

**The Mediating Role of Emotion Dysregulation in the Relationship between Insecure
Attachment and Dissociation**

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Abstract

Introduction: Insecure attachment has been linked to dissociation in many stages of life, but the mechanisms of influence in adulthood are still unclear. The aim of this study was to examine the possible mediating role of emotion dysregulation on the relationship between insecure attachment and dissociative symptoms in a university student sample. **Method:** A sample of 143 first-year psychology students aged 16 and older filled out three self-report questionnaires, namely, the Dissociative Experience Scale-II, Experience in Close Relationship Scale, and Difficulties in Emotion Regulation Scale. Participants were recruited via the research platform SONA. **Results:** A mediation analysis provided support for the role of emotion regulation as a mediator ($b = .88$, 95% CI [-1.37, 3.13], $p = .44$) in the relationship between insecure attachment and dissociation. The direct effect of attachment on dissociation was not significant. **Conclusion:** These findings provide preliminary support for the mediating effect of emotion regulation on the relationship between attachment and dissociation. The results are in line with existing literature linking emotion regulation as a mediator between attachment and psychological symptoms. There are no previous existing findings on this specific topic. Future research should focus on determining the temporality and scope of the mediation effect.

Keywords: Attachment, Emotion Dysregulation, Dissociation

The Mediating Role of Emotion Dysregulation in the Relationship between Insecure Attachment and Dissociation

Attachment

Attachment has been stipulated as being the predictor of a variety of behavioral and psychological outcomes (Carlson, 1998; Fairbairn et al., 2018; Mikulincer & Shaver, 2005; Pascuzzo et al., 2015). Most of the current evidence focuses on parent-child relationships, bypassing the role of adulthood attachment in other close relationships. Attachment styles can be defined as the individual ways that people connect with each other in intimate relationships (see e.g., Ainsworth, 1989; Mikulincer & Shaver, 2019). More specifically, variations in individuals' attachment can be characterized as taking place between two axes, namely, attachment anxiety and attachment avoidance (see e.g., Brenning & Braet, 2013; Mikulincer & Shaver, 2005, 2019). As logically follows, secure attachment is located at the meeting point between low anxiety and low avoidance. Realistically speaking, people fall in between these characteristics. Although malleable through the life span, attachment first arises in childhood from the caregiver-child bond (Pinquart et al., 2013).

According to Bowlby (1973), an attachment bond arises through interaction between the infant and their caregiver providing a foundation for interaction and a sense of self. Interactions, such as feeding, playtime, and changing nappies that are repeated time after time, create mental representations that help the child anticipate future interactions. Bowlby calls these schemas the internal working models. According to Bowlby (1988), internal working models consist of expectations regarding the self, the caregiver, and the interaction between the two. A secure attachment forms when the caregiver consistently provides the infant with care, love, and security. In contrast, an insecure attachment, generally divided into anxious and avoidant attachment styles, forms when the caregiver acts inconsistently or non-responsively. Anxious attachment manifests as needing constant closeness and reassurance of

the attachment figure's love whereas avoidant attachment is typically displayed as a need for emotional distance and independence (see e.g., Lewczuk et al., 2021; Mikulincer & Shaver, 2005, 2019).

Attachment and Psychological Symptoms

Current evidence suggests that insecure attachment and psychological symptoms, including dissociation, are largely connected (see e.g., Kobak and Bosmans, 2019; Mikulincer & Shaver, 2012; Ogawa et al., 1997). A systematic review by Mikulincer and Shaver (2012) provides evidence for the connection between insecure attachment and psychopathology ranging from mild negative emotional states to severe personality disorders. The authors propose that underlying explanations for the relationship between insecure attachment and psychological symptoms might include interpersonal difficulties arising from insecure attachment, negative self-representations, and emotion regulation difficulties. This hypothesis aligns well with the dynamic model of the insecure cycle proposed by Kobak and Bosmans (2019). The model provides a framework for the emergence and maintenance of psychopathology from an insecure attachment style through three components of insecure internal working models: negative expectancies, interpretative biases, and defensive strategies. Kobak and Bosmans (2019) postulate that this dynamic model reflects a vicious cycle that renders the individual vulnerable to developing psychological symptoms and further feeds into itself. One of the psychological symptoms linked to insecure attachment is dissociation (see e.g., Marcusson-Clavertz et al., 2017; Nilsson et al. 2011). Yet, it remains unclear which mechanisms connect attachment and dissociation.

Dissociation

Dissociation in the field of psychology is defined as an altered state of consciousness resulting in a disconnect between the individual and their surroundings (Cardeña, 1994). It is also often described as a defense mechanism used to disengage from pain, negative emotions,

or memories. Additionally, it is a known symptom of disorders such as post-traumatic stress disorder, depression, anxiety, and bipolar disorder as well as the central tenet of dissociative disorders, namely, dissociative amnesia, dissociative identity disorder, and depersonalization-derealization disorder (5th ed.; DSM-5; American Psychiatric Association, 2013). According to the National Alliance on Mental Illness (n.d.), up to 75% of people experience dissociation during their lives with approximately 2% of them classified as chronic episodes. A parent-child-focused model of dissociation by Liotti (1992) suggests that incompatible internal models of the parent (attachment figure) and the self, result in later risks of developing dissociation. Research by Kong et al. (2018) implies that adulthood attachment insecurity mediates the link between childhood trauma and dissociative symptoms in adulthood. A possible explanation may be that dissociation develops as a coping mechanism to alleviate the negative emotions related to insecure attachment and subsequent interpersonal difficulties (Mikulincer and Shaver, 2012).

Dissociation and Attachment

According to attachment theory, the continuous inconsistent or lacking support from the attachment figure ultimately interferes with the development of interpersonal skills, subsequently giving rise to psychological problems, including dissociation (Mikulincer and Shaver, 2012). The theory postulates that as the attachment figure is not responding in the desired way, the individual relies on secondary strategies, namely, hyperactivation (anxious) and deactivation (avoidant). According to Mikulincer and Shaver (2012), the use of these secondary strategies is at the root of the interpersonal difficulties. This considerable contribution of insecure attachment to the emergence of negative emotions may be one of the factors increasing vulnerability to psychological symptoms. Kong et al. (2018) studied insecure attachment, childhood maltreatment, and adulthood dissociation in a clinical sample of adults. The authors found a mediation effect of insecure attachment for the relationship

between various forms of maltreatment (e.g., emotional, physical, and sexual abuse) and later dissociation. Although the study was cross-sectional and, thus, causality cannot be inferred, the results indicate that attachment and dissociation are associated. As the authors discuss, their results indicate that insecure attachment in adulthood explains how childhood trauma results in the later development of dissociative symptoms. This implies that insecure attachment plays an important role in the development of dissociative symptoms. Similar evidence was earlier found by Ogawa et al. (1997) in a longitudinal study spanning 19 years. Notably, their study only included a measure of parent-child attachment in early childhood and no follow-up was conducted. The authors found evidence that insecure parent-child attachment in childhood predicted later development of dissociation. Taken together, the evidence of these studies suggests that insecure attachment in childhood and later in life is likely a factor predicting dissociation. However, further research needs to be conducted to determine the mechanisms of the association.

As mentioned, dissociation is considered a maladaptive coping mechanism. Some scholars have suggested that it develops due to difficulties with emotion regulation (see e.g., McLaughlin et al. 2011). Considering the associations between negative emotions, insecure attachment (see e.g., Van Buren & Cooley, 2002), and the development of psychopathology (see e.g., Mikulincer and Shaver, 2012; Snippe et al., 2023), a possible mediator in the relationship between insecure attachment and dissociation might be emotion dysregulation.

Emotion Regulation

In recent years the role of emotion regulation has gained a lot of interest as a factor influencing the occurrence of various psychopathologies (see e.g., Kong et al., 2018; Lewczuk et al., 2021; McLaughlin et al., 2011; Nielsen et al., 2017; Pascuzzo et al., 2015). Emotion regulation refers to an ability to adjust and adapt one's emotions and entails several subcategories such as emotional awareness, control, and acceptance (Gratz & Roemer, 2004;

Nielsen et al., 2017). Therefore, emotion dysregulation is not merely being unable to control one's negative emotions but also refers to a lack of understanding, clarity, and accepting emotions of varying valence (Gratz & Roemer, 2004). Emotion dysregulation is also a characteristic of various psychological disorders such as borderline personality disorder (Obeldobel et al., 2023). Furthermore, emotion regulation has been found to mediate the associations between attachment styles and depression (Malik et al., 2014) and mental health (Mortazavizadeh & Forstmeier, 2018).

Emotion Regulation and Attachment

Attachment plays a role in the development of intra- and interpersonal skills such as emotion regulation (Fonagy et al., 2002; Stern & Cassidy, 2018). Emotions are a central tenet of attachment. Emotion regulation has been linked to attachment styles in various stages of life (Henschel et al., 2020; Obeldobel et al., 2023; Zimmer-Gembeck et al., 2017). These skills arise early in life based on experience and role models, such as the attachment figure (Ainsworth, 1989; Bowlby, 1973). In infancy, the primary caregiver acts as a “mirror” for the child as they learn to make sense of the world and themselves. Research by Riva-Crugnola et al. (2011) examining infants in a Strange Situation Procedure where infants are briefly left alone with a stranger, suggests that securely attached infants are more likely to use positive social engagement whereas anxiously attached infants tend to use negative social engagement and avoidant infants are less engaging and use more object focused emotional regulation. The most significant difference between securely, anxiously, and avoidantly attached infants was the valence of emotions and engagement towards the attachment figure. This suggests that insecure attachment is associated with negative emotional responses in stressful situations. A meta-analysis by Zimmer-Gembeck et al. (2017) investigating the link between attachment and emotion regulation in childhood and adolescence also found a small yet significant association between emotion dysregulation and insecure attachment. Their review included 23

studies, some of which were longitudinal, and only included objective measures of attachment. Similarly, research focusing on adults suggests that insecurely attached individuals are more likely to use dysfunctional emotion regulation strategies (Brenning & Braet, 2013; Henschel et al., 2020; Mikulincer & Shaver, 2019).

These findings support the emotion regulation theory of attachment proposing that insecure attachment is associated with emotion dysregulation following repeated distant or disorganized signals from the attachment figure (Brenning & Braet, 2013). Additionally, depending on the type of insecure attachment, people show differential processing of emotional cues and subsequent dysregulation of emotions to elicit a desired reaction from the attachment figure. This theory was supported by two studies conducted by Brenning and Braet (2013) examining adolescents. In the first study, the authors found differential emotion dysregulation strategies between anxiously and avoidantly attached individuals. Avoidant attachment was linked to sadness suppression and dysregulation of anger, whereas anxious attachment was associated with dysregulation of anger and sadness. Furthermore, they were able to confirm these findings in the second study. A review by Mikulincer and Shaver (2019) provides further support the findings of Brenning and Braet (2013). The authors discuss a wide range of behavioral and neuroscientific studies linking attachment and emotion regulation together. Their analysis provides evidence suggesting that attachment styles have a strong impact on the development and maintenance of emotion regulation strategies. Mikulincer and Shaver (2019) suggest that emotion regulation strategies can be dysfunctional, thus, strengthening the traits of an insecure attachment. Conversely, they can be functional and therefore possibly protecting the individual from psychopathology, such as dissociation (see e.g., Brenning & Braet, 2013; McLaughlin et al., 2011).

Emotion Dysregulation and Dissociation

Emotion dysregulation and dissociation have also been linked together. A meta-analysis by Cavicchioli et al. (2021) examined the relationship between emotion regulation strategies and dissociation. The authors found a moderate association between dissociation and maladaptive emotion regulation strategies but no evidence linking adaptive strategies to dissociation. Dysfunctional emotion regulation strategies have also been found to predict psychopathology (McLaughlin et al., 2011) which indicates that functional emotion regulation may operate as a protective factor against psychopathology such as dissociative disorders. Furthermore, in a longitudinal study, McLaughlin et al. (2011) found evidence that emotion regulation deficits are a predictor rather than a consequence of psychopathology. This supports the idea of the current hypothesis that emotion dysregulation is associated with mental health issues, such as dissociation. In addition, theories linking attachment and dissociation (see e.g., Kong et al., 2018) often assume emotion regulation as a property of attachment that plays a role in coping with trauma.

Attachment, Dissociation, and Emotion Regulation

Currently, there are no studies investigating the variables of attachment style, emotion regulation, and dissociation together in a non-clinical adult sample. As established above, attachment, emotion regulation, and dissociation have previously been linked together in practice and on a conceptual level. Attachment has been found to provide a basis for emotion regulation through developmental processes and later in adulthood (Ainsworth, 1989; Henschel et al., 2020; Mikulincer & Shaver, 2019; Obeldobel et al., 2023; Zimmer-Gembeck et al., 2017). Emotion regulation has been found to mediate the relationship between adult attachment and psychopathology such as anxiety disorders as well as general mental health (Mortazavizadeh & Forstmeier, 2018; Nielsen et al., 2017; Pascuzzo et al., 2015) but has not been investigated directly in relation to insecure attachment and emotion regulation. Available data indicates that emotion regulation likely mediates the relationship between attachment and

dissociative symptoms. There is a gap in the literature as previous studies did not investigate the mediating effect of emotion regulation in the association between insecure attachment and emotion dysregulation.

The Present Study

To address the gap in the literature, the aim of this study is to test the mediating role of emotion regulation in the relationship between insecure attachment and dissociation. Based on current literature, the hypothesis follows that an insecure attachment style is related to higher levels of emotion dysregulation, which, in turn, is associated with increased dissociation.

Method

Participants

The participants represent a convenience sample as they were recruited through the SONA system. The sample consists of 143 first-year psychology students at the University of Groningen aged 16 and older. The students participated in exchange for research credits. The requirement for this study was a sufficient command of English. The sample had 103 female participants (72.0%), 29 male participants (20.3%), 3 who indicated their gender as “other” (2.1%), and one participant (0.7%) who did not want to share this information. Most participants were within the age range of 16-25 years old with 67 participants aged 16 to 20 (46.9%) and 66 aged between 20 and 25 years old (46.2%). Only three participants (2.1%) indicated their age to be above 25 years old. Seven participants were missing this information completely.

Procedure

Data was implemented online via Qualtrics. Upon sign-up, the participants were informed about the aim, content, and risk of the study. The risk was slight distress to participants with relational difficulties as the study involved questions regarding their romantic relationship. After informed consent was given, participants responded to the questionnaires. At the end of

the study, as a mood repair, participants were asked to describe a recent positive memory. Finally, the participants were debriefed with an online form. No deception was used and for this reason, the debriefing form mainly provided a more specific overview of what was measured (e.g., pathological/non-pathological dissociation) and how the variables would be investigated in relation to each other. Contact information of the Student Counseling Center and instructions on how to gain access to a psychotherapist were provided in case participants felt distressed. The study was approved by the Ethical Committee of the Psychology Department at the University of Groningen.

Measures

Demographics

Age and gender were measured with multiple choice questions. Age was divided into three categories, namely, 16-20, 20-25, and 25 and up. With gender, participants could choose female, male, other, or “I do not wish to answer this question”.

Dissociative Experience Scale-II (DES-II)

This 28-item self-report measure of dissociation was originally developed by Bernstein and Putnam (1986) and revised later to simplify the scoring. Participants were asked to rate the frequency of experiences on a visual analog scale (0% = “never”, 100 = “always”). Examples of items are “Some people have the experience of looking in a mirror and not recognizing themselves” and “Some people find that they sometimes are able to ignore pain” (Carlson & Putnam, 1993). A total DES-II score was calculated by summing all 28 item scores. The scale has high internal consistency as demonstrated by a Cronbach’s alpha of $\alpha < 0.92$ (Saggino et al., 2020; Zingrone & Alvarado, 2001). In the current sample, Cronbach’s alpha was .95, which is comparable to results found by Carlson and Putnam (1993) as well as Saggino et al. (2020).

Experience in Close Relationship Scale (ECR-R)

The ECR-R is a self-report questionnaire that measures insecure attachment in a romantic relationship on a 7-point Likert scale (7 = “*strongly disagree*”, 1 = “*strongly agree*”). The scale has two subdomains of anxious and avoidant attachment that both consist of 18 items. The participants were instructed to think about their current or last romantic relationship while answering statements for anxious attachment such as “I worry a lot about my relationships” and avoidant attachment “I find it relatively easy to get close to my partner”. The scores for attachment anxiety and avoidance were obtained by summing up the relevant eighteen items (Fraley et al., 2000). Additionally, fourteen of the items were scored in reverse. The internal consistency of the avoidance subscale was found to be 0.93 ($\alpha = .93$) and 0.92 ($\alpha = .92$) for the anxious attachment subscale (Fairchild & Finney, 2006). In the current sample, Cronbach’s alpha was .96 which is comparable to previously reported results (Fairchild & Finney, 2006; Fraley et al., 2000). This indicates a high overall reliability of the ECR-R scale.

Difficulties in Emotion Regulation Scale (DERS)

The 36-item self-report measure developed for adults by Gratz and Roemer (2004) measures emotion regulation. The DERS relies on a 5-point Likert scale (1 = “*almost never*”, 5 = “*almost always*”) (Gratz & Roemer, 2004). The scale has six subscales namely, nonacceptance of emotional responses, difficulty engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. The scale includes items such as “I pay attention to how I feel” and “When I’m upset it takes me a long time to feel better”. A total score was obtained by adding all scores up and taking the average. Eleven items are reversed. Gratz and Roemer (2004) and Hallion et al. (2018) have found the test to be psychometrically valid. The authors found a Cronbach’s alpha equal to 0.93 ($\alpha = .93$) which indicates a high internal consistency of items. Furthermore, each subscale had a Cronbach’s alpha above 0.8 ($\alpha > .80$).

The DERS has good test-retest reliability, ($\rho = .88, p < .01$) as calculated by Gratz and Roemer (2004). Moreover, Hallion and colleagues (2018) have found the scale to have good predictive power of treatment outcomes. In the present sample, a Cronbach's alpha of .95 was found. This is in line with previous research (Gratz & Roemer, 2004; Hallion et al., 2018).

Results

Descriptive Statistics

Table 1 displays descriptive data such as means and standard deviations for the measures.

Table 1

Descriptive Statistics

	<i>N</i>	<i>Mean</i> (<i>SD</i>)	<i>Min-Max</i>	<i>Skewness</i>	<i>Kurtosis</i>
DES	131	667.10 (460.23)	70-1970	.95	-.02
ECR-R	132	123.67 (38.21)	42-219	.00	-.53
DERS	130	92.35 (22.89)	54-156	.60	-.18

Note: DES = Dissociative Experience Scale-II total score, ECR-R = Experiences in Close Relationships Scale Revised total score, DERS = Difficulties in Emotion Regulation Scale total score.

Assumption Check

Assumption checks for the mediation analysis was performed in SPSS to ensure unbiased results of the mediation analysis. Linearity was checked using scatter plots of the dependent variable against each independent variable and found to be satisfactory.

Multicollinearity, as indicated by the variance inflation factor, was not an issue for the

analysis as the values were significantly below the recommended cut-off score of four ($VIF = 1.62$, tolerance = 0.62). Furthermore, the zero-order correlations between the variables were moderate at most.

Table 3

Zero Order Correlations between Variables

	1	2	3
1. DES	.		
2. ECR-R	.39* (N = 131)	.	
3. DERS	.55* (N = 128)	.62* (N = 129)	.

Note: DES = Dissociative Experience Scale-II total score, ECR-R = Experiences in Close Relationships Scale Revised total score, DERS = Difficulties in Emotion Regulation Scale total score. * $p < .001$.

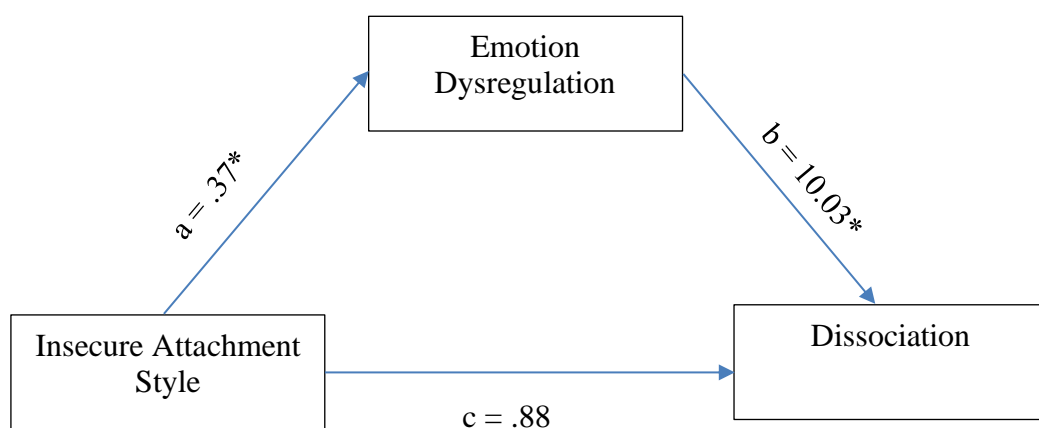
The residual values were independent as shown by the Durbin-Watson statistic of 2.21 which is close to the ideal value of two. Homoscedasticity was checked using a scatterplot depicting standardized predicted values against the standardized residuals obtained (see Appendix). The plot did not show any major patterns and thus, the data was considered homoscedastic. The P-P plot for the model showed a deviation from the midline. Therefore, it seems that the residuals are not normally distributed, and this assumption is violated. However, as discussed by Ernst and Albers (2017), due to the central limit theorem this may not be a serious issue. A box plot of each variable using the ± 1.5 interquartile range rule showed no potential outliers for ECR-R and only a few potential outliers for DES-II and DERS total scores. However, none of these data points were extreme and thus, were not removed from the dataset. Cook's distance was checked and showed no extreme outliers.

Mediation Analysis

Mediation analysis was carried out using SPSS version 29.0 and Hayes PROCESS macro v4.3. Hayes (2012). The recommended level of 5000 bootstrapping (Hayes, 2009) was used to estimate the indirect effect. The analysis was run with the total score of DES-II as the dependent variable, DERS total score as the mediator, and the ECR-R total score as the independent variable. The direct effect of insecure attachment on dissociation was not significant ($b = .88$, 95% CI [-1.37, 3.13], $p = .44$). The indirect effect was significant ($b = 3.72$, 95% CI [2.16, 5.53]). The regression had an effect size of $R^2 = .15$ when the mediator was not included in the model. For the full model including both insecure attachment and emotion regulation, $R^2 = .39$ indicating that insecure attachment and emotion regulation accounted for 39% of the variance in dissociation. This is an increase from a small effect to a moderate one (Fairchild et al., 2009). For a psychological construct, this is a substantial result (Cohen, 1988) as these constructs are often explained by a multitude of factors.

Figure 1

Unstandardized Regression Coefficients for the Relationship between Attachment and Dissociation Mediated by Emotion Regulation



n = 128.

* $p < .001$

Discussion

The aim of the present study was to examine the mediating role of emotion dysregulation in the relationship between insecure attachment and dissociation. The results of the study are in line with my hypothesis that insecure attachment styles increase dissociation through emotion dysregulation. The findings indicate that insecure attachment in a romantic relationship in adulthood is a risk factor for emotion dysregulation which increases the risk of developing dissociation. To my knowledge, there are no studies done on this specific relationship besides those conducted by my colleagues in the thesis group (Kiers, 2023; Tran, 2023).

The findings of the current study on the mediating role of emotion dysregulation in the relationship between insecure attachment and dissociation show that insecurely attached individuals are more likely to experience difficulties with emotion regulation. Limiting the use of adaptive emotion regulation strategies subsequently links to using maladaptive emotion regulation strategies, such as dissociation, as a coping mechanism. As previously mentioned, attachment theory suggests that repeated inconsistent support from the attachment figure promotes the use of secondary (insecure) attachment strategies which, in turn, are associated with poorer emotion regulation and social skills. Notably, emotion regulation is stipulated by many researchers to arise from attachment and the related internal working models (see e.g., Fonagy et al., 2002; Stern & Cassidy, 2018). The present findings can, thus, be explained by attachment theory and the emotion regulation theory of attachment.

Some scholars have also suggested that emotion dysregulation is a nexus of psychopathology (see e.g., Trull et al., 2015). In a review of evidence linking emotion regulation and psychopathology on a neural level Beauchaine and Cicchetti (2019) further propose that emotion dysregulation is a transdiagnostic factor underlying various forms of psychopathology. As previously mentioned, emotion regulation and attachment are strongly

related as emotion regulation initially arises from internal working models that develop through attachment. If the stipulations of emotion regulation as a nexus of psychopathology hold, it further explains the present mediation effect of emotion regulation on the relationship between insecure attachment and dissociation.

The present results supporting the mediation effect of emotion dysregulation on the relationship between insecure attachment and dissociation are in line with existing research. Lewczuk et al. (2021) conducted two studies investigating the predictive effect of insecure attachment on groups of physical and mental health symptoms and included emotion dysregulation as a mediator. My results were consistent with their finding that emotion regulation mediates the relationship between insecure attachment and mental health symptoms. Similar results have been found by Pascuzzo et al. (2015) who conducted a 10-year longitudinal study investigating the mediating effect of emotion regulation on the relationship between insecure attachment and later development of psychopathology. The authors found the mediation to be significant and concluded that insecure attachment is a predictor of later development of psychopathology. The current results also fit the findings of Mortazavizadeh and Forstmeier (2018). In a systematic review, the authors examine evidence linking insecure attachment and mental health issues with an emphasis on the role of emotion regulation in the association. The authors found a moderate association between insecure attachment and mental disorders, similar to the correlation found in the present study. Moreover, they concluded that insecurely attached individuals experienced more emotion dysregulation. In sum, these studies have found evidence of the mediating effect of emotion regulation on the relationship between insecure attachment and psychological symptoms, such as dissociation.

Interestingly, my colleagues conducted a moderation analysis using the present data to investigate the moderating effect of emotion dysregulation on the relationship between

insecure attachment and dissociation and found non-significant results for both avoidant (Kiers, 2023) and anxious attachment styles (Tran, 2023). Thus, it seems that emotion dysregulation does not have a moderating effect on the relationship between insecure attachment and dissociation, but a mediating effect.

Contradictory to existing literature the direct effect of insecure attachment on dissociation was not significant. Previously the two constructs have been linked in childhood (see e.g., Liotti, 1992), adolescence (see e.g., Nilsson et al., 2011), and adulthood (see e.g., Kong et al, 2018; Ogawa et al., 1997). The present study found a moderate zero-order correlation between insecure attachment and dissociation but the overall direct effect in the mediation analysis was non-significant.

The present study has several implications. Treatment of dissociative symptoms and related disorders should begin to consider the role of attachment and emotion dysregulation in designing interventions. Treatments could also benefit from integrating emotion regulation strategy training and should include the role of adult attachments as a foundation for poor emotion regulation and subsequent coping through dissociation. Moreover, insecure romantic attachment might be a root issue for difficulties with emotion regulation. Therefore, attachment-focused interventions and building healthy relationships might help reduce dissociative symptoms. There is some existing evidence demonstrating that increasing attachment security has alleviated mental health problems (Mikulincer & Shaver, 2012). The findings also carry significance for existing literature as they provide preliminary evidence for the relationship between adult attachment, emotion regulation, and dissociative symptoms. Additionally, the findings may shed light on the etiology and maintenance of dissociative symptoms. The findings of this study provide evidence that the associations also exist in adult romantic relationships.

Limitations

The present study has several limitations. Firstly, the study was cross-sectional, and causality cannot be inferred. It may very well be that the mediation relationship is bidirectional. Dissociative symptoms may increase emotion regulation difficulties which in turn may worsen attachment security. Second, the study was based on online self-report measures. We had no control over the conditions in which the participants filled in the questionnaires. This means that distractions and other influencing factors, such as fatigue and mood, are unknown. Subsequently, the study did not contain attention checks meaning that answers may have been chosen randomly. This is especially relevant for measuring dissociation. Third, the sample has in proportion much less male than female participants which reduces the generalizability of the results. Lastly, it was beyond the scope of this study to compare avoidant and anxious attachment and differentiate between different levels of emotion regulation and dissociation. Thus, the results are only based on larger concepts and do not account for subcategories and the possible variations within constructs.

Future research should focus on replicating these findings to gain a clearer picture regarding the robustness and extent of this effect in various samples and across cultures. Further, it would be clinically relevant to investigate whether adaptive emotion regulation strategies and attachment-focused therapy can reduce dissociation. Additionally, while the present study focused merely on insecure attachment as a unified concept, future studies should investigate the possible differences between attachment styles. Current evidence suggests that avoidant attachment is strongly characterized by emotional distancing whereas anxious attachment is described as a failure to avoid stressful cues (see e.g., Lewczuk et al., 2021; Mikulincer & Shaver, 2005, 2019). The mediation effect of emotion regulation difficulties may thus be larger for avoidantly attached individuals than for anxiously attached ones because dissociation, much like avoidant attachment, shares the characteristic of

emotional avoidance. As the present study cannot shed light on this distinction, prospective studies should aim to do so. Furthermore, the present study did not examine the differences between dimensions of emotion dysregulation, such as goal-directedness and emotional clarity, which might contain some important information as well. Moro (2023) investigated the differences between anxiously and avoidantly attached individuals based on their scores on the DERS subscales. The author found that anxious attachment was more strongly associated with the subscales of difficulty engaging in goal-directed behavior, impulse control difficulties, and limited access to emotion regulation strategies. Conversely, subscales of lack of nonacceptance of emotional responses and emotional awareness were more strongly related to avoidant attachment. Taken together, these findings highlight the need for a more thorough investigation regarding the complexity that may underline the mediation effect of emotion regulation on the relationship between insecure attachment and psychopathology, such as dissociative symptoms.

Conclusion

In conclusion, gathering data from first-year psychology students at the University of Groningen, a mediation analysis found a significant mediating effect of emotion regulation on the relationship between attachment styles in a romantic relationship and dissociative symptoms. These findings are in line with the current literature linking these three variables together but as the present study is the first of its kind, comparisons are made carefully. The findings have implications for the understanding and treatment of dissociative disorders. Future research is required to ensure the robustness, generalizability, and temporal order of the variable included. However, the findings of this study contribute to the growing body of evidence tying insecure attachment, emotion regulation, and dissociation together in the adult population and provide a preliminary framework for how these constructs fit together.

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Appendix

Standardized predicted values against the standardized residuals

