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What was once essential, may become detrimental: The mediating role of depersonalization in the relationship between childhood emotional maltreatment and psychological distress in adults

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Abstract

Depersonalization (DP) is a dissociative phenomenon, characterised by feeling “unreal” or detached from one's own emotions, thoughts and behaviour (APA, 2013). It is considered a defense mechanism, employed in response to overwhelming events, whereby thoughts and emotions are suppressed in order to enhance the individual's capacity to function in traumatic environments. DP has been found to co-occur with anxiety and depressive disorders and childhood emotional maltreatment (EM) has been identified as an important predisposing factor. The study's primary aim was to investigate the mediating role of DP in the relationship between childhood emotional maltreatment and psychological distress in young adults. Additionally it aimed to confirm that a history of childhood EM (emotional abuse and emotional neglect) predicted current levels of DP and to explore how both a person's attitude towards experiencing and expressing emotions (with an emphasis on the affect phobia model) and their current attachment security are related to current DP. A cross-sectional design was employed, which included young adults ($N = 761$) aged between 18-25 years. Participants completed an online survey that comprised of several self-report measures. Regression and

mediation analyses were conducted. The results indicated that: (1) DP significantly mediated the relationship between childhood EM and current psychological distress (2); that a history of EM, but no other forms of childhood abuse, significantly predicted current depersonalization experiences and (3); EM, attachment-related anxiety and negative attitudes towards emotions predicted clinical cut-off levels of DP. The results are discussed in detail, including clinical implications and direction for future research.

Depersonalization (DP) is a complex dissociative phenomenon, characterised by feelings of being “detached from one’s own mental processes or body” and is believed to be a form of “mental escape from the full experience of reality” (Michal et al., 2007: 693). Individuals experiencing DP have reported feelings of unreality, being spaced-out, and feeling detached from their thoughts, emotions, sensations and behaviour (DSM-5; APA, 2013). DP is typically accompanied by derealization (DR), whereby the person experiences a sense of detachment from their environment (APA, 2013; ICD-10, 2016). DP has been documented as the third most frequently reported psychiatric symptom, after depression and anxiety, (Cattell & Cattell, 1974), albeit the least studied. DP can be part of a symptom-complex or a primary disorder (Michal et al., 2015), where DP phenomenon lie along a continuum ranging from mild and transient experiences of detachment to extremely disabling symptoms, such as those observed in DP as a disorder (Simeon, 2004). Transient symptoms of DP are typical within the general population, where epidemiological studies have found prevalence rates ranging from 26-74 % and the gender ratio is 1:1 (Hunter, Sierra & David, 2004). Transient DP experiences can also occur during times of acute stress, fear, fatigue (APA, 2013; van Heugten-van der Kloet, Giesbrecht, & Merckelbach, 2015) and intoxication or withdrawal (Simeon, Kozin, Segal, & Lerch, 2009). Studies have found a strong correlation between sleep disruptions and an increase in dissociative symptoms (including

DP) in young people; in particular relating to levels of ‘sleepiness’ (van der Kloet, Giesbrecht & Merckelbach, 2011) and a disruption in the ‘sleep-wake-cycle’ (Giesbrecht, Smeets, Leppink, Jelicic, & Merckelbach, 2007). Additionally, it has been reported that shorter, more transient episodes of DP often result from a reaction to a foreign substance (Simeon et al., 2009). Drug-induced DP has been documented in the research, where cannabis, ecstasy, ketamine and other drugs have been shown to reliably induce DP symptomatology (Medford et al., 2003; Simeon et al., 2009).

The prevailing theoretical framework of DP and dissociation in general is the trauma model where DP is understood to be employed as a defense mechanism in response to fear and other overwhelming emotions/situations (Dalenberg et al., 2012). This reaffirms the historical perspective; where DP was regarded as a ‘hard-wired’ biological defense mechanism, a ‘mental escape’, from the potentially incapacitating impact of overwhelming emotions during life-threatening situations (Sierra & Berrios, 1998). Researchers have noted that DP during traumatic events plays an important role in protecting an individual from experiencing the total impact of adverse events (van der Hart, van Ochten, van Son, Steele & Lensvelt-Mulders, 2008). This adaptive defense mechanism was essential in order to survive and to feel safe in environments that were frightening or overwhelming, by detaching and creating emotional distance (Simeon & Abugel, 2006). Nevertheless, once this protective coping mechanism has been learned it can become habituated and automatic, predominantly occurring unconsciously and often in times of minor stresses, essentially becoming maladaptive (Van der Hart & Horst, 1989). Consequently, some or all emotional experiences may be unconsciously suppressed, ultimately leading to the development of psychopathological presentations.

A number of clinical presentations have been observed to include DP symptomatology; such as panic disorder (Marquez, Segui, Garcia, Canet, & Ortiz, 2001), depression, anxiety (Michal et al., 2011), post-traumatic stress disorder (Foa, Riggs, & Gershuny, 1994), personality disorders (Simeon, Knutelska, Neslon, & Guralnik, 2003) and somatic complaints (Michal et al., 2009). Even though DP may be a secondary symptom within other disorders, it has also been identified as a separate condition (Michal et al., 2011a). In research and clinical practice, there appears to be a common misunderstanding of DP as ‘a negligible variant’ of depression and anxiety (Sierra, 2009; Simeon, 2004). However, Michal and colleagues’ (2011) large study ($N = 5000$) found that DP is a common and distinct psychopathological syndrome, separate from depression and anxiety, providing evidence that DP can contribute independently to a person’s mental health (Michal et al., 2011). Additional evidence suggests that co-occurring DP can affect the chronicity and severity of other presentations (Michal et al., 2015; Mula, Pini, & Cassano, 2007). Neglecting the significant impact of co-occurring DP may inevitably influence the treatment and overall outcome of depressive and anxious presentations (Michal et al., 2011a).

This depersonalized, detached state has a distinct neurophysiological profile, characterised by limbic hypo-activation and prefrontal cortex hyper-activation (Lemche et al., 2007; Phillips & Sierra, 2003). This results in an “inhibition of emotional processing, and a heightened state of alertness” (Sierra & Berrios, 2000: 154). It is suggested that the clinical characteristics of DP arise from these two concurrent mechanisms. This heightened stress cortisol response has been found in both clinical and non-clinical presentations of DP, indicating a HPA-axis dysregulation in DP (Giesbrecht, Smeets, Merckelbach, & Jelicic, 2007; Simeon, Guralnik, Knutelska, Hollander, & Schmeidler, 2001b), confirming the neurobiological constructs found in DP presentations, where the person maintains heightened

states of alertness in times of fear (Sierra et al., 2002). The second neurological mechanism is emotional numbing, which has been recognised as a core feature of DP; where individuals have been found to have a physiological hypo-reactivity response to emotional stimuli during DP states, in which their emotional experience is suppressed, dulled or non-existent, leading to impairment in functioning (Medford et al., 2006; Mula et al., 2007; Sierra & Berrios, 1998; Simeon & Abugel, 2006). Clinically, emotional numbing presents as a defensive avoidance of specific emotions, where the individual may struggle with their ability to regulate, process and react to emotional experiences (Carlson, Yates & Sroufe, 2009; Monde, Ketay, Giesbrecht, Braun & Simeon, 2013; Svartberg, Stiles, & Seltzer, 2004). This unconscious emotional inhibition ultimately impacts on the person's ability to adaptively experience and express emotions.

Research has identified childhood emotional maltreatment (EM; which includes emotional abuse and emotional neglect) as a predisposing factor across the DP continuum (for recent review see Krüger & Fletcher, 2017; Michal et al., 2007; Simeon, Guralnik, Schneidler, Sirof, & Knutelska, 2001a). EM is subtle and often invisible therefore making it difficult to detect and as a result it is often assumed that the long-term significance of EM is not as severe as physical forms of abuse (Egeland, 2009). EM consists of repeated patterns of parental insensitivity, devaluation, rejection, humiliation and non-responsivity of the child's emotional needs (Finzi-Dottan & Karu, 2006; Haferkamp, Bebermeier, Mollering, & Neuner, 2015). This repeated form of abuse conveys to a child that they are "worthless, unloved or unwanted", and these are thwarted, damaging messages to the child and their developing sense of self (Finzi-Dottan & Karu, 2006; Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003). EM also negatively affects the young person's capacity to trust and relate to others and their environment (Courtois & Ford, 2009).

Recent studies have highlighted the association between childhood maltreatment and the development of psychological distress in adulthood (Fitzhenry et al., 2015) such as: depression, anxiety and dissociation (Carr, Martins, Stingel, Lemgruber & Juruena, 2013). EM specifically, has been linked to internalising disorders, including PTSD, depression, anxiety and suicidality (Gibb, Chelminski, & Zimmerman, 2007; McGee, Wolfe, & Wilson, 1997; Norman et al., 2012; Spertus et al., 2003). Hovens and colleagues (2012) found that a history of childhood trauma, particularly EM, was associated with both the chronicity and comorbidity of anxiety and depressive disorders. More specifically, Gibb's et al (2007) found that emotional abuse was strongly related to the presence of major depression and social anxiety. Haferkamp and colleagues' (2015) research showed that emotional abuse was the strongest and most direct predictor of dissociation and Kruger and Fletcher's (2017) recent findings revealed that emotional neglect by parents/siblings was predictive of a dissociative disorder in adults. The above findings indicate that a history of childhood EM may predispose a person to both mental distress and dissociative experiences.

From a developmental perspective, it is within the attachment relationship that the young child learns to express and regulate emotions (van Rosmalen, van IJzendoorn, & Bakermans-Kranenburg, 2014). Unfortunately, by its nature EM inevitably disrupts the child-caregiver attachment bond, with negative consequences for the developing child (Briere, 2002). Bowlby's (1973; 1982) work on children with insecure, disrupted attachments, observed a 3 stage 'reaction process': first the child protests; second they fall into deep despair and finally the child "gives up" and becomes detached, to escape the intolerable emotional pain (Johnson, 1994). Therefore, when the child's emotional needs are persistently unmet (i.e. through EM), the child finds a protective solution to deal with their internal conflict and emotional pain – detachment (Johnson, 1994). So, caregiver responses, such as

persistent rejection or inattentive feedback, lead to the child dissociating in order to disconnect and protect themselves from the inescapable situation (Barach, 1991). Therefore, being maltreated as a child will inevitably impact on both the development of the emotional self and the young person's development of mental representations of self and others. These are repeated later in life, leading them to be more likely to detach, subsequently impacting on their relationships as young adults, reducing the likelihood of adaptively care-seeking from others in times of distress, instead using avoidant coping strategies to assuage their unmet emotional needs (McCluskey, 2011). Recent mediation analyses showed that conflicts in the young adult–parent interactions partially mediated the relationship between childhood abuse and dissociation (Byun, Brumariu & Lyons-Ruth, 2016). Research on attachment and DP has focused on disorganised attachment. This is the most anxious category of attachment (Liotti, 2013), whereby the child is caught in an irresolvable pattern of “fright without solution”, where their caregiver is also the source of the fear (Main & Hesse, 1990; van Rosmalen et al., 2014). Recent studies have found that disorganised attachment in adulthood was significantly related to current dissociative symptoms (Paetzold, Rholes & Andrus, 2017) and that the relationship between childhood trauma and dissociation was mediated by attachment insecurity in adults (Kong, Kang, Oh & Kim, 2017).

A person's attachment style has been found to be relatively stable (Shapiro & Levendosky, 1999) and according to Heard, Lake and McCluskey's (2009) post-Bowlbyian model of attachment, a young person's attachment history and past experiences (i.e. EM) impact on how they currently cope and manage distressing emotions. If their care-seeking has not been met in the past, this influences their present ability to adaptively care-seek from others in times of overwhelm or distress (McCluskey, 2011). Consequently, their fear-system overrides their care-seeking system, leading the young person to rely on their default defense

mechanism (i.e. DP) to assuage their distress (Heard, Lake, & McCluskey, 2009; McCluskey, 2011). However, DP as a learned response may lead to increased difficulties relating to their emotional self, their relationship with others and ultimately developing psychological difficulties such as anxiety and depression.

A recently developed theoretical approach, Affect Phobia (McCullough et al., 2003), which incorporates both learning and psychodynamic theory, suggests that by suppressing adaptive emotions, over time individuals may develop a phobia towards their emotions and emotional self (McCullough et al., 2003). The theory proposes that as a result of adverse events in the developing child's emotional environment (i.e. being invalidated, rejected, devalued or punished when expressing emotions), certain emotions may be interpreted as unacceptable or frightening, leaving the child with the message that these emotions must be avoided or controlled (McCullough et al., 2003). This message leads to the development of internal conflicts, 'affect phobias' and the unconscious need for self-protective defences (i.e. DP), to reduce the discomfort of inhibitory affects, such as, guilt, shame and anxiety that are activated when exposed to specific adaptive affects that are not considered safe, like anger, sadness or positive feelings of the self (McCullough et al., 2003). A recent Irish study found that having a negative attitude towards experiencing and expressing emotions predicted (53% of the variance) the severity of emotional eating (a defense mechanism) in a sample ($n = 97$) of overweight/obese clients attending a motivational weight loss programme (Fox, Conneely & Egan, 2017).

Based on the affect phobia framework, experiencing and expressing specific emotions causes increased anxiety and the young person may revert to their default defense (i.e. DP) to reduce that anxiety, at a classical conditioning level. This automatic defense negatively

reinforces the phobic response to given emotions (McCullough et al., 2003), wherein the person learns not to express their emotions in the current moment or to care-seek. Such behaviours, which might be adaptive in healthy relationships, would be unwise to express in an abusive relational environment. Therefore, developing an apprehensive or negative attitude towards experiencing and expressing emotions (Laghai & Joseph, 2000) could ultimately result in an avoidant, detached response, amplifying the fear of feelings and the need to avoid/detach from the anxiety related to them (McCullough et al., 2003). Based on earlier experiences of not being soothed or being punished when experiencing or expressing overwhelming emotions, (which inevitably caused increased anxiety related to these emotions), the young person developed protective defenses, such as unconsciously detaching, to moderate the anxiety related to the phobic affect. Over time, this defense (DP) may become a default mechanism when they are faced with these feared emotions and the associated anxiety (McCullough et al., 2003).

This study intended to build on previous research findings that have established links between DP and the different concepts outlined above and to explore DP as a defense mechanism within the affect phobia framework. It was hypothesised that:

- depersonalisation would mediate the relationship between childhood emotional maltreatment and later psychological distress.
- that emotional abuse and emotional neglect would be the two abuse categories that would predict current DP.
- that a history of childhood EM, current attachment and an inability to experience or express emotions would impact on current clinical levels of DP, where sleep and drug-use were used as control variables.

Method

Design

A cross-sectional design was employed, using a community sample primarily consisting of university students. Participants were invited to partake if they had ever experienced feelings of “unreality” or feeling ‘disconnected’ from themselves or their environment. Data was collected online using self-report measures.

Participants

Participants, between 18-25 years, were recruited via social media, by press release and via email through the university. Seven-hundred and sixty-one ($N = 761$) participants completed the online survey. The mean age of participants was 21.46 years ($SD = 2.45$); 69.6% female and 30.4% male.

Measures

A *Demographic Questionnaire* was employed to ascertain pertinent information regarding age, gender, sleep and substance use. Substance use was measured by asking a dichotomous question: “Do you take drugs? (i.e. illegal drugs, such as cocaine, ecstasy, heroin or marijuana or non-prescribed drugs, such as sleeping pills, valium, benzodiazepines or ketamine)”. Sleep was measured based on average hours of sleep per night (average sleep defined as 7-9 hours as per the sleepfoundation.org) versus hours outside of the average range of sleep.

The Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) a self-report measure of retrospective childhood abuse (physical abuse; sexual abuse; emotional abuse; emotional neglect and physical neglect). This measure has shown high internal consistency for all subscales and good test-retest reliability (Bernstein, Ahluvalia, Pogge & Handelsman, 1997). Cronbach's alpha for all subscales in this study were above .82, other than physical neglect (.68). Scale scores for emotional abuse and emotional neglect were combined to produce an EM score, Cronbach's alpha .91.

The Cambridge Depersonalization Scale (CDS; Sierra & Berrios, 2000), is a 29-item self-report measure that examines the current level of DP a person experiences, in terms of frequency and duration. The scale has demonstrated high internal consistency (Sierra & Berrios, 2000) and construct validity (Sierra, Baker, Medford & David, 2005). A short version of the scale, CDS-9 items, has been found to measures DP as accurately as the complete scale, using a cut-off score of 19 for the detection of DP (Michal et al., 2007). The 9-item measure was administered in this study, cronbach's alpha .87.

The Experiences in Close Relationships- Relationship Structures Questionnaire (ECR-RS; Fraley, Heffernan, Vicary, & Brumbaugh, 2001) is a 9-item scale that assesses the individual's current attachment style in close relationships. The relationship that was explored in this study was the person the participant "feels closest to, or who they go to when distressed". The ECR-RS produces two scores: attachment-related avoidance and attachment-related anxiety, low scores in both are indicative of a secure attachment. The ECR-RS has been found to be a reliable measure of current attachment (Fraley, Heffernan, Vicary, & Brumbaugh, 2011). Cronbach's alpha for the present sample was .87 for avoidance and .89 for anxiety.

The Attitudes towards Emotional Expression (AEE; Joseph, Williams, Irwing & Cammock, 1994) scale is a 20-item self-report measure of four underlying factors reflecting: first, “the belief that the expression of emotions is a sign of weakness, second, the belief that emotions should be kept under control, third, the belief that other people will be rejecting, and fourth, the tendency to express emotions” (Laghai & Joseph, 2000); higher scores indicative of more negative attitudes toward emotional expression. Cronbach’s alpha for the total scale was .92.

The Depression, Anxiety and Stress Scale (DASS-21); a shortened version of the 42 item scale (Lovibond & Lovibond, 1995), was administered to examine the participants current levels of psychological distress. It is a 21-item, self-report questionnaire designed to measure the severity of a range of symptoms common to depression, anxiety and stress. The participant was asked to indicate the presence of a symptom over the previous week. Each subscale consists of 7-items, with a total score of 21 (multiplied by 2 to allow comparability to the full-scale), with higher scores indicating higher levels of distress. The measure was found to have good reliability in this study (Cronbach’s alpha: .91 for Depression, .84 for Anxiety, and .87 for Stress).

Procedure

Full ethical approval was granted through the university’s ethics committee. Participants were invited to complete self-report measures through an online portal and they were required to provide informed consent. The survey took approximately 20 minutes to complete. All questionnaires were completed anonymously. Contact details for support services were provided throughout the survey.

Analysis

The data was transferred into the IBM Statistical Package for the Social Sciences version 21 software for analysis. Descriptive statistics, correlation analysis, t-tests, one-way analysis of variance and regression analysis were initially conducted. Subsequently, mediation analysis was performed using the PROCESS macro add-on (Hayes, 2013). Finally, logistic regression analysis was conducted to assess the relationship between EM, current attachment, attitude towards emotional expression and DP.

Results

Data Screening

Due to the large sample size, significance in skewness and kurtosis was expected (Tabachnick & Fidell, 2013). A log transformation was used on the CDS outcome variable due to multiple outliers, to ensure that the data was normally distributed for analysis. Initial screening analysis revealed that the data was suitable for regression and simple mediation analysis.

Preliminary analysis

Descriptive statistics for the categorical variables and the 5 abuse categories of the CTQ are presented in Table 1. Means, corresponding standard deviations (SD) and bivariate correlation relationships between key continuous variables are presented in Table 2 and correlations between DP and the 5 abuse categories are presented in Table 3. Within this non-

clinical sample, 41.8% of the participants were experiencing DP above the clinical cut-off score and the average scores for depression and anxiety were in the moderate range and stress was in the mild range.

DP was significantly correlated with all the key variables other than attachment-avoidance, [with large effect sizes for the psychological distress variables, medium-large effect for AEE and with medium effect sizes for EM and attachment-anxiety]. As attachment-related avoidance did not significantly correlate with DP ($p = .44$) it was not entered into the logistic regression analysis as a predictor variable.

A number of preliminary t-tests were conducted to examine the relationship between key categorical variables (gender, Drug use, Sleep) and DP as a continuous variable. No significant difference was found for gender ($t(759) = -.05, p > .05$), which echoed previous prevalence studies. Significant differences were found for both sleep and drug use on DP scores. Sleep [average ($M = 16.69, SD = 13.33$) versus outside of average ($M = 25.33, SD = 17.09$) hours] was significant ($t(151.90) = -5.30, p < .001$) and drug use was also significantly related to DP scores; $t(262.24) = 3.34, p < .01$ [YES ($M = 21.47, SD = 16.03$) or NO ($M = 17.04, SD = 13.64$)].

Multiple Regression

A multiple regression was employed to examine the predictive relationship between the 5 abuse categories of the CTQ and DP. The 5 predictor variables were entered into the same block for analysis. The overall model was significant, $F(5, 760) = 28.68, p = .00$. Emotional neglect (EN) and emotional abuse (EA) were the only two significant predictors of DP, where EN predicted 22% of the variance ($\beta = .22, t = 4.33, p = .00$) and EA predicted

21%; ($\beta = .21$, $t = 4.15$, $p = .00$). For the mediation analysis EA and EN were combined to create an emotional maltreatment (EM) total score variable to use in the mediation analysis.

Mediation Analysis

To address whether the link between emotional maltreatment and psychological distress (depression, anxiety, stress) was, in part, explained by levels of depersonalization, multiple mediator models were conducted following the specifications set out by Hayes' PROCESS macro add-on for SPSS, version 21; (Hayes, 2013; see figure 1). Direct and indirect effects were evaluated for significance at $p < 0.05$, using 95% confidence intervals (CIs) established via bootstrapping (BCa) techniques, using 1000 bootstrapped samples (as recommended by Field, 2013). For the analysis, bootstrapped CIs were considered significant when they did not cross 0. The size of the indirect effect is expressed using (K^2) Kappa-squared statistics (Preacher & Kelley, 2011), wherein they estimate the relative effect size measurements of the simple mediation models' indirect effect; where a small effect size is .01, a medium effect size .09, and a large effect size is approximately .25 (Preacher & Kelley, 2011).

Results of the mediation indicated that there was a significant indirect effect of DP across all indices of psychological distress, mediated by higher levels of DP (Table 4). The indirect effect for depression, anxiety and stress demonstrated medium to large effect sizes, measured by the K^2 statistic. Results from the full mediation models are presented in Table 4.

Logistic regression

Logistic regression analysis was conducted to identify which variables may predict the likelihood of experiencing DP. The clinical cut-off score of 19 for the detection of DP (Michal et al., 2007) was used as the outcome variable (No DP detected v. DP detected). Drug-use and sleep were entered into block one (as control variables) and EM, attitude towards emotional expression and attachment-related anxiety were entered into block 2. The overall model-fit for block 2 was good, $X^2 = 8.28$ (8), $n = 761$, $p = .41$. The overall percentage correct was 70.3%, and the percentage correctly classified for each group was 83.1% for those below the cut-off for the detection of DP and 52.5% for those above the cut-off. The pseudo R square values, Cox & Snell .20 and Nagelkerke .27, indicated that the model explained 20-27% of the variance of DP cut-off scores. Table 5 presents the output for all the variables in the model. Emotional maltreatment, attachment-related anxiety, attitudes towards emotional expression and sleep all significantly predicted DP levels. The odd ratios (OR) indicated that as EM, AEE, and Attachment-related Anxiety scores increase, so do the odds that DP clinical cut-off scores will also increase. With regards to Sleep, the odds ratio predicts that when a person does not get the average recommended sleep (7-9 hours) the likelihood of experiencing DP will increase.

Discussion

The purpose of this study was to examine the relationship between childhood emotional maltreatment, depersonalization and psychological distress in a community/university sample of young adults, with a particular emphasis on evaluating the mediating role of depersonalization within the childhood EM and psychological distress relationship. In

order to understand and further explore the role of this often neglected experience (DP), the study also explored additional psychological factors related to DP as a defense mechanism, drawing on the affect phobia (McCullough et al., 2003) and adult attachment frameworks (Heard et al., 2009). The main findings demonstrated that young people who have a history of emotional maltreatment are more likely to experience higher levels of psychological distress through depersonalization and that emotional abuse and emotional neglect were the two childhood abuse categories that independently predicted DP. Additionally, the exploratory findings suggest a new conceptualisation for the assessment and treatment of DP as a defense mechanism, using the affect phobia model.

The key finding indicated a significant indirect effect of childhood emotional maltreatment with all measures of psychological distress via depersonalization, with medium-to-large effect sizes. These findings indicated that people who have experienced EM in childhood may be more likely to have higher levels of psychological distress in adulthood if they depersonalize. Based on the research, these indirect relationships were unsurprising, yet to the authors' knowledge, they have not been reported in the literature. Although causal mechanisms cannot be established, these findings suggest that current levels of depersonalization, which may have developed originally as a protective defense against EM, increase the likelihood of experiencing psychological distress in young adults.

Another significant contribution from this study was the affirmation that emotional abuse and emotional neglect were the two independent abuse categories that significantly predicted current levels of DP. The other abuse categories (physical abuse, physical neglect and sexual abuse) did not significantly predict DP. This confirmed the role of emotional maltreatment in the aetiology of DP in a non-clinical sample: (Michal et al., 2007; Simeon et

al., 2001a), adding strength to the argument that a history of EM is a particular vulnerability factor for DP, above any other category of childhood abuse. The results also detailed that DP was significantly associated with increased levels of psychological distress, as expected. This is in line with previous research that highlighted the significance of DP as a secondary symptom in other psychopathological presentations, impacting the chronicity and severity of anxiety and depression (Michal et al., 2011a; Mula et al., 2007).

Furthermore, this study aimed to explore other psychological factors that may predict current levels of DP based on adult attachment theory and the affect phobia model. Regression analysis indicated that EM, negative attitudes towards emotional expression and attachment-related anxiety predicted higher levels of depersonalization experiences in this sample. These results imply that a young person who depersonalizes (based on previous experience i.e. EM) may be more likely to avoid than express their emotions, (believing that they may be a sign of weakness and should be controlled or they might be rejected; Laghai & Joseph, 2000). Therefore, they may be less likely to adaptively seek care or support from an attachment figure in times of distress, ultimately reinforcing the use of DP as a default mechanism to assuage their own emotional needs (McCluskey, 2011; McCullough et al., 2003); creating a DP-cycle. The apprehensive and/or negative attitude towards emotion is not only an attempt to relieve anxiety associated with a feared emotion, but also an attempt to relieve anxiety that is related to feelings toward an attachment figure (unconscious anxiety; Osborn et al., 2014). These feelings associated with an attachment figure usually develop in childhood and have been repressed for years as they were unsafe to express and the child received no validation, support or guidance in experiencing and expressing these feelings (McCullough et al., 2003); leading to a need to employ protective defense mechanisms such as DP to assuage the anxiety related to care-seeking and expressing emotions. This finding

may provide a useful therapeutic framework to work with people who are detaching from their feared emotional self.

This study has generated noteworthy findings within the under-researched field of DP and it has important clinical implications. The main finding suggests that the detection of co-occurring DP may lead to changes in the relationship between early EM experiences and later psychological distress. The results highlight the importance and necessity of a detailed screening, not only for historical EM but also DP in young people presenting in distress - regarding their potential treatment and outcome; as DP is not typically the presenting complaint (Sierra, 2009). Previous research has emphasised the neglect of DP in the initial clinical assessment phase and how overlooking DP may be detrimental for the course of treatment and ultimate outcome for a person presenting with unidentified co-occurring DP (Medford et al., 2006; Michal et al., 2011; Mula et al., 2007).

The exploratory findings suggest an alternate approach with regards to the clinical assessment and intervention for people who are identified as experiencing DP, using an Affect Phobia Therapy (APT) model, where DP is viewed as a default defense mechanism against feared emotional experiences, conditioned and instrumentally avoided in the context of a close attachment relationship in childhood. The objective of this short-term dynamic psychotherapy is to help the individual to experience and express their emotions (affect restructuring); to understand and reflect on both the functions and origins of their defenses (i.e. DP and EM) and to enhance their ability to relate to themselves and others (Osborn et al., 2014). The approach focuses on the importance of the affect and defense work, allowing for the formulation of an affect phobia and its related defenses (i.e. DP). As a therapeutic approach, it would assist the young person to engage in defense recognition and the

relinquishing of unhelpful defenses, all the while, enabling space to safely experience and express emotions and to develop emotion regulation skills (McCullough et al., 2003). A recent review by Julien and O'Connor (2016) on the efficacy of APT, which included literature published between 1997 and 2014 (18 studies in total), found that there were promising results for APT, showing similar effects to cognitive therapy for Cluster C personality disorders and preliminary results suggesting more efficacy in treating anxiety and depression than a controlled condition. Although APT has not yet been used to address the emotional numbing mechanism of DP in the scientific literature; the approach would theoretically empower individuals to begin to acknowledge and access their feared emotional experiences; by using exposure and anxiety regulation techniques such as desensitization. Since Julien and O'Connor's (2016) efficacy review of the APT literature, the model was recommended as a treatment model for people who are overweight or obese (Fox et al., 2017).

Based on the affect phobia framework and incorporating our understanding of attachment theory the clinician can assist the client in identifying their unmet emotional need (i.e. attachment, emotional expression). They look for moments where that emotional expression might occur within the therapeutic relationship and where the client employs their habituated, protective defense mechanism to suppress/modulate their painful emotions (i.e. anxiety caused by unmet emotional need; McCullough et al., 2003). The clinician can help the client to notice these moments in therapy when they start to withdraw or detach, in response to their conditioned fear of emotional expression. The clinician can then support the client to reduce their anxiety, increasing their ability to tolerate and explore their feared emotional expression (McCullough et al., 2003); ultimately reducing their unconscious reliance of DP as a defense. Research has highlighted that psychotherapy can assist the client

in enhancing more mature defenses, and that these changes in defense styles were found to predict changes in clinical symptoms (Bond & Perry, 2004).

The person's current attachment behaviour, established in childhood, is often re-enacted in the person's current and therapeutic relationships. By providing a corrective emotional experience within the therapeutic relationship, through empathy and 'affect attunement' (McCluskey, Hooper, & Miller, 1999), the young person can develop their care-seeking abilities (McCluskey et al., 1999), reducing their reliance on defenses. These therapeutic approaches may enable the young person to develop self-awareness and adaptive coping mechanisms to deal with overwhelming emotions, hopefully reducing their need to detach and depersonalize. These approaches may also reduce psychological distress, as the corrective emotional experience of a trusting, therapeutic relationship allows a client to notice, explore and tolerate negative emotions. They can then learn to regulate their emotions and care-seek from others, rather than to depersonalize as a way of coping with distress and overwhelming emotions (Heard et al., 2009; McCullough et al., 2003).

Like all research, a number of limitations have been identified. Firstly, the cross-sectional design means that conclusions concerning cause and effect mechanisms are limited. However, the study tried to address this by using a theory driven mediation model. Also, DP has been found to share similar symptoms to acute stress presentations (Sierra, 2009), in which high levels of stress can trigger DP. Investigating this relationship was beyond the scope of this study, but this similarity and direction of causation should not be overlooked. The use of a self-report, retrospective recollection of childhood trauma has inevitable drawbacks, albeit a widely used psychometric tool, the accuracy of individual recollections cannot be assured due to retrospective bias. Additionally, the use of a self-report measure for

current attachment may affect the reliability of the responses because of its subjective nature. Due to the nature of online studies, the survey was open to all within the age-range; as a result there may be confounding factors (i.e. personal issues, exams, work/study stress) that have not been assessed or controlled for within this study, limiting its generalisability.

Future Research

It would be important to replicate these findings in both the general population and a clinical population, particularly with individuals who are presenting with depression or anxiety, as they may have undetected co-occurring DP. Future research may warrant adding a measure of current trauma, as the relationships found in this study may have been confounded by any current or recent trauma the young person was experiencing, as DP has been documented as being associated with current trauma (Hunter et al., 2003). Future research should also focus on the exploratory findings related to the affect phobia model of DP and the impact of current levels of attachment-related anxiety on DP, to ascertain whether these models may advance assessment, treatment and research in the area of DP.

Important and innovative findings have been established from this study. The recognition of DP as a mediator in the relationship between childhood EM and current psychological distress provides recommendations for assessment and clinical practice; highlighting the importance of screening and acknowledging the confounding impact of DP on other psychological presentations. The exploratory findings suggest a new direction for the assessment and treatment of DP using the Affect Phobia Therapy model, incorporating current attachment. Albeit, these findings need to be further replicated, they provide a framework for potential intervention and direction for future research.

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Table 1. *Descriptive statistics for categorical and CTQ abuse variables*

Variable	Value	n
Age (18-25)	21.46 (2.45)	
Gender (%)		
Male	30.4	231
	69.6	530
Sleep (%)		
Average (7-9hrs)	83.8	638
Outside average hours	16.2	123
Drug use (%)		
Yes	23.5	179
No	76.5	582

CTQ abuse categories (5-25)	
Emotional abuse	9.53 (4.66)
Emotional neglect	9.45 (4.39)
Physical neglect	6.99 (2.80)
Physical abuse	6.54 (3.16)
Sexual abuse	5.78 (2.97)

Note. Values are reported as means (standard deviations) and percentages (%). Minimum and maximum values are outlined in brackets following variable names where relevant.

Table 2. *Descriptive Statistics and Correlations between Key Variables*

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Age	21.46	2.45	-	-	.01	-.06	-.13**	-.03	-.07*	.01	-.09*
				.10*							
2. DP	18.09	14.35		-	.39*	.50*	.51**	.51*	.34*	-.03	.43**
					*	*	*	*	*		
3. EM	18.9				-	.43*	.38**	.38*	.41*	-	.48**
	7	8.28				*	*	*	*	.15**	

4. Depression	14.34	10.85					-	.69**	.73*	.41*	-	.49**
								*	*		.15**	
5. Anxiety	13.25	9.87						-	.76*	.36*	-.06	.37**
									*	*		
6. Stress	16.58	10.00							-	.39*	-.06	.37**
										*		
7. ECR Anx	2.66	1.77								-	-.07	.45**
8. ECR Avoid	5.77	.79									-	.14**

9. AEE	52.4 1	14.9 4										-	
<p><i>Note:</i> * = $p < .05$ (2-tailed), ** = $p < .01$ (2-tailed), <i>SD</i> = Standard Deviation, DP = Depersonalization, EM = Emotional Maltreatment, ECR Anx = ECR Anxiety Attachment score, ECR Avoid = ECR Avoidance Attachment score, AEE = Attitude Towards Emotional Expression.</p>													

Table 3. *Correlations between Depersonalization and the Abuse Categories*

	1	2	3	4	5	6
1. DP	-	.37**	.35**	.29**	.19*	.13**
2. Emotional Neglect		-	.67**	.63**	.48**	.25**
3. Emotional Abuse			-	.54**	.59**	.31**
4. Physical Neglect				-	.48**	.34**
5. Physical Abuse					-	.34**
6. Sexual Abuse						-

Note: * = $p < .05$ (2-tailed), ** = $p < .01$ (2-tailed)

Table 4. *Tests of the mediating variable among emotional maltreatment and measures of psychological distress*

	Effect of IV on MV (path a)	Effect of MV on DV (path b)	Direct effect (path c ¹)	Total Effect (path c)	Indirect effect (a x b)	Indirect effect (a x b)	Kappa- squared K ²
Variables						CI 95%	
	<i>b</i> <i>p</i>	<i>b</i> <i>p</i>	<i>b</i> <i>p</i>	<i>b</i> <i>p</i>	<i>b</i> <i>SE</i>	Lower Upper	K ²
Emotional Maltreatment							
Depression	.72 < .01	.32 < .01	.34 < .01	.57 < .01	.23 .03	.18 .30	.18
Anxiety	.72 < .01	.33 < .01	.22 < .01	.46 < .01	.24 .03	.16 .30	.20

Stress	.72	.32	.24	.46	.23	.18	.19
	< .01	< .01	< .01	< .01	.03	.29	

Note. IV: Emotional Maltreatment; MV: Depersonalization; DV: Psychological Distress (Depression, Anxiety, Stress); k2: Kappa Squared. [*b* represents the unstandardized coefficient, which indicates the change in the outcome variable associated with a unit change in the predictor variable, indicating the strength of the relationship (Field, 2013)].

Table 5. *Logistic regression analysis using cut-off scores for the detection of DP.*

Variables	B	S.E.	Wald	<i>p</i>	OR	95% CI.for OR	
						<u>Lower</u>	<u>Upper</u>
Drugs	-.12	.20	.35	.55	.90	.61	1.31
SLEEP	.49	.23	4.61	.03	1.63	1.04	2.56
EMtotal	.06	.01	25.05	<.01	1.06	1.04	1.09
ECRAnx	.18	.05	11.67	<.01	1.20	1.08	1.33
AEEtotal	.03	.01	23.85	<.01	1.03	1.02	1.05

Note. OR = Odds Ratio; EMtotal = Emotional Maltreatment; ECRAnx = Attachment Anxiety; AEEtotal = Attitudes toward Emotional Expression.

Figure 1 Conceptual Outline of Simple Mediation

