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BASIC RESEARCH ARTICLE

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Adverse and benevolent childhood experiences in Posttraumatic Stress Disorder (PTSD) and Complex PTSD (CPTSD): implications for trauma-focused therapies

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ABSTRACT

Background: There is very little work on the role of positive or benevolent childhood experiences and how such events might offer protection from the insidious effects of adverse experiences in childhood or later in life.

Objectives: We set out to test, using latent variable modelling, whether adverse and benevolent childhood experiences could be best described as a single continuum or two correlated constructs. We also modelled the relationship between adverse and benevolent childhood experiences and ICD-11 PTSD and Complex PTSD (CPTSD) symptoms and explored if these associations were indirect via psychological trauma.

Methods: Data were collected from a trauma-exposed sample (N = 275) attending a specialist trauma care centre in the UK. Participants completed measures of childhood adverse and benevolent experiences, traumatic exposure, and PTSD and CPTSD symptoms.

Results: Findings suggested that adverse childhood experiences operate only indirectly on PTSD and CPTSD symptoms through lifetime trauma exposure, and with a stronger effect for PTSD. Benevolent childhood experiences directly predicted only CPTSD symptoms.

Conclusions: Benevolent and traumatic experiences seem to form unique associations with PTSD and CPTSD symptoms. Future research is needed to explore how benevolent experiences can be integrated within existing psychological interventions to maximise recovery from traumatic stress.

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PTSD; CPTSD; benevolent experiences; adverse experiences

PALABRAS CLAVE
TEPT; TEPTC; experiencias benignas; experiencias adversas

关键词
PTSD; CPTSD; 良善经历; 不良经历

HIGHLIGHTS

- Adverse childhood experiences have a stronger effect on PTSD compared to CPTSD.
- Benevolent childhood experiences predict only CPTSD symptoms.
- Drawing on material from positive experiences in childhood can enhance CPTSD treatment.

Experiencias adversas y benignas en la infancia en Trastorno de Estrés Postraumático (TEPT) y Tept Complejo (TEPTC): implicancias para terapias centradas en el trauma

Objetivos: Nos propusimos evaluar, usando un modelo de variables latentes, si experiencias adversas y benignas en la infancia podrían ser mejor descritas como un continuo simple o bien como dos constructos correlacionados. También modelamos la relación entre experiencias adversas y benignas en la infancia y síntomas de TEPT y TEPT complejo (TEPTc) según la CIE-11 y exploramos si estas asociaciones eran indirectas a través del trauma psicológico.

Métodos: Los datos fueron obtenidos de una muestra expuesta a trauma (N=275) que acudía a un centro especializado en trauma en el Reino Unido. Los participantes completaron mediciones sobre experiencias adversas y benignas en la infancia, exposición a trauma, y síntomas de TEPT y TEPTc.

Resultados: Los hallazgos sugirieron que las experiencias adversas en la infancia operan sólo indirectamente en síntomas de TEPT y TEPTc a lo largo de exposición a trauma en la vida, con un importante efecto para TEPT. Las experiencias benignas en la infancia predijeron directamente sólo síntomas de TEPTc.

Conclusiones: Las experiencias adversas y benignas parecen formar asociaciones particulares con síntomas de TEPT y TEPTc. Se requieren investigaciones futuras para explorar cómo las experiencias benignas pueden ser integradas en intervenciones psicológicas existentes para optimizar la recuperación de estrés traumático.

创伤后应激障碍（PTSD）和复杂性PTSD（CPTSD）的童年期不良经历和良善经历：对聚焦创伤疗法的启示

目的：我们着手于使用潜变量模型，以考查童年期不良经历和良善经历最好可被描述为一个连续体还是两个相关构念。我们还模拟了童年期不良经历和良善经历与ICD-11 PTSD和复杂性PTSD (CPTSD) 症状之间的关系，并探讨了这些关联是否通过心理创伤间接产生。

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方法: 数据从在英国一家专业创伤护理中心接受治疗的创伤暴露样本 (N = 275) 中采集。参与者完成了对童年期不良经历和良善经历, 创伤暴露以及PTSD和CPTSD症状的评估。
结果: 结果表明, 童年期不良经历仅通过终身创伤暴露间接影响PTSD和CPTSD症状, 并且对PTSD作用更大。童年期良善经历直接预测了CPTSD症状。
结论: 良善经历和创伤经历似乎与PTSD和CPTSD症状有独特关联。需要未来研究去探索如何将良善经历整合到现有的心理干预措施中, 以使得从创伤应激中的恢复最大化。

1. Introduction

The negative effects of adverse childhood experiences and childhood trauma on health and wellbeing have been well documented in the literature (e.g. Centre for Disease Control and Prevention, 2016). There is now adequate evidence to suggest that exposure to childhood interpersonal trauma compromises a child's ability to successfully master certain developmental tasks (e.g. affect regulation, secure attachments; Cicchetti & Toth, 1995) partly because they compromise the development of neurobiological systems involved in regulating arousal, emotion, stress responses, and reward processing (McLaughlin, Fox, Zeanah, & Nelson, 2011). These core psychobiological functions are all related to the development of potentially long-term problems with posttraumatic stress, predominantly in the form of Complex PTSD (Karatzias et al., 2017).

Less work has been done on the role of positive or benevolent childhood experiences and how such events might offer protection from the insidious effects of adverse experiences in childhood or later in life. Emerging evidence suggests that a number of positive early life experiences (e.g. positive attachments with caregivers, effective parenting, and positive relationships with teachers, peers and extended kin) can confer resilience, even in the context of adversity (Wright, Masten, & Narayan, 2013). Hillis et al. (2010) found that family-specific strengths including closeness, loyalty, and protection predicted lower odds of adolescent pregnancy and adult psychosocial maladjustment. Another study found that positive parental relationships and positive behaviours such as being hugged or complimented predicted lower levels of depression (Chung, Mathew, Elo, Coyne, & Culhane, 2008). Positive experiences in childhood have also been found to moderate the course of psychiatric illness in adulthood. Skodol et al. (2007) found that more positive experiences, and over a longer period time in childhood, are associated with a better prognosis of later-life avoidant and schizotypal personality disorders. More recently, Narayan, Rivera, Bernstein, Harris, and Lieberman (2018) found that higher levels of positive childhood experiences can counteract the effects of childhood adversity on prenatal stress and psychopathology. Their introduction of the Benevolent Experiences Scale (Narayan et al., 2018) to the literature has created the opportunity to explore the role of positive experiences on different types of psychological distress. Narayan et al. (2018) described a list of childhood benevolent experiences such as exposure to caregivers with whom people felt safe or whether one had the opportunity to have a good time. In contrast to adverse childhood experiences, or standard definitions of traumatic exposure, benevolent childhood experiences emphasize themes of predictability, safety and comfort. To the other end, ICD-11 defines a traumatic stressor as '…an extremely threatening or horrific event or series of events' (ICD-11, 2018). DSM-5's description of a traumatic event is that it involves: '…exposure to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence' (DSM-5, 2013). Thus, traumatic stressors, or adverse childhood experiences which seem to be equally associated with DSM-5 and ICD-11 traumatic stress conditions (Hyland et al., 2020), and benevolent experiences seem to be conceptually distinct constructs.

The recent publication of ICD-11 includes two related disorders following exposure to traumatic stress. Posttraumatic Stress Disorder (PTSD) and Complex PTSD (CPTSD) are presented under the parent category of 'disorders specifically associated with stress'. ICD-11 PTSD includes three symptom clusters that describe reactions to traumatic stimuli: re-experiencing in the here and now, avoidance of threat-related stimuli, and a sense of current threat (World Health Organization [WHO], 2018). CPTSD is a broader diagnosis that includes the three PTSD symptom clusters plus an additional three symptom clusters (i.e. affect dysregulation, negative self-concept, and disturbances in relationships) that are collectively referred to as 'disturbances in self-organisation' (DSO). ICD-11 PTSD and CPTSD have been found to be equally strongly related to adverse childhood experiences (Cloitre et al., 2019) and more recent evidence suggests that traumatic life events and adverse childhood experiences can be associated with ICD-11 PTSD and CPTSD (Hyland et al., 2020). Nevertheless, the associations between benevolent childhood experiences and ICD-11 PTSD and CPTSD have never been explored before.

The first aim of this study was to assess the latent structure of adverse and benevolent childhood experiences. Factor analytic models were used to test whether adverse and benevolent childhood experiences represent opposite ends of a childhood

experience continuum, or, whether they are distinct but correlated constructs. If the latter is the case, it is important to estimate the effects of adverse experiences while controlling for benevolent experiences, and vice versa. Without doing so, the estimated associations for adverse experiences with criterion variables may be artificially high.

The second aim was to assess the associations between adverse and benevolent childhood experiences, respectively, and ICD-11 CPTSD symptoms. This can provide useful insights regarding the importance of benevolent experiences in posttraumatic distress following adversity. Literature in the area has primarily focused on the impact of adverse or traumatic childhood experiences and available interventions to help survivors of childhood adversity to reverse this impact. If benevolent experiences are distinct from adverse or traumatic childhood experiences and independently associated with posttraumatic stress problems, then available interventions may maximise the chances of recovery from the impact of childhood adversity by assessing and utilizing memories of those benevolent experiences.

The third aim was to investigate if the associations between adverse and benevolent childhood experiences and CPTSD symptoms were indirect via the total number of lifetime traumatic events. Emerging evidence suggests that people who have experienced adverse life events in childhood are more likely to experience traumatic life events in adulthood (Karatzias et al., 2017).

2. Methods

2.1. Participants and procedures

Participants were individuals who self-referred to a trauma centre in Edinburgh, Scotland (N = 275). All new patients over a 6-month recruitment period were invited to complete a set of standardised measures as part of their initial assessment. The centre welcomes patients with all different types of trauma. Ethics approval was obtained by the appropriate ethics committee. The mean age of the sample was 36 years (SD = 12.02) and there were more females (66.6%) than males. In terms of employment, 48.1% were employed, 30.6% were unemployed, 8.0% were students, 6.6% were in voluntary or sheltered employment, and the others were either retired, homemakers or did not specify employment status. Over one-third of the participants were living alone (36.5%), 6.7% were homeless, and the remainder lived with a partner, relative or friends (8.4% did not specify living arrangements). The majority of participants completed secondary (36.7%) or tertiary/further education (54.0%). Most participants reported their ethnicity as 'White' (87.5%).

2.2. Measures

2.2.1. ICD-11 PTSD and CPTSD symptoms

The International Trauma Questionnaire (ITQ; Cloitre et al., 2018, can be accessed at https://www.traumameasuresglobal.com/itq) is a self-report measure of the ICD-11 diagnoses of PTSD and CPTSD. It is comprised of two sections measuring the six symptoms of PTSD (re-experiencing, avoidance and sense of threat) and the six DSO symptoms (affective dysregulation, negative self-concept and disturbed relationships). Each cluster is measured by two items. All items are measured using a Likert scale ranging from 0 ('Not at all') to 4 ('Extremely'). For PTSD, participants are asked to rate how much they have been bothered by their symptoms in the last month. The diagnostic criteria for PTSD require participants to endorse one symptom in each cluster by a score of ≥2 ('Moderately'), as well endorse an indicator of functional impairment associated with these symptoms (constituted by a score of ≥2 in the domain(s) of social life, work-life and/or other important obligations). For the DSO symptoms, participants are instructed to report how they typically feel, think about themselves, and relate to others. For a diagnosis of CPTSD, participants must endorse one symptom in each PTSD cluster and one symptom in each DSO cluster, and evidence functional impairment in relation to the PTSD and DSO symptoms alike. The ITQ has been validated in several populations (Karatzias et al., 2017b) and the internal reliability, as measured by Cronbach's alpha (α), was acceptable in the current study; PTSD, α = .72; DSO, α = .82; full scale, α = .83.

2.2.2. Traumatic Life Events

The Life Events Checklist (LEC-5); Weathers et al. (2013) is a 17-item self-report measure designed to screen for potentially traumatic events in a respondent's lifetime. The LEC assesses exposure to 16 traumatic events (e.g. natural disaster, physical assault, life threatening illness/injury), and a 17th item 'Any other very stressful event/experience' can be used to indicate exposure to a trauma that is not listed. For each item, the participant indicated if the event 'Happened to me' (1), 'Witnessed it happening to somebody else' (2), 'Learned about it happening to someone close to me' (3), 'Part of my job' (4), 'Not sure it applies' (5), 'Doesn't apply to my experience' (6). The items were recoded into binary variables ('Happened to me' = 1, all other responses = 0) except item 14 (Sudden violent death, for example, homicide, suicide) and 15 (Sudden accidental death) where 'Happened to me/Witnessed it happening to somebody else' represented endorsement. Summed scores on the LEC, excluding the 17th item, have a possible range from 0 to 16.

2.2.3. Adverse childhood experiences

The Adverse Childhood Experiences scale (ACE; Felitti et al., 1998) is a 10-item self-report measure of negative experiences in childhood including emotional abuse ('Did a parent or other adult in the household often swear at you, insult you, put you down, or humiliate you?'), physical abuse ('Did a parent or other adult in the household often push, grab, slap, or throw something at you?), sexual abuse ('Did an adult or person at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way?'), physical neglect ('You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?'), and household dysfunction (e.g. 'Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?'). Responses were binary scored (Yes = 1, No = 0) and summed with a possible range of scores of 0 to 10. The internal reliability, as measured by Cronbach's alpha (α), was acceptable in the current study (ACE, α = .78).

2.2.4. Benevolent childhood experiences

The Benevolent Childhood Experiences scale (BCE; Narayan et al., 2018) is a 10-item self-report measure designed to quantify positive early life experiences. It measures aspects of internal perceived safety (e.g. 'Did you have beliefs that gave you comfort'), external perceived safety (e.g. 'Did you have at least one caregiver with whom you felt safe'), security and support (e.g. 'Was there an adult who could provide you with support or advice?') and positive and predictable qualities of life (e.g. 'Did you have a predictable home routine, like regular meals and a regular bedtime'). Responses were binary scored (Yes = 1, No = 0). Preliminary evaluation of the scale showed that total BCE scores correlated negatively with measures of adverse childhood experiences, stress, depression and posttraumatic stress (Narayan et al., 2018). The internal reliability, as measured by Cronbach's alpha (α), was acceptable in the current study (BCE, α = .79).

2.3. Statistical analysis

Analyses were conducted in two phases. In the first phase, the dimensionality of the ACE and BCE items were tested using two confirmatory factor analysis (CFA) models to determine if ACEs and BCEs represent a single bipolar dimension or two distinct but correlated dimensions. The first model specified one latent variable with all ACE and BCE items loading on it. This 'Childhood experiences' latent variable represented a bipolar continuous variable ranging from extreme positive to extreme negative experiences. The second model specified two correlated latent variables, with the 'Adverse childhood experiences' latent variable being measured by the ACE items and a 'Benevolent childhood experiences' latent variable being measured by the BCE items. For all models the unique variances, or measurement errors, were specified as uncorrelated. These analyses were conducted in Mplus 8.2 (Muthén & Muthén, 1998–2012) using the robust weighted least squares estimator (WLSMV) based on the tetrachoric correlation matrix of latent continuous response variables. WLSMV was used as the ACE and BCE items were binary and this method of estimation provides accurate parameter estimates, standard errors, and test-statistics for ordinal indicators (Flora & Curran, 2004; Li, 2016). The standard recommendations were followed to assess model fit (Hu & Bentler, 1998, 1999): a non-significant chi-square (χ^2), Comparative Fit Index (CFI: Bentler, 1990) and Tucker Lewis Index (TLI: Tucker & Lewis, 1973) values above .95 reflect excellent fit, while values above .90 reflect acceptable fit; Root-Mean-Square Error of Approximation with 90% confidence intervals (RMSEA 90% CI: Steiger, 1990) with values of .06 or less reflect excellent fit while values less than .08 reflect acceptable fit. The Standardized Root-Mean-Square Residual (SRMR: Jöreskog & Sörbom, 1993) was also used with values of .06 or less indicating excellent fit while values less than .08 indicating acceptable fit. The fit of the CFA models was compared using the DIFFTEST procedure in Mplus.

In the second phase, the latent variable model shown in Figure 1 was tested to assess the associations between adverse and benevolent childhood experiences and ICD-11 PTSD and DSO symptoms. The 'Adverse childhood experiences' and 'Benevolent childhood experiences' latent variables were specified to predict summed scores of the PTSD and DSO symptoms from the ITQ. Indirect paths were also added through the summed scores on the LEC-5 to represent lifetime trauma exposure. This model was also estimated based on tetrachoric and biserial correlations and the model parameters were estimated using WLSMV and model fit was assessed using the same criteria as for the CFA models. The WLSMV estimation produces linear regression coefficients for the structural part of the model. The statistical significance of the indirect effects were calculated using 95% bootstrapped bias-corrected and accelerated percentile based confidence intervals (Efron, 1987; Efron & Tibshirani, 1993). Confidence intervals for an indirect effects that does not include zero are considered to be statistically significant ($p < .05$).

At the variable level, there was a modest amount of missing data, ranging from 0.7% to 20.5%, and pairwise missingness ranged from 2.0% to 21.6%. The missing values were considered to be missing completely at random (Little's test: χ^2 (493) = 492.51, p = .498). Missing data were handled by using

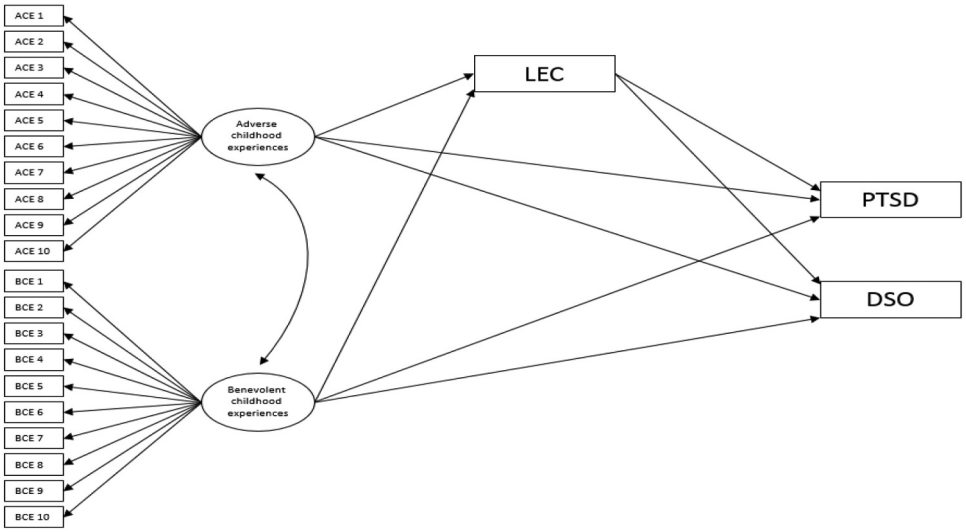

Figure 1. Latent variable model of adverse and benevolent childhood experiences and PTSD and DSO symptoms.

pairwise present data, and this approach has been shown to produce unbiased estimates and is more efficient than listwise deletion (Asparouhov & Muthén, 2010).

3. Results

The participants experienced multiple childhood adversities and traumatic life events. Scores on the summed ACE variable ranged from 0 to 10, with a mean of 4.24 (*SD* = 2.72) and median of 4.00. The most frequently endorsed ACE items were verbal abuse by a parent or caregiver (67.2%), emotional neglect by a parent or caregiver (61.7%), and severe mental illness in the family home (54.2%). The ACE variables were all positively correlated, with correlations ranging from r = .15 to r = .88 with a mean of r = .45. Scores on the summed LEC-5 variable ranged from 0 to 11 with a mean of 3.71 (*SD* = 2.42) and median of 3.00. The most frequently reported life events were 'Physical assault, for example, being attacked, hit, slapped, kicked, beaten up' (68.1%), 'Other unwanted or uncomfortable sexual experience' (57.2%) and 'Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)' (50.0%). Benevolent childhood experiences were common. Scores on the summed BCE variable ranged from 0 to 10, with a mean of 6.39 (*SD* = 2.66) and a median of 7.00. The most frequently reported experiences were 'Did you have at least one good friend?' (82.4%), 'Did you have opportunities to have a good time?' (81.7%), and 'Did you have at least one caregiver with whom you felt safe?' (79.5%). The BCE variables were all positively correlated, with correlations ranging from r = .15 to r = .70 with a mean of r = .46.

The mean scores for the summed PTSD (*M* = 16.99, *SD* = 4.89) and DSO (*M* = 17.31, *SD* = 5.46) variables were high (possible range of each score 0–24) and this was reflected in a large proportion of the sample meeting the diagnostic criteria for either PTSD or CPTSD (77.1%); specifically, 12.0% met the criteria for PTSD and 65.1% for CPTSD.

The model fit indices for the confirmatory factor analysis models of childhood experiences showed that the two-factor model provided acceptable fit (χ^2 (169) = 275.91, $p < .05$; RMSEA = .049, 90% CI .038–.059; CFI = .946; TLI = .940; SRMR = . 106) and the one-factor model did not (χ^2 (170) = 428.80, $p < .05$; RMSEA = .076, 90% CI .067–.085; CFI = .879; TLI = .855; SRMR = .142). Although the χ^2 statistic was large relative to the degrees of freedom this should not lead to the rejection of the model as the power of the chi-square test is positively related to sample size (Tanaka, 1987). The DIFFTEST (χ^2 (1) = 49.05, $p < .001$) indicated that the two-factor model was significantly better than the one-factor model. The standardised factor loadings for the 'Adverse childhood experiences' (range = .55–.93) and 'Benevolent childhood experiences' (range = .57–.88) latent variables were all high, positive and statistically significant. The correlation between the latent variables was r = −.60.

The fit of the structural model represented in Figure 1 was acceptable (χ^2 (223) = 348.36, $p < .05$; RMSEA = .045, 90% CI .036–.041; CFI = .941; TLI = .934; SRMR = .100) and the standardised estimates are reported in Table 1.

The estimates show that neither the ACE nor the BCE latent variables predicted PTSD scores directly, and only the BCE latent variable predicted DSO scores directly, with the coefficient being negative (β = −.24). This suggests that while controlling for adverse childhood experiences, increased benevolent experiences are associated with lower DSO scores. While controlling for benevolent experiences the adverse experiences do not predict PTSD or DSO directly.

Only the ACE latent variable predicted lifetime trauma exposure (β = .37), as measured by the LEC-5, and LEC-5 scores significantly predicted both

Table 1. Standardised direct and indirect regression coefficients from adverse and benevolent childhood experiences to PTSD and DSO with life events as a mediator.

	Outcome Variable		
	Direct Effects		
Predictor	LEC β (se)	PTSD β (se)	DSO β (se)
ACE	.37 (.09)***	−.01 (.10)	.12 (.10)
BCE	.05 (.11)	−.05 (.11)	−.24 (.11)*
LEC		.23 (.07)***	.16 (.07)**
R-Squared	.12	.06	.16
		Indirect Effects	
		β (95% CI)	β (95% CI)
ACE		.08 (.03 −.15)**	.06 (.01 −.12)*
BCE		.01 (−.03 −.08)	.01 (−.02 −.06)

*$p < .05$, **$p < .01$, ***$p < .001$.

PTSD (β = .23) and DSO (β = .16) scores. The indirect effects from the ACE latent variable to PTSD (β = .08) and DSO (β = .06) were also significant based on their confidence intervals. This pattern of results suggest different pathways from positive and negative childhood experiences to the constituent symptoms of CPTSD. Adverse childhood experiences operate only indirectly on PTSD and DSO symptoms through lifetime trauma exposure, and with a stronger effect for PTSD. Benevolent childhood experiences predict only DSO symptoms and this effect is direct.

4. Discussion

We set out to assess the latent structure of adverse and benevolent childhood experiences using factor analytic models. We also explored the relationship between adverse and benevolent childhood experiences and PTSD and DSO symptoms whilst exploring the possible indirect effects of lifetime traumatic experiences. The results, overall, highlighted the importance of childhood adverse experiences and lifetime polytrauamatisation, as well as benevolent childhood experiences on ICD-11 CPTSD symptoms in adulthood, among adults in a highly trauma-exposed clinical sample. Childhood adverse and benevolent experiences, as recalled in adulthood, are inversely related but empirically distinct. In addition, these two types of childhood experiences may represent risk factors for different types of adult posttraumatic stress problems; childhood adversity and lifetime polytraumatisation are specifically and independently associated with PTSD symptoms, whereas benevolent experiences are specifically and independently associated with DSO symptoms.

Childhood adversity is negatively associated with the development of adaptive emotion regulation strategies and secure relational attachments (Cicchetti & Toth, 1995; McLaughlin et al., 2011). However, our results suggest that childhood adversity may be predominantly linked in adulthood to PTSD symptoms rather than to symptoms of emotion and interpersonal dysregulation (i.e. DSOs). Further, the statistical mediation by lifetime polytraumatisation, which was associated with both childhood adversity and adult PTSD symptoms, suggests that childhood adversity may be linked to adult PTSD symptoms as a result of polyvictimization in childhood and adolescence (Finkelhor, Ormrod, & Turner, 2007a) or re-victimization across the lifespan (Finkelhor, Ormrod, & Turner, 2007b; Ports, Ford, & Merrick, 2015). Thus, treatment for PTSD with adults who have experienced extensive childhood adversity may be optimized by using approaches to trauma memory processing that address not only memories of specific focal traumatic events but also the impact of cumulative exposure to multiple types of traumatisation that occurred in adulthood as well as in childhood (Ford, 2018).

On the other hand, in clinical populations characterized by extensive (albeit variable) degrees of trauma exposure, complex forms of affective, interpersonal, and self-dysregulation that comprise DSOs may reflect the absence or insufficiency of the protective effects of early life benevolent experiences. This is not to suggest that traumatisation is unimportant in the development of DSOs, but instead that, in clinical populations in which trauma exposure and posttraumatic stress problems are the norm, positive childhood experiences and relationships may buffer the adverse effects of extensive childhood adversity. This is consistent with evidence that secure relational attachments with primary caregivers are associated with a reduced risk of psychopathology in childhood (Spinazzola, van der Kolk, & Ford, 2018) and adulthood (Lyons-Ruth, Bureau, Holmes, Easterbrooks, & Brooks, 2013; Ogle, Rubin, & Siegler, 2016). While the present study did not specifically assess benevolent experiences in early (versus middle or late) childhood, the findings are also consistent with those of a study of mothers for whom positive memories of caregivers ('angels in the nursery') appeared to be protective against the adverse effects of past childhood maltreatment on PTSD, comorbid psychopathology, and their own children's trauma exposure (Narayan, Ippen, Harris, & Lieberman, 2019).

4.1. Clinical implications

The present results have potential implications for trauma-focused interventions aiming to tackle the effects of childhood trauma. Early interventions that introduce positive childhood experiences and resources to children and adolescents exposed to interpersonal trauma, can have a buffering or even protective effect on mental health in adulthood. The

focus of treating psychological trauma in children as well as adults has been predominantly on reversing the impact of negative experiences.

Cognitive theories of traumatic stress, on which many trauma-focused treatments are based, suggest that information associated with a traumatic event is inconsistent with the information contained in an individual's core cognitive schema. When an individual is exposed to a traumatic event, the individual tries to make sense of the experience but has difficulty fully integrating it into their existing schema. Maladaptive beliefs related to the traumatic event have also been identified as a risk factor for the development of traumatic stress (Bryant, 2003). Cognitive behavioural interventions address posttraumatic distress by increasing awareness of dysfunctional trauma-related thoughts and correct or replace those thoughts with more adaptive and/or rational cognitions (Foa, Keane, Friedman, & Cohen, 2009). This process may be enhanced by drawing on material from positive experiences in childhood. Indeed, some PTSD treatment models, such as Eye Movement Desensitisation and Reprocessing (EMDR) explicitly encourage patients to reflect on personal resources while processing trauma-related memories and beliefs (Shapiro, 2017); however, a specific focus on benevolent events in childhood has not yet been systematically integrated into any evidence-based PTSD treatment model. It might also be the case, especially for symptoms of DSO, that instead of (or in addition to) focusing on reversing the effects of negative experiences, a present-centred approach to treatment might emphasize drawing on the benefits of positive experiences in childhood in current adult life (Ford, 2017). This can be a new and exciting area of future enquiry to maximise the benefits of interventions for psychological trauma.

4.2. Limitations

There are several limitations in the current study. The analyses were based on a clinical sample with severe traumatic symptomatology meaning that there was an increased likelihood of Type 2 errors occurring. Furthermore, the predominately female composition of the sample and high level of exposure to childhood trauma limits the generalizability of findings to the wider trauma population. This is reflected in the high rates of CPTSD identified in the present study.

In addition, self-report assessments rather than clinician-administered interviews were employed in the present study. It is possible that the self-report nature of the data may have biased results and replication with clinician-administered measures would be beneficial to confirm current findings. The cross-sectional nature of our study is another major limitation. The data do not identify the exact timing of the positive and negative experiences in childhood and lifetime traumatic events. We, therefore, cannot determine whether the childhood adversity experiences preceded, occurred concurrently with, or followed the traumatic life events.

It also is possible that the associations of lifetime trauma exposure with childhood adversity and PTSD symptoms may be due to item overlap between the adversity and traumatic events measures. Thus, the statistical mediation of the relationship between childhood adversity and PTSD symptoms by the lifetime number of types of potentially traumatic events may be somewhat over-stated due to possible redundant endorsement of the same 'events' on both the adversity and trauma exposure measures, and may represent either concurrent polyvictimization (Finkelhor et al., 2007a) or prospective re-victimization (Finkelhor et al., 2007b). Research is needed to examine the impact of different sequencings of discrete adversity types and traumatic stressors across childhood (Dierkhising, Ford, Branson, Grasso, & Lee, 2018) and lifetime (Ports et al., 2015).

Finally, the reliance on retrospective recall of childhood adversity and lifetime traumatic event exposure is an important limitation. The recollection of childhood adverse or traumatic events that occurred decades previously has been shown to be at best tenuously related to actually documented events (Baldwin, Reuben, Newbury, & Danese, 2019). Thus, the present study's findings do not warrant an inference of causation of PTSD or DSO symptoms by childhood adversity (or benevolent events) and lifetime trauma exposure. However, retrospectively recalled childhood adversity and other potentially traumatic events may still play an important role in informing treatment (e.g. identifying focal life events and experiences for trauma memory, cognitive, or affective processing). As summarized by Widom (2019): 'From a clinical perspective, these … findings do not negate the importance of listening to what the patient says, but they suggest that caution should be used in assuming that … retrospective reports accurately represent experiences, rather than perception, interpretations, or existential recollections' (p. E2).

In conclusion, our results highlight the importance of positive experiences in the expression of traumatic stress and introduce new possibilities for interventions that aim to enable recovery in people who have been affected by adverse traumatic life events in childhood. There is clearly a need for further developmental research exploring how certain experiences, positive or negative, shape people's health and wellbeing at different developmental stages.

Disclosure statement

No potential conflict of interest was reported by the authors.

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