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Research Article

The role of denial on emotional correlates of childhood trauma in a non-clinical population

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Abstract

Background: A large body of evidence suggests that child abuse and neglect by a caregiver is a recurrent event linked to increased psychopathology symptoms. The Childhood Trauma Questionnaire (CTQ) is commonly used to assess abuse/neglect during childhood. However, even though the Minimization-Denial (MD) subscale was originally designed to assess response bias (i.e., underreporting of childhood maltreatment), it is possible that the scale may reflect coping strategies that play an effective role in the relationship between childhood trauma and their negative outcomes. Also, even though MD has been associated with decreased psychopathology symptoms, it is also strongly associated with other scales of the CTQ.

Method: This study (*n* = 133) examined whether (1) the MD-scale is negatively associated with alexithymia, emotion dysregulation and psychopathology, if (2) these associations will hold when adjusting for different subtypes of abuse and neglect and (3) and the role of MD as a possible moderator in these relationships.

Results: The analyses showed that, although MD scores have relatively strong and (mostly) significant (negative) associations with the CTQ, emotion dysregulation strategies and psychopathology symptoms, these associations were weak and failed to remain significant when adjusting for the effect of CTQ.

Conclusion: Our findings suggest that the MD scores should be viewed as an accurate reflection of the absence (or little) of exposure to childhood abuse/neglect.

More Information

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Introduction

Childhood psychopathologic disorders are mental and developmental disorders that impact neurodevelopmental, behavioral, emotional and disorders. Psychological and social well-being may be affected by broad and severe after facts which mostly persist in adulthood [1,2] One of the risk factors contributing to such devastating consequences is child abuse and neglect. A large body of evidence suggests that child abuse and neglect by a parent/caregiver is a relatively recurrent event [3-6]. Individuals who report high-level abuse and neglect during childhood account for the association with increased depression [7,8], anxiety symptoms [9], PTSD [10] and personality disorders [11].

Individuals with a history of childhood trauma cope differently with these experiences, with some being inclined to deny the experienced trauma and use this process as a coping mechanism. Even though some studies of childhood trauma ignore the effects of denial [12-14], recent studies address the importance of denial when studying the effect of childhood trauma [15-17]. Denial of childhood trauma represents the valorization of caregivers by the individuals who were abused and/or neglected by them. It is important to emphasize that denial does not imply the *absence* of reporting abuse, rather it indicates minimization of abuse, which was the focus of the current study as well as in previous ones [18,19]. This may result in a tendency to deny the existence of a traumatic experience and the feelings associated with it [20] or a tendency to minimize the scope of the harm these individuals have experienced [21]by creating implicit and explicit avoidance of confrontation to deal with the reality of the traumatizing event [18,21].

The present study used a short version of CTQ that includes two items of the Minimization/Denial (MD) Scale developed to detect the tendency to deny the existence of a traumatic experience and the feelings associated with it [20], or to minimize and eventually underreport the scope of the harm these individuals have experienced [18,21]. The MD items

are an expression of childhood views suggesting that (a) their childhood was perfect and (b) they had the best family in the world. Yet, the items generally may appear too vague to detect the effect of minimization, suggesting that one should exercise caution in terms of the effect of underreporting/minimization on other correlates [22]. Previous research indicates that the distribution of MD scores varies across the studies [19,23], therefore, we used the full 5-point scale in order to account for all the variation.

Evidence suggests there is an inverse association between MD and reporting of anxiety and depression symptoms [24-26]. Moreover, while denial represents a self-serving bias in healthy participants, denial is decreased in the population with an established psychiatric diagnosis [15]. Having said that, when Bernstein and colleagues [21] validated the MD scale against the Balanced inventory of Desirable responses (BIDR) assessing the self-deception and impression management components, they found that the MD scale was strongly correlated with both BIDR subscales. This finding has been found in other studies as well [15,27]. Therefore, it is possible to hypothesize that MD is a form of self-deception (self-serving bias) that serves to protect the individual from threats to the self by amplifying self-efficacy and control, but it does not imply that MD inhibits the prevalence of experiencing these unpleasant autobiographical memories.

Moreover, a study by MacDonald, et al [19] found that MD is occurring in about 40% of CTQ scales from non-clinical subjects and 30% among clinical subjects, indicating that MD is not merely a rare reporting bias. In a group of 200 adult psychiatric outpatients, MacDonald, et al. [28] did not find that the MD Scale significantly moderated the relationships between the CTQ and any of the 28 variables related to attachment style, temperament, personality, depression, and clinical diagnoses. However, MacDonald, et al. [19] found in a large sample study that MD is better viewed as a dimensional rather than categorical construct, and reported that the MD scale had a moderating effect on the relation between CTQ total scores and a clinical versus community population, but this moderation effect was very weak and restricted to the emotional neglect subscale.

Different strategies, such as denial or suppression, may assist the individual in modifying (regulating) the encoding process of internal emotional cues [29]. However, if denial has been excessively used over a long time, it becomes a maladaptive strategy that inevitably leads to poorer health management, high levels of distress, anxiety and depression [16]. As denial implies limited emotional conscious processing and expression of unpleasant emotions and experiences, it appears similar to alexithymia [30]. Alexithymia sometimes referred to as “no words for feelings” [31], indicates that alexithymic individuals experience difficulties expressing, identifying, and understanding their own emotions. However, these difficulties do not imply that alexithymic individuals experience an absence or limited insight into unpleasant emotional experiences. Studies suggest that, while alexithymic individuals show a general tendency to experience negative affect [32-34], individuals who deny acknowledging the existence of traumatic events appear to have limited access to unpleasant emotions, such as anxiety [15,35].

To sum up, previous studies suggest that childhood trauma has a detrimental impact on both mental and physical health, but very few studies address the effect of denial of childhood trauma on psychopathological symptoms in a non-clinical population. In addition, previous research also suggests that individuals who show symptoms of psychopathology and a history of childhood abuse and neglect appear to have greater difficulties in regulating their emotions along with higher levels of alexithymia [36]. However, it remains unclear whether excessive use of denial is associated with difficulties with emotion regulation, which may result in the onset of psychopathology in individuals with elevated levels of alexithymic traits. Also, previous research shows that denial may have a protective self-serving bias [15] that may minimize the impact of childhood trauma in a self-enhancing way, which may lead to a reduction of anxiety and psychopathology symptoms [16]. Other studies point to the role of denial as a response bias index, signaling the individual tendency to deny trauma which may impact the reporting of the proper results on the clinical variables. Even though denial has received a lot of attention in previous research, due to being associated with decreased psychopathology symptoms, it is possible that this effect could be better explained by having strong relationships with another component of the instrument CTQ (i.e., abuse/neglect).

Therefore, the aim of the study was to examine whether the MD scale is negatively associated with alexithymia, emotion dysregulation and psychopathology and if these effects will hold when statistically adjusting for different subtypes of abuse and neglect. Thus, using a non-clinical sample, this study investigated the role of the MD scale as an index of a protective *self-serving bias,* which should lead to higher levels of MD being associated with lower levels of alexithymia, emotion dysregulation and psychopathology, *after* adjusting for the effects of abuse and neglect. In addition, if the negative association between the MD scale and the emotional correlates holds, this study further examined if denial serves as an index of *response bias* (underreporting of childhood maltreatment). That is, as these individuals are not assumed to represent true low neglect/abuse scorers, response bias should be evident if the negative association between the MD scale and a clinical correlate is more pronounced among those at higher levels of neglect/abuse (compared to those at lower levels neglect/abuse). We used a multiverse analytic approach to evidence the robustness of the MD scale, which involved performing analyses across a large set of emotional variables (subscales of alexithymia, emotion dysregulation, and psychopathology). We, therefore, extended the work by MacDonald, et al. [19,28]

by relating the MD scale to other clinical variables (alexithymia and emotion dysregulation) not previously tested, but also by examining if the effects of the MD scale in competition with CTQ.

Methods

Participants and procedure

The sample of the current study consisted of 133 participants (76 females) with an average age of 27.81 (*SD* = 12.99, range 18 years - 63 years old). Most participants were United World College Red Cross Nordic (UWC) students (51.9%, *n* = 69) and UWC staff (25.6%, *n* = 34). UWC is a college campus in Norway, where students and staff from all parts of the world (more than 99 nations) attend classes and live. A smaller fraction of the sample (22, 5%) were participants recruited outside of college campuses. We decided to include these participants, for several reasons; (1) the heterogeneity of the UWC sample did not collide with a profile of these participants, (2) participants meet inclusion criteria and (3) the inclusion of these participants increased the power of the obtained results. In order to be included in the study, the participants should be at least 18 years old, witnessed/experienced some degree of abuse or neglect in childhood, have not obtained an established diagnosis by a professional (indicating mental illness), and does not consider childhood traumatic experiences to challenging in order participate in the study. A sensitivity analysis was run in order to detect effect sizes given our sample size (*n* =133), which allowed us to detect partial correlation coefficients of r = .215 (one-sided) or more with a power of .80 (and α =.05). The Institutional Review Board of the Nordic United World College in Norway and Mid Sweden University in Sweden approved the study. Participants were recruited online via email or via the link for participation in the study which was provided. Every participant was informed in advance about research purposes and the protocol. Written informed consent was obtained from every participant. Participants filled in questionnaires via Qualtrics survey software by which data were gathered. Qualtrics provided coding for every participant where confidentiality of the data was ensured. Participants took part in the study on a voluntary basis and there was no compensation for the participation. In case of missing data, multivariate data imputation by chained equation was performed.

Measures

Emotion dysregulation: Emotion dysregulation was measured with the Difficulties in Emotion Regulation Scale [37]. The DERS is a 36-item self-report questionnaire measuring six domains of emotion regulation. Items were rated from 1 (almost never) to 5 (almost always). Higher DERS scores indicated greater emotion regulation difficulties.

Alexithymia: The Bermond–Vorst Alexithymia Scale [38] is a 40-item dimensional self-report scale used to measure alexithymia. The BVAQ consists of five subscales rated on a 5-point scale (ranging from 1 = “strongly disagree” to 5 = “strongly agree”).

Denial, Child abuse and neglect: The Child Trauma Questionnaire [21] measured abuse and neglect history by a self-report that assesses a range of traumatic childhood experiences,

The questionnaire may be administered to adults and adolescents. Findings indicate that the CTQ is a valid and sensitive screening tool for childhood trauma in an adolescent population [39] from the age of 14 (Harbor, et al., 2022). The CTQ consists of six clinical subscales: Emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, and minimization/denial. Denial represents the valorization of caregivers by the individuals who were abused and/or neglected by them. This may result in the minimization/denial of the scope of the harm that these individuals have experienced [18,21]. Even though some studies of childhood trauma ignore the effects of denial [12,13,14], recent studies such as the study by Mert, et al. [17] point to the importance of for denial when studying the effect of childhood trauma. Mert, et al. [17] further elaborate that in case of not addressing the effect of minimizations, results may be misleading in determining the relative frequencies and evaluating the long-lasting effects of childhood trauma. Taking these findings into consideration, the short version of CTQ was constructed for this study. Items for the short version were selected upon the highest factor loadings of CTQ items in the confirmatory analyses of four population groups in Texas USA (adolescents, substance abusers, community members, and Texas sample) in the study by Bernstein, et al. [18]. CTQ showed high-reliability properties [18,21]. The short version of CTQ in the present study contained two items that aim to assess denial. These items are «I had perfect childhood” and “I had the best family in the world” rated on a 5-point scale ranging from 1 (never true) to 5 (very often true). The percentage of MD positive (participants who endorsed a score of 5) “I had perfect childhood” item was 37.6%, and 54.9% for the “I had the best family in the world” item.

Psychopathology: Symptom Checklist 90 Revised [40] is a 90-item self-report screening instrument used to assess current psychological pathology. The SCL-90-R has three global distress indexes (I. Global Severity Index (GSI) II. Positive Symptom Distress Index (PSDI) III. Positive Symptom Total (PST), and nine subscales: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Participants rated items on a 5-point Likert scale ranging from 1 (not at all) to 5 (extremely). Higher scores indicated greater psychopathology.

Results

To explore the associations between all variables in this

study, Pearson correlations were calculated. To explore the associations between denial and specific clinical criterion variables while adjusting for total CTQ scores and the subtypes of abuse and neglect, partial Person correlations were calculated.

As evident in Table 1, results showed that (1) MD scores are (mostly) strongly associated with total CTQ score and the CTQ subscales and (2) are moderately (and negatively) correlated with the total score of emotion dysregulation and psychopathology, but is not significantly correlated with alexithymia. Internal consistencies for these variables were satisfactory.

As evident in Table 2, the MD scores showed relatively moderate and (mostly) significant associations with the subscales of emotion dysregulation strategies and psychopathology symptoms, but MD has little in common with the subscales of alexithymia. In addition, the total CTQ score and the CTQ subscales (in particular the Emotional Abuse, Emotional Neglect, and Physical Neglect subscales) have moderate to strong positive associations with emotion dysregulation and psychopathology but have little in common with the subscales of alexithymia.

However, Table 3 shows that the significant associations between MD and emotion dysregulation and psychopathology did not survive the inclusion of the total score CTQ as a covariate. Specifically, while an estimate in the bold text shows that the significant associations between MD and a clinical

Table 1: Means, standard deviations, zero-order correlations, and internal consistencies for all main measures.

	CTQ	SA	PA	EA	EN	PN	MD	ER	A	GSI
Child abuse and neglect (CTQ)	1									
Sexual abuse (SA)	.60**	1								
Physical abuse (PA)	.67**	.35**	1							
Emotional abuse (EA)	.86**	.42**	.55**	1						
Emotion. neglect (EN)	.73**	.19*	.21*	.53**	1					
Physical neglect (PN)	.76**	.22*	.33**	.52**	.69**	1				
MD scale	-.66**	-.38**	-.32**	-.51**	-.56**	-.61**	1			
Emotion dysregulation (ER)	.42**	.01	.08	.42**	.46**	.51**	-.27**	1		
Alexithymia (A)	.12	.01	-.05	.05	.19*	.22*	-.12	.19*	1	
Psychopath. symptoms (GSI)	.46**	.11	.17	.44**	.44**	.48**	-.34**	.65**	.39**	1
Cronbach's α	.81	.74	.75	.81	.71	.77	.69	.80	.84	.97
Mean	18.18	2.99	3.04	4.64	4.14	3.38	8.59	95.12	111	1.96
SD	6.89	1.77	1.70	2.34	1.88	1.75	1.44	14.60	15.85	.52

Note. Pearson correlation analyses (**, $p < .001$ *, $p < .05$). The internal consistency values reported are from the current study. The raw (unstandardized) values are reported for each variable.

Table 2: Intercorrelations for the CTQ subscales and the subscales of emotion dysregulation strategies and psychopathology symptoms.

	MD	CTQ	SA	PA	EA	EN	PA
Emotion dysregulation							
Non-acceptance	-.35**	.45**	.11	.14	.40**	.43**	.51**
Goals	-.17	.27**	.01	.05	.30**	.28**	.32**
Impulse	-.23**	.41**	.01	.11	.40**	.43**	.51**
Awareness	.25**	-.40**	-.18*	-.14	-.25**	-.31**	-.40**
Strategies	-.33**	.47**	.05	.10	.46**	.50**	.53**
Clarity	-.01	.18*	.03	-.02	.10	.31**	.24**
Alexithymia							
Verbalizing	-.16	.20*	.03	-.06	.15	.29**	.30**
Fantasizing	.00	-.05	-.30	-.03	-.12	.00	.20
Identifying	-.18*	.21*	.03	-.01	.16	.21*	.37**
Emotionalizing	.01	-.04	.03	-.50	-.01	.02	-.13
Analyzing	-.04	.01	-.03	-.02	-.50	.05	.09
Psychopath. symptoms							
Somatization	-.25**	.31**	.11	.16	.34**	.18**	.29**
OCD	-.14	.29**	.18	.64	.32**	.31**	.30**
Interpersonal	-.36**	.44**	.18*	.05	.40**	.47**	.50**
Depression	-.31**	.50**	.10	.21*	.46**	.50**	.51**
Anxiety	-.32**	.39**	.01	.19*	.38**	.37**	.42**
Anger/Hostility	-33**	.47**	.09	.24**	.43**	.44**	48**
Phobic anxiety	-30**	.37**	.04	.08	.31**	.45**	.46**
Paranoid Ideation.	-.27**	.32**	.20*	.01	.33**	.26**	.24**
Psychoticism	-.36**	.37**	.16	.14	.34**	.32**	.36**

Note: Pearson correlation analyses of the main outcomes of the study (**, $p < .001$ *, $p < .05$), with significant coefficients marked in **bold text**. MD: Minimization/Denial; CTQ: Total score of childhood trauma, CTQ; SA: Sexual Abuse; PA: Physical Abuse; EA: Emotional Abuse; EN: Emotional Neglect; PN: Physical Neglect.

Table 3: Partial correlation coefficients between MD and the subscales of emotion dysregulation strategies and psychopathology symptoms while adjusting for total CTQ scores and sub-types of abuse and neglect (in parenthesis).

	MD (CTQcov)	MD (SAcov)	MD (PAcov)	MD (EAcov)	MD (ENcov)	MD (PNcov)
Emotion dysregulation	.02	-.28**	-.22**	-.07	-.01	.07
Non-acceptance	-.08	-.33**	-.33**	-.18*	-.15	-.05
Goals	.02	-.18*	-.16	-.02	-.02	.04
Impulse	.06	-.25**	-.21*	-.04	.01	.11
Awareness	.04	-.20*	.22*	.15	.10	.04
Strategies	-.04	-.39**	-.32**	-.12	-.08	-.01
Clarity	.16	.01	-.01	.05	.22*	.03
Alexithymia	-.06	-.12	-.14	-.11	-.01	.02
Verbalizing	-.03	-.16	-.18*	-.09	.01	.03
Fantasizing	-.04	-.01	-.01	-.07	.00	.02
Identifying	-.05	-.18*	-.19*	-.12	-.07	.06
Emotionalizing	-.01	.03	-.01	.01	.03	-.09
Analyzing	-.04	-.05	-.04	-.07	-.01	.02
Affective Alex.	-.04	.01	-.01	-.039	.02	-.04
Cognitive Alex.	-.05	-.16	-.18*	-.12	-.03	.05
Psychopath. symptoms	-.06	-.33**	-.31**	-.15	-.13	-.07
Somatization	-.06	-.23**	-.21*	-.09	-.18*	-.09
OCD	.07	-.15	-.13	.03	.04	.05
Interpersonal	-.10	-.32**	-.36**	-.20*	-.13	-.08
Depression	.02	-.30**	-.27**	-.10	-.05	-.00
Anxiety	-.10	-.34**	-.28**	-.16	-.15	-.09
Anger/Hostility	-.03	-.32**	-.27**	-.14	-.11	-.06
Phobic anx.	-.08	-.31**	-.29**	-.18*	-.07	-.03
Paranoid Idea.	-.08	-.21*	-.25**	-.12	-.16	-.17
Psychoticism	-.17	-.33**	-.36***	-.23**	-.23**	-.19*

Note: Partial correlation analyses of the main outcomes of the study. (**, $p < .001$ *, $p < .05$), with significant coefficients marked in **bold text**. CTQcov: Total score of childhood trauma, CTQ treated as a covariate; SAcov: Sexual Abuse as a covariate; PAcov: Physical Abuse as a covariate; EAcov: Emotional Abuse as a covariate; ENcov: Emotional Neglect as a covariate; PNcov: Physical Neglect as a covariate; Non-acceptance: Nonacceptance of Emotional Responses; Goals: Difficulties Engaging in Goal-Directed; Impulse: Impulse Control Difficulties; Aware: Lack of Emotional Awareness; Strategies: Limited Access to Emotion Regulation Strategies; Clarity: Lack of Emotional Clarity.

correlate survive the adjustment of that particular subscale, the absence of bold text points to the source of covariance that canceled out the significant association between MD and a clinical correlate. Moreover, as evident in Table 3, Emotional Abuse, Emotional Neglect, and Physical Neglect were in large the sources of covariance that cancelled out most of the significant association between MD and a clinical correlate. Noteworthy was that the association between MD and Psychoticism survived the adjustment for all of the subscales of the CTC, but not for the total score CTQ as a covariate.

Finally, as there were no significant negative associations between the MD scale and the clinical correlates, examination of response bias (evident if the negative association between the MD scale and a clinical correlate is more pronounced among those at higher levels of neglect/abuse) was not warranted.

Discussion

The primary objective of the current study was to address the importance of the MD scale as an index of self-serving bias or response bias in relation to CTQ and its associations with clinical correlates (alexithymia, emotion dysregulation and psychopathology symptoms). Distribution scores CTQ scores were normally distributed which consisted on previous studies [21,39,41]. Consistent with previous research addressing high rates of MD-positivity in the non-clinical population [15,16], in the current study, there were relatively high rates of participants who were MD-positive. A study by MacDonald, et al. [19] found that MD-positivity along with the rest of the MD scores is quite prevalent (30% - 40%). MacDonald's study suggests that the degree of response bias found that higher MD scores indicate a higher degree of MD prevalence. This finding indicates that our sample had a high prevalence of a high degree of MD response bias scores.

In addition, the MD scores showed relatively (mostly) strong negative associations with total CTQ scores, CTQ subscales, emotion dysregulation strategies and psychopathology symptoms. More importantly, the associations between MD scores and emotion dysregulation strategies and psychopathology symptoms were weak and failed to remain significant when statistically adjusting for the effect of CTQ. Moreover, even if there were significant negative associations between MD and emotion dysregulation and psychopathology when sexual and physical abuse was accounted for, these significant associations did not survive the adjustment of the total score CTQ or the adjustment of one of the other subscales of the CTQ. Specifically, the subscales of Emotional Abuse, Emotional Neglect, and Physical Neglect were in large the sources of covariance that cancelled out most of the significant association between MD and a clinical correlate, variables which in fact were most strongly correlated with the MD scale (Table 1). Thus, the significant

associations between MD and clinical correlates are better explained by its relatively strong association with the CTQ scales rather than being a major contributing factor for the variations in the clinical variables, and hence no evidence for MD as an index of a protective self-serving bias. Interestingly, we found no significant associations with alexithymia, which have features that are to some extent similar to the definition of denial (see introduction).

The absence of negative associations between the MD scale and the clinical correlates (after the adjustment of CTQ) indicated no support for the notion of MD as an index of response bias. This evidence potentially indicates that MD items generally may appear too vague to detect the effect of minimization, suggesting that one should consider adding, for example, the overprotection/over-control subscale in order to improve the detection of the MD effect [22]. This finding is in line with the MacDonald, et al. study, finding no support for denial as a "hidden reservoir" of minimized/denied childhood traumatic experiences. In addition, the current study examined participants from a non-clinical sample consisting of college students and employees who had no established psychiatric diagnosis at the time of the data collection and who reported moderate levels of childhood trauma that were similar to other studies with non-clinical samples [5,28,42]. Moreover, a non-clinical population (compared to a clinical one) has more resources to cope with the traumatic experiences (i.e., having better behavioral/ functioning levels, such as attending school, going to work, having relationships, etc.) that influence their understanding of trauma and their tendency to minimize it.

Even if outside the purpose of the study, there were some strong correlations between CTQ and the outcome variables, with the strongest correlation between the total CTQ score and psychopathology symptoms, more specifically depression, which is in line with previous research [7,8]. The associations between emotional and physical neglect, emotion dysregulation strategies (nonacceptance, impulse, and strategies), and depression are also well-documented findings in previous studies [43,44].

Finally, the term minimization/denial may lead to some confusion when it comes to interpretation. The confusion may be reflected in the sense that denial may suggest bias/self-deception, but at the same time may be indicative of a defense mechanism as conceptualized within the psychodynamic tradition. Therefore, it would be interesting to examine the association between the MD scale and scales measuring denial as a defense mechanism, which to determine similarities and differences between the two psychological constructs, since both are crucial in the processing of traumatic experiences and functionality of adult individuals [28,45].

The lack of evidence for the MD scale as a contributing factor for the variation in our outcome variables should be considered in light of certain limitations. First, a more homogeneous sample would be recommendable to recruit. A few other studies employing denial in the psychiatric patient population found that MD is higher in healthy individuals [15,46]. Therefore, the psychiatric population could contribute to better insight with respect to the effect of denial of childhood trauma in relation to other clinical correlates. Secondly, retrospective reporting of trauma along with denial may be suboptimal for the investigation of childhood trauma due to possible effects of mood and memory recall bias. Yet, it is important to note that Brewin, et al. [47] found that retrospective memory recall of child abuse and neglect (along with denial as a control variable) is quite accurate. Furthermore, Paivio [48] confirmed that CTQ shows that retrospective reports of child abuse and neglect appear accurate and robust. Therefore, the CTQ is well-established and well-validated [18,48,49]. Third, the analyses used cross-sectional data, which limits any substantial conclusion regarding causality.

Conclusion

In our sample of 133 non-clinical participants, despite MD having several significant associations with several variables, the influence of MD was abolished when in competition with the CTQ variables, in particular, due to the influence of emotional abuse, physical abuse, and emotional neglect. Consequently, MD scores are having little influence on the variation in our outcome variables, and therefore the MD scale does not appear to reflect a self-serving protective bias, nor indicating a higher risk of minimized or denied trauma (i.e., response bias). According to MacDonald, et al. [28] response bias indicator of the MD, the scale has little relevance to important result outcomes of CTQ. However, MacDonald, et al. [19] found in a very large sample (19 600 participants) that the MD scale moderated the relation between CTQ total scores and clinical status, but the effect was very weak and neglect able, and was restricted to only one of the subscales of the CTQ. Thus, given the relatively strong negative correlation between abuse/neglect and MD scores (r = - .66 for CTQ total and MD score in the present sample), MD scores should be viewed as an accurate expression of childhood views suggesting that when agreeing to a statement that "the childhood was perfect", it may reflect the absence (or little) exposure to childhood abuse/neglect. Moreover, a large sample replication (and with clinical samples) is necessary to examine the discriminative validity of CTQ when accounting for MD in order to consider such a recommendation as informed-based practice.

References

1. Polanczyk G, Rohde LA. Epidemiology of attention-deficit/hyperactivity disorder across the lifespan. Curr Opin Psychiatry. 2007 Jul;20(4):386-92. doi: 10.1097/YCO.0b013e3281568d7a. PMID: 17551354.

2. Shaw M, Hodgkins P, Caci H, Young S, Kahle J, Woods AG, Arnold LE. A systematic review and analysis of long-term outcomes in attention deficit hyperactivity disorder: effects of treatment and non-treatment. BMC Med. 2012 Sep 4;10:99. doi: 10.1186/1741-7015-10-99. PMID: 22947230; PMCID: PMC3520745.

3. Barnett OW, Miller-Perrin CL, Perrin RD. Family Violence across the Lifespan: An Introduction. Thousand Oaks, CA: Sage publishing. 1997.
4. Briere J, Elliott DM. Prevalence and psychological sequelae of self-reported childhood physical and sexual abuse in a general population sample of men and women. Child Abuse Negl. 2003 Oct;27(10):1205-22. doi: 10.1016/j.chiabu.2003.09.008. PMID: 14602100.
5. Häuser W, Schmutzer G, Brähler E, Glaesmer H. Maltreatment in childhood and adolescence: results from a survey of a representative sample of the German population. Dtsch Arztebl Int. 2011 Apr;108(17):287-94. doi: 10.3238/arztebl.2011.0287. Epub 2011 Apr 29. PMID: 21629512; PMCID: PMC3103979.
6. Scher CD, Forde DR, McQuaid JR, Stein MB. Prevalence and demographic correlates of childhood maltreatment in an adult community sample. Child Abuse Negl. 2004 Feb;28(2):167-80. doi: 10.1016/j.chiabu.2003.09.012. PMID: 15003400.
7. Lok A, Bockting CL, Koeter MW, Snieder H, Assies J, Mocking RJ, Vinkers CH, Kahn RS, Boks MP, Schene AH. Interaction between the MTHFR C677T polymorphism and traumatic childhood events predicts depression. Transl Psychiatry. 2013 Jul 30;3(7):e288. doi: 10.1038/tp.2013.60. PMID: 23900311; PMCID: PMC3731792.
8. Nanni V, Uher R, Danese A. Childhood maltreatment predicts unfavorable course of illness and treatment outcome in depression: a meta-analysis. Am J Psychiatry. 2012 Feb;169(2):141-51. doi: 10.1176/appi.ajp.2011.11020335. Erratum in: Am J Psychiatry. 2012 Apr;169(4):439. PMID: 22420036.
9. Gibb BE, Chelminski I, Zimmerman M. Childhood emotional, physical, and sexual abuse, and diagnoses of depressive and anxiety disorders in adult psychiatric outpatients. Depress Anxiety. 2007;24(4):256-63. doi: 10.1002/da.20238. PMID: 17041933.
10. Hetzel MD, McCanne TR. The roles of peritraumatic dissociation, child physical abuse, and child sexual abuse in the development of posttraumatic stress disorder and adult victimization. Child Abuse Negl. 2005 Aug;29(8):915-30. doi: 10.1016/j.chiabu.2004.11.008. PMID: 16125234.
11. Rogosch FA, Cicchetti D. Child maltreatment, attention networks, and potential precursors to borderline personality disorder. Dev Psychopathol. 2005 Fall;17(4):1071-89. doi: 10.1017/s0954579405050509. PMID: 16613431; PMCID: PMC1474024.
12. Aas M, Djurovic S, Athanasiu L, Steen NE, Agartz I, Lorentzen S, Sundet K, Andreassen OA, Melle I. Serotonin transporter gene polymorphism, childhood trauma, and cognition in patients with psychotic disorders. Schizophr Bull. 2012 Jan;38(1):15-22. doi: 10.1093/schbul/sbr113. Epub 2011 Sep 9. PMID: 21908796; PMCID: PMC3245595.
13. Arnow BA, Blasey CM, Hunkeler EM, Lee J, Hayward C. Does gender moderate the relationship between childhood maltreatment and adult depression? Child Maltreat. 2011 Aug;16(3):175-83. doi: 10.1177/1077559511412067. Epub 2011 Jul 4. PMID: 21727161.
14. Zou Z, Meng H, Ma Z, Deng W, Du L, Wang H, Chen P, Hu H. Executive functioning deficits and childhood trauma in juvenile violent offenders in China. Psychiatry Res. 2013 May 30;207(3):218-24. doi: 10.1016/j.psychres.2012.09.013. Epub 2012 Oct 1. PMID: 23036491.
15. Church C, Andreassen OA, Lorentzen S, Melle I, Aas M. Childhood Trauma and Minimization/Denial in People with and without a Severe Mental Disorder. Front Psychol. 2017 Aug 24;8:1276. doi: 10.3389/fpsyg.2017.01276. PMID: 28883800; PMCID: PMC5573805.
16. Kline D,Karper L, Afriyie A.The Effect of Denial of Childhood Trauma on the Self-Report of Suicidality on Psychiatric Inpatients. Poster presented at LVHN Research Scholar Program Poster Session, Lehigh Valley Health Network, Allentown, PA. 2014.
17. Mert DG, Kelleci M, Yildiz E, Mizrak A, Kugu N. Childhood trauma and general cognitive ability: Roles of minimization/denial and gender. Psychiatry Res. 2016 Sep 30;243:147-51. doi: 10.1016/j.psychres.2016.02.025. Epub 2016 Jun 21. PMID: 27392231.
18. Bernstein DP, Stein JA, Newcomb MD, Walker E, Pogge D, Ahluvalia T, Stokes J, Handelsman L, Medrano M, Desmond D, Zule W. Development and validation of a brief screening version of the Childhood Trauma Questionnaire. Child Abuse Negl. 2003 Feb;27(2):169-90. doi: 10.1016/s0145-2134(02)00541-0. PMID: 12615092.
19. MacDonald K, Thomas ML, Sciolla AF, Schneider B, Pappas K, Bleijenberg G, Bohus M, Bekh B, Carpenter L, Carr A, Dannlowski U, Dorahy M, Fahlke C, Finzi-Dottan R, Karu T, Gerdner A, Glaesmer H, Grabe HJ, Heins M, Kenny DT, Kim D, Knoop H, Lobbestael J, Lochner C, Lauritzen G, Ravndal E, Riggs S, Sar V, Schäfer I, Schlosser N, Schwandt ML, Stein MB, Subic-Wrana C, Vogel M, Wingenfeld K. Minimization of Childhood Maltreatment Is Common and Consequential: Results from a Large, Multinational Sample Using the Childhood Trauma Questionnaire. PLoS One. 2016 Jan 27;11(1):e0146058. doi: 10.1371/journal.pone.0146058. PMID: 26815788; PMCID: PMC4729672.
20. Telford K, Kralik D, Koch T. Acceptance and denial: implications for people adapting to chronic illness: literature review. J Adv Nurs. 2006 Aug;55(4):457-64. doi: 10.1111/j.1365-2648.2006.03942.x. PMID: 16866841.
21. Bernstein DP,Fink L. Childhood trauma Questioner: A retrospective self- report: Manual. San Antonio, TX: The Psychological Corporation. 1998.
22. Wu Z, Liu Z, Jiang Z, Fu X, Deng Q, Palaniyappan L, Xiang Z, Huang D, Long Y. Overprotection and overcontrol in childhood: An evaluation on reliability and validity of 33-item expanded Childhood Trauma Questionnaire (CTQ-33), Chinese version. Asian J Psychiatr. 2022 Feb;68:102962. doi: 10.1016/j.ajp.2021.102962. Epub 2021 Dec 15. PMID: 34929586.
23. Lochner C, Seedat S, Allgulander C, Kidd M, Stein D, Gerdner A. Childhood trauma in adults with social anxiety disorder and panic disorder: a cross-national study. Afr J Psychiatry (Johannesbg). 2010 Nov;13(5):376-81. doi: 10.4314/ajpsy.v13i5.63103. PMID: 21390408.
24. Ben-Zur S, Breznitz . Denial, anxiety and information processing, in the nature of deception and self-deception, Michael S. Myslobodsky. Psychology Press. 2016.
25. Forchuk C, Westwell J. Denial. J Psychosoc Nurs Ment Health Serv. 1987 Jun;25(6):8-13. PMID: 3649412.
26. Naditch MP, Gargan MA, Michael LB. Denial, anxiety, locus of control, and the discrepancy between aspirations and achievements as components of depression. J Abnorm Psychol. 1975 Feb;84(1):1-9. doi: 10.1037/h0076254. PMID: 1053779.
27. Holtgraves T. Social desirability and self-reports: testing models of socially desirable responding. Pers Soc Psychol Bull. 2004 Feb;30(2):161-72. doi: 10.1177/0146167203259930. PMID: 15030631.
28. MacDonald K, Thomas ML, MacDonald TM, Sciolla AF. A perfect childhood? Clinical correlates of minimization and denial on the childhood trauma questionnaire. J Interpers Violence. 2015 Mar;30(6):988-1009. doi: 10.1177/0886260514539761. Epub 2014 Jun 30. PMID: 24981003.
29. Thompson RA. Emotion regulation: a theme in search of definition. Monogr Soc Res Child Dev. 1994;59(2-3):25-52. PMID: 7984164.
30. Lumley MA, Neely LC, Burger AJ. The assessment of alexithymia in medical settings: implications for understanding and treating health problems. J Pers Assess. 2007 Dec;89(3):230-46. doi: 10.1080/00223890701629698. PMID: 18001224; PMCID: PMC2931418.
31. Sifoneos P. Short-term psychotherapy and emotional crisis. Cambridge, MA: Harvard University Press. 1972.
32. Dubey A,Pandey R. Mental Health Problems in Alexithymia: Role of Positive and Negative Emotional Experiences, J. Proj. Psy. & Ment. Health. 2013;20, 128-136.
33. Lumley MA. Alexithymia and negative emotional conditions.

J Psychosom Res. 2000 Jul;49(1):51-4. doi: 10.1016/s0022-3999(00)00161-6. PMID: 11203601.

34. Spence S, Courbasson C. The role of emotional dysregulation in concurrent eating disorders and substance use disorders. Eat Behav. 2012 Dec;13(4):382-5. doi: 10.1016/j.eatbeh.2012.05.006. Epub 2012 Jun 7. PMID: 23121793.

35. Firestone RW, Joyce Catlett J. Psychological Defenses in Everyday Life. New York: Human Sciences Press. 1998.

36. Krvavac S, Jansson, B. The role of emotion dysregulation and alexithymia in the link between types of child abuse and neglect and psychopathology: A moderated mediation model. European Journal of Trauma & Dissociation. 2021; 5(3): https://doi.org/10.1016/j.ejtd.2021.100213

37. Gratz KL, Roemer L. Multidimensional assessment of emotion regulation and dysregulation. Journal of Psychopathology and Behavioral Assessment. 2004; 26(1): 41–54. https://doi.org/10.1023/B:JOBA.0000007455.08539.94

38. Vorst HCM, Bermond B.Validity and reliability of the Bermond–Vorst Alexithymia Questionnaire. Personality and Individual Differences. 2001; 30(3): 413–434.

39. Bernstein DP, Ahluvalia T, Pogge D, Handelsman L. Validity of the Childhood Trauma Questionnaire in an adolescent psychiatric population. J Am Acad Child Adolesc Psychiatry. 1997 Mar;36(3):340-8. doi: 10.1097/00004583-199703000-00012. PMID: 9055514.

40. Derogatis L. SCL-90-R: Administration, Scoring and Procedures Manual II for the Revised Version Clinical Psychometric Research. Towson, MD: Pearson. 1992.

41. Hagborg JM, Kalin T, Gerdner A. The Childhood Trauma Questionnaire-Short Form (CTQ-SF) used with adolescents - methodological report from clinical and community samples Journal of Child and Adolescent Trauma, DOI: 10.1007/s40653-022-00443-8. 2022.

42. Aguilera M, Arias B, Wichers M, Barrantes-Vidal N, Moya J, Villa H, van Os J, Ibáñez MI, Ruipérez MA, Ortet G, Fañanás L. Early adversity and 5-HTT/BDNF genes: new evidence of gene-environment interactions on depressive symptoms in a general population. Psychol Med. 2009 Sep;39(9):1425-32. doi: 10.1017/S0033291709005248. Epub 2009 Feb 12. PMID: 19215635.

43. Dvir Y, Ford JD, Hill M, Frazier JA. Childhood maltreatment, emotional dysregulation, and psychiatric comorbidities. Harv Rev Psychiatry. 2014 May-Jun;22(3):149-61. doi: 10.1097/HRP.0000000000000014. PMID: 24704784; PMCID: PMC4091823.

44. Hall K, Youssef G, Simpson A, Sloan E, Graeme L, Perry N, Moulding R, Baker AL, Beck AK, Staiger PK. An Emotion Regulation and Impulse Control (ERIC) Intervention for Vulnerable Young People: A Multi-Sectoral Pilot Study. Front Psychol. 2021 Apr 1;12:554100. doi: 10.3389/fpsyg.2021.554100. PMID: 33868064; PMCID: PMC8047628.

45. Vaillant GE. Mental health. Am J Psychiatry. 2003 Aug;160(8):1373-84. doi: 10.1176/appi.ajp.160.8.1373. PMID: 12900295.

46. Karper L, Kline D, Afriyie A. The Effect of Denial of Childhood Trauma on the Self-Report of Suicidality on Psychiatric Inpatients. Poster presented at LVHN Research Scholar Program Poster Session, Lehigh Valley Health Network, Allentown, PA. 2014.

47. Brewin CR, Andrews B, Gotlib IH. Psychopathology and early experience: a reappraisal of retrospective reports. Psychol Bull. 1993 Jan;113(1):82-98. doi: 10.1037/0033-2909.113.1.82. PMID: 8426875.

48. Paivio SC. Stability of retrospective self-reports of child abuse and neglect before and after therapy for child abuse issues. Child Abuse Negl. 2001 Aug;25(8):1053-68. doi: 10.1016/s0145-2134(01)00256-3. PMID: 11601597.

49. Patel V, Chisholm D, Dua T, Laxminarayan R, Medina-Mora ME, editors. Mental, Neurological, and Substance Use Disorders: Disease Control Priorities, Third Edition (Volume 4). Washington (DC): The International Bank for Reconstruction and Development / The World Bank; 2016 Mar 14. PMID: 27227198.