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Research paper

The role of explicit and implicit self-esteem in the relationship between childhood trauma and adult depression and anxiety

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ABSTRACT

Background: Self-esteem is an important psychological concept that can be measured explicitly (reflective processing) and implicitly (associative processing). The current study examined 1) the association between childhood trauma (CT) and both explicit and implicit self-esteem, and 2) whether self-esteem mediated the association between CT and depression/anxiety.

Methods: In 1479 adult participants of the Netherlands Study of Depression and Anxiety, CT was assessed with a semi-structured interview, depression/anxiety symptoms with self-report questionnaires and explicit and implicit self-esteem with the Rosenberg Self-Esteem Scale and Implicit Association Test, respectively. ANOVAs and regression analyses determined the association between CT (no/mild/severe CT), its subtypes (abuse/neglect) and self-esteem. Finally, we examined whether self-esteem mediated the relationship between CT and depression/anxiety.

Results: Participants with CT reported lower explicit (but not lower implicit) self-esteem compared to those without CT ($p < .001$, partial $\eta^2 = 0.06$). All CT types were associated with lower explicit self-esteem ($p = .05$ for sexual abuse, $p < .001$ for other CT types), while only emotional neglect significantly associated with lower implicit self-esteem after adjusting for sociodemographic characteristics ($p = .03$). Explicit self-esteem mediated the relationship between CT and depression/anxiety symptoms (proportion mediated = 48–77 %).

Limitations: The cross-sectional design precludes from drawing firm conclusions about the direction of the proposed relationships.

Conclusions: Our results suggested that the relationship between CT and depression/anxiety symptoms can at least partly be explained by explicit self-esteem. This is of clinical relevance as it points to explicit self-esteem as a potential relevant treatment target for people with CT.

1. Introduction

Childhood trauma (CT), often defined as the experience of abuse and/or neglect before the age of 18, has been associated with affective disorders in adulthood, an earlier disease onset and more severe and recurrent depression and anxiety symptoms (Kuzminskaite et al., 2022; Nelson et al., 2017). Identifying factors that may explain the relationship between CT and adult depression and anxiety symptoms is important as it can reveal potential targets for (preventative) intervention.

Lowered self-esteem has been proposed as one of the psychological mechanisms explaining the association between CT and affective disorders (Hoppen and Chalder, 2018; Panagou and MacBeth, 2022; Zhao et al., 2022). Self-esteem refers to an individual's evaluation of one's self-worth or personal value (Leary and Baumeister, 2000). Previous studies on self-esteem in adult depression and anxiety have distinguished explicit from implicit self-esteem (Creemers et al., 2012; Franck et al., 2007; van Tuijl et al., 2016). Explicit self-esteem refers to consciously held evaluations about one's self-worth, while implicit self-esteem

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represents automatic, unconscious associations and feelings towards the self that may differ from explicit self-esteem (Beevers, 2005; Rudolph et al., 2010). It is theorized that both explicit and implicit self-esteem have unique effects in the development of depression and anxiety (Beevers, 2005; Ouimet et al., 2009). Furthermore, CT may influence self-esteem at both the implicit and explicit level.

CT often occurs during an important developmental period in which attachment style and personal beliefs about the self are formed, which subsequently may impact self-esteem (DeHart et al., 2006; DeHart et al., 2013). In line with this view, a recent meta-analysis showed that CT in general and different CT types (physical, emotional, sexual abuse and/or physical and emotional neglect) were significantly and negatively associated with explicit self-esteem in both children and adults (Zhang et al., 2023). Regarding implicit associations towards the self, results of a large cohort study showed that adults with a history of CT reported more explicit and implicit self-depression and self-anxiety associations (i.e. "I am insecure" and "I am inadequate") compared to their non-maltreated counterparts (van Harmelen et al., 2010). However, to the best of our knowledge, only one study directly examined the association between CT and implicit self-esteem. This study, conducted in children, showed lower implicit self-esteem in those who were exposed to emotional abuse (Reid-Russell et al., 2022).

Consistent with the proposition that the relationship between CT and affective psychopathology might be explained by (low) self-esteem, earlier studies showed that lower explicit self-esteem was associated with depression and anxiety symptoms (Berber Çelik and Odacı, 2020; Keane and Loades, 2017; Steiger et al., 2014). Meta-analytic findings showed a bi-directional relationship between explicit self-esteem and depression/anxiety symptoms (Orth et al., 2016; Sowislo and Orth, 2013; Yeo et al., 2023), although the prospective effect of self-esteem on depression and anxiety symptoms ('vulnerability model') is suggested to be stronger than the negative impact of depression and anxiety symptoms on self-esteem ('scar model') (Orth et al., 2016; Sowislo and Orth, 2013). A large study within the Netherlands Study of Depression and Anxiety (NESDA) examined both explicit and implicit self-esteem and showed that adults with (a history of) depressive and/or anxiety disorders reported lower explicit self-esteem compared to individuals without a history of these disorders, while specifically individuals with a current comorbid depression and anxiety disorder also showed lowered implicit self-esteem (van Tuijl et al., 2016). Longitudinal research within NESDA showed that both forms of self-esteem showed prognostic value for the recurrence of depression and anxiety, also when statistically controlling for baseline symptoms (van Tuijl et al., 2020).

Previous studies looking at whether self-esteem explains the association between CT and symptoms of anxiety and depression found support for explicit self-esteem. (Berber Çelik and Odacı, 2020; Chen et al., 2022; Kim et al., 2022; Li et al., 2023; Reid-Russell et al., 2022; Wang et al., 2022; Yoon et al., 2019). However, these studies were limited to non-clinical samples of (adolescent) students. The only study that did consider implicit self-esteem suggested that lower implicit self-esteem in children mediated the association between childhood abuse and (increase in) depression (Reid-Russell et al., 2022). Given that implicit and explicit self-esteem are likely to play unique roles in the development of depression and anxiety (Beevers, 2005; Ouimet et al., 2009), the critical next step is to include validated measures of both explicit and implicit self-esteem in a large adult sample, including individuals with clinical levels of depression and/or anxiety. We examined whether the relationship between CT severity and depression and anxiety symptoms would be mediated by (low) self-esteem, and whether this would yield for both explicit and implicit self-esteem. As a subsidiary aim, we investigated the association between the different CT types and self-esteem. In line with preliminary evidence, we hypothesized that the relationship between CT and depression and anxiety symptoms would be mediated by both (low) explicit and implicit self-esteem. Second, based on previous findings, we expected that all CT types would be associated with lower explicit self-esteem and that particularly emotional abuse would be associated with lowered implicit self-esteem.

2. Methods

2.1. Design and participants

The current study sample consisted of adults who participated in NESDA, an ongoing longitudinal cohort study that investigates the development and long-term prognosis of depression and anxiety. In NESDA, participants with a lifetime or current depressive and/or anxiety disorder ($n = 2329$) and participants with no history of a depressive and/or anxiety disorder ($n = 652$) were included. Participants with a primary clinical diagnosis of a psychotic disorder, obsessive compulsive disorder, bipolar disorder, or severe addiction disorder at baseline were excluded. Participants were recruited via community samples ($n = 564$), primary care practices ($n = 1610$), and specialized mental health organizations ($n = 807$). NESDA was approved by the Medical Ethics Committee of the participating centres and all participants provided written informed consent. More detailed information about NESDA and its measures and recruitment can be found elsewhere (Penninx et al., 2008).

For the current analyses, data of the fourth biannual follow-up assessment were used (approximately 6 years after baseline, $n = 2256$) as this wave included self-esteem measures. Participants with a lifetime or current depressive and/or anxiety disorder ($n = 1118$) and participants with no history of a depressive and/or anxiety disorder ($n = 361$) were included if they had available data on CT at baseline and completed the self-esteem measures relevant for the present analysis. Participants were excluded from the present analyses if they had missing data on the presence of a bipolar disorder ($n = 67$), developed a bipolar disorder during NESDA ($n = 102$), reported an alcohol dependence since the last follow-up assessment ($n = 42$), or if they had invalid scores on the implicit self-esteem measure ($n = 106$, see description of the Implicit Association Test in the methods section), yielding a final sample size of 1479 participants aged between 23 and 72 years (M = 47.65, SD = 13.29; 66 % female).

2.2. Measures

2.2.1. Childhood trauma

At baseline, CT was assessed with the childhood trauma interview (CTI) (De Graaf et al., 2002). This retrospective interview assesses the frequency of four CT types (sexual abuse, physical abuse, emotional abuse, and emotional neglect) before the age of 16 (0 = "never", 1 = "once or sometimes", and 2 = "regularly, often, or very often"). As a measure for CT severity, a cumulative childhood trauma index (range 0–8) was calculated, with a higher score indicating more types and a higher frequency of CT (Hovens et al., 2010). In line with previous research, participants were assigned to one of three CT severity groups: no CT (CTI = 0), mild CT ($1 \leq$ CTI ≤ 3), or severe CT ($4 \leq$ CTI ≤ 8) (Kuzminskaite et al., 2022).

Additionally, at the third biannual follow-up assessment, the internationally widely used Childhood Trauma Questionnaire (CTQ) was administered to assess five CT types: sexual, physical, and emotional abuse, and physical and emotional neglect (Bernstein et al., 2003). Each subscale (i.e. CT type) consists of five items scored on a five-point Likert scale (1 = "never true" to 5 = "very often true"). The physical neglect scale of the CTQ was not included in the current analyses due to its low validity and reliability (Spinhoven et al., 2014). Therefore, the overall CTQ score ranged from 20 to 100.

Since the CTI was administered at baseline it was used as CT measure in the main analyses. However, to ensure the robustness of findings across different trauma instruments, we conducted sensitivity-analyses by repeating the analyses with the CTQ.

2.2.2. Explicit self-esteem

Explicit self-esteem was assessed with the Rosenberg Self-Esteem Scale (RSES) (Franck et al., 2008; Rosenberg, 1965). This questionnaire contains 10 items (i.e. "At times, I think I am not good at all" and "I feel I do not have much to be proud of") that participants have to answer on a 4-point Likert scale, ranging from 1 (strongly agree) to 4 (strongly disagree). A higher total score, ranging from 10 to 40, was indicative of higher explicit self-esteem. The measure showed good internal reliability in the present study (Cronbach's $\alpha = 0.91$; based on all 1479 participants).

2.2.3. Implicit self-esteem

To measure implicit self-esteem, we used an Implicit Association Test (IAT), a computerized reaction time task that aims to measure the relative strengths of implicit associations between two contrasted target concepts and two attribute concepts (Greenwald et al., 1998). The two target concepts were "I" (I, myself, self, my, own) and "other" (other, you, they, them, themselves) and the two attribute concepts were "positive" (meaningful, successful, important, worthwhile, confident) and "negative" (worthless, unimportant, weak, failure, useless). After two practice blocks of 10 trials (block 1 and 2), participants sorted negative- and other-related words with the left key and positive- and I-related words with the right key (pairing 1) in a practice block (block 3) and a test block (block 4) of 20 trials. Subsequently, after a practice block of 10 trials (block 5), participants sorted negative- and I-related words with the left key and other- and positive-related words with the right key (pairing 2) in a practice block (block 6) and a test block (block 7) of 20 trials. It is assumed that participants find it easier (and are therefore quicker) to sort more strongly associated target and attribute concepts when they share the same key. To derive an implicit self-esteem score, the mean reaction time for pairing 1 (block 3 and 4) was subtracted from the mean reaction time of pairing 2 (block 6 and 7). This value was subsequently divided by the pooled standard deviation of both pairings. A higher IAT score indicates higher implicit self-esteem. IAT scores were based on the D4-algorithm (Glashouwer et al., 2013; Greenwald et al., 2003), as used in former NESDA studies on implicit measures (van Harmelen et al., 2010; van Tuijl et al., 2020; van Tuijl et al., 2016). According to this algorithm, participants were excluded if there was an error rate of over 20 %, >1 % of trials were longer than 10,000 ms, or if >10 % of trials were faster than 300 ms ($n = 106$). Reaction times on error trials were replaced with the mean of the correct answers in that block with an added 600 ms error penalty. The IAT showed good internal split-half reliability as reported in a previous NESDA study that used data of the same follow-up assessment (Spearmen-Brown corrected correlation = 0.85) (van Tuijl et al., 2016).

2.2.4. Depression symptom severity

Depression symptom severity was assessed with the 28-item self-report Inventory of Depression Symptomatology (IDS-SR) (Rush et al., 1996). Depression symptoms over the past seven days were rated on a 4-point Likert scale, ranging from 0 to 3. A higher total score (0–84) indicated higher depression symptom severity. For 20 participants no IDS total score was available (questionnaire not returned or too many missing responses). These participants were excluded from any analysis involving the IDS. The IDS showed excellent internal reliability across all those without missing answers (Cronbach's $\alpha = 0.88$; $n = 1383$).

2.2.5. Anxiety symptom severity

Anxiety symptom severity was assessed with the 21-item Beck Anxiety Inventory (BAI) which contains items about physical, physiological and cognitive anxiety symptoms over the past seven days. Each item is rated on a 4-point Likert scale, on which participants indicated how much they are bothered by the particular symptom, ranging from 0 (not at all) to 3 (severely, it bothered me a lot). A higher total score (0–63) indicated higher anxiety symptom severity. 22 participants had missing on the BAI total score and were excluded from any analysis involving the BAI. The BAI showed excellent internal reliability across all those without missing answers (Cronbach's $\alpha = 0.90$; $n = 1425$;).

2.3. Statistical analyses

Data were analyzed with SPSS version 28.0 and checked for univariate outliers (standardized residuals exceeding ±3) and multivariate outliers (Mahalanobis distance exceeding the critical chi-square value of 13.82, 18.47 or 20.52 with 2, 4 or 5 degrees of freedom respectively and a critical alpha of .001). Outliers were only omitted if they were evidently invalid responses/values.

As a preliminary analysis, the relationship between CT severity and self-esteem was examined using One-Way ANOVAs with CT as categorical predictor (no, mild, severe CT) and both self-esteem measures as outcome variables. To determine the relationship between different CT types and self-esteem, four univariate regression analyses were conducted.

To examine whether the relationship between CT and depression and anxiety symptom severity can be explained by self-esteem, mediation analyses were performed with the PROCESS macro for SPSS, using linear regression analyses based on the ordinary least squares (OLS) method (Hayes, 2017). To determine the presence and significance of mediation, we estimated the indirect effect of CT severity on depression and anxiety symptoms through self-esteem. Bootstrapped 95 % confidence intervals (CIs), using 5000 bootstrap samples, were used to test the significance of the indirect effect (i.e. check whether the CI does not include zero). The proportion mediated (ratio of the indirect effect to the total effect) was calculated to determine the mediation effect size.

All analyses were additionally adjusted for sex, age and education, which have been previously reported to be associated with self-esteem (Bleidorn et al., 2016; Giannouli, 2023; Orth et al., 2010; Reilly et al., 2022) and depression and anxiety (Bjelland et al., 2008; Kessler et al., 2005; Kessler et al., 2010; Schuch et al., 2014). To determine the consistency of results across CT instruments, sensitivity analyses were conducted with the CTQ subscales and total score as predictor variables in a sub-sample for which data on both the CTI and CTQ-SF were available ($n = 1453$).

3. Results

3.1. Descriptive statistics

Of 1479 study participants, 848 (57 %) reported no CT, 391 (26 %) mild CT, and 240 (16 %) severe CT. In participants with mild or severe CT, emotional neglect was the most common CT type (78 %), followed by emotional abuse (45 %), sexual abuse (36 %) and physical abuse (25 %). Sociodemographic and clinical sample characteristics, according to the presence and severity of CT, are presented in Table 1. For the total sample, there was a small-sized positive correlation between implicit and explicit self-esteem ($r = 0.19$, $p < .001$). Moderate to strong correlations were found between the subscales of the CTI and CTQ (Table S1). Across all main analyses, no univariate ($n = 134$) and multivariate outliers ($n = 12$) were removed as these data points were not considered as evidently invalid responses.

3.2. Preliminary analysis: the relationship between CT severity and self-esteem

There was a significant relationship between CT severity and explicit self-esteem (F (2,1476) = 44.17, $p < .001$, partial $\eta^2 = 0.06$). Simple contrasts indicated that participants with mild and severe CT reported significantly lower explicit self-esteem compared to participants without CT. Second, participants with severe CT reported significantly lower explicit self-esteem than participants with mild CT (Fig. 1). For implicit self-esteem, no significant difference was found between the three CT severity groups (F (2,1476) = 0.37, $p = .69$, partial $\eta^2 = 0.00$).

Table 1
Sample characteristics according to the presence and severity of CT.

	No CT (*N* = 848)	Mild CT (*N* = 391)	Severe CT (*N* = 240)	*P*
Sociodemographic characteristics				
Age in years, mean (SD)	46.17 (13.81)	48.91 (12.52)	50.85 (11.83)	<0.001**
Female sex, % (n)	60.5 (513)	72.6 (284)	72.9 (175)	<0.001**
Education in years, mean (SD)	13.36 (3.21)	13.53 (3.19)	12.59 (3.29)	<0.001**
Clinical characteristics				
Diagnostic status, % (n)				<0.001**
Current comorbid depression and anxiety disorder	4.4 (37)	5.9 (23)	10.0 (24)	
Current depressive or anxiety disorder	11.9 (101)	18.7 (73)	25.8 (62)	
Recovered depressive and/or anxiety disorder	50.9 (432)	59.8 (234)	55.0 (132)	
No lifetime depressive and anxiety disorder	32.8 (278)	15.6 (61)	9.2 (22)	
Explicit self-esteem (RSES), mean (SD)	32.42 (5.14)	30.66 (5.15)	29.04 (5.74)	<0.001**
Implicit self-esteem (IAT), mean (SD)	0.65 (0.44)	0.63 (0.46)	0.66 (0.47)	0.64

	No CT (*N* = 838)	Mild CT (*N* = 385)	Severe CT (*N* = 236)	*P*
Depression symptom severity (IDS), mean (SD)	11.27 (9.58)	14.31 (9.78)	18.14 (11.59)	<0.001**

	No CT (*N* = 837)	Mild CT (*N* = 384)	Severe CT (N = 236)	*P*
Anxiety symptom severity (BAI), mean (SD)	6.07 (6.76)	7.59 (7.29)	9.86 (7.90)	<0.001**

Note. Childhood trauma was measured with the Childhood Trauma Interview (CTI). Abbreviations: CT = childhood trauma, SD = standard deviation, IDS = Inventory of Depressive Symptomatology, BAI = Beck Anxiety Inventory, RSES = Rosenberg Self-Esteem Scale, IAT = Implicit Association Test. Unadjusted comparisons using Chi square tests (categorical variables) and analyses of variance (ANOVA) (continuous variables).
** $p < .01$.

3.3. The relationship between CT types and self-esteem

Emotional neglect, emotional abuse and physical abuse were significantly and negatively associated with explicit self-esteem ($p < .001$). The association between sexual abuse and explicit self-esteem was borderline significant ($p = .05$) (Table 2). None of the CT types were significantly related to implicit self-esteem (Table 2). However, after adjusting for sex, age and education, emotional neglect was significantly and negatively associated with implicit self-esteem ($p = .03$) (Table S2).

3.4. Indirect relationship between CT and symptom severity via self-esteem

To examine whether the relationship between CT severity and depression and anxiety symptoms was mediated by self-esteem, categorical mediation analyses were performed using three group comparisons: 1) mild CT versus no CT, 2) severe CT versus no CT, and 3) severe CT versus mild CT. As there were no large differences in results between these group comparisons, only results of the most extreme group comparison (severe CT versus no CT) are discussed and presented in Figs. 2 and 3. Results of the mediation analyses for all three group comparisons are presented in Fig. S2 and Fig. S3.

CT was significantly and positively associated with depression symptom severity (c^1 path Fig. 2) and accounted for (a significant) 6 % of the variance in depression symptom severity ($R^2 = 0.06$, $F(2,1456) = 46.80$, $p < .001$). Adding self-esteem as a mediator to the model significantly increased the amount of variance in depression symptom severity which was explained by the independent variables ($\Delta R^2 = 0.39$, ΔF (1,1455) = 1033.54, $p < .001$). CT significantly and negatively

Table 2
Results of univariate regression analyses with CT types as predictors and self-esteem measures as outcome variables (N = 1479).

	Explicit self-esteem (RSES)		Implicit self-esteem (IAT)	
	B [95 % CI]	*P*	*B* [95 % CI]	*P*
Emotional neglect	−1.58 [−1.88, −1.28]	<0.001**	−0.01 [−0.04, 0.01]	0.35
Emotional abuse	−1.28 [−1.65, −0.91]	<0.001**	0.01 [−0.02, 0.05]	0.38
Physical abuse	−1.86 [−2.44, −1.27]	<0.001**	0.02 [−0.03, 0.07]	0.37
Sexual abuse	−0.60 [−1.20, 0.00]	0.05	−0.02 [−0.07, 0.03]	0.46

Note. Childhood trauma was measured with the Childhood Trauma Interview (CTI). Abbreviations: RSES = Rosenberg Self-Esteem.
Scale, IAT = Implicit Association Test.
** $p < .01$.

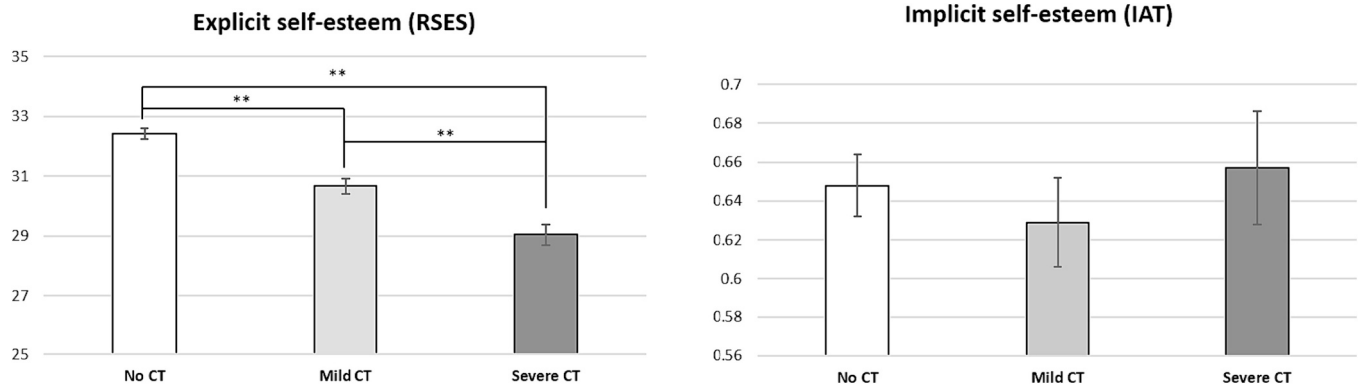

Fig. 1. Estimated marginal means of explicit self-esteem and implicit self-esteem by CT severity status ($N = 1479$).
Note. Childhood trauma was measured with the Childhood Trauma Interview (CTI). Abbreviations: CT = childhood trauma, RSES = Rosenberg Self-Esteem Scale, IAT = Implicit Association Test, **p < .01.

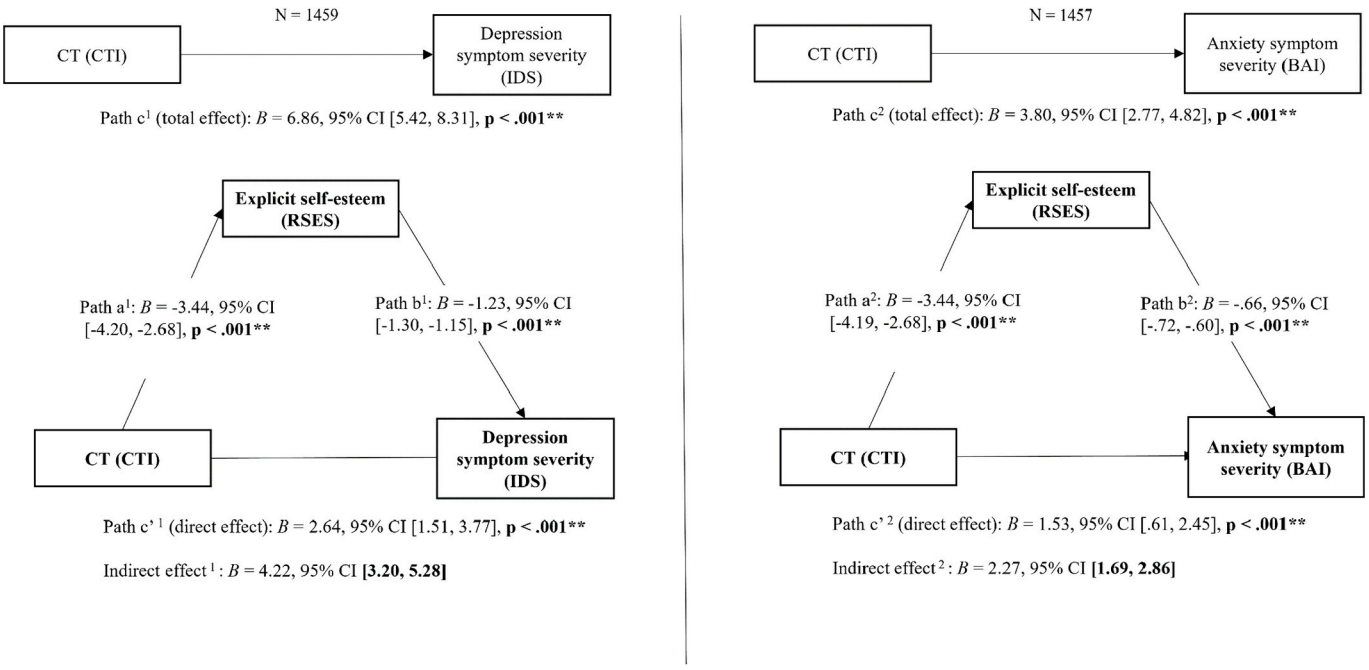

Fig. 2. Model of CT (severe CT versus no CT) as predictor of depression and anxiety symptoms, mediated by explicit self-esteem.
Note. Childhood trauma was measured with the Childhood Trauma Interview (CTI). Abbreviations: CT = childhood trauma, IDS = Inventory of depressive symptomatology, BAI = Beck Anxiety Inventory, RSES = Rosenberg Self-Esteem Scale. * $p < .05$, ** $p < .01$.

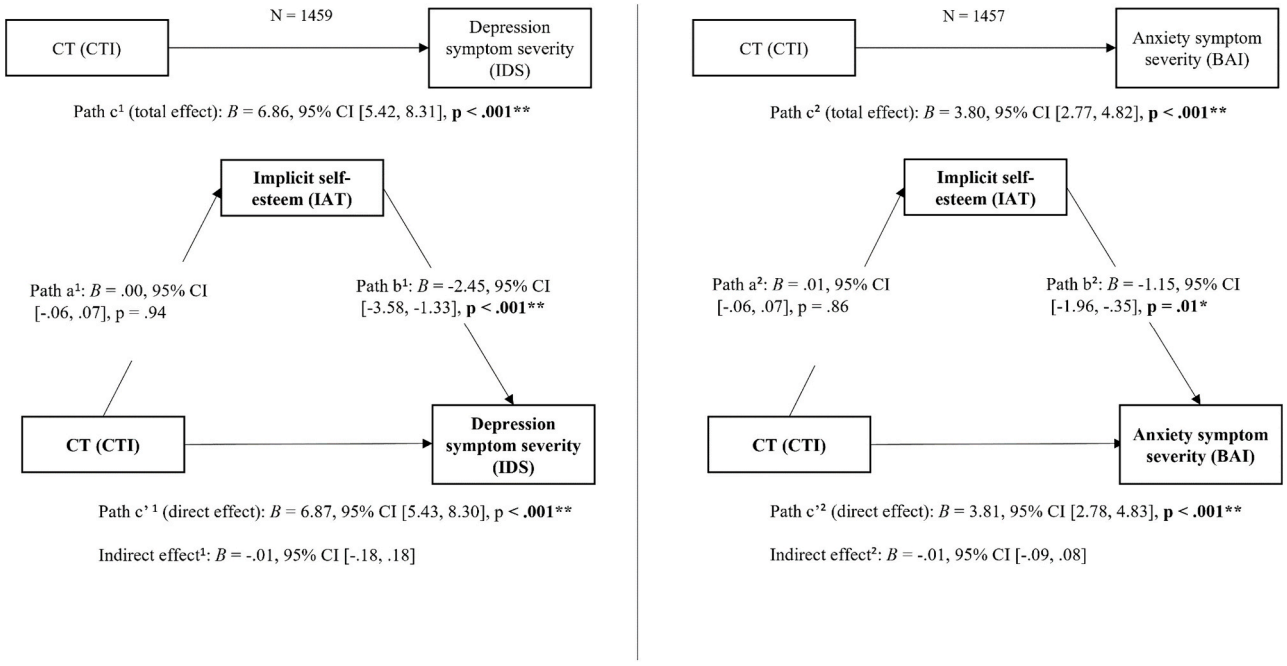

Fig. 3. Explanatory role of implicit self-esteem in the relationship between CT (severe CT versus no CT)and depressive and anxiety symptoms.
Note. Childhood trauma was measured with the Childhood Trauma Interview (CTI). Abbreviations: CT = childhood trauma, IDS = Inventory of depressive symptomatology, BAI = Beck Anxiety Inventory, IAT = Implicit Association Test. * p < .05, ** p < .01.

associated with explicit self-esteem (a paths Fig. 2), which in turn significantly and negatively associated with depression symptom severity (b^1 path Fig. 2). Explicit self-esteem mediated the relationship between CT and depression symptom severity as displayed by a significant indirect effect (Fig. 2), explaining 62 % of the total effect of CT on depression symptom severity. The mediation effect sizes of the other group comparisons (mild CT versus no CT and severe CT versus mild CT) were 71 % and 54 %, respectively.

CT severity was significantly and positively associated with anxiety symptom severity (c^2 path Fig. 2) and accounted for (a significant) 4 % of the variance in anxiety symptom severity ($R^2 = 0.04$, F (2,1454) = 27.69, $p < .001$). The amount of explained variance in anxiety symptom severity increased when explicit self-esteem was added to the model ($\Delta R^2 = 0.23$, ΔF (1,1453) = 456.97, $p < .001$). Explicit self-esteem significantly and negatively associated with anxiety symptom severity (b^2 path Fig. 2). The association between CT and anxiety symptom

severity was mediated by explicit self-esteem, with the indirect effect explaining 60 % of the total effect. For the other group comparisons, the mediation effect was 77 % (mild CT versus no CT) and 48 % (severe CT versus mild CT).

Implicit self-esteem, in contrast, did not explain the relationship between CT and depression and anxiety symptom severity, as displayed by non-significant indirect effects (i.e. 95 % CIs included zero) (Fig. 3). Although implicit self-esteem was significantly and negatively associated with both depression and anxiety symptoms (b paths Fig. 3), no significant relationship was found between CT severity and implicit self-esteem (a paths Fig. 3).

Results of the mediation analyses did not change after adjusting for sex, age and education (Fig. S4 and S5).

3.5. Sensitivity analyses

Sociodemographic and clinical sample characteristics, according to the presence of CT as measured with the CTQ, are presented in Table S3. Regression analyses carried out with the CTQ mostly showed similar associations as when the CTI was used, with the difference that the association between sexual abuse and explicit self-esteem was significant ($p < .05$) when CT was indexed with the CTQ (Table S4). Mediation analyses with the CTQ total score as continuous predictor yielded comparable results as when de CTI was used (Fig. S6 and S7). Only explicit self-esteem significantly mediated the effect of CT severity on depression and anxiety, explaining 63 % and 65 % of the total effect of CT on depression and anxiety symptom severity, respectively.

4. Discussion

The major aim of the current study was to examine the role of explicit and implicit self-esteem in the relationship between CT and depression and anxiety symptoms in adults. As a subsidiary aim, we investigated for each of the various CT types (i.e. emotional, physical and sexual abuse and emotional neglect) their association with both implicit and explicit self-esteem.

4.1. CT and self-esteem

Our results showed that there was a significant and negative relationship between CT severity and explicit self-esteem. All CT types were associated with lower explicit self-esteem, although the relationship between sexual abuse and explicit self-esteem was borderline significant. By and large similar relationships were found when using the CTQ as a measure of CT with the only difference that, in line with previous meta-analytic findings (Zhang et al., 2023), also the relationship with sexual abuse reached significance. This difference might be explained by how sexual abuse is operationalized. The CTI only contains one item about sexual abuse while the CTQ contains 5 items, including an item about sexual assault and blackmail (i.e. “When I was growing up someone threatened to hurt me or tell lies about me unless I did something sexual with them”). It might be that the CTI captures a too narrow definition of sexual abuse and that the difference in results may highlight that sexual assault and blackmail are also detrimental to self-esteem. Contrary to our expectations and previous findings of Reid-Russell et al. (2022), CT severity was not associated with implicit self-esteem, nor were specific CT types. Yet, after adjusting for sex, age and education, emotional neglect significantly and negatively associated with implicit self-esteem. A possible explanation for this finding could be that (one of the) sociodemographic variables counteracted some of the negative effect of emotional neglect (negative confounding). Exploratory analyses showed that age and education were weakly but significantly associated with implicit self-esteem in both participants who did not report emotional neglect and in participants who were exposed to emotional neglect. In addition, there was a significant difference in age between participants who did and did not report a history of emotional neglect, with those who were regularly or (very) often exposed to emotional neglect having the highest age. It could be possible that after adjusting for age, the effect of emotional neglect on implicit self-esteem was not small anymore compared to the unexplained variability.

4.2. The mediating role of self-esteem

In accordance with our hypothesis, explicit self-esteem mediated the relationship between CT and depression and anxiety, explaining a considerable amount (48–77 %) of the total effect of CT severity on both depression and anxiety symptom severity. These findings are in line with previous (non-clinical) studies in (adolescent) students that suggested that lower explicit self-esteem had a mediating role in the association of childhood maltreatment and depression and anxiety symptoms (Berber Çelik and Odacı, 2020; Chen et al., 2022; Kim et al., 2022; Li et al., 2023; Wang et al., 2022; Yoon et al., 2019). The current study extends these findings by pointing out explicit self-esteem as an explanatory link between CT and depression/anxiety symptoms in a large adult sample, including participants with and without (a history of) depression and/or anxiety disorders. Although there was a significant and positive association between CT and symptoms of depression and anxiety, it should be noted that CT severity explained little variance in both depression ($R^2 = 0.06$) and anxiety ($R^2 = 0.04$) symptom severity. This finding is however in line with results of a meta-analysis on the relationship between childhood maltreatment and adult depression severity that also showed that all CT types had a significant but weak to moderate association with depression severity (ranging from $r = 0.17$ for sexual abuse to $r = 0.29$ for emotional abuse) (Nelson et al., 2017). Hence, although our results echo previous research findings that also showed a significant association between CT severity and depression and anxiety symptoms (Orth et al., 2016; Sowislo and Orth, 2013; Steiger et al., 2014; Yeo et al., 2023), other variables also seem to play an important role in explaining the variability in symptom severity. In fact, adding self-esteem as an independent variable significantly increased the amount of variance in depression and anxiety symptom severity that was explained by our models.

Our results showed that implicit self-esteem did not explain the relationship between CT and depression and anxiety symptom severity. This is in contrast with the study of Reid-Russell et al. (2022) who suggested that the association between childhood abuse and (increases in) depression was mediated by lower implicit self-esteem. The findings of this study, conducted in children, appear not to generalize to depression and anxiety symptoms in adulthood. Moreover, in the study of Reid-Russell et al. (2022), mediation effect sizes were small (proportion mediated = 10 % for concurrent depression and 17 % for depression after several years) and limitations of this study should be taken into account (i.e. relatively small sample of which the representativeness for clinical populations is unclear). Thus, while we did observe an association between implicit self-esteem and symptoms of depression and anxiety, implicit self-esteem seems relatively robust against the effects of CT, both the severity and the type.

Generally, our findings suggests that conscious self-evaluations may be more important for the impact of CT in developing depression and anxiety symptoms than automatic, preconscious self-evaluations. In the current study, there was a significant but small correlation between explicit and implicit self-esteem ($r = 0.19$), suggesting both forms of self-esteem to be related but also clearly reflect largely independent constructs. It is surprising that implicit self-esteem in adulthood did not appear to be affected by CT, and is counter to previous findings in children (Reid-Russell et al., 2022) and attachment and sociometer theories of implicit self-esteem development (DeHart et al., 2006; DeHart et al., 2013). It is possible that the type of perpetrator (e.g., primary caregiver or not) and how others responded at the time may moderate the effect of CT on implicit self-esteem. Furthermore, the age of CT exposure may play a role, as the formation of implicit self-esteem

may be especially critical during early childhood (DeHart et al., 2006), while the formation of explicit self-esteem may be especially effected and formed over time (DeHart et al., 2013). It may also be important to consider discrepancies in implicit and explicit self-esteem (Creemers et al., 2012). However, an adequate measure of this concept is lacking (van Tuijl et al., 2016). Lastly, there is some debate as to whether the IAT actually measures implicit self-esteem. Indeed, criticisms of the IAT as a measure of implicit associations concern that the task is context-dependent (Bosson et al., 2000) and that an association between target (i.e. 'I') and valence (i.e. 'smart') does not provide sufficient, unambiguous evidence for an attitude or self-evaluation (e.g., 'I am smart' vs. 'I want to be smart') (Fiedler et al., 2006). As such, this measurement error may disrupt the power to detect smaller effects, even with a relatively large sample size. Yet, despite these limitations, it is worth noting that validation studies support the usefulness of the IAT as an instrument to assess implicit self-esteem (Bosson et al., 2000; Glashouwer et al., 2013; Izuma et al., 2018; Rudolph et al., 2010).

4.3. Strengths and limitations

This study is the first to explore the mediating role of both explicit and implicit self-esteem in the association between CT and depression and anxiety symptom severity in a large adult sample, including individuals with clinical levels of depression and/or anxiety. Furthermore, we used validated, conventional and psychometrically sound instruments to measure both explicit and implicit self-esteem and investigated the association between different CT types and self-esteem. However, some limitations of this study should be reported as well. First, due to the cross-sectional design, no firm conclusions about the direction of the proposed relationships can be drawn. Therefore, our results should be interpreted with caution and longitudinal research is needed to investigate whether explicit self-esteem indeed prospectively mediates the relationship between CT and adult depression and anxiety. Second, CT was assessed by the sole use of retrospective measures. Meta-analytic findings have shown poor agreement between retrospective and prospective CT measures, implying that the underlying mechanisms of psychopathology may differ in individuals who report CT retrospectively compared to those for whom CT is determined through prospective measures (Baldwin et al., 2019). Third, it was beyond the scope of the paper to take the chronicity and comorbidity of anxiety and depression into account. Future studies could investigate whether these clinical aspects might impact the relationship between CT and self-esteem, particularly as a previous study found lower implicit self-esteem in participants with comorbid depression and anxiety and not in individuals with a 'pure' depression or anxiety disorder (van Tuijl et al., 2016).

4.4. Conclusion, clinical relevance and future research

The key findings of the present study were that 1) CT severity and different CT types were (significantly) associated with lowered explicit self-esteem, 2) there was no association between CT severity and implicit self-esteem and only after adjusting for sociodemographic characteristics, emotional neglect significantly associated with implicit self-esteem, and 3) explicit self-esteem mediated the relationship between CT and adult depression and anxiety symptom severity. Future research should replicate our findings in longitudinal, prospective studies, and take into consideration potential (protective) factors that may moderate the relationship (i.e. identity of perpetrator, reactions from the environment, age of CT exposure). Interventions aimed at boosting self-esteem, such as cognitive behavioral therapies, mindfulness/relaxation techniques and evaluative conditioning, have proven to be effective in increasing self-esteem in individuals with and without mental disorders (Niveau et al., 2021). For example, Competitive Memory Training (COMET), a short cognitive-behavioral intervention, has been proven efficacious in improving self-esteem in patients with depressive and anxiety disorders (Korrelboom et al., 2012; Staring et al., 2016). One way to further test the relevance of self-esteem in the relationship between CT and depression/anxiety is to examine if interventions that directly target self-esteem not only enhance self-esteem in individuals with CT but also reduce their symptoms of depression and/or anxiety. If indeed such intervention would be effective this would not only support the view that self-esteem is a critical factor in the persistence of depression/anxiety in individuals with CT, but also provide support for using this type of interventions as a therapeutic tool in clinical practice.

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CRediT authorship contribution statement

Anouk W. Gathier: Conceptualization, Formal analysis, Writing – original draft, Writing – review & editing. **Lonneke A. van Tuijl:** Conceptualization, Supervision, Writing – review & editing. **Brenda W. J.H. Penninx:** Conceptualization, Writing – review & editing. **Peter J. de Jong:** Conceptualization, Writing – review & editing. **Patricia C. van Oppen:** Writing – review & editing. **Christiaan H. Vinkers:** Writing – review & editing. **Josine E. Verhoeven:** Conceptualization, Supervision, Writing – review & editing.

Declaration of competing interest

None.

Data availability

Our data involving clinical participants are not freely available in a public repository. However, data are – under some specifications – available upon request via the NESDA Data Access Committee (nesda@ggzingeest.nl). See also our website: https://www.nesda.nl/.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jad.2024.03.036.

References

Baldwin, J.R., Reuben, A., Newbury, J.B., Danese, A., 2019. Agreement between prospective and retrospective measures of childhood maltreatment: a systematic review and meta-analysis. JAMA Psychiatry 76 (6), 584–593.

Beevers, C.G., 2005. Cognitive vulnerability to depression: a dual process model. Clin. Psychol. Rev. 25 (7), 975–1002.

Berber Çelik, Ç., Odacı, H., 2020. Does child abuse have an impact on self-esteem, depression, anxiety and stress conditions of individuals? Int. J. Soc. Psychiatry 66 (2), 171–178.

Bernstein, D.P., Stein, J.A., Newcomb, M.D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., 2003. Development and

validation of a brief screening version of the Childhood Trauma Questionnaire. Child Abuse Negl. 27 (2), 169–190.
Bjelland, I., Krokstad, S., Mykletun, A., Dahl, A.A., Tell, G.S., Tambs, K., 2008. Does a higher educational level protect against anxiety and depression? The HUNT study. Soc. Sci. Med. 66 (6), 1334–1345.
Bleidorn, W., Arslan, R.C., Denissen, J.J., Rentfrow, P.J., Gebauer, J.E., Potter, J., Gosling, S.D., 2016. Age and gender differences in self-esteem—a cross-cultural window. J. Pers. Soc. Psychol. 111 (3), 396.
Bosson, J.K., Swann Jr., W.B., Pennebaker, J.W., 2000. Stalking the perfect measure of implicit self-esteem: the blind men and the elephant revisited? J. Pers. Soc. Psychol. 79 (4), 631.
Chen, S.-S., He, Y., Xie, G.-D., Chen, L.-R., Zhang, T.-T., Yuan, M.-Y., Li, Y.-H., Chang, J.-J., Su, P.-Y., 2022. Relationships among adverse childhood experience patterns, psychological resilience, self-esteem and depressive symptoms in Chinese adolescents: a serial multiple mediation model. Prev. Med. 154, 106902.
Creemers, D.H., Scholte, R.H., Engels, R.C., Prinstein, M.J., Wiers, R.W., 2012. Implicit and explicit self-esteem as concurrent predictors of suicidal ideation, depressive symptoms, and loneliness. J. Behav. Ther. Exp. Psychiatry 43 (1), 638–646.
De Graaf, R., Bijl, R.V., Smit, F., Vollebergh, W.A., Spijker, J., 2002. Risk factors for 12-month comorbidity of mood, anxiety, and substance use disorders: findings from the Netherlands Mental Health Survey and Incidence Study. Am. J. Psychiatry 159 (4), 620–629.
DeHart, T., Pelham, B.W., Tennen, H., 2006. What lies beneath: parenting style and implicit self-esteem. J. Exp. Soc. Psychol. 42 (1), 1–17.
DeHart, T., Peña, R., Tennen, H., 2013. The development of explicit and implicit self-esteem and their role in psychological adjustment. In: Self-esteem. Psychology Press, pp. 99–123.
Fiedler, K., Messner, C., Bluemke, M., 2006. Unresolved problems with the "I", the "a", and the "T": a logical and psychometric critique of the Implicit Association Test (IAT). Eur. Rev. Soc. Psychol. 17 (1), 74–147.
Franck, E., De Raedt, R., De Houwer, J., 2007. Implicit but not explicit self-esteem predicts future depressive symptomatology. Behav. Res. Ther. 45 (10), 2448–2455.
Franck, E., De Raedt, R., Barbez, C., Rosseel, Y., 2008. Psychometric properties of the Dutch Rosenberg self-esteem scale. Psychologica Belgica 48 (1), 25–35.
Giannouli, V., 2023. Are sex differences in self-estimated intelligence an elusive phenomenon? Exploring the role of working memory, creativity, and other psychological correlates in young and older adults. Brain and Behavior 13 (2), e2857.
Glashouwer, K.A., Smulders, F.T., de Jong, P.J., Roefs, A., Wiers, R.W., 2013. Measuring automatic associations: validation of algorithms for the Implicit Association Test (IAT) in a laboratory setting. J. Behav. Ther. Exp. Psychiatry 44 (1), 105–113.
Greenwald, A.G., McGhee, D.E., Schwartz, J.L., 1998. Measuring individual differences in implicit cognition: the implicit association test. J. Pers. Soc. Psychol. 74 (6), 1464.
Greenwald, A.G., Nosek, B.A., Banaji, M.R., 2003. Understanding and using the implicit association test: I. An improved scoring algorithm. J. Pers. Soc. Psychol. 85 (2), 197.
van Harmelen, A.-L., de Jong, P.J., Glashouwer, K.A., Spinhoven, P., Penninx, B.W., Elzinga, B.M., 2010. Child abuse and negative explicit and automatic self-associations: the cognitive scars of emotional maltreatment. Behav. Res. Ther. 48 (6), 486–494.
Hayes, A.F., 2017. Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. Guilford Publications.
Hoppen, T.H., Chalder, T., 2018. Childhood adversity as a transdiagnostic risk factor for affective disorders in adulthood: a systematic review focusing on biopsychosocial moderating and mediating variables. Clin. Psychol. Rev. 65, 81–151.
Hovens, J.G., Wiersma, J.E., Giltay, E.J., Van Oppen, P., Spinhoven, P., Penninx, B.W., Zitman, F.G., 2010. Childhood life events and childhood trauma in adult patients with depressive, anxiety and comorbid disorders vs. controls. Acta Psychiatr. Scand. 122 (1), 66–74.
Izuma, K., Kennedy, K., Fitzjohn, A., Sedikides, C., Shibata, K., 2018. Neural activity in the reward-related brain regions predicts implicit self-esteem: a novel validity test of psychological measures using neuroimaging. J. Pers. Soc. Psychol. 114 (3), 343.
Keane, L., Loades, M., 2017. Low self-esteem and internalizing disorders in young people–a systematic review. Child Adolesc. Mental Health 22 (1), 4–15.
Kessler, R.C., Berglund, P., Demler, O., Jin, R., Merikangas, K.R., Walters, E.E., 2005. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Arch. Gen. Psychiatry 62 (6), 593–602.
Kessler, R.C., Birnbaum, H.G., Shahly, V., Bromet, E., Hwang, I., McLaughlin, K.A., Sampson, N., Andrade, L.H., De Girolamo, G., Demyttenaere, K., 2010. Age differences in the prevalence and co-morbidity of DSM-IV major depressive episodes: results from the WHO World Mental Health Survey Initiative. Depress. Anxiety 27 (4), 351–364.
Kim, Y., Lee, H., Park, A., 2022. Patterns of adverse childhood experiences and depressive symptoms: self-esteem as a mediating mechanism. Soc. Psychiatry Psychiatr. Epidemiol. 1–11.
Korrelboom, K., Maarsingh, M., Huijbrechts, I., 2012. Competitive memory training (COMET) for treating low self-esteem in patients with depressive disorders: a randomized clinical trial. Depress. Anxiety 29 (2), 102–110.
Kuzminskaite, E., Vinkers, C.H., Milaneschi, Y., Giltay, E.J., Penninx, B.W., 2022. Childhood trauma and its impact on depressive and anxiety symptomatology in adulthood: a 6-year longitudinal study. J. Affect. Disord. 312, 322–330.
Leary, M.R., Baumeister, R.F., 2000. The nature and function of self-esteem: sociometer theory. In: Advances in Experimental Social Psychology, Vol. 32. Elsevier, pp. 1–62.
Li, W., Lai, W., Guo, L., Wang, W., Li, X., Zhu, L., Shi, J., Teopiz, K.M., McIntyre, R.S., Lu, C., 2023. Childhood maltreatment and subsequent depressive symptoms: a prospective study of the sequential mediating role of self-esteem and internalizing/externalizing problems. BMC Psychiatry 23 (1), 179.
Nelson, J., Klumparendt, A., Doebler, P., Ehring, T., 2017. Childhood maltreatment and characte- ristics of adult depression: meta-analysis. Br. J. Psychiatry 210 (2), 96–104.
Niveau, N., New, B., Beaudoin, M., 2021. Self-esteem interventions in adults–a systematic review and meta-analysis. J. Res. Pers. 94, 104131.
Orth, U., Trzesniewski, K.H., Robins, R.W., 2010. Self-esteem development from young adulthood to old age: a cohort-sequential longitudinal study. J. Pers. Soc. Psychol. 98 (4), 645.
Orth, U., Robins, R.W., Meier, L.L., Conger, R.D., 2016. Refining the vulnerability model of low self-esteem and depression: disentangling the effects of genuine self-esteem and narcissism. J. Pers. Soc. Psychol. 110 (1), 133.
Ouimet, A.J., Gawronski, B., Dozois, D.J., 2009. Cognitive vulnerability to anxiety: a review and an integrative model. Clin. Psychol. Rev. 29 (6), 459–470.
Panagou, C., MacBeth, A., 2022. Deconstructing pathways to resilience: a systematic review of associations between psychosocial mechanisms and transdiagnostic adult mental health outcomes in the context of adverse childhood experiences. Clin. Psychol. Psychother. 29 (5), 1626–1654.
Penninx, B.W., Beekman, A.T., Smit, J.H., Zitman, F.G., Nolen, W.A., Spinhoven, P., Cuijpers, P., De Jong, P.J., Van Marwijk, H.W., Assendelft, W.J., 2008. The Netherlands Study of Depression and Anxiety (NESDA): rationale, objectives and methods. Int. J. Methods Psychiatr. Res. 17 (3), 121–140.
Reid-Russell, A., Miller, A.B., Cvencek, D., Meltzoff, A.N., McLaughlin, K.A., 2022. Lower implicit self-esteem as a pathway linking childhood abuse to depression and suicidal ideation. Dev. Psychopathol. 34 (4), 1272–1286.
Reilly, D., Neumann, D.L., Andrews, G., 2022. Gender differences in self-estimated intelligence: exploring the male hubris, female humility problem. Front. Psychol. 13, 812483.
Rosenberg, M., 1965. Rosenberg self-esteem scale (RSE). Acceptance and commitment therapy. Measures Package 61 (52), 18.
Rudolph, A., Schröder-Abé, M., Riketta, M., Schütz, A., 2010. Easier when done than said!: implicit self-esteem predicts observed or spontaneous behavior, but not self-reported or controlled behavior. Zeitschrift für Psychologie/Journal of Psychology 218 (1), 12.
Rush, A.J., Gullion, C.M., Basco, M.R., Jarrett, R.B., Trivedi, M.H., 1996. The inventory of depressive symptomatology (IDS): psychometric properties. Psychol. Med. 26 (3), 477–486.
Schuch, J.J., Roest, A.M., Nolen, W.A., Penninx, B.W., De Jonge, P., 2014. Gender differences in major depressive disorder: results from the Netherlands study of depression and anxiety. J. Affect. Disord. 156, 156–163.
Sowislo, J.F., Orth, U., 2013. Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. Psychol. Bull. 139 (1), 213.
Spinhoven, P., Penninx, B.W., Hickendorff, M., van Hemert, A.M., 2014. Childhood Trauma Questionnaire: factor structure, measurement invariance, and validity across emotional disorders. Psychol. Assess. 26, 717–729.
Staring, A., Van den Berg, D., Cath, D., Schoorl, M., Engelhard, I., Korrelboom, C., 2016. Self-esteem treatment in anxiety: a randomized controlled crossover trial of eye movement desensitization and reprocessing (EMDR) versus competitive memory training (COMET) in patients with anxiety disorders. Behav. Res. Ther. 82, 11–20.
Steiger, A.E., Allemand, M., Robins, R.W., Fend, H.A., 2014. Low and decreasing self-esteem during adolescence predict adult depression two decades later. J. Pers. Soc. Psychol. 106 (2), 325.
van Tuijl, L.A., Glashouwer, K.A., Bockting, C.L., Tendeiro, J.N., Penninx, B.W., de Jong, P.J., 2016. Implicit and explicit self-esteem in current, remitted, recovered, and comorbid depression and anxiety disorders: the NESDA study. PLoS One 11 (11), e0166116.
van Tuijl, L.A., Bennik, E.C., Penninx, B.W., Spinhoven, P., de Jong, P.J., 2020. Predictive value of implicit and explicit self-esteem for the recurrence of depression and anxiety disorders: a 3-year follow-up study. J. Abnorm. Psychol. 129 (8), 788.
Wang, S., Xu, H., Zhang, S., Yang, R., Li, D., Sun, Y., Wan, Y., Tao, F., 2022. Linking childhood maltreatment and psychological symptoms: the role of social support, coping styles, and self-esteem in adolescents. J. Interpers. Violence 37 (1–2), NP620–NP650.
Yeo, G., Tan, C., Ho, D., Baumeister, R.F., 2023. How do aspects of selfhood relate to depression and anxiety among youth? A meta-analysis. Psychol. Med. 1–23.
Yoon, M., Cho, S., Yoon, D., 2019. Child maltreatment and depressive symptomatology among adolescents in out-of-home care: the mediating role of self-esteem. Child Youth Serv. Rev. 101, 255–260.
Zhang, H., Wang, W., Liu, S., Feng, Y., Wei, Q., 2023. A meta-analytic review of the impact of child maltreatment on self-esteem: 1981 to 2021. Trauma Violence Abuse 24 (5), 3398–3411.
Zhao, Y., Han, L., Teopiz, K.M., McIntyre, R.S., Ma, R., Cao, B., 2022. The psychological factors mediating/moderating the association between childhood adversity and depression: a systematic review. Neurosci. Biobehav. Rev. 137, 104663.