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Research Paper

Differential Pathways of Emotion Regulation Difficulties Linking Childhood Maltreatment to Disturbances in Self-Organisation in Adolescents

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ABSTRACT

Childhood maltreatment (CM) is associated with disturbances in self-organisation (DSO), a core component of Complex Post-Traumatic Stress Disorder. Although difficulties in emotion regulation (DER) may contribute to this relationship, limited research has examined the differential indirect associations of specific DER dimensions with DSO, particularly among adolescents in non-Western contexts. This study examined these associations among 444 adolescents aged 14–17 years recruited from clinical and community settings across Kerala and Karnataka, India. CM, DER, and DSO were assessed using the Childhood Trauma Questionnaire, Difficulties in Emotion Regulation Scale, and International Trauma Questionnaire, respectively. Structural equation modeling was used to examine direct and indirect associations. CM was significantly associated with DSO and all six DER dimensions. However, significant indirect associations with DSO were observed only through impulse control difficulties, difficulties engaging in goal-directed behavior, and limited access to emotion regulation strategies. Non-acceptance of emotional responses, lack of emotional awareness, and unclear emotional experiences did not demonstrate significant indirect associations. These findings indicate that the association between CM and DSO may be differentially related to specific behavioral and functional aspects of emotion regulation rather than generalized dysregulation, highlighting the importance of a multidimensional approach to understanding trauma-related difficulties among adolescents.

Keywords: *Adolescents, Childhood maltreatment, Complex post-traumatic stress disorder, Disturbances in self-organization, Emotional regulation difficulties*

Childhood experiences play a crucial role in shaping psychological, emotional, and social development. While supportive early environments promote adaptive functioning, adverse experiences such as childhood maltreatment (CM) can substantially alter developmental trajectories (Likhar et al., 2022; Morris et al., 2021). Childhood maltreatment remains a widespread concern globally, with an estimated 400 million children under five exposed to physical or psychological violence, while approximately one in five women and one in seven men report experiences of childhood sexual abuse (UNICEF, 2024). These experiences are particularly concerning during

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childhood and adolescence, when emotional, interpersonal, and self-regulatory capacities are still developing.

In India, CM represents a significant public health and child-welfare concern, with consistently high rates reported across studies (Choudhry et al., 2018). Government data indicate that nearly 53% of children experience some form of abuse (Government of India, Ministry of Statistics and Programme Implementation [MoSPI], 2012), with emotional abuse and neglect emerging as particularly prevalent forms (Kacker et al., 2007). Further evidence indicates that emotional and physical abuse affect up to 72% and 74% of children, respectively, while 69% report sexual abuse and 60% emotional neglect (Fernandes et al., 2021). Maltreatment frequently occurs within children's immediate social and caregiving environments, where stigma and norms surrounding family honour and silence may restrict disclosure and access to support (Kacker et al., 2007; MoSPI, 2012; Paul et al., 2021; Pietkiewicz-Pareek, 2014; UNICEF, 2024). These circumstances may place affected children and adolescents at heightened vulnerability to persistent emotional and relational difficulties.

CM refers to experiences of abuse and neglect occurring before the age of 18, including emotional, physical, and sexual abuse and neglect (World Health Organization [WHO], 2024). Rather than occurring as isolated events, maltreatment is often chronic and relational, particularly within caregiving contexts (Valentino, 2017). Caregivers who are expected to provide safety and emotional support may instead become sources of threat, rejection, or neglect (Cicchetti., 2016; Daley et al., 2025). Such adverse caregiving experiences may interfere with the development of emotional security and adaptive interpersonal functioning and are associated with difficulties in emotion regulation, self-concept, and relationships (Doyle & Cicchetti., 2017; Barlow et al., 2017; Teicher & Samson, 2016; Scharf & Roth., 2025). These effects may extend across development, increasing vulnerability to psychological difficulties during adolescence and beyond (Gutman et al., 2019).

One important trauma-related outcome associated with CM is Complex Post-Traumatic Stress Disorder (CPTSD), as conceptualized within the ICD-11 (Lortye et al., 2024). In addition to the core domains of post-traumatic stress disorder, CPTSD includes disturbances in self-organisation (DSO), comprising affective dysregulation, negative self-concept, and disturbances in interpersonal relationships (Karatzias et al., 2017). DSO therefore reflects difficulties across emotional, self-evaluative, and relational domains that may be particularly consequential during adolescence. Adolescence is a sensitive developmental period characterized by identity formation and continuing development of emotional and interpersonal competencies (Erikson, 1968; Jimenez et al., 2024). Exposure to CM may therefore increase vulnerability to difficulties in self-organisation during this period. Evidence indicates that different forms of CM, including sexual abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect, are associated with DSO and other complex trauma-related outcomes (Adams et al., 2018; Lortye et al., 2024; Mahfir & Parameswari, 2026).

Emotion regulation difficulties (DER) may represent an important psychological process associated with both CM and DSO (Dvir et al., 2014; Clinchard et al., 2026; Zhang & Zhang., 2025). Adverse caregiving environments may limit opportunities for the development and practice of adaptive emotional regulation, while CM has been associated with difficulties in emotional awareness, clarity, impulse control, and goal-directed behavior

(Doyle & Cicchetti., 2017; Gee., 2020; Warmingham et al., 2023; Berking & Wupperman, 2012; Clinchard et al., 2026). Consistent with this, emerging evidence suggests that emotion regulation may be involved in the association between childhood adversity and trauma-related psychological outcomes (Haselgruber et al., 2021; Miu et al., 2022; Knefel et al., 2019).

Importantly, emotion regulation difficulties are multidimensional rather than unitary, encompassing difficulties involving emotional awareness, clarity, acceptance, impulse control, and goal-directed behavior (Gratz, 2004). Nevertheless, much of the existing literature has examined emotion dysregulation as a global construct, potentially obscuring the differential relevance of its individual dimensions to trauma-related outcomes (Igra et al., 2023; Weiss et al., 2019). For example, Schaich et al. (2021) found that impulse control difficulties mediated the association between childhood maltreatment and borderline personality disorder, suggesting that specific regulatory processes may operate differently across psychological outcomes. However, limited research has systematically examined whether individual dimensions of emotion regulation difficulties demonstrate differential indirect associations between CM and DSO. This gap is particularly evident among adolescents and in non-Western contexts.

The need to examine these processes is particularly relevant in India, where adolescents may face limited access to mental health resources and persistent stigma surrounding psychological distress and help-seeking (Ramaswamy & Seshadri, 2020). Although the prevalence of CM among Indian adolescents has been documented (Kacker et al., 2007), comparatively less attention has been given to the psychological pathways through which maltreatment may be associated with complex trauma-related outcomes in this population (Pandey et al., 2020). Understanding these pathways may contribute to a more differentiated understanding of the needs of adolescents exposed to maltreatment and may help identify specific areas for psychological and psychosocial support.

Accordingly, the present study examines the indirect associations of individual dimensions of emotion regulation difficulties in the relationship between CM and DSO among Indian adolescents. Rather than treating emotion regulation difficulties as a single construct, the study examines each dimension as a distinct pathway to determine whether they demonstrate differential associations with DSO. Given the cross-sectional design, these pathways are conceptualized as statistical indirect associations rather than causal mechanisms. The study is theoretically grounded in the ICD-11 conceptualization of CPTSD, which identifies DSO as comprising affective dysregulation, negative self-concept, and disturbances in relationships (WHO, 2021; Cloitre et al., 2013; Knefel et al., 2019). Attachment Theory further provides a developmental framework for understanding how adverse caregiving environments may influence emotional regulation and relational functioning (Bowlby, 1969/1982; Mikulincer & Shaver, 2007), while Emotion Regulation Theory provides a framework for understanding difficulties in monitoring, evaluating, and modulating emotional responses (Gross, 1998, 2014). Based on these perspectives, the study hypothesised that individual dimensions of emotion regulation difficulties would demonstrate significant indirect associations in the relationship between CM and DSO.

METHODOLOGY

Participants and Procedure

The study was conducted among adolescents aged 14–17 years recruited through purposive sampling from rehabilitation centres, psychiatry departments of hospitals, private clinics, non-governmental organizations (NGOs), and orphanages across Kerala and Karnataka, India. A total of 586 adolescents were initially recruited and screened for childhood maltreatment using the Childhood Trauma Questionnaire (CTQ). A total CTQ score of ≥55 was used as the predefined eligibility criterion for substantial exposure to childhood maltreatment (Bernstein & Fink, 1998). Of the 586 adolescents screened, 444 met this criterion and were included in the final analysis.

Of the 172 adolescents recruited from rehabilitation centres, 151 met the eligibility criterion. Among 114 adolescents recruited from psychiatry departments and private clinics, 99 qualified for inclusion, with trauma histories additionally corroborated through clinical records. Of the 210 adolescents recruited from orphanages, 133 met the criterion, while 61 of the 90 adolescents recruited through NGOs qualified. Thus, the final sample comprised 444 adolescents recruited across clinical and community-based settings.

As shown in Table 1, the sample comprised 280 males (63.1%) and 164 females (36.9%). Regarding residential background, 190 participants (42.8%) were from rural areas and 254 (57.2%) from urban areas. In terms of socioeconomic status, 210 (47.3%) were from middle-class, 95 (21.4%) from upper-middle-class, and 139 (31.3%) from lower socioeconomic backgrounds. The majority were aged 16 years (n = 280, 63.1%), followed by 15 years (n = 89, 20.0%), 14 years (n = 49, 11.0%), and 17 years (n = 26, 5.9%).

The study received ethical clearance from the Institutional Ethics Committee and the institutional review boards of the participating organizations. Informed consent was obtained from parents or legal guardians, and assent was obtained from all adolescents. Participants were informed about the study purpose, confidentiality, and their right to withdraw without consequences. Psychological support was available through institutional psychologists if participants experienced distress during data collection; these professionals were not involved in recruitment, assessment, or data collection. Data collection was conducted from March 2024 for six months.

Table 1 Socio-demographic Characteristics of the Sample (N = 444)

Variable	Category	n	%
Gender	Male	280	63.1
	Female	164	36.9
Age (years)	14	49	11.0
	15	89	20.0
	16	280	63.1
	17	26	5.9
Residence	Rural	190	42.8
	Urban	254	57.2
Socioeconomic Status	Lower	139	31.3
	Middle	210	47.3
	Upper-middle	95	21.4

Note. N = 444. Percentages may not total 100 due to rounding.

Instruments

Childhood maltreatment was assessed using the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), a 28-item self-report measure comprising five dimensions: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. Items are rated on a 5-point Likert scale, with higher scores indicating greater severity of maltreatment. In the present study, the CTQ demonstrated good internal consistency (Cronbach's $\alpha = .91$).

Difficulties in emotion regulation were assessed using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), with the adolescent adaptation developed by Weinberg and Klonsky (2009). The scale consists of 36 items measuring six dimensions: non-acceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. Items are rated on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always), with higher scores indicating greater difficulties in emotion regulation. In the present study, the DERS demonstrated good internal consistency (Cronbach's $\alpha = .90$).

Disturbances in self-organisation were assessed using the International Trauma Questionnaire (ITQ; Cloitre et al., 2018), based on ICD-11 criteria for complex PTSD. The DSO component includes affective dysregulation, negative self-concept, and disturbances in relationships. Items are rated on a Likert scale, with higher scores indicating greater disturbance. In the present study, the DSO scale showed good internal consistency (Cronbach's $\alpha = .87$).

Statistical Techniques Used

All analyses were conducted using IBM SPSS and AMOS. Descriptive statistics and Pearson correlations were computed to examine the distributions and associations among CM, DER and its dimensions, and DSO and its dimensions.

Structural equation modeling (SEM) was conducted in two stages. First, the measurement model was evaluated to assess the adequacy of the latent constructs. Second, the structural model was tested to examine the direct and indirect associations among CM, the dimensions of DER, and DSO, with individual DER dimensions specified as indirect pathways between CM and DSO. Indirect effects were estimated using bias-corrected bootstrapping, with statistical significance determined using 95% confidence intervals. Model fit was evaluated using χ^2/df, Comparative Fit Index (CFI), Standardized Root Mean Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), and PClose.

The sample comprised of three hundred persons. There were two groups of children between the ages of 7 and 13 years and their mothers. Group I consisted of 75 chronically ill children and their mothers 75 and Group II consisted of 75 normal healthy children and their mothers (75). Group II served as a control group. In Group I; children who were suffering from some type of chronic illness like TB, epilepsy, kidney trouble, rheumatic heart disease, congenital heart disease, sickle cell anemia and asthma were included. In both groups children from different socioeconomic classes – low, medium, and high were interviewed.

RESULTS

Primary Analysis and Correlation

Descriptive statistics, distributional properties, and Pearson correlations are presented in Table 2. The mean scores indicated elevated levels of childhood maltreatment (CM; M = 78.01, SD = 10.15), difficulties in emotion regulation (DER; M = 104.23, SD = 13.22), and disturbances in self-organisation (DSO; M = 33.67, SD = 7.75). Based on established criteria, CM scores corresponded to the moderate-to-severe range of maltreatment (Bernstein & Fink, 1998), while DER scores indicated elevated emotion-regulation difficulties (Gratz & Roemer, 2004). The mean DSO score was also consistent with clinically relevant levels reported in CPTSD research (Cloitre et al., 2018).

Assessment of normality indicated no substantial deviations from normality, supporting the suitability of parametric analyses (Kline, 2016). Across CM, DER, DSO, and their respective dimensions, skewness values ranged from −0.29 to 0.58, while kurtosis values ranged from −0.60 to 0.53, indicating acceptable distributional properties.

Table 2 Results of descriptive statistics and Pearson Correlation

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.EN	16.36	2.99	1																
2. EA	15.13	3.06	.53**	1															
3. PA	15.12	3.20	.22**	.40**	1														
4. SA	15.80	3.05	.17**	.34**	.12**	1													
5. PN	15.59	3.43	.18**	.40**	.17**	.13**	1												
6. CM	78.01	10.15	.64**	.82**	.60**	.54**	.61**	1											
7. DEG	17.84	3.78	.23**	.40**	.14**	.12*	.15**	.32**	1										
8. LEA	17.13	3.89	.17**	.39**	.18**	.09*	.19**	.32**	.19**	1									
9. ICC	16.59	3.72	.18**	.43**	.18**	.18**	.18**	.36**	.13**	.20**	1								
10. LAES	17.50	4.20	.21**	.44**	.22**	.18**	.17**	.38**	.21**	.14**	.22**	1							
11. UEE	17.35	3.84	.22**	.36**	.13**	.12**	.17**	.31**	.20**	.13**	.13**	.15**	1						
12. NAER	17.83	3.77	.26**	.47**	.19**	.14**	.24**	.41**	.27**	.15**	.21**	.22**	.21**	1					
13. DER	104.23	13.22	.37**	.74**	.31**	.25**	.33**	.62**	.58**	.53**	.55**	.59**	.53**	.60**	1				
14. DR	10.32	3.39	.32**	.31**	.10*	.10*	.13**	.29**	.39**	.10*	.11*	.14**	.17**	.15**	.31**	1			
15. NSC	10.89	4.19	.16**	.25**	.12**	.11*	.10*	.23**	.15**	.15**	.10*	.10*	.13**	.20**	.24**	.15**	1		
16. AD	12.46	4.37	.19**	.37**	.18**	.23**	.13**	.34**	.21**	.10*	.39**	.42**	.15**	.13**	.42**	.10*	.11*	1	
17. DSO	33.67	7.75	.34**	.48**	.21**	.24**	.19**	.45**	.38**	.19**	.32**	.35**	.23**	.25**	.51**	.58**	.67**	.67**	1

Note **. Correlation is significant at the 0.01 level (2-tailed). EA – Emotional Abuse; PA –– Physical Abuse; PN – Physical Neglect; EN – Emotional Neglect; SA – Sexual Abuse; NAER- Non-Acceptance Of Emotional Responses; ICC – Impulse Control Challenges; LEA – Lack Of Emotional Awareness; LAES – Limited Access To Emotion Regulation Strategies; UEE - Unclear Emotional Experiences; DEG - Difficulty Engaging In Goal-Directed Behaviors; AD – Affective Dyregulation; NSC – Negative Self-concept; DR – Disturbed Relationship; CM – Childhood Maltreatment; DSO – Disturbance in Self-organization; DER – Difficulties in Emotion Regulation

CM was positively correlated with total DER ($r = .62$, $p < .01$) and all six DER dimensions ($r = .31–.41$, $p < .01$). CM dimensions were also positively correlated with DER and its dimensions ($r = .09–.74$, $p < .01$). CM was positively associated with DSO ($r = .45$, $p < .01$) and its dimensions ($r = .23–.34$, $p < .01$). Similarly, total DER was positively correlated with DSO ($r = .51$, $p < .01$) and its dimensions ($r = .24–.42$, $p < .01$), while DER dimensions showed significant positive associations with DSO and its dimensions ($r = .10–.42$, $p < .01$). Overall, the correlation pattern indicated positive associations among CM, DER, and DSO and their respective dimensions.

Measurement Model Properties

The measurement model demonstrated an excellent fit to the data, exceeding recommended cutoff criteria ($\chi^2/df = 1.06$, CFI = .995, SRMR = .027, RMSEA = .011, PClose = 1.00). Construct reliability and validity were evaluated using composite reliability (CR), average variance extracted (AVE), maximum shared variance (MSV), and Hancock's H coefficient (see Table 3). All constructs exhibited strong internal consistency, with CR values ranging from .923 to .958, exceeding the recommended threshold of .70. In addition, all standardized factor loadings were above .50, indicating that the observed indicators adequately represented their respective latent constructs. Convergent validity was further supported, as AVE values ranged from .706 to .795, exceeding the recommended criterion of .50,

suggesting that a substantial proportion of variance in the indicators was explained by the latent variables. Discriminant validity was established using multiple criteria. First, the square root of AVE for each construct (diagonal elements in Table 3) exceeded the corresponding inter-construct correlations, satisfying the Fornell–Larcker criterion. Second, MSV values ranged from .107 to .370 and were consistently lower than the respective AVE values, indicating that constructs shared more variance with their own indicators than with other constructs. Furthermore, Hancock's H coefficients ranged from .928 to .961, providing additional evidence of construct reliability and replicability. Overall, these findings indicate that the measurement model demonstrates satisfactory reliability, convergent validity, and discriminant validity, supporting its suitability for subsequent structural model evaluation.

Table 3 Measurement Model Properties

	CR	AVE	MSV	H	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. EA	.923	.706	.335	.928	**.840**													
2. PA	.935	.741	.186	.937	.431	**.861**												
3. PN	.929	.723	.194	.932	.441	.189	**.850**											
4. EN	.938	.752	.335	.941	.579	.251	.195	**.867**										
5. SA	.933	.736	.136	.935	.369	.132	.152	.187	**.858**									
6. NAER	.942	.729	.370	.944	.533	.213	.273	.285	.178	**.854**								
7. ICC	.935	.707	.212	.938	.460	.200	.198	.197	.189	.227	**.841**							
8. LEA	.940	.723	.107	.943	.327	.147	.185	.105	.095	.121	.217	**.850**						
9. LAES	.950	.760	.292	.951	.478	.231	.195	.255	.224	.222	.233	.146	**.872**					
10. CLT	.936	.711	.156	.941	.394	.158	.195	.251	.143	.244	.155	.142	.096	**.843**				
11. DEG	.940	.723	.277	.942	.430	.093	.161	.239	.127	.297	.126	.142	.204	.205	**.851**			
12. AD	.958	.791	.292	.961	.366	.195	.134	.175	.236	.105	.431	.166	.541	.154	.062	**.889**		
13. DR	.934	.738	.277	.935	.377	.156	.158	.396	.111	.197	.109	.087	.144	.180	.526	.069	**.859**	
14. NSC	.951	.795	.370	.953	.451	.135	.183	.253	.117	.609	.218	.107	.135	.169	.239	.175	.141	**.892**

Note: Diagonal elements represent the square root of AVE; EA – Emotional Abuse; PA – Physical Abuse; PN – Physical Neglect; EN – Emotional Neglect; SA – Sexual Abuse; NAER- Non-Acceptance Of Emotional Responses; ICC – Impulse Control Challenges; LEA – Lack Of Emotional Awareness; LAES – Limited Access To Emotion Regulation Strategies; UEE - Unclear Emotional Experiences; DEG - Difficulty Engaging In Goal-Directed Behaviors; AD – Affective Dyregulation; NSC – Negative Self-concept; DR – Disturbed Relationship

Structural Model and Specific Indirect Association

SEM was conducted to examine the specific indirect associations of the six dimensions of DER in the relationship between CM and DSO (see Table 4 and Figure 1). The structural model demonstrated an acceptable fit to the data, $\chi^2/df = 2.90$, CFI = .948, SRMR = .056, RMSEA = .065, PClose = .119, and GFI = .974. These indices indicated that the hypothesized structural model provided an adequate representation of the observed relationships among CM, the dimensions of DER, and DSO.

CM demonstrated significant positive associations with all six dimensions of DER. Specifically, CM was significantly associated with impulse control difficulties (ICC; $\beta = .36$, $p = .001$), difficulties engaging in goal-directed behavior (DEG; $\beta = .33$, $p = .001$), non-acceptance of emotional responses (NAER; $\beta = .41$, $p = .002$), lack of emotional awareness (LEA; $\beta = .32$, $p = .001$), limited access to emotion regulation strategies (LAES; $\beta = .39$, $p = .001$), and unclear emotional experiences (UEE; $\beta = .32$, $p = .001$). Thus, greater levels of childhood maltreatment were associated with greater difficulties across all assessed dimensions of emotion regulation. Among these associations, the strongest was observed for NAER ($\beta = .41$), followed by LAES ($\beta = .39$), ICC ($\beta = .36$), DEG ($\beta = .33$), and both LEA and UEE ($\beta = .32$).

The six DER dimensions demonstrated differential associations with DSO. Three dimensions showed statistically significant positive associations with DSO: ICC ($\beta = .17$, p

= .004), DEG (β = .23, p = .001), and LAES (β = .17, p = .001). In contrast, NAER (β = .004, p = .949), LEA (β = .002, p = .925), and UEE (β = .07, p = .079) were not significantly associated with DSO. This pattern indicates that although CM was significantly associated with all dimensions of DER, the dimensions of DER did not demonstrate uniform associations with DSO. In particular, difficulties involving impulse control, goal-directed behavior, and access to emotion regulation strategies showed significant associations with DSO, whereas non-acceptance of emotional responses, emotional awareness, and emotional clarity did not. In addition, CM demonstrated a significant direct association with DSO (β = .23, 95% CI [.14, .32], p = .001), indicating that CM remained significantly associated with DSO after accounting for the DER dimensions included in the structural model.

Bootstrapped indirect effects based on 5,000 samples were examined to determine whether the association between CM and DSO differed according to the specific dimension of DER through which it was examined. Significant indirect associations were identified for three of the six DER dimensions. The indirect association between CM and DSO through ICC was statistically significant (β = .06, 95% CI [.02, .07], p = .003). Similarly, the indirect association through DEG was significant (β = .08, 95% CI [.04, .08], p = .001). The largest specific indirect association was observed through DEG. A significant indirect association was also observed through LAES (β = .07, 95% CI [.03, .08], p = .001). In contrast, the indirect associations through the remaining three DER dimensions were not statistically significant. Specifically, the indirect association through NAER was not significant (β = .001, 95% CI [−.02, .02], p = .946), nor was the indirect association through LEA (β = .001, 95% CI [−.02, .02], p = .913). The indirect association through UEE was also not statistically significant (β = .02, 95% CI [.00, .03], p = .068).

Taken together, the structural model revealed a differential pattern: although CM was significantly associated with all six DER dimensions, only ICC, DEG, and LAES showed significant indirect associations with DSO, highlighting the specific relevance of impulse control, goal-directed behavior, and access to emotion regulation strategies.

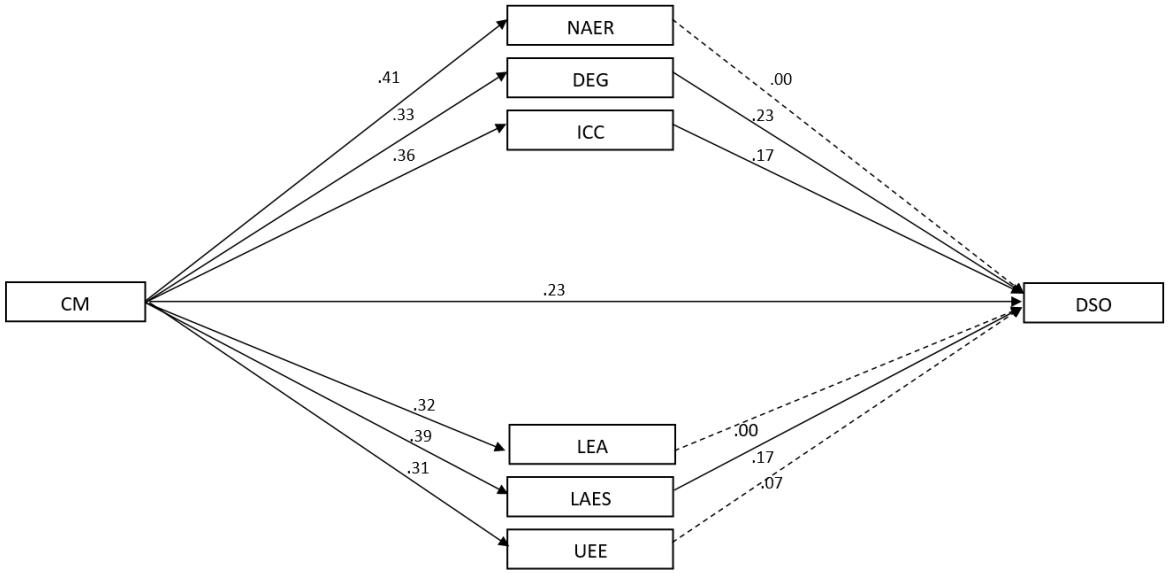
Table 4 Indirect Effects of DER (Difficulties in emotional regulation) Dimensions on Associations Between CM and DSO

	β	**95% BC CI**	***p***
Standardized direct effects			
CM → DSO	0.230	[0.144, 0.316]	0.001
CM → ICC	0.362	[0.288, 0.426]	0.001
CM → DEG	0.328	[0.259, 0.392]	0.001
CM → NAER	0.412	[0.335, 0.482]	0.002
CM → LEA	0.323	[0.241, 0.398]	0.001
CM → LAES	0.385	[0.314, 0.449]	0.001
CM → UEE	0.315	[0.245, 0.383]	0.001
ICC → DSO	0.169	[0.087, 0.241]	0.004
DEG → DSO	0.234	[0.160, 0.303]	0.001
LEA → DSO	0.002	[-0.077, 0.096]	0.925
NAER → DSO	0.004	[-0.071, 0.080]	0.949
LAES → DSO	0.171	[0.097, 0.250]	0.001
UEE → DSO	0.070	[0.005, 0.137]	0.079
Standardized indirect effects			
CM → ICC → DSO	0.061	[0.023, 0.074]	0.003

	β	95% BC CI	*p*
CM → DEG → DSO	0.077	[0.038, 0.082]	0.001
CM → NAER → DSO	0.001	[-0.023,0.024]	0.946
CM → LEA → DSO	0.001	[-0.018, 0.024]	0.913
CM → LAES → DSO	0.066	[0.028, 0.078]	0.001
CM → UEE → DSO	0.022	[0.002, 0.033]	0.068

Note: CM – Childhood Maltreatment; NAER- Non-Acceptance of Emotional Responses; ICC – Impulse Control Challenges; LEA – Lack of Emotional Awareness; LAES – Limited Access to Emotion Regulation Strategies; UEE - Unclear Emotional Experiences; DEG - Difficulty Engaging in Goal-Directed Behaviors; DSO – Disturbances in Self-organization

Figure 1. Structural Model Illustrating the Direct and Indirect Effects of Childhood Maltreatment on Disturbances in Self-Organisation Through Dimensions of Emotion Regulation Difficulties



Note. CM = Childhood Maltreatment; NAER = Non-Acceptance of Emotional Responses; DEG = Difficulties in Goal-Directed Behavior; ICC = Impulse Control Difficulties; LEA = Lack of Emotional Awareness; LAES = Limited Access to Emotion Regulation Strategies; UEE = Unclear Emotional Experiences; DSO = Disturbances in Self-Organisation. Standardized path coefficients are presented.

DISCUSSION

The present study provides evidence of a differential pattern in the associations among CM, difficulties in emotion regulation DER, and DSO among CM-exposed adolescents. Although CM was significantly associated with all six dimensions of DER, only impulse control difficulties, difficulties engaging in goal-directed behavior, and limited access to emotion regulation strategies demonstrated significant indirect associations with DSO. This pattern suggests that the association between CM and DSO may not be uniformly represented across all aspects of emotion regulation. Instead, regulatory difficulties involving behavioral control, goal-directed functioning, and access to regulatory strategies may be particularly relevant to DSO. This finding supports a multidimensional conceptualization of emotion regulation in understanding trauma-related difficulties (Knefel et al., 2019; Turner et al., 2020; Tull et al., 2018).

Impulse control difficulties emerged as one of the significant pathways. Difficulties in inhibiting or modulating behavioral responses during emotional distress may be particularly relevant to affective dysregulation, one of the core domains of DSO within the ICD-11 framework of CPTSD (Cloitre et al., 2013; Karatzias et al., 2017). Previous research has similarly linked childhood maltreatment with difficulties in emotional and behavioral regulation during adolescence (Dvir et al., 2014; Heleniak et al., 2016; Herts et al., 2012). Chronic exposure to adverse caregiving environments may be associated with heightened emotional reactivity and difficulties regulating responses under distress, which may have implications for broader emotional and interpersonal functioning. Neurobiological research has also identified associations between childhood maltreatment and alterations in stress-response and regulatory systems (Teicher & Samson, 2016; McLaughlin et al., 2014; Murphy et al., 2022; Leroux et al., 2023). However, these mechanisms were not directly examined in the present study and therefore provide a possible context for, rather than an explanation of, the observed association.

Difficulties engaging in goal-directed behavior also demonstrated a significant indirect association between CM and DSO. This dimension reflects difficulties maintaining purposeful activity when experiencing emotional distress and may be particularly relevant during adolescence, a developmental period characterized by continued maturation of executive and self-regulatory capacities (Conti et al., 2023; Clinchard et al., 2025). Adverse caregiving experiences may be associated with reduced opportunities for consistent guidance, emotional support, and autonomous decision-making, potentially influencing adolescents' ability to sustain purposeful behavior under emotional strain (Doyle & Cicchetti, 2017; Gee, 2020). Difficulties in maintaining goal-directed functioning may subsequently have implications for domains of functioning represented within DSO, including self-concept and interpersonal relationships. In contexts where adolescent goals and decisions are strongly shaped by familial expectations, opportunities for autonomy may also vary, potentially influencing how these difficulties are experienced and expressed (Pietkiewicz-Pareek, 2014; Saraswathi & Pai, 1997; Waseem & Firdous, 2025).

Limited access to emotion regulation strategies constituted the third significant pathway. This dimension reflects difficulties in identifying or accessing effective ways of managing emotional experiences and may be particularly relevant among adolescents exposed to inconsistent, neglectful, or invalidating caregiving environments (Beauchaine & Cicchetti, 2019; Gratz & Roemer, 2004). Adolescents exposed to maltreatment may have fewer opportunities to develop and practice adaptive strategies for managing distress, potentially resulting in greater reliance on avoidance, disengagement, or other less effective forms of regulation (Heleniak et al., 2016; Warmingham et al., 2023). Difficulties in accessing appropriate regulatory strategies may therefore be associated with difficulties across emotional, self-evaluative, and interpersonal domains, which are central to DSO. Cultural expectations concerning emotional expression and restraint may also shape opportunities for learning and using different regulatory strategies, although such contextual factors require direct investigation in future research.

In contrast, non-acceptance of emotional responses, lack of emotional awareness, and unclear emotional experiences did not demonstrate significant indirect associations with DSO. Notably, CM was significantly associated with each of these dimensions, indicating that their lack of indirect association with DSO was not attributable to an absence of association with maltreatment. Rather, the findings suggest that difficulties in emotional

acceptance, awareness, and clarity may not have the same relevance to DSO as difficulties involving behavioral regulation and the application of regulatory strategies. This distinction is consistent with multidimensional models of emotion regulation, which differentiate between processes involved in awareness, evaluation, and modulation of emotional experiences (Gross, 2014; Gratz & Roemer, 2004). Developmental considerations may also be relevant, as emotional awareness, clarity, and acceptance continue to develop during adolescence (Fombouchet et al., 2023; Herd et al., 2020; Riediger, 2024). Nevertheless, these interpretations should be considered cautiously because the present study did not directly examine developmental or contextual mechanisms underlying these differential associations.

Collectively, the findings indicate that the association between CM and DSO is characterized by specific rather than generalized emotion-regulation pathways. Although maltreatment was associated with difficulties across all assessed dimensions of emotion regulation, only difficulties involving impulse control, goal-directed behavior, and access to regulation strategies showed significant indirect associations with DSO. This differential pattern highlights the value of examining specific regulatory processes in understanding the psychological difficulties of adolescents exposed to childhood maltreatment and provides a focused basis for identifying areas that may warrant attention in the support and care of vulnerable adolescents.

From a clinical and psychosocial perspective, the findings support the development of targeted, mechanism-focused interventions that prioritize specific regulatory capacities. Interventions aimed at improving behavioral regulation under distress, enhancing goal-directed functioning, and increasing access to adaptive coping strategies may be particularly relevant for adolescents exposed to childhood maltreatment. These domains may also provide useful targets for early identification and psychosocial support within clinical, residential, educational, and community-based services working with vulnerable adolescents. Evidence-based approaches such as Dialectical Behavior Therapy (Linehan, 2015) and emotion regulation skills training (Berking & Wupperman, 2012) are especially relevant in this regard. Furthermore, incorporating developmentally and culturally sensitive approaches—such as caregiver involvement and autonomy-supportive parenting practices—may enhance the contextual relevance of support, particularly in settings characterized by high parental control or strong familial expectations (Mahfir & Parameswari, 2026).

Several limitations should be considered when interpreting these findings. First, the cross-sectional design precludes causal inference and limits conclusions regarding temporal sequencing and directionality; longitudinal research is therefore warranted. Second, the model did not include potentially relevant relational, contextual, and demographic factors, such as peer relationships, family dynamics, social support, socioeconomic status, family structure, and parental education. Variations in the severity and nature of maltreatment, caregiving environments, and perpetrator characteristics were also not explicitly examined, limiting a more nuanced understanding of their potential associations with DSO. Third, although the measures demonstrated good psychometric properties in the present sample, they were originally developed in Western contexts and may not fully capture culturally specific aspects of emotional experiences and caregiving practices in diverse Indian contexts. Finally, reliance on self-report measures may introduce recall and social desirability biases and may limit assessment of complex regulatory processes. Developmental differences in emotional insight may also have influenced the observed

associations, particularly for intrapsychic dimensions of emotion regulation. Future research should consider longitudinal and multi-method approaches incorporating behavioral assessments, clinical interviews, and informant reports, alongside broader contextual variables.

CONCLUSION

The present study indicates that the association between childhood maltreatment and disturbances in self-organisation is differentially related to specific dimensions of emotion regulation, particularly impulse control, goal-directed functioning, and access to regulatory strategies. These findings highlight the value of moving beyond a generalized view of emotion dysregulation toward a multidimensional understanding of trauma-related difficulties among adolescents. From a clinical and psychosocial perspective, the findings identify specific regulatory domains that may warrant attention in supporting adolescents affected by childhood maltreatment, while emphasizing the importance of developmentally and culturally sensitive approaches. Overall, the study contributes to a more focused understanding of trauma-related difficulties and potential areas for support among vulnerable adolescents.

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Conflict of Interest
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