EEG/ERP measures of emotion regulation, which allow for the assessment of variables that are not accessible through the use of questionnaires or interviews (i.e., neural markers of emotion regulation). These aspects have never been previously investigated in the case of individuals exposed to childhood maltreatment and, as such, provide insight into how these processes might work in the case of these individuals. In this experimental study, participants were trained in using the proposed regulatory strategies, and were given the opportunity to practice these strategies prior to the experimental task, as a way to ensure familiarization with the strategies and to ensure that participants knew how to properly employ them.

In the study investigating the impact of the cognitive reappraisal training, we offered participants personalized feedback in order to reduce possible errors that appeared during the implementation of reappraisal. The instructions for the reappraisal exercises were extracted and adapted from the REBT/CBT and ACT approaches (Beck, 2012; Hayes, 2020; Hofmann et al., 2014), in order to increase ecological validity (Cristea et al., 2012).

4.3. Limitations And Future Directions

Although this thesis brings forward important contributions, it presents a series of limitations. The discussion section of the papers included in this thesis present the limitations corresponding to each study. The following section addresses the general limitations of this thesis and proposes future directions based on these limitations.

The samples included in this thesis were composed of participants from the community, presenting cluster C symptomatology, without personality impairment being taken into account upon assessment. Clinical interviews were not employed in the assessment of cluster C. As such, the samples included in this thesis are analogue. We have not accounted for sex or age related differences in our samples, and the samples were composed mostly of women. The sample sizes employed are small, even though sample size was estimated for two of the studies included in this thesis. These limitations raise the issue of sample representativeness, limiting the generalizability of results to non-clinical settings. Future research could conduct similar studies in participants that have been clinically diagnosed with cluster C PDs, where the patterns identified in these studies might be different. Clinical comorbidities should be taken into account when investigating cluster C. In order to overcome these limitations, future studies could also investigate whether age and sex differences exist in how cluster C symptomatology manifests.

The instruments employed in this thesis are self-report instruments, and some instruments presented low internal validity. The instruments measuring childhood adversity were retrospective. Future studies could employ prospective measures that include complementary assessment (such as parent- or clinician-rated instruments). Even though this thesis consists of experimental studies and ecological momentary assessment designs, firm conclusions regarding the temporality of the findings (especially when the impact of childhood adversities is taken into account) cannot be drawn. Future studies could conduct longitudinal research in order to address the directionality and temporality of these associations.

Despite these limitations, the present thesis fills in important gaps in the research concerning cluster C, and the impact of ACEs and emotion regulation on this type of symptomatology. Taking childhood adversities and emotion regulation into account when working with these disorders could lead to advances in diagnosis, prevention and treatment of this symptomatology and its associated personality dysfunction.

REFERENCES

Adler, N., & Stewart, J. (2007). *The MacArthur scale of subjective social status*. San Francisco: MacArthur Research Network on SES & Health.

Aldao, A. (2013). The future of emotion regulation research: Capturing context. *Perspectives on Psychological Science*, *8*(2), 155-172. doi: 10.1177/1745691612459518.

Aldao, A., Gee, D. G., De Los Reyes, A., & Seager, I. (2016). Emotion regulation as a transdiagnostic factor in the development of internalizing and externalizing psychopathology: Current and future directions. *Development and Psychopathology*, *28*(4pt1), 927-946. doi:10.1017/S0954579416000638.

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*(2), 217-237. doi: 10.1016/j.cpr.2009.11.004.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. American Psychiatric Publishing, Inc.

Andriopoulos, P., & Kafetsios, K. (2015). Avoidant attachment and the processing of emotion information: selective attention or cognitive avoidance?. *Journal of Relationships Research*, *6*, E6. doi:10.1017/jrr.2015.2.

Avina, C. (2008). The use of self-monitoring as a treatment intervention. In: *Evidence-based adjunctive treatments* (pp. 207-219). Academic Press. doi: 10.1016/B978-012088520-6.50011-1.

Bach, B., & Hutsebaut, J. (2018). Level of Personality Functioning Scale–Brief Form 2.0: Utility in capturing personality problems in psychiatric outpatients and incarcerated addicts. *Journal of Personality Assessment*, *100*(6), 660-670. doi: 10.1080/00223891.2018.1428984.

Baczkowski, B. M., van Zutphen, L., Siep, N., Jacob, G. A., Domes, G., Maier, S., Sprenger, A., Senft, A., Willenborg, B., Tuscher, O., Arntz, A., & van de Ven, V. (2017). Deficient amygdala–prefrontal intrinsic connectivity after effortful emotion regulation in borderline personality disorder. *European Archives of Psychiatry and Clinical Neuroscience*, *267*, 551-565. doi: 10.1007/s00406-016-0760-z.

Bagby, R. M., & Farvolden, P. (2004). The personality diagnostic questionnaire-4 (PDQ-4). In: *Comprehensive Handbook of Psychological Assessment*, *2*, 122-133. John Wiley & Sons, Inc.

Bangash, A. (2020). Personality disorders in later life: epidemiology, presentation and management. *BJPsych Advances*, *26*(4), 208-218. doi: 10.1192/bja.2020.16.

Battle, C. L., Shea, M. T., Johnson, D. M., Yen, S., Zlotnick, C., Zanarini, M. C., Sanislow, C.A., Skodol, A.E., Gunderson, J.G., Grilo, C.M., McGlashan, T.H., & Morey, L. C. (2004). Childhood maltreatment associated with adult personality disorders: findings from the Collaborative Longitudinal Personality Disorders Study. *Journal of Personality Disorders*, *18*(2), 193-211. doi: 10.1521/pedi.18.2.193.32777.

Beck, A. T., Davis, D. D., & Freeman, A. (Eds.). (2015). *Cognitive Therapy of Personality Disorders.* Guilford Publications.

Beck, J. S. (2012). *Cognitive Behavior Therapy: Basics and Beyond.* Guilford Publications.

Beck, J. S. (2020). *Cognitive Behavior Therapy: Basics and Beyond.* Guilford Publications.

Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., & Zule, W. (2003). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse & Neglect*, *27*(2), 169-190. doi: 10.1016/s0145-2134(02)00541-0.

Birgenheir, D. G., & Pepper, C. M. (2011). Negative life experiences and the development of cluster C personality disorders: A cognitive perspective. *Cognitive Behaviour Therapy*, *40*(3), 190-205. doi: 10.1080/16506073.2011.566627.

Birk, J. L., & Bonanno, G. A. (2016). When to throw the switch: The adaptiveness of modifying emotion regulation strategies based on affective and physiological feedback. *Emotion*, *16*(5), 657. doi: 10.1037/emo0000157.

Bonanno, G. A., & Burton, C. L. (2013). Regulatory flexibility: An individual differences perspective on coping and emotion regulation. *Perspectives on Psychological Science*, *8*(6), 591-612. doi: 10.1177/1745691613504116.

Bonanno, G. A., Maccallum, F., Malgaroli, M., & Hou, W. K. (2020). The Context Sensitivity Index (CSI): Measuring the ability to identify the presence and absence of stressor context cues. *Assessment*, *27*(2), 261-273. doi: 10.1177/1073191118820131.

Borges, L. M., & Naugle, A. E. (2017). The role of emotion regulation in predicting personality dimensions. *Personality and Mental Health*, *11*(4), 314-334. doi: 10.1002/pmh.1390.

Bornstein, R. F. (2012). Illuminating a neglected clinical issue: Societal costs of interpersonal dependency and dependent personality disorder. *Journal of Clinical Psychology*, *68*(7), 766-781. doi: 10.1002/jclp.21870.

Burns, E. E., Jackson, J. L., & Harding, H. G. (2010). Child maltreatment, emotion regulation, and posttraumatic stress: The impact of emotional abuse. *Journal of Aggression, Maltreatment & Trauma*, *19*(8), 801-819. doi: 10.1080/10926771.2010.522947.

Campbell, J. I., & Thompson, V. A. (2012). MorePower 6.0 for ANOVA with relational confidence intervals and Bayesian analysis. *Behavior Research Methods*, *44*, 1255-1265. doi: 10.3758/s13428-012-0186-0.

Carver, C. S., Johnson, S. L., McCullough, M. E., Forster, D. E., & Joormann, J. (2014). Adulthood personality correlates of childhood adversity. *Frontiers in Psychology*, *5*, 1357. doi: 10.3389/fpsyg.2014.01357.

Chanen, A. M., & Thompson, K. N. (2019). The age of onset of personality disorders. In *Age of onset of mental disorders* (pp. 183-201). Springer, Cham.

Chapman, A. L. (2019). Borderline personality disorder and emotion dysregulation. *Development and Psychopathology*, *31*(3), 1143-1156. doi: 0.1017/S0954579419000658.

Chen, S., & Bonanno, G. A. (2021). Components of emotion regulation flexibility: Linking latent profiles to depressive and anxious symptoms. *Clinical Psychological Science*, *9*(2), 236-251. doi: 10.1177/2167702620956972.

Chen, J. A., Fearey, E., & Smith, R. E. (2017). "That Which is Measured Improves": A Theoretical and Empirical Review of Self-Monitoring in Self-Management and Adaptive Behavior Change. *Journal of Behavior Therapy and Mental Health*, *1*(4), 19-38. doi: 10.14302/issn.2474-9273.jbtm-16-1180.

Chiesa, M., Larsen-Paya, M., Martino, M., & Trinchieri, M. (2016). The relationship between childhood adversity, psychiatric disorder and clinical severity: results from a multi-centre study. *Psychoanalytic Psychotherapy*, *30*(1), 79-95. doi: 10.1080/02668734.2016.1145131.

Clark, D. A. (2014). Cognitive restructuring. In: Hofmann, S. G., Dozois, D. J., Rief, W. E., & Smits, J. A. (2014). *The Wiley handbook of cognitive behavioral therapy*, Vol. 1. Wiley Blackwell.

Clark, L. A. (2007). Assessment and diagnosis of personality disorder: Perennial issues and an emerging reconceptualization. *Annual Review of Psychology*, *58*, 227-257. doi: 10.1146/annurev.psych.57.102904.190200.

Clark, D. A. (2022). Cognitive reappraisal. In: *Cognitive and Behavioral Practice. Association for Behavioral and Cognitive Therapies (ABCT).*

29(3), 564-566. doi: 10.1016/j.cbpra.2022.02.018.

Clark, L. A., Livesley, W. J., & Morey, L. (1997). Special feature: Personality disorder assessment: The challenge of construct validity. *Journal of Personality Disorders*, *11*(3), 205-231. doi: 10.1521/pedi.1997.11.3.205.

Clark, L. A., Simms, L. J., Wu, K. D., & Casillas, A. (2014). *Manual for the schedule for nonadaptive and adaptive personality (SNAP-2)*. Springer, Cham

Clen, S. L., Mennin, D. S., Fresco, D. M. (2014). Emotion regulation strategies. In: Hofmann, S. G., Dozois, D. J., Rief, W. E., & Smits, J. A. (2014). *The Wiley Handbook of Cognitive Behavioral Therapy,* Vol. 1. Wiley Blackwell.

Coid, J., Yang, M. I. N., Tyrer, P., Roberts, A., & Ullrich, S. (2006). Prevalence and correlates of personality disorder among adults in Great Britain. *The British Journal of Psychiatry*, *188*(5), 423-431. doi: 10.1192/bjp.188.5.423.

Cristea, I. A., Tatar, A. S., Nagy, D., & David, D. (2012). The bottle is half empty and that's bad, but not tragic: Differential effects of negative functional reappraisal. *Motivation and Emotion, 36*(4), 550-563. doi: 10.1007/s11031-012-9277-6.

Cruitt, P. J., & Oltmanns, T. F. (2018). Age-related outcomes associated with personality pathology in later life. *Current Opinion in Psychology*, *21*, 89-93. doi: 10.1016/j.copsyc.2017.09.013.

Dannlowski, U., Kugel, H., Huber, F., Stuhrmann, A., Redlich, R., Grotegerd, D., ... & Suslow, T. (2013). Childhood maltreatment is associated with an automatic negative emotion processing bias in the amygdala. *Human Brain Mapping*, *34*(11), 2899-2909. doi: 10.1002/hbm.22112.

DeJong, C. A., van der Staak, C. P., & van den Brink, W. (1995). Memories of parental rearing and personality pathology in male alcoholics. *European Addiction Research*, *1*(4), 199-205. doi: 10.1159/000259086.

Denny, B. T., Fan, J., Liu, X., Ochsner, K. N., Guerreri, S., Mayson, S. J., Rimsky, L., McMaster, A., New, A.S., Goodman, M., Siever, L.J., & Koenigsberg, H. W. (2015). Elevated amygdala activity during reappraisal anticipation predicts anxiety in avoidant personality disorder. *Journal of Affective Disorders*, *172*, 1-7. doi: 10.1016/j.jad.2014.09.017.

Diedrich, A., & Voderholzer, U. (2015). Obsessive–compulsive personality disorder: a current review. *Current Psychiatry Reports*, *17*, 1-10. doi: 10.1007/s11920-014-0547-8.

Disney, K. L. (2013). Dependent personality disorder: a critical review. *Clinical Psychology Review*, *33*(8), 1184-1196. 10.1016/j.cpr.2013.10.001.

Dixon-Gordon, K. L., Conkey, L. C., & Whalen, D. J. (2018). Recent advances in understanding physical health problems in personality disorders. *Current Opinion In Psychology*, *21*, 1-5. doi: 10.1016/j.copsyc.2017.08.036

Dorman Ilan, S., Shafir, R., Birk, J. L., Bonanno, G. A., & Sheppes, G. (2019). Monitoring in emotion regulation: behavioral decisions and neural consequences. *Social Cognitive and Affective Neuroscience*, *14*(12), 1273-1283. doi: 10.1093/scan/nsaa001.

Duval, S., & Tweedie, R. (2000). Trim and fill: a simple funnel-plot–based method of testing and adjusting for publication bias in meta-analysis. *Biometrics*, *56*(2), 455-463. doi: 10.1111/j.0006-341x.2000.00455.x.

Dvir, Y., Ford, J. D., Hill, M., & Frazier, J. A. (2014). Childhood maltreatment, emotional dysregulation, and psychiatric comorbidities. *Harvard Review of Psychiatry*, *22*(3), 149-161. doi: 10.1097/HRP.0000000000000014.

Egger, M., Smith, G. D., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *BMJ*, *315*(7109), 629-634. doi: 10.1136/bmj.315.7109.629.

Eldesouky, L., & English, T. (2019a). Individual differences in emotion regulation goals: Does personality predict the reasons why people regulate their emotions?. *Journal of Personality*, *87*(4), 750-766. doi: 10.1111/jopy.12430.

Eldesouky, L., & English, T. (2019b). Regulating for a reason: Emotion regulation goals are linked to spontaneous strategy use. *Journal of Personality*, *87*(5), 948-961. doi: 10.1111/jopy.12447.

Eldesouky, L., & Gross, J. J. (2019). Emotion regulation goals: An individual difference perspective. *Social and Personality Psychology Compass*, *13*(9), e12493. doi: 10.1111/spc3.12493.

Fanslow, J., Hashemi, L., Gulliver, P., & McIntosh, T. (2021). Adverse childhood experiences in New Zealand and subsequent victimization in adulthood: findings from a population-based study. *Child Abuse & Neglect*, *117*, 105067. doi: 10.1016/j.chiabu.2021.105067.

Farabaugh, A., Fava, M., Mischoulon, D., Sklarsky, K., Petersen, T., & Alpert, J. (2005). Relationships between major depressive disorder and comorbid anxiety and personality disorders. *Comprehensive Psychiatry*, *46*(4), 266-271. doi: 10.1016/j.comppsych.2004.10.005.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, *14*(4), 245-258. doi: 10.1016/s0749-3797(98)00017-8.

Ferree, T. C., Luu, P., Russell, G. S., & Tucker, D. M. (2001). Scalp electrode impedance, infection risk, and EEG data quality. *Clinical Neurophysiology*, 112(3), 536-544. doi: 10.1016/S1388-2457(00)00533-2.

Finkelhor, D. (2018). Screening for adverse childhood experiences (ACEs): Cautions and suggestions. *Child Abuse & Neglect*, *85*, 174-179. doi: 10.1016/j.chiabu.2017.07.016.

Finkelhor, D., Shattuck, A., Turner, H., & Hamby, S. (2015). A revised inventory of adverse childhood experiences. *Child Abuse & Neglect, 48*, 13–21. doi: 10.1016/j.chiabu.2015.07.011.

Friborg, O., Martinussen, M., Kaiser, S., Øvergård, K.T., Rosenvinge, J. H., (2013). Comorbidity of personality disorders in anxiety disorders: A meta-analysis of 30 years of research. *Journal of Affective Disorders* 145*(2),* 143-155. doi: 10.1016/j.jad.2012.07.004.

Garofalo, C., Velotti, P., Callea, A., Popolo, R., Salvatore, G., Cavallo, F., & Dimaggio, G. (2018). Emotion dysregulation, impulsivity and personality disorder traits: A community sample study. *Psychiatry Research*, *266*, 186-192. doi: 10.1016/j.psychres.2018.05.067.

Gawda, B. (2018). Cross-cultural studies on the prevalence of personality disorders. *Current Issues in Personality Psychology*, *6*(4), 318-329. doi: 10.5114/cipp.2018.80200.

Gawda, B., & Czubak, K. (2017). Prevalence of personality disorders in a general population among men and women. *Psychological Reports*, *120*(3), 503-519. doi: 10.1177/0033294117692807.

Gignac, G. E., & Szodorai, E. T. (2016). Effect size guidelines for individual differences researchers. *Personality and Individual Differences*, *102*, 74-78. doi: 10.1016/j.paid.2016.06.069.

Glynn, L. M., Stern, H. S., Howland, M. A., Risbrough, V. B., Baker, D. G., Nievergelt, C. M., Baram, T. Z., & Davis, E. P. (2019). Measuring novel antecedents of mental illness: the Questionnaire of Unpredictability in Childhood. *Neuropsychopharmacology*, *44*(5), 876-882. doi: 10.1038/s41386-018-0280-9.

Grant, B. F., Hasin, D. S., Stinson, F. S., Dawson, D. A., Chou, S. P., Ruan, W. J., & Pickering, R. P. (2004). Prevalence, correlates, and disability of personality disorders in the United States: results from the national epidemiologic survey on alcohol and related conditions. *Journal of Clinical Psychiatry*, *65*(7), 948-958. doi: 10.4088/jcp.v65n0711.

Gratz, K. L., Tull, M. T., Matusiewicz, A. M., Breetz, A. A., & Lejuez, C. W. (2013). Multimodal examination of emotion regulation difficulties as a function of co-occurring avoidant personality disorder among women with borderline personality disorder. *Personality Disorders: Theory, Research, and Treatment*, *4*(4), 304-314. doi: 10.1037/per0000020.

Gross, J. J. (1998). Antecedent-and response-focused emotion regulation: divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology*, *74*(1), 224-237. doi: 10.1037//0022-3514.74.1.224.

Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, *26*(1), 1-26. doi: 10.1080/1047840X.2014.940781.

Gross, J. J., & Jazaieri, H. (2014). Emotion, emotion regulation, and psychopathology: An affective science perspective. *Clinical Psychological Science*, *2*(4), 387-401. doi: 10.1177/2167702614536164.

Gross, J. J., Uusberg, H., & Uusberg, A. (2019). Mental illness and well-being: an affect regulation perspective. *World Psychiatry*, *18*(2), 130-139. doi: 10.1002/wps.20618.

Groth-Marnat, G. (2009). *Handbook of psychological assessment (5th ed.)*. New Jersey: John Wiley & Sons, Inc.

Gruhn, M. A., & Compas, B. E. (2020). Effects of maltreatment on coping and emotion regulation in childhood and adolescence: A meta-analytic review. *Child Abuse & Neglect*, *103*, 104446. doi: 10.1016/j.chiabu.2020.104446.

Guassi Moreira, J. F., Sahi, R., Leon, M. D. C., Saragosa-Harris, N., Waizman, Y. H., Sedykin, A. E., Ninova, E., Peris, T.S., Gross, J.J., & Silvers, J. (2021). A data-driven typology of emotion regulation profiles. doi: 10.31234/osf.io/9stvx.

Gunay-Oge, R., Pehlivan, F. Z., & Isikli, S. (2020). The effect of positive childhood experiences on adult personality psychopathology. *Personality and Individual Differences*, *158*, 109862. doi: 10.1016/j.paid.2020.109862.

Gunthert, K. C., & Wenze, S. J. (2012). Daily diary methods. In: M. R. Mehl & T. S. Conner (Eds.), *Handbook of research methods for studying daily life* (pp. 144–159). The Guilford Press.

Hageman, T. K., Francis, A. J., Field, A. M., & Carr, S. N. (2015). Links between childhood experiences and avoidant personality disorder symptomatology. *International Journal of Psychology and Psychological Therapy*, *15*(1), 101-116.

Hajcak, G., Dunning, J. P., Foti, D., & Weinberg, A. (2014). Temporal dynamics of emotion regulation. In: J. J. Gross (Ed.), *Handbook of Emotion Regulation* (2nd ed., pp. 43–57). New York, NY: Guilford.

Hajcak, G., & Foti, D. (2020). Significance?... Significance! Empirical, methodological, and theoretical connections between the late positive potential and P300 as neural responses to stimulus significance: An integrative review. *Psychophysiology*, *57*(7), e13570. doi: 10.1111/psyp.13570.

Haller, D. L., & Miles, D. R. (2004). Personality disturbances in drug-dependent women: Relationship to childhood abuse. *The American Journal of Drug and Alcohol Abuse*, *30*(2), 269-286. doi: 10.1081/ada-120037378.

Hardt, J., & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: review of the evidence. *Journal of Child Psychology and Psychiatry*, *45*(2), 260-273. doi: 10.1111/j.1469-7610.2004.00218.x.

Hayes, S. C. (2020). *A liberated mind: How to pivot toward what matters*. Penguin.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, *44*(1), 1-25. doi: 10.1016/j.brat.2005.06.006.

Hayes, S. C., Pistorello, J., & Levin, M. E. (2012). Acceptance and commitment therapy as a unified model of behavior change. *The Counseling Psychologist*, *40*(7), 976-1002. doi: 10.1177/0011000012460836.

Hock, R. S., Bryce, C. P., Fischer, L., First, M. B., Fitzmaurice, G. M., Costa, P. T., & Galler, J. R. (2018). Childhood malnutrition and maltreatment are linked with personality disorder symptoms in adulthood: results from a Barbados lifespan cohort. *Psychiatry Research*, *269*, 301-308. doi: 10.1016/j.psychres.2018.05.085.

Hofmann, S. G., Dozois, D. J., Rief, W. E., & Smits, J. A. (2014). *The Wiley handbook of cognitive behavioral therapy, Vol. 1*. Wiley Blackwell.

Hogg, B., Gardoki-Souto, I., Valiente-Gómez, A., Rosa, A. R., Fortea, L., Radua, J., Amann, B. L., & Moreno-Alcázar, A. (2022). Psychological trauma as a transdiagnostic risk factor for mental disorder: an umbrella meta-analysis. *European Archives of Psychiatry and Clinical Neuroscience*, 273(2), 397–410. doi: 10.1007/s00406-022-01495-5.

Hughes, D. J., Kratsiotis, I. K., Niven, K., & Holman, D. (2020). Personality traits and emotion regulation: A targeted review and recommendations. *Emotion*, *20*(1), 63-67. doi: 10.1037/emo0000644.

Infurna, M. R., Reichl, C., Parzer, P., Schimmenti, A., Bifulco, A., & Kaess, M. (2016). Associations between depression and specific childhood experiences of abuse and neglect: A meta-analysis. *Journal of Affective Disorders*, *190*, 47-55. doi: 10.1016/j.jad.2015.09.006.

Ion, A., Bîlc, M. I., Pițur, S., Pop, C. F., Szentágotai-Tătar, A., & Miu, A. C. (2023). Childhood maltreatment and emotion regulation in everyday life: an experience sampling study. *Scientific Reports*, *13*(1), 7214. doi: 10.1038/s41598-023-34302-9.

Johnson, J. G., Cohen, P., Chen, H., Kasen, S., & Brook, J. S. (2006). Parenting behaviors associated with risk for offspring personality disorder during adulthood. *Archives of General Psychiatry*, *63*(5), 579-587. doi: 10.1001/archpsyc.63.5.579.

Karn, S. M., & Rosli, N. A. (2019). Assessment of personality disorder: a review of existing literature on psychological assessment. *Jurnal Psikologi Malaysia*, *33*(1).

Kim, J., & Cicchetti, D. (2010). Longitudinal pathways linking child maltreatment, emotion regulation, peer relations, and psychopathology. *Journal of Child Psychology and Psychiatry*, *51*(6), 706-716. doi: 10.1111/j.1469-7610.2009.02202.x.

King, B. R., & Boswell, J. F. (2019). Therapeutic strategies and techniques in early cognitive-behavioral therapy. *Psychotherapy*, *56*(1), 35-40. doi: 10.1037/pst0000202.

Klein, J. P., Roniger, A., Schweiger, U., Späth, C., & Brodbeck, J. (2015). The association of childhood trauma and personality disorders with chronic depression: a cross-sectional study in depressed outpatients. *The Journal of Clinical Psychiatry*, *76*(6), 1523. doi: 10.4088/JCP.14m09158.

Klonsky, E. D., Oltmanns, T. F., & Turkheimer, E. (2002). Informant-reports of personality disorder: Relation to self-reports and future research directions. *Clinical Psychology: Science and Practice*, *9*(3), 300. doi: 10.1093/clipsy.9.3.300.

Koenigsberg, H., Denny, B., Lopez, R., Fan, J., Schulz, K., Trumbull, J., ... & McClure, M. (2019). F149. The Effects of Cognitive Reappraisal Training to Enhance Emotion Regulation in Borderline and Avoidant Personality Disorder Patients: Evidence From Self-Reported Affect Ratings and Neuroimaging. *Biological Psychiatry*, *85*(10), S270-S271. doi: 10.1016/j.biopsych.2019.03.686.

Koval, P., & Kalokerinos, E. (2022). Studying Emotion Regulation with Daily Diaries and Ecological Momentary Assessment. doi: 10.31234/osf.io/whqga.

Koval, P., Kalokerinos, E. K., Greenaway, K. H., Medland, H., Kuppens, P., Nezlek, J. B., Hinton, J. D. X., & Gross, J. J. (2023). Emotion regulation in everyday life: Mapping global self-reports to daily processes. *Emotion*, *23*(2), 357-374. doi: 10.1037/emo0001097.

Krause-Utz, A., Erol, E., Brousianou, A. V., Cackowski, S., Paret, C., Ende, G., & Elzinga, B. (2019). Self-reported impulsivity in women with borderline personality disorder: the role of childhood maltreatment severity and emotion regulation difficulties. *Borderline Personality Disorder and Emotion dysregulation*, *6*, 1-14. doi: 10.1186/s40479-019-0101-8.

Krueger, R. F., & Markon, K. E. (2014). The role of the DSM-5 personality trait model in moving toward a quantitative and empirically based approach to classifying personality and psychopathology. *Annual Review of Clinical Psychology*, *10*, 477-501. doi: 10.1146/annurev-clinpsy-032813-153732.

Lampe, L. (2016). Avoidant personality disorder as a social anxiety phenotype: risk factors, associations and treatment. *Current Opinion in Psychiatry*, *29*(1), 64-69. doi: 10.1097/YCO.0000000000000211.

Lampe, L., & Malhi, G. S. (2018). Avoidant personality disorder: current insights. *Psychology Research and Behavior Management*, 11, 55-66. doi: 10.2147/PRBM.S121073.

Lavi, I., Katz, L. F., Ozer, E. J., & Gross, J. J. (2019). Emotion reactivity and regulation in maltreated children: A meta-analysis. *Child Development*, *90*(5), 1503-1524. doi: 10.1111/cdev.13272.

Leahy, R. L., & Rego, S. A. (2012). Cognitive restructuring. In: W. T. O'Donohue & J. E. Fisher (Eds.), *Cognitive behavior therapy: Core principles for practice* (pp. 133–158). John Wiley & Sons, Inc. doi: 10.1002/9781118470886.ch6.

Lenzenweger, M. F. (1999). Stability and change in personality disorder features: The Longitudinal Study of Personality Disorders. *Archives of General Psychiatry*, *56*(11), 1009-1015. doi: 10.1001/archpsyc.56.11.1009.

Lenzenweger, M. F., Lane, M. C., Loranger, A. W., & Kessler, R. C. (2007). DSM-IV personality disorders in the National Comorbidity Survey Replication. *Biological Psychiatry*, *62*(6), 553-564. doi: 10.1016/j.biopsych.2006.09.019.

Lincoln, T. M., Schulze, L., & Renneberg, B. (2022). The role of emotion regulation in the characterization, development and treatment of psychopathology. *Nature Reviews Psychology*, *1*(5), 272-286. doi: 10.1038/s44159-022-00040-4.

Lischetzke, T., & Könen, T. (2020). Daily diary methodology. In: *Encyclopedia of quality of life and well-being research* (pp. 1-8). Cham: Springer International Publishing.

Liu, R. T. (2017). Childhood adversities and depression in adulthood: Current findings and future directions. *Clinical psychology: Science and Practice*, *24*(2), 140. doi: 10.1111/cpsp.12190.

Liu, Y., Huang, H., McGinnis-Deweese, M., Keil, A., & Ding, M. (2012). Neural substrate of the late positive potential in emotional processing. *Journal of Neuroscience*, *32*(42), 14563-14572. doi: 10.1523/JNEUROSCI.3109-12.2012.

López-Pérez, B., & McCagh, J. (2020). How do I want to feel? The link between emotion goals and difficulties in emotion regulation in borderline personality disorder. *British Journal of Clinical Psychology*, *59*(1), 96-114. doi: 10.1111/bjc.12235.

Luck, S. J. (2012). Event-related potentials. In: H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 1. Foundations, planning, measures, and psychometrics* (pp. 523–546). American Psychological Association. doi: 10.1037/13619-028.

Luck, S. J. (2014). *An introduction to the event-related potential technique*. MIT press.

Maples, J. L., Carter, N. T., Few, L. R., Crego, C., Gore, W. L., Samuel, D. B., Williamson, R. L., Lynam, D. R., Widiger, T. A., Markon, K. E., Krueger, R. F., & Miller, J. D. (2015). Testing whether the DSM-5 personality disorder trait model can be measured with a reduced set of items: An item response theory investigation of the Personality Inventory for DSM-5. *Psychological Assessment*, 27(4), 1195–1210. doi: 10.1037/pas0000120.

Massaal-van der Ree, L. Y., Eikelenboom, M., Hoogendoorn, A. W., Thomaes, K., & van Marle, H. J. (2022). Cluster B versus cluster C personality disorders: a comparison of comorbidity, suicidality, traumatization and global functioning. *Behavioral Sciences*, *12*(4), 105. doi: 10.3390/bs12040105.

Mauss, I. B., & Tamir, M. (2014). Emotion goals: How their content, structure, and operation shape emotion regulation. In: J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 361–375). The Guilford Press.

McCrory, E., De Brito, S. A., & Viding, E. (2012). The link between child abuse and psychopathology: a review of neurobiological and genetic research. *Journal of the Royal Society of Medicine*, *105*(4), 151-156. doi: 10.1258/jrsm.2011.110222.

McLafferty, M., Bunting, B. P., Armour, C., Lapsley, C., Ennis, E., Murray, E., & O'Neill, S. M. (2020). The mediating role of emotion regulation strategies on psychopathology and suicidal behaviour following negative childhood experiences. *Children and Youth Services Review*, *116*, 105212. doi: 10.1016/j.childyouth.2020.105212.

McLaughlin, K. A., Colich, N. L., Rodman, A. M., & Weissman, D. G. (2020). Mechanisms linking childhood trauma exposure and psychopathology: a transdiagnostic model of risk and resilience. *BMC Medicine*, *18*(1), 1-11. doi: 10.1186/s12916-020-01561-6.

McLaughlin, K. A., & Sheridan, M. A. (2016). Beyond cumulative risk: A dimensional approach to childhood adversity. *Current Directions in Psychological Science*, *25*(4), 239-245. doi: 10.1177/0963721416655883.

McLaughlin, K. A., Sheridan, M. A., & Lambert, H. K. (2014). Childhood adversity and neural development: Deprivation and threat as distinct dimensions of early experience. *Neuroscience & Biobehavioral Reviews*, *47*, 578-591. doi: 10.1016/j.neubiorev.2014.10.012.

McMahon, T. P., & Naragon-Gainey, K. (2019). The multilevel structure of daily emotion-regulation-strategy use: An examination of within-and between-person associations in naturalistic settings. *Clinical Psychological Science*, *7*(2), 321-339. doi: 10.1177/2167702618807408.

McMahon, T. P., & Naragon-Gainey, K. (2020). Ecological validity of trait emotion regulation strategy measures. *Psychological Assessment*, *32*(8), 796. doi: 10.1037/pas0000827.

McRae, K., & Gross, J. J. (2020). Emotion regulation. In: *Emotion*, Oxford University Press.

McRae, K., Gross, J. J., Weber, J., Robertson, E. R., Sokol-Hessner, P., Ray, R. D., Gabrieli, J. D. I., & Ochsner, K. N. (2012). The development of emotion regulation: an fMRI study of cognitive reappraisal in children, adolescents and young adults. *Social Cognitive and Affective Neuroscience*, *7*(1), 11-22. doi: 10.1093/scan/nsr093.

Merrick, M. T., Ford, D. C., Ports, K. A., & Guinn, A. S. (2018). Prevalence of adverse childhood experiences from the 2011-2014 behavioral risk factor surveillance system in 23 states. *JAMA Pediatrics*, *172*(11), 1038-1044.

Mersky, J. P., Janczewski, C. E., & Topitzes, J. (2017). Rethinking the measurement of adversity: Moving toward second-generation research on adverse childhood experiences. *Child Maltreatment*, *22*(1), 58-68. doi: 10.1177/1077559516679513.

Mertens, Y., Yılmaz, M., & Lobbestael, J. (2020). Schema modes mediate the effect of emotional abuse in childhood on the differential expression of personality disorders. *Child Abuse & Neglect*, *104*, 104445. doi: 10.1016/j.chiabu.2020.104445.

Meyer, B., & Carver, C. S. (2000). Negative childhood accounts, sensitivity, and pessimism: A study of avoidant personality disorder features in college students. *Journal of Personality Disorders*, *14*(3), 233-248. doi: 10.1521/pedi.2000.14.3.233.

Millgram, Y., Huppert, J. D., & Tamir, M. (2020). Emotion goals in psychopathology: A new perspective on dysfunctional emotion regulation. *Current Directions in Psychological Science*, *29*(3), 242-247. doi: 10.1177/0963721420917713.

Millgram, Y., Joormann, J., Huppert, J. D., & Tamir, M. (2015). Sad as a matter of choice? Emotion regulation goals in depression. *Psychological Science*, *26*(8), 1216-1228. doi: 10.1177/0956797615583295.

Miu, A. C., Szentágotai-Tătar, A., Balazsi, R., Nechita, D., Bunea, I., & Pollak, S. D. (2022). Emotion regulation as mediator between childhood adversity and psychopathology: A meta-analysis. *Clinical Psychology Review*, *93*, 102141. doi: 10.1016/j.cpr.2022.102141.

Morgan, P. T., Desai, R. A., & Potenza, M. N. (2010). Gender-related influences of parental alcoholism on the prevalence of psychiatric illnesses: analysis of the National Epidemiologic Survey on Alcohol and Related Conditions. *Alcoholism: Clinical and Experimental Research*, *34*(10), 1759-1767. doi: 10.1111/j.1530-0277.2010.01263.x.

Moser, J. S., Hajcak, G., Bukay, E., & Simons, R. F. (2006). Intentional modulation of emotional responding to unpleasant pictures: an ERP study. *Psychophysiology*, *43*(3), 292-296. doi: 10.1111/j.1469-8986.2006.00402.x.

Oltmanns, T. F., & Powers, A. D. (2012). Gender and personality disorders. In: *The Oxford handbook of personality disorders*, 206. Oxford University Press.

Paris, J. (2003). Personality disorders over time: precursors, course and outcome. *Journal of Personality Disorders*, *17*(6), 479-488. doi: 10.1521/pedi.17.6.479.25360.

Paris, J. (2004). Gender differences in personality traits and disorders. *Current Psychiatry Reports*, *6*(1), 71-74. doi: 10.1007/s11920-004-0042-8.

Paris, J. (2008). Recent advances in research on personality disorders. *Current Psychiatry Reviews*, 4, 10–13. doi: 10.2174/157340008783743848.

Perry, J. C. (1992). Problems and considerations in the valid assessment of personality disorders. *The American Journal of Psychiatry*. doi: 10.1176/ajp.149.12.1645.

Prefit, A. B., Candea, D. M., & Szentagotai-Tătar, A. (2019). Emotion regulation across eating pathology: A meta-analysis. *Appetite*, *143*, 104438. doi: 10.1016/j.appet.2019.104438.

Preti, E., Di Pierro, R., Fanti, E., Madeddu, F., & Calati, R. (2020). Personality disorders in time of pandemic. *Current Psychiatry Reports*, *22*, 1-9. doi: 10.1007/s11920-020-01204-w.

Proudfoot, J., & Nicholas, J. (2010). Monitoring and evaluation in low intensity CBT interventions. In: *Oxford guide to low intensity CBT interventions*, 97-104. New York, NY, US: Oxford University Press.

Reis, H. T. (2012). Why researchers should think "real-world": A conceptual rationale. In Mehl MR & Conner TS (Eds.), *Handbook of research methods for studying daily life* (pp. 321). New York, NY: Guilford Press.

Reuben, A., Moffitt, T. E., Caspi, A., Belsky, D. W., Harrington, H., Schroeder, F., Hogan, S., Ramrakha, S., Poulton, R., & Danese, A. (2016). Lest we forget: comparing retrospective and prospective assessments of adverse childhood experiences in the prediction of adult health. *Journal of Child Psychology and Psychiatry*, *57*(10), 1103-1112. doi: 10.1111/jcpp.12621.

Robinson, M. D., & Clore, G. L. (2002). Belief and feeling: evidence for an accessibility model of emotional self-report. *Psychological Bulletin*, *128*(6), 934. doi: 10.1037/0033-2909.128.6.934.

Robinson, K., Schmidt, T., & Teti, D. M. (2005). Issues in the use of longitudinal and cross-sectional designs. In: *Handbook of research methods in developmental science*, 1-20. Blackwell Publishing Ltd.

Ross, S., Dermatis, H., Levounis, P., & Galanter, M. (2003). A comparison between dually diagnosed inpatients with and without Axis II comorbidity and the relationship to treatment outcome. *The American Journal of Drug and Alcohol Abuse*, *29*(2), 263-279. doi: 10.1081/ADA-120020511.

Samuel, D. B., Sanislow, C. A., Hopwood, C. J., Shea, M. T., Skodol, A. E., Morey, L. C., Ansell, E. B., Markowitz, J. C., Zanarini, M. C., & Grilo, C. M. (2013). Convergent and incremental predictive validity of clinician, self-report, and structured interview diagnoses for personality disorders over 5 years. *Journal of consulting and clinical psychology*, *81*(4), 650. doi: 10.1037/a0032813.

Scheffers, F., Van Vugt, E., Lanctôt, N., & Lemieux, A. (2019). Experiences of (young) women after out of home placement: an examination of personality disorder symptoms through the lens of child maltreatment. *Child Abuse & Neglect*, *92*, 116-125. doi: /10.1016/j.chiabu.2019.03.022.

Schulte Holthausen, B., & Habel, U. (2018). Sex differences in personality disorders. *Current Psychiatry Reports*, *20*(12), 1-7. doi: 10.1007/s11920-018-0975-y.

Seligowski, A. V., Lee, D. J., Bardeen, J. R., & Orcutt, H. K. (2015). Emotion regulation and posttraumatic stress symptoms: A meta-analysis. *Cognitive Behaviour Therapy*, *44*(2), 87-102. doi: 10.1080/16506073.2014.980753.

Shafir, R., Schwartz, N., Blechert, J., & Sheppes, G. (2015). Emotional intensity influences pre-implementation and implementation of distraction and reappraisal. *Social Cognitive and Affective Neuroscience*, *10*(10), 1329-1337. doi: 10.1093/scan/nsv022.

Shafir, R., & Sheppes, G. (2018). When knowledge is (not) power-the influence of anticipatory information on subsequent emotion regulation: Neural and behavioral evidence. *Journal of Experimental Psychology: General*, *147*(8), 1225. doi: 10.1037/xge0000452.

Shafir, R., Thiruchselvam, R., Suri, G., Gross, J. J., & Sheppes, G. (2016). Neural processing of emotional-intensity predicts emotion regulation choice. *Social Cognitive and Affective Neuroscience*, 11(12), 1863-1871. doi: 10.1093/scan/nsw114.

Sheppes, G. (2020). Transcending the "good & bad" and "here & now" in emotion regulation: Costs and benefits of strategies across regulatory stages. *Advances in Experimental Social Psychology* (Vol. 61, pp. 185-236). Academic Press. doi: 10.1016/bs.aesp.2019.09.003.

Sheppes, G., & Gross, J. J. (2011). Is timing everything? Temporal considerations in emotion regulation. *Personality and Social Psychology Review*, *15*(4), 319-331. doi: 10.1177/1088868310395778.

Sheppes, G., & Gross, J. J. (2012). Emotion regulation effectiveness: What works when. In H. Tennen, J. Suls, & I. B. Weiner (Eds.), *Handbook of psychology: Personality and social psychology* (pp. 391–405). John Wiley & Sons, Inc.

Sheppes, G., Scheibe, S., Suri, G., Radu, P., Blechert, J., & Gross, J. J. (2014). Emotion regulation choice: a conceptual framework and supporting evidence. *Journal of Experimental Psychology: General*, *143*(1), 163. doi: 10.1037/a0030831.

Sheppes, G., Suri, G., & Gross, J. J. (2015). Emotion regulation and psychopathology. *Annual Review of Clinical Psychology*, 11, 379-405. doi: 10.1146/annurev-clinpsy-032814-112739.

Schoenleber, M., & Berenbaum, H. (2010). Shame aversion and shame-proneness in Cluster C personality disorders. *Journal of Abnormal Psychology*, *119*(1), 197. doi: 10.1037/a0017982.

Schweizer, S., Walsh, N. D., Stretton, J., Dunn, V. J., Goodyer, I. M., & Dalgleish, T. (2016). Enhanced emotion regulation capacity and its neural substrates in those exposed to moderate childhood adversity. *Social Cognitive and Affective Neuroscience*, *11*(2), 272-281. doi: 10.1093/scan/nsv109.

Skodol, A. E., Bender, D. S., & Oldham, J. M. (2014). An alternative model for personality disorders: DSM-5 Section III and beyond. In: *The American Psychiatric Publishing Textbook of Personality Disorders, 2nd ed*. Edited by Oldham JM, Skodol AE, Bender DS. Washington, DC, American Psychiatric Publishing, 2014, pp 511–544.

Skodol, A. E., Clark, L. A., Bender, D. S., Krueger, R. F., Morey, L. C., Verheul, R., Alarcon, R. D., Bell, C. C., Siever, L. J., & Oldham, J. M. (2011). Proposed changes in personality and personality disorder assessment and diagnosis for DSM-5 Part I: Description and rationale. *Personality Disorders: Theory, Research, and Treatment*, *2*(1), 4-22. doi: 10.1037/a0021891.

Skodol, A. E., Gunderson, J. G., McGlashan, T. H., Dyck, I. R., Stout, R. L., Bender, D. S., Grilo, C.M., Shea, M.T., Zanarini, M.C, Morey, L.C., Sanislow, C.A., & Oldham, J. M. (2002). Functional impairment in patients with schizotypal, borderline, avoidant, or obsessive-compulsive personality disorder. *American Journal of Psychiatry*, *159*(2), 276-283. doi: 10.1176/appi.ajp.159.2.276.

Skodol, A. E., Gunderson, J. G., Shea, M. T., & McGlashan, T. H. (2005). THE COLLABORATIVE LONGITUDINAL PERSONALITY DISORDERS STUDY (CLPS): OVERVIEW AND IMPLICATIONS. *Journal of Personality Disorders*, *19*(5), 487. doi: 10.1521/pedi.2005.19.5.487.

Skodol, A. E., Johnson, J. G., Cohen, P., Sneed, J. R., & Crawford, T. N. (2007). Personality disorder and impaired functioning from adolescence to adulthood. *The British Journal of Psychiatry*, *190*(5), 415-420. doi: 10.1192/bjp.bp.105.019364.

Smith, K. E., & Pollak, S. D. (2021). Rethinking concepts and categories for understanding the neurodevelopmental effects of childhood adversity. *Perspectives on Psychological Science*, *16*(1), 67-93. doi: 10.1177/1745691620920725.

Snir, A., Bar-Kalifa, E., Berenson, K. R., Downey, G., & Rafaeli, E. (2017). Affective instability as a clinical feature of avoidant personality disorder. *Personality Disorders: Theory, Research, and Treatment, 8*(4), 389–395. doi: 10.1037/per0000202.

Soeteman, D. I., Roijen, L. H. V., Verheul, R., & Busschbach, J. J. (2008). The economic burden of personality disorders in mental health care. *Journal of Clinical Psychiatry*, *69*(2), 259. doi: 10.4088/jcp.v69n0212.

Steenkamp, M. M., Suvak, M. K., Dickstein, B. D., Shea, M. T., & Litz, B. T. (2015). Emotional functioning in obsessive-compulsive personality disorder: Comparison to borderline personality disorder and healthy controls. *Journal of Personality Disorders*, *29*(6), 794-808. doi: 10.1521/pedi_2014_28_174.

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the Parent-Child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse & Neglect*, *22*(4), 249-270. doi: 10.1016/S0145-2134(97)00174-9.

Suri, G., Whittaker, K., & Gross, J. J. (2015). Launching reappraisal: It's less common than you might think. *Emotion*, *15*(1), 73. doi: 10.1037/emo0000011.

Tamir, M. (2016). Why do people regulate their emotions? A taxonomy of motives in emotion regulation. *Personality and Social Psychology Review*, *20*(3), 199-222. doi: 10.1177/1088868315586325.

Tamir, M., Halperin, E., Porat, R., Bigman, Y. E., & Hasson, Y. (2019). When there's a will, there's a way: Disentangling the effects of goals and means in emotion regulation. *Journal of Personality and Social Psychology*, *116*(5), 795. doi: 10.1037/pspp0000232.

Tamir, M., & Millgram, Y. (2017). Motivated emotion regulation: Principles, lessons, and implications of a motivational analysis of emotion regulation. In: *Advances in motivation science* (Vol. 4, pp. 207-247). Elsevier. doi: 10.1016/bs.adms.2016.12.001

Tamir, M., Vishkin, A., & Gutentag, T. (2020). Emotion regulation is motivated. *Emotion,* 20(1), 115-119. doi: 10.1037/emo0000635.

Tan, Y., Liu, Y., & Wu, L. (2016). Screening results correlating to personality disorder traits in a new employee population of People's Republic of China. *Neuropsychiatric Disease and Treatment*, *12*, 2553. doi: 10.2147/NDT.S118668.

Taylor, S. E., Lerner, J. S., Sage, R. M., Lehman, B. J., & Seeman, T. E. (2004). Early environment, emotions, responses to stress, and health. *Journal of Personality*, *72*(6), 1365-1394. doi: 10.1111/j.1467-6494.2004.00300.x.

Thiruchselvam, R., Blechert, J., Sheppes, G., Rydstrom, A., & Gross, J. J. (2011). The temporal dynamics of emotion regulation: An EEG study of distraction and reappraisal. *Biological Psychology*, *87*(1), 84-92. doi: 10.1016/j.biopsycho.2011.02.009.

Tottenham, N., Hare, T. A., Quinn, B. T., McCarry, T. W., Nurse, M., Gilhooly, T., ... & Casey, B. (2010). Prolonged institutional rearing is associated with atypically large amygdala volume and difficulties in emotion regulation. *Developmental Science*, *13*(1), 46-61. doi: 10.1111/j.1467-7687.2009.00852.x.

Trotta, A., Murray, R. M., & Fisher, H. L. (2015). The impact of childhood adversity on the persistence of psychotic symptoms: a systematic review and meta-analysis. *Psychological Medicine*, *45*(12), 2481-2498. doi: 10.1017/S0033291715000574.

Trull, T. J., Jahng, S., Tomko, R. L., Wood, P. K., & Sher, K. J. (2010). Revised NESARC personality disorder diagnoses: gender, prevalence, and comorbidity with substance dependence disorders. *Journal of Personality Disorders*, *24*(4), 412-426. doi: 10.1521/pedi.2010.24.4.412.

Tyrka, A. R., Burgers, D. E., Philip, N. S., Price, L. H., & Carpenter, L. L. (2013). The neurobiological correlates of childhood adversity and implications for treatment. *Acta Psychiatrica Scandinavica*, *128*(6), 434-447. doi: 10.1111/acps.12143.

van Zutphen, L., Siep, N., Jacob, G. A., Domes, G., Sprenger, A., Willenborg, B., Goebel, R., & Arntz, A. (2018). Always on guard: emotion regulation in women with borderline personality disorder compared to nonpatient controls and patients with cluster-C personality disorder. *Journal of Psychiatry and Neuroscience*, *43*(1), 37-47. doi: 10.1503/jpn.170008.

Warmingham, J. M., Duprey, E. B., Handley, E. D., Rogosch, F. A., & Cicchetti, D. (2023). Patterns of childhood maltreatment predict emotion processing and regulation in emerging adulthood. *Development and Psychopathology*, *35*(2), 766-781. doi: 10.1017/S0954579422000025.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063. doi: 10.1037/0022-3514.54.6.1063.

Waxman, R., Fenton, M. C., Skodol, A. E., Grant, B. F., & Hasin, D. (2014). Childhood maltreatment and personality disorders in the USA: Specificity of effects and the impact of gender. *Personality and Mental Health*, *8*(1), 30-41. doi: 10.1002/pmh.1239.

Weinbrecht, A., Schulze, L., Boettcher, J., & Renneberg, B. (2016). Avoidant personality disorder: a current review. *Current Psychiatry Reports*, *18*, 1-8. doi: 10.1007/s11920-016-0665-6.

Weissman, D. G., Bitran, D., Miller, A. B., Schaefer, J. D., Sheridan, M. A., & McLaughlin, K. A. (2019). Difficulties with emotion regulation as a transdiagnostic mechanism linking child maltreatment with the emergence of psychopathology. *Development and Psychopathology*, *31*(3), 899-915. doi: 10.1017/S0954579419000348.

Wells, G., Shea, B., O'Connell, D., Peterson, J., Welch, V., Losos, M., & Tugwell, P. (2014). Newcastle-Ottawa quality assessment scale cohort studies. University of Ottawa.

Werner, K., & Gross, J. J. (2010). Emotion regulation and psychopathology: A conceptual framework. In: A. M. Kring & D. M. Sloan (Eds.), *Emotion regulation and psychopathology: A transdiagnostic approach to etiology and treatment* (pp. 13–37). The Guilford Press.

Wheaton, M. G., & Pinto, A. (2017). The role of experiential avoidance in obsessive–compulsive personality disorder traits. *Personality Disorders: Theory, Research, and Treatment*, *8*(4), 383. doi: 10.1037/per0000200.

Widiger, T. A., & Samuel, D. B. (2005). Evidence-based assessment of personality disorders. *Psychological Assessment*, *17*(3), 278. doi: 10.1037/1040-3590.17.3.278.

Winsper, C., Bilgin, A., Thompson, A., Marwaha, S., Chanen, A. M., Singh, S. P., Wang, A., & Furtado, V. (2020). The prevalence of personality disorders in the community: a global systematic review and meta-analysis. *The British Journal of Psychiatry*, *216*(2), 69-78. doi: 10.1192/bjp.2019.166.

Wonderlich, S. A., Rosenfeldt, S., Crosby, R. D., Mitchell, J. E., Engel, S. G., Smyth, J., & Miltenberger, R. (2007). The effects of childhood trauma on daily mood lability and comorbid psychopathology in bulimia nervosa. *Journal of Traumatic Stress*, *20*(1), 77-87. doi: 10.1002/jts.20184.

Wright, A. G., Hopwood, C. J., & Simms, L. J. (2015). Daily interpersonal and affective dynamics in personality disorder. *Journal of Personality Disorders*, *29*(4), 503-525. doi: 10.1521/pedi.2015.29.4.503.

Wright, A. G., Pincus, A. L., & Lenzenweger, M. F. (2011). Development of personality and the remission and onset of personality pathology. *Journal of Personality and Social Psychology*, *101*(6), 1351. doi: 10.1037/a0025557.

Wright, A. G., & Simms, L. J. (2016). Stability and fluctuation of personality disorder features in daily life. *Journal of Abnormal Psychology*, *125*(5), 641. doi: 10.1037/abn0000169.

Wu, A., & Francois, D. (2021). Personality disorders in late life: An update. *GeroPsych: The Journal of Gerontopsychology and Geriatric Psychiatry*. doi: 10.1024/1662-9647/a000261.

Yaroslavsky, I., Bush, A. H., & France, C. M. (2022). Emotion regulation deficits mediate childhood sexual abuse effects on stress sensitization and depression outcomes. *Development and Psychopathology*, *34*(1), 157-170. doi: 10.1017/S095457942000098X.

Young, J. E., Klosko, J. S., & Weishaar, M. E. (2003). *Schema therapy*. New York: Guilford, *254*, 653-658.

Young, J. E., Klosko, J. S., & Weishaar, M. E. (2006). *Schema therapy: A practitioner's guide.* Guilford press.

Zhang, J., & Zheng, Y. (2018). Childhood maltreatment profiles among incarcerated Chinese males and their associations with personality disorder symptoms and criminal behaviors. *Psychiatry Research*, *268*, 272-278. doi: 10.1016/j.psychres.2018.06.063.

Zhao, N., Shi, D., Huang, J., Chen, Q., & Wang, Q. (2021). Comparing the self-reported personality disorder traits and childhood traumatic experiences between patients with schizophrenia vs. major depressive disorder. *Frontiers in Psychiatry*, 1684. doi: 10.3389/fpsyt.2021.754174.

Zheng, Y., Severino, F., Hui, L., Wu, H., Wang, J., & Zhang, T. (2019). Co-Morbidity of DSM-IV personality disorder in major depressive disorder among psychiatric outpatients in China: a further analysis of an epidemiologic survey in a clinical population. *Frontiers in Psychiatry*, *10*, 833. doi: 10.3389/fpsyt.2019.00833.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, *52*(1), 30-41. doi: 10.1207/s15327752jpa5201_2.