Disentangling the link between mindfulness and dissociation: The mediating role of attention and emotional acceptance
Alexis Vancappel, L. Guerin, Christian Réveillère, Wissam El-Hage

To cite this version:

HAL Id: hal-03590393
https://hal.science/hal-03590393
Submitted on 9 May 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Distributed under a Creative Commons Attribution - NonCommercial 4.0 International License
Disentangling the link between mindfulness and dissociation: the mediating role of attention and emotional acceptance

Vancappel A\textsuperscript{a,b,c,*}, Guerin L\textsuperscript{b}, Réveillère C\textsuperscript{b}, El-Hage W\textsuperscript{a,c}

\textsuperscript{a} CHRU de Tours, Pôle de Psychiatrie-Addictologie, Centre Régional de Psychotraumatologie CVL, Tours, France
\textsuperscript{b} Département de Psychologie, Université de Tours, Tours, France
\textsuperscript{c} UMR 1253, iBrain, Université de Tours, Inserm, Tours, France
\* Corresponding author: Clinique Psychiatrique Universitaire, CHRU de Tours, Tours, France, a.vancappel@chu-tours.fr

**Ethical approval:** The experiment and consent procedures were approved by the ethics committee of the University (Comité d’Ethique de la Recherche Tours-Poitiers, n°2020-01-08).

**Availability of data and materials:** The datasets gathered and/or analyzed during the current study are available from the corresponding author on reasonable request.

**Competing interests:** There is no competing interest.

**Authors’ contributions:** All authors took part in developing the methodology and in gathering the data. The first author performed the statistical analysis. The first and second authors wrote the first version of the manuscript. All authors added modifications and approved the final version.

**Acknowledgements:** We would like to thank all the participants and the University of Tours for the software support.

**Funding:** This work did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.
Abstract

Background: Dissociation can be defined as a disruption in the usually integrated functions of consciousness, memory, identity, and perception of the environment. Previous studies have reported the negative correlation between mindfulness and dissociation. Some authors have also suggested that mindfulness-based interventions may be relevant psychotherapeutic tools to treat dissociative symptoms. According to Bishop et al.’s model of mindfulness, two processes are involved in mindfulness-based interventions: self-regulation of attention, and acceptance of internal experiences. The aim of this study was to identify which of these mechanisms mediate the link between mindfulness and dissociation in a non-clinical sample.

Method: We recruited 312 healthy volunteers (269 women, mean age 29.5±12.8, mean years of higher education 3.37±2.48) who completed online questionnaires to assess history of childhood trauma, dissociative experiences, emotion regulation abilities, cognitive difficulties, attention control, and mindfulness abilities.

Results: We found significant negative correlations between mindfulness and dissociation, and positive correlations between dissociation, attention and emotional acceptance. We also found significant correlations between mindfulness, attention and emotional acceptance. The causal steps approach revealed a reduction of the variance of dissociation explained by mindfulness when attention and emotional acceptance were added. The bootstrapping analysis confirmed the mediating role of attention and emotional acceptance in the link between mindfulness and dissociation.

Discussion: The results suggest that the link between dissociation and mindfulness may be mediated by attention and emotional acceptance. This is consistent with the model proposed by Bishop et al. (2004). Specific exercises targeting attentional control and emotional acceptance are indicated to treat dissociative symptoms.

Key-words: Dissociation, mindfulness, attention, emotional acceptance
1. Introduction

Dissociation is described as a disruption in the usually integrated functions of consciousness, memory, identity, and perception of the environment (American Psychiatric Association, 2013). Dissociation is a transdiagnostic symptom (McKinnon et al., 2016) that is frequently observed in Post-Traumatic Stress Disorder (PTSD). The dissociative subtype of PTSD has consequently been included in the DSM-5 (American Psychiatric Association, 2013), due to the strong correlation between dissociation and PTSD (Murphy et al., 2017). In addition to common PTSD symptoms, the dissociative subtype of PTSD is marked by depersonalization (i.e., feeling detached from oneself, a sense of not being real) and/or derealization (i.e., feeling as if the world is not real).

To date, Trauma Focused-Cognitive Behavioral Therapy (TF-CBT) and Prolonged Exposure Therapy (Foa et al., 2007) are the most widely recommended and scientifically validated treatments for PTSD (Foa et al., 2010; National Collaborating Centre for Mental Health (UK), 2005; World Health Organization, 2013). However, dissociation, while much more prominent than PTSD symptoms, is one of the contraindications of Prolonged Exposure Therapy (Foa et al., 2007). Although some studies found no moderating effect of dissociation on treatment outcomes (Hagan et al., 2018; Halvorsen et al., 2014; Zoet et al., 2018), others indicated that dissociation could moderate the outcome of psychotherapy through positive associations with poor treatment results and/or residual symptoms (Feeny & Danielson, 2004; Kleindienst et al., 2016; Lanius, Frewen, et al., 2010; Lanius et al., 2012; Price et al., 2014; Steuwe et al., 2012; Wolf et al., 2012). Furthermore, dissociation appears to interfere with treatment, particularly when patients are faced with intense emotions (Lanius, Frewen, et al., 2010; Lanius, Vermetten, et al., 2010). It therefore seems important to understand which mechanisms are implicated in traumatic dissociation in order to adapt treatment to the presence and severity of dissociative symptoms.

Some authors suggest that mindfulness-based interventions could be appropriate for treating dissociative symptoms (Cloitre et al., 2012; Forner, 2018; Frewen et al., 2015; Zerubavel & Messman-Moore, 2015). To date, only a few studies have been conducted on the links between dissociation and mindfulness; a negative correlation has been found between mindfulness and dissociation in the general population (Baer et al., 2004; Perona-Garcelán et al., 2014; Walach et al., 2006), among patients suffering from auditory and verbal
hallucinations (Escudero-Pérez et al., 2016), among patients suffering from Post-Traumatic Stress Disorder (Kratzer et al., 2018), and among patients suffering chronic pain (Michal et al., 2007). Those results suggest that the more patients have mindfulness abilities, the less they have dissociative symptoms. A positive effect was found in only one study, which investigated the effect of mindfulness-based group therapy on dissociative symptoms. However, it only included 7 patients suffering from dissociative symptoms and there was no control group (Sharma et al., 2016).

In 2004, Bishop et al. proposed a two-component model of mindfulness that includes self-regulation of attention and orientation to experience. Self-regulation of attention consists of maintaining awareness of current experience (Bishop et al., 2004) and the ability to disengage from thoughts that come to mind and to which attention naturally turns. This component is strongly related to the executive functions of inhibition, sustained attention, and attention switching, which are predicted to improve with mindfulness. The second component, orientation to experience, consists of accepting internal experiences (emotions, feelings, thoughts) without judgment, and maintaining an attitude of openness and curiosity. These two components, leading to a decentered perspective of emotion, contribute to adaptive emotion regulation, by enabling the individual to gain insight and greater emotional awareness and acceptance (Bishop et al., 2004; Bondolfi et al., 2011). It would be interesting to identify which of the mechanisms described in this model (self-regulation of attention or orientation to experience) mediates the link between mindfulness and dissociation.

Previous studies have reported that dissociation is associated with emotion dysregulation within the general population (Moulton et al., 2015) and within patients suffering from PTSD (Powers et al., 2015). Moreover, dissociative pathologies are strongly correlated with alexithymia, which is the inability to identify and describe emotions (Merckelbach et al., 2017). Daytime EEGs in highly dissociative patients have shown that dissociative experiences are positively associated with reduced attentional control (Kirino, 2006; Krüger et al., 2013). It has also been found that highly dissociative patients, especially those experiencing intense negative emotions, have difficulty sustaining and controlling attention when faced with distracting stimuli (Soffer-Dudek, 2014). Overall, these findings suggest that both emotional regulation and attentional abilities may mediate the link between dissociation and mindfulness.

Identification of the mechanisms that link dissociation and mindfulness would make it possible to set up appropriate therapeutic programs to reduce dissociative symptoms. The
main aim of this study was thus to disentangle the different cognitive and affective mechanisms that connect mindfulness and dissociation in a non-clinical population. We postulate that this connection is partially mediated by, first, attention control, and secondly, emotional acceptance.

2. Method

2.1. Procedure

Participants were recruited through social networks and had to be at least 18 years old. After reading an information note online, they gave their consent to participate in the study by ticking a box. Data were collected anonymously using Sphinx software. The experiment and consent procedures were approved by the ethics committee of the University (Comité d’Ethique de la Recherche Tours-Poitiers, n°2020-01-08).

Participants were asked to answer a few short questions about their age, sex, and years of study after high school. They then completed questionnaires and scales assessing history of childhood trauma, dissociative experiences, emotion regulation abilities, cognitive difficulties, attention control, and mindfulness abilities.

2.2. Measures

2.2.1. Dissociative Experience Scale (DES)

The DES is a 28-item self-report questionnaire evaluating trait dissociation (Bernstein & Putnam, 1986). A typical item is “Some people have the experience of driving a car and suddenly realizing that they don’t remember what has happened during all or part of the trip”. Participants are asked to rate how often each experience happens to them on a scale ranging from 0% (never) to 100% (always). The overall score is the mean of the scores of all the items ranging from 0 to 100. French validation studies show good internal consistency (α=0.94) (Darves-Bornoz et al., 1999). This questionnaire is composed of 3 subscales: amnesia, depersonalization/derealization and absorption.

2.2.2. Difficulties in Emotion Regulation Scale (DERS)

The Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004) is a 36-item self-report questionnaire assessing emotion regulation difficulties. A typical item is “I am clear about my feelings”. Items are rated from 1 (almost never) to 5 (almost always). The French version has good internal consistency for all the sub-dimensions, with Cronbach alpha values of 0.84 to
0.90 (Dan-Glauser & Scherer, 2013). This questionnaire is composed of 6 subscales: non-acceptance of emotional response, difficulties in engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotional regulation strategies and lack of emotional clarity.

2.2.3. Cognitive Difficulties Scale (CDS)

The Cognitive Difficulties Scale (McNair & Kahn, 1983) is a 39-item self-report questionnaire assessing difficulties with memory, attention, concentration, language, praxis, and spatial orientation. Items are rated from 0 (not at all) to 4 (Very often). The French version was validated by the working group on cognitive evaluations (GRECO, 2020). This questionnaire is composed of 6 subscales: attention-concentration; praxis; delayed recall; orientation to people; temporal orientation and prospective memory.

2.2.4. Five Facet Mindfulness Questionnaire (FFMQ)

The FFMQ is a 39-item self-report questionnaire assessing five facets of mindfulness (Baer et al., 2008). A typical item is: “While walking, I am aware of the sensations in my body”. Participants respond on a 5-point Likert scale ranging from 1 (never) to 5 (always true). The French version has been shown to have good psychometric properties (Heeren et al., 2011). This questionnaire is composed of 5 subscales: observing, describing, acting with awareness, non-judging and non-reactivity.

2.2.5. Childhood Trauma Questionnaire (CTQ)

The Childhood Trauma Questionnaire is a 28-item self-report questionnaire assessing the history of sexual, emotional, and/or physical abuse during childhood (D. P. Bernstein et al., 2003). A typical item: “When I was growing up, people in my family hit me so hard that it left me with bruises or marks”. Participants answer on a 5-point Likert scale ranging from 1 (never true) to 5 (very often true). Studies have shown that the French version has good psychometric properties (Paquette et al., 2004). This questionnaire is composed of 5 subscales: emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect.

2.3. Statistical Analyses

We conducted correlation analysis (Bravais-Pearson) and multiple linear regressions. We used the bootstrapping technique for mediation analysis. Statistical analyses were performed using SPSS software, 23rd version. The mediation analyses were performed using the 4th model of
3. Results

3.1. Descriptive data

We recruited 312 participants (269 women, 43 men), who completed the study protocol online. Their mean age was 29.5 years (SD=12.78) and mean years of higher education was 3.75 (SD=2.48). Descriptive statistics were used to summarize total and subscale scores (see Table 1).

3.2. Correlational analyses

We used Pearson’s correlation analysis to explore the association between the different variables. All the results are presented in Table 2. Dissociation was positively related to all the sub-dimensions of the DERS, all the sub-dimensions of the CDS, and the Childhood Trauma Questionnaire. We also found a negative relationship between mindfulness and dissociation (-0.423, p<0.01). There was a positive relationship between dissociation and emotional acceptance (r=0.370, p<0.001) and attention-concentration (r=0.585, p<0.001). We also found a negative relationship between mindfulness and emotional acceptance (r=-0.523, p<0.001) and attention-concentration (r=-0.626, p<0.001). These results enabled us to run a mediation analysis.

3.3. Causal analysis

We used multiple linear regressions to analyze causal relations, with dissociation as the dependent variable. All the steps are presented in Table 3.

When entered alone (Model 1), mindfulness was a significant predictor of dissociation (β=0.761, p<0.001). When entered simultaneously (Model 2), mindfulness and emotional acceptance were significant predictors (respectively β=0.215, p<0.001 and β=0.649, p<0.001).
However, the $\beta$ value of mindfulness was lower than in Model 1, which suggests that the effect of mindfulness on dissociation is partly mediated by emotional acceptance. In Model 3, mindfulness and attention-concentration were the independent variables; attention-concentration was a significant predictor of dissociation ($\beta=0.825$, $p<0.001$) but mindfulness was not. This suggests that the effect of mindfulness on dissociation is mediated by attention-concentration. Finally, we entered mindfulness, attention-concentration and emotional acceptance as the independent variables. We found that emotional acceptance and attention-concentration were significant predictors of dissociation (respectively $\beta=0.699$, $p<0.001$ and $\beta=0.0201$, $p<0.001$), but mindfulness was not significant and its Beta value reached almost zero. This suggests that the effect of mindfulness on dissociation is mediated by attention-concentration and emotional acceptance.

-Insert Table 3-

3.4. Bootstrapping analyses

Following the recommendations of Preacher and Hayes (2008), we used a bootstrapping technique to assess the mediation effect. Overall, we found a significant model predicting dissociation, with emotional acceptance and attention-concentration as mediators and mindfulness as the independent variable ($F=58.04$, $R^2=0.3612$; $p<0.001$). More specifically we found a mediating effect of attention-concentration (bias-corrected 95% confidence interval CI=-0.0027 to -0.0017) and a mediating effect of emotional acceptance (bias-corrected 95% confidence interval, CI=-0.008 to -0.0002). Details of the mediation analysis are presented in Figure 1.

-Insert Figure 1-

4. Discussion

The aim of the present study was to disentangle the cognitive and affective mechanisms that connect dissociation and mindfulness. In line with previous studies, we found that dissociation was positively correlated with childhood trauma (e.g. Sanders & Giolas, 1991).
Similarly, we also found that dissociation was negatively related to mindfulness (Baer et al., 2004; Perona-Garcelán et al., 2014; Walach et al., 2006) and positively correlated with attention-concentration difficulties, in line with previous studies reporting impaired attention control and sustained attention among patients with dissociative disorders (Kirino, 2006; Krüger et al., 2013; Soffer-Dudek, 2014). Furthermore, in our nonclinical sample, dissociation was positively correlated with: a) non-acceptance of emotional responses; b) difficulty engaging in goal-directed behavior and impulse control; c) lack of emotional awareness; d) lack of emotional clarity; and e) limited access to emotion regulation strategies. These results are consistent with previous studies that found emotion dysregulation and alexithymia among patients with dissociative disorders (Merckelbach et al., 2017; Powers et al., 2015).

Conversely, and as expected, mindfulness was negatively correlated with dissociation, cognitive difficulties, and difficulties in emotion regulation. These results are consistent with the two-component model of mindfulness proposed by Bishop et al. (2004), in which self-regulation of attention and emotion were predicted to increase with mindfulness. Furthermore, we found that the effect of mindfulness on dissociation was mediated by attention-concentration and emotional acceptance. Our results thus indicate the mediating effects of emotional acceptance and attention-concentration on dissociation.

These results support previous studies indicating that mindfulness could be combined with other psychotherapies to reduce and treat dissociative symptoms (Cloitre et al., 2012; Forner, 2018; Frewen et al., 2015; Alexandre Heeren & Philippot, 2010; Zerubavel & Messman-Moore, 2015), by improving self-regulation of attention, orientation to experience, and emotion regulation. For example, mindfulness is used in Dialectic Behavioral Therapy to help patients with Borderline Personality Disorder develop distress-tolerance skills (Linehan et al., 1991), and it could thus be proposed as an experimental protocol for patients with dissociative disorders. However, some researchers have noted that mindfulness may be detrimental for patients suffering from dissociative symptoms (Alexandre Heeren & Philippot, 2010). They explain that dissociation is a way to avoid aversive emotions. In that way, exposing patients to aversive emotions during mindfulness exercises may create a dissociative reaction. Therefore, a preliminary work on emotion regulation may be necessary before practicing mindfulness with patients suffering from dissociative symptoms. This would help patients face their emotions. Psychotherapy programs focusing on emotion regulation and attention processes for dissociative symptoms could also be developed.
This study has a number of limitations. As an exploratory study, we measured attention-concentration through a questionnaire, and cognitive tests such as the D2-R (Brickenkamp et al., 1999) would be a more accurate way of evaluating attention. However, previous results did not indicate a consistent relationship between cognitive difficulties evaluated using cognitive tasks (McKinnon et al., 2016). Further studies are therefore required to explore the links between cognitive performance and dissociation before using such tasks to evaluate the mediating effect of attention between mindfulness and dissociation. Moreover, our sample is not a clinical sample. We can wonder if dissociation in the general population corresponds to dissociation in a psychiatric population and more precisely within patients suffering from PTSD. This study should be performed with patients suffering from dissociative disorder or dissociative subtype of post-traumatic stress disorder. Furthermore, the fact that mindfulness-trait is negatively associated with dissociative symptoms does not mean that mindfulness-based interventions are necessary efficient for treating dissociative symptoms. Finally, we conducted correlational analyses, which do not show causal relationships. To provide evidence of a causal relationship and strengthen the existence of mediator effects between a) emotional acceptance and dissociation, and b) attention-concentration and dissociation, it would be interesting to assess the effect of a mindfulness-based experimental protocol on patients suffering from dissociative symptoms. This would be the only way to assure that mindfulness is a relevant way to treat dissociative symptoms.

Finally, most participants in our study were women, and our findings should be replicated with a more gender-balanced sample.

5. Conclusion

In addition to a negative correlation between mindfulness-trait and dissociation (meaning that the more subjects have mindfulness abilities, the less they have dissociative symptoms), this study demonstrates that attention-concentration and emotion regulation have mediating effects on dissociation. More research within a clinical population are required to argue that mindfulness-based interventions are efficient to reduce dissociative symptoms. Other approaches based on attention processes and emotion regulation could also be developed to treat or reduce the dissociative symptoms of Post-Traumatic Stress Disorder. Our findings thus have clinical implications for the treatment of traumatic dissociation and suggest directions for future research.
6. References


validation in a French-speaking sample.


https://doi.org/10.1080/15299732.2013.821433


https://doi.org/10.1176/ajp.148.3.A50

https://doi.org/10.4103/0019-5545.192013

https://doi.org/10.1037/cns0000023


Table 1. Descriptive Data.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>DES</td>
<td>.0</td>
<td>.799</td>
<td>.235</td>
<td>.164</td>
</tr>
<tr>
<td>DERS-NA</td>
<td>6</td>
<td>30</td>
<td>13.91</td>
<td>6.79</td>
</tr>
<tr>
<td>DERS-DE</td>
<td>5</td>
<td>25</td>
<td>15.67</td>
<td>5.29</td>
</tr>
<tr>
<td>DERS-I</td>
<td>6</td>
<td>30</td>
<td>12.57</td>
<td>5.62</td>
</tr>
<tr>
<td>DERSR-C</td>
<td>6</td>
<td>30</td>
<td>15.76</td>
<td>5.39</td>
</tr>
<tr>
<td>DERS-S</td>
<td>9</td>
<td>45</td>
<td>23.57</td>
<td>8.54</td>
</tr>
<tr>
<td>DERS-CE</td>
<td>5</td>
<td>25</td>
<td>11.72</td>
<td>4.44</td>
</tr>
<tr>
<td>McNair-AC</td>
<td>0</td>
<td>38</td>
<td>16.90</td>
<td>8.09</td>
</tr>
<tr>
<td>McNair-P</td>
<td>0</td>
<td>14</td>
<td>3.08</td>
<td>2.97</td>
</tr>
<tr>
<td>McNair-RD</td>
<td>0</td>
<td>12</td>
<td>3.71</td>
<td>2.80</td>
</tr>
<tr>
<td>McNair-OP</td>
<td>0</td>
<td>16</td>
<td>5.37</td>
<td>3.11</td>
</tr>
<tr>
<td>McNair-OT</td>
<td>0</td>
<td>8</td>
<td>2.75</td>
<td>2.27</td>
</tr>
<tr>
<td>McNairMP</td>
<td>0</td>
<td>8</td>
<td>4.01</td>
<td>1.96</td>
</tr>
<tr>
<td>FFMQ</td>
<td>49</td>
<td>183</td>
<td>122.92</td>
<td>23.51</td>
</tr>
<tr>
<td>CTQ</td>
<td>29</td>
<td>118</td>
<td>47.68</td>
<td>14.38</td>
</tr>
</tbody>
</table>

DES: Dissociative Experiences Scale; DERS-NA: Non-acceptance of emotional responses; DERS-DE: Difficulty engaging in Goal-directed behavior; DERS-I: Impulse control difficulties; DESR-C: Lack of emotional awareness; DERS-S: Limited access to emotion regulation strategies; DERSR-CL: Lack of emotional clarity; McNair-AC: Attention-concentration; McNair-P: Praxis; McNair-RD: Delayed recall; McNair-OP: Orientation to people; McNair-OT: Temporal orientation; McNairMP: Prospective memory; FFMQ: Five Facet Mindfulness Questionnaire; CTQ= Childhood Trauma Questionnaire.
Table 2. Correlational Analyses

<table>
<thead>
<tr>
<th></th>
<th>DES</th>
<th>DER</th>
<th>DER</th>
<th>DES</th>
<th>DER</th>
<th>DER</th>
<th>McNa</th>
<th>McNa</th>
<th>McNa</th>
<th>McNa</th>
<th>McNa</th>
<th>McNa</th>
<th>McNa</th>
<th>FFM</th>
<th>Q</th>
<th>CTQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>DES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS-NA</td>
<td>.370''</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS-DE</td>
<td>.316''</td>
<td>.496''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS-I</td>
<td>.397''</td>
<td>.562''</td>
<td>.648''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DESR-C</td>
<td>.184''</td>
<td>.213''</td>
<td>.105</td>
<td>.147''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS-S</td>
<td>.361''</td>
<td>.641''</td>
<td>.729''</td>
<td>.701''</td>
<td>.143''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DERS-CE</td>
<td>.494''</td>
<td>.501''</td>
<td>.454''</td>
<td>.566''</td>
<td>.525''</td>
<td>.553''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McNair-AC</td>
<td>.585''</td>
<td>.423''</td>
<td>.522''</td>
<td>.443''</td>
<td>.210''</td>
<td>.512''</td>
<td>.547''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McNair-P</td>
<td>.426''</td>
<td>.266''</td>
<td>.193''</td>
<td>.159''</td>
<td>.079</td>
<td>.254''</td>
<td>.253''</td>
<td>.465''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McNair-RD</td>
<td>.398''</td>
<td>.253''</td>
<td>.270''</td>
<td>.241''</td>
<td>.195''</td>
<td>.227''</td>
<td>.334''</td>
<td>.497''</td>
<td>.368''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McNair-OP</td>
<td>.501''</td>
<td>.239''</td>
<td>.196''</td>
<td>.139''</td>
<td>.095</td>
<td>.207''</td>
<td>.250''</td>
<td>.576''</td>
<td>.429''</td>
<td>.451''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McNair-OT</td>
<td>.436''</td>
<td>.223''</td>
<td>.281''</td>
<td>.194''</td>
<td>.156</td>
<td>.250''</td>
<td>.330''</td>
<td>.512''</td>
<td>.320''</td>
<td>.430''</td>
<td>.492''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McNairMP</td>
<td>.322''</td>
<td>.257''</td>
<td>.234''</td>
<td>.193''</td>
<td>.116</td>
<td>.252''</td>
<td>.234''</td>
<td>.436''</td>
<td>.247''</td>
<td>.412''</td>
<td>.350''</td>
<td>.343''</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FFMQ</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CTQ</td>
<td>.423''</td>
<td>.523''</td>
<td>.552''</td>
<td>.559''</td>
<td>.519''</td>
<td>.620''</td>
<td>.725''</td>
<td>.626''</td>
<td>.302''</td>
<td>.376''</td>
<td>.267''</td>
<td>.341''</td>
<td>.380''</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DES: Dissociative Experiences Scale; DERS-NA: Non-acceptance of emotional responses; DERS-DE: Difficulty engaging in goal-directed behavior; DERS-I: Impulse control difficulties; DESR-C: Lack of emotional awareness; DERS-S: Limited access to emotion regulation strategies; DESR-C: Lack of emotional clarity; McNair-AC: Attention-concentration; McNair-P: Praxis; McNair-RD: Delayed recall; McNair-OP: Orientation to people; McNair-OT: Temporal orientation; McNairMP: Prospective memory; FFMQ: Five Facet Mindfulness Questionnaire; CTQ: Childhood Trauma Questionnaire; *<0.05; **<0.001
### Table 3. Multiple linear regression models predicting dissociation.

<table>
<thead>
<tr>
<th>Predictor of dissociation</th>
<th>Standardized β</th>
<th>T</th>
<th>R</th>
<th>R²</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FFMQ</td>
<td>0.761</td>
<td>20.67</td>
<td>0.761</td>
<td>0.579</td>
<td>427.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FFMQ</td>
<td>0.215</td>
<td>3.78</td>
<td>0.838</td>
<td>0.703</td>
<td>366.8</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Emotional acceptance</td>
<td>0.649</td>
<td>11.39</td>
<td>0.838</td>
<td>0.703</td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Model 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FFMQ</td>
<td>0.071</td>
<td>1.49</td>
<td>0.886</td>
<td>0.784</td>
<td>562.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Attention-concentration</td>
<td>0.825</td>
<td>17.17</td>
<td>0.886</td>
<td>0.784</td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Model 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FFMQ</td>
<td>0.008</td>
<td>0.16</td>
<td>0.889</td>
<td>0.791</td>
<td>390.3</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Attention-concentration</td>
<td>0.699</td>
<td>11.43</td>
<td>0.889</td>
<td>0.791</td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Emotional acceptance</td>
<td>0.201</td>
<td>3.24</td>
<td>0.889</td>
<td>0.791</td>
<td></td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

FFMQ: Five Facet Mindfulness Questionnaire.
Figure 1. Mediation analysis (n.s.: non-significant).

DES: Dissociative Experiences Scale; DERS-NA: Non-acceptance of emotional responses; McNair-AC: Attention-concentration; FFMQ: Five Facet Mindfulness Questionnaire

DES: Dissociative Experiences Scale; DERS-NA: Non-acceptance of emotional responses; McNair-AC: Attention-concentration; FFMQ: Five Facet Mindfulness Questionnaire