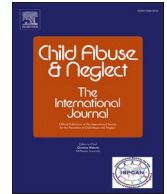




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Child Abuse & Neglect

journal homepage: www.elsevier.com/locate/chiabuneg

The well-being of young adults: The implications of multi-type child maltreatment and the mediating role of betrayal trauma

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ARTICLE INFO

Keywords:

Child maltreatment
Betrayal trauma
Well-being
Young adults

ABSTRACT

Background: Research indicates that the nature of the relationship between a victim-survivor and perpetrator of child maltreatment can influence well-being experienced during young adulthood. However, further research is required to substantiate the possible mediating role of betrayal trauma following child maltreatment.

Objective: To explore the relationship between child maltreatment and psychological well-being experienced during young adulthood by examining the extent of maltreatment, the importance of the type of perpetrator, and the potential mediating role of betrayal trauma following child maltreatment.

Participants and setting: The self-selected sample comprised 468 young adults (aged 18–25 years; $M = 21.74$ years, $SD = 2.47$) from Australia and internationally.

Method: Information regarding participants' current well-being, the extent of enduring five types of maltreatment (witnessing family violence, neglect, physical abuse, psychological abuse, and sexual abuse) by their mother, father and other adults during childhood, multi-type maltreatment, and severity of betrayal trauma were obtained via an online survey.

Results: Using multiple regression analysis, it was found that higher levels of multi-type maltreatment were associated with poorer current well-being. Maltreatment by one's mother or father predicted poorer well-being, maltreatment by another adult did not. Hierarchical regressions revealed young adults' sense of betrayal trauma in close relationships partially mediated the relationship between current well-being and child maltreatment by one's mother, father, and another adult.

Conclusion: Findings show that the extent of child maltreatment experienced, one's sense of betrayal, and the relationship of the child/adolescent to the perpetrator can influence well-being experienced during young adulthood. These findings highlight the therapeutic benefit of clinicians supporting young adults who have endured child maltreatment to process betrayal trauma, to improve their well-being.

Preventing child maltreatment is essential given the significant ramifications it has on victim-survivors' well-being. However, little is known about the impacts of this during young adulthood. Compared to other developmental periods, young adults—individuals aged between 18 and 25 years who are transitioning to adulthood—typically experience various unique developmental challenges (e.

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<https://doi.org/10.1016/j.chiabu.2024.106840>

Received 26 January 2024; Received in revised form 24 April 2024; Accepted 3 May 2024

Available online 10 May 2024

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g., establishing self-identity; Arnett et al., 2014) and high levels of psychological distress (Australian Bureau of Statistics, 2022) that can be exacerbated due to child maltreatment (Dovran et al., 2016). Child maltreatment comprises witnessing family violence, enduring neglect, and psychological, physical, or sexual abuse before age 18 (Carr et al., 2020; World Health Organisation, 2022). The Australian Child Maltreatment Study (ACMS), a population-representative study of five types of child maltreatment, found that among individuals aged 16–24 years, 21.0 % of this age group reported experiencing one maltreatment type, while 40.2 % reported experiencing more than one type (Higgins et al., 2023). Furthermore, according to Jankovic et al. (2022), young adults who experienced child maltreatment reported poorer current psychological well-being than those who did not. Thus, it is crucial to examine the repercussions of maltreatment on young adults' well-being. However, little is known about the extent that well-being during young adulthood is associated with the type of perpetrator and violation of trust endured from child maltreatment, hence the focus of the current study. Well-being is multi-dimensional and does not simply involve the absence of negative emotional states. Similar to Jankovic et al. (2022), in the current study we measured psychological well-being via the PERMA framework, comprising Positive emotions, Engagement, Relationships, Meaning, and Accomplishment (Seligman, 2012).

1. Multi-type maltreatment

Child maltreatment is detrimental to one's well-being, and therefore, it is important to consider that individuals typically endure more than one form of child maltreatment, known as multi-type maltreatment (Higgins et al., 2023; Higgins & McCabe, 2001a). According to the ACMS, more children experienced multi-type maltreatment (39.4 %) than a single type (22.8 %), with emotional abuse, physical abuse and witnessing family violence being most common (Higgins et al., 2023). Additionally, women and gender-diverse individuals were more likely to report having experienced multi-type maltreatment than males (Higgins et al., 2024). Thus, psychological well-being outcomes cannot be attributed to a single form of maltreatment, and multi-type maltreatment should be considered to ensure that findings accurately reflect young adult victim-survivors' experiences (Higgins et al., 2023).

The long-term burden of child maltreatment is associated with severe health issues later in life (see Carr et al., 2020; Dovran et al., 2016; Ibrahim et al., 2018; Scott et al., 2023). Research repeatedly indicates that multi-type maltreatment, compared to a single type, has significant adverse effects on well-being (Price-Robertson et al., 2013). Individuals who endured multi-type maltreatment often report poorer adjustment later in life (Higgins et al., 2003), lower self-esteem, and increased symptoms of depression and suicidality than those who experienced a single type of maltreatment (Arata et al., 2005). The ACMS revealed that mental health disorders are most prevalent among adults who have experienced multi-type maltreatment (54.8 %) than those who have experienced a single maltreatment type (36.2 %) or no maltreatment (21.6 %; Scott et al., 2023). Multi-type maltreatment victim-survivors are three times more likely to have anxiety, depression, and alcohol use disorder and five times more likely to have post-traumatic stress disorder (Scott et al., 2023). High-risk behaviours such as binge drinking, cigarette smoking, obesity, self-harm, and suicide attempts were also significantly associated with multi-type maltreatment (Lawrence et al., 2023). While these findings highlight the importance of examining the accumulative effect of various types of maltreatment on well-being experienced during adulthood, they do not specifically outline the extent that it impacts well-being during young adulthood in particular. This knowledge is integral to better understanding the challenges associated with multi-type maltreatment that may be hindering young adults from experiencing optimal well-being, therefore this is an important aspect considered in the current study.

2. Perpetrators of child maltreatment

A child's well-being following maltreatment may depend on their relationship with the perpetrator; however, research examining this is scarce (Jankovic et al., 2022). Although any adult can perpetrate child maltreatment, children most commonly report enduring neglect, and physical and emotional abuse from their biological parents (Hurren et al., 2018). Suldo and Fefer (2013) indicated that warmth and emotional support from parents are associated with subjective well-being among adolescents, demonstrating the importance of examining the link between child maltreatment perpetrators and well-being during young adulthood. Biological mothers are often reported as perpetrators (Hurren et al., 2018) despite being considered most accountable for a child's well-being, as they are typically the primary caregivers (Child Family Community Australia [CFCA], 2014). Moreover, Videon (2005) asserted that fathers are equally as important as mothers to a child's well-being, as adolescents who reported greater relationship satisfaction with their father typically experienced fewer depressive symptoms than those less satisfied, regardless of the adolescent-mother relationship. Thus, relationships with mothers and fathers can be important for well-being. Jankovic et al. (2022) found that young adults with greater experiences of child maltreatment by their mother or father reported poorer current well-being, however, maltreatment by another adult was not associated with well-being. In contrast, Kiser et al. (2014) found that youth who experienced sexual and physical abuse by a non-caregiver reported more post-traumatic symptoms and internalising behaviour problems than those maltreated by a caregiver, arguing that clinicians should consider the detrimental effects of child maltreatment by another adult on well-being. The contradicting findings of well-being outcomes following maltreatment by different perpetrators may be due to inconsistencies in the well-being measurements that were used, as well as the child maltreatment types that are considered. For example, Kiser et al. (2014) only considered physical and sexual abuse, as opposed to multi-type maltreatment which enhances the risk of mental health problems experienced during young adulthood (Scott et al., 2023). Nonetheless, this warrants further research to replicate these findings and consider the extent that the type of perpetrator and exposure to multiple types of child maltreatment can influence well-being outcomes (Jankovic et al., 2022). Furthermore, due to a paucity of research, it is also unclear whether other factors such as the extent that a victim-survivor's trust was betrayed by the perpetrator may also shape their experiences of future well-being (Jankovic et al., 2022).

3. The mediating role of betrayal trauma

An important factor potentially influencing well-being during young adulthood is betrayal trauma endured following child maltreatment, therefore, the current study explores the role of betrayal (Jankovic et al., 2022). Betrayal trauma theory provides an interpersonal lens through which the impacts of child maltreatment can be understood (Hocking et al., 2016). It posits that children endure trauma upon experiencing a severe violation of trust when maltreated by their caregivers, whom they depend on for survival and safety (Gobin & Freyd, 2014). To prevent the maltreatment from violating their bond and reduce disappointment in their carer, the child may disconnect from the trauma by subconsciously withdrawing knowledge and emotions associated with the betrayal, known as betrayal blindness (Birrell & Freyd, 2006; Kerig et al., 2012). Thus, victim-survivors may develop flawed abilities to trust others, potentially impacting adult relationships (Gobin & Freyd, 2014) and distorting their view of themselves and their world (Tedeschi & Calhoun, 2004). Consequently, children are forced to re-evaluate their views of life, shifting from believing the world is benevolent to incorporating a reality where trauma occurs (Janoff-Bulman, 1992), potentially influencing one's future well-being (Jankovic et al., 2022).

Although the well-being of victim-survivors can depend on the relational closeness of the child to the perpetrator (Delker & Freyd, 2014; Freyd et al., 2007), it is unclear whether betrayal trauma explains (i.e., mediates) the nature of the relationship between child maltreatment and well-being. Hurren et al. (2018) found that of the substantiated reports of child maltreatment made to the statutory authority in the state of Queensland (Australia), the perpetrators are often biological parents (78.5 %). This is concerning given that individuals maltreated by their parents often endure a greater sense of betrayal and PTSD than individuals maltreated by another adult (Delker & Freyd, 2014; Lev-Wiesel et al., 2004). Compared to having been maltreated by someone not close, betrayal trauma from maltreatment by someone close often leads to more significant violation of trust and more strongly predicts individuals experiencing alexithymia and dissociation (Goldsmith et al., 2012), as well as anxiety, depression, and PTSD during young adulthood (Tang & Freyd, 2012). Therefore, betrayal trauma may be necessary for understanding well-being following child maltreatment (Jankovic et al., 2022), although further research is required to evaluate the potential mediating role of betrayal trauma.

4. The current study

The aim of this study was to examine the relationship between child maltreatment and current psychological well-being among young adults, including understanding the mediating effects of betrayal trauma. Child maltreatment was investigated in terms of the frequency of experiencing five types of abuse (physical abuse, psychological abuse, sexual abuse, neglect, and witnessing family violence) perpetrated by the individual's mother, father, or another adult; however, for witnessing family violence, we did not measure which parent (or whether both) perpetrated it. Furthermore, we examined whether individuals experienced multiple types of maltreatment (i.e., multi-type maltreatment). It was predicted that young adults who report:

1. a greater number of different types of child maltreatment (i.e., multi-type maltreatment) will report poorer current psychological well-being scores than those with fewer maltreatment experiences (see Fig. 1);
2. a greater frequency of any type of child maltreatment by their mother or father will have poorer current psychological well-being scores than those who report a lower frequency of maltreatment or are maltreated by another adult (see Fig. 1);
3. greater frequency of any type of child maltreatment by one's mother, father, or another adult will predict greater betrayal trauma and, subsequently, poorer current psychological well-being scores, in which betrayal trauma may mediate the relationship between child maltreatment and well-being (see Fig. 2).

5. Method

5.1. Participants

The study included an international community sample of 736 young adults. The current study is part of a broader study investigating posttraumatic growth, child maltreatment and well-being, therefore, following data screening, the current sample included 468 individuals (365 females) aged between 18 and 25 ($M = 21.74$, $SD = 2.47$) and focused on the relationship between maltreatment, subsequent betrayal trauma and well-being. Participants were recruited online and indicated being primarily from Australia (59.6 %).

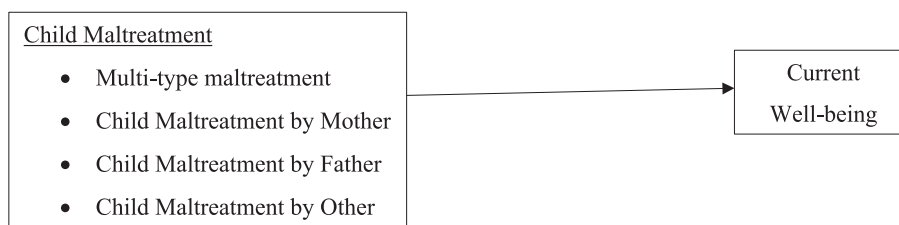


Fig. 1. Expected model of the extent that child maltreatment predicts current well-being among young adults.

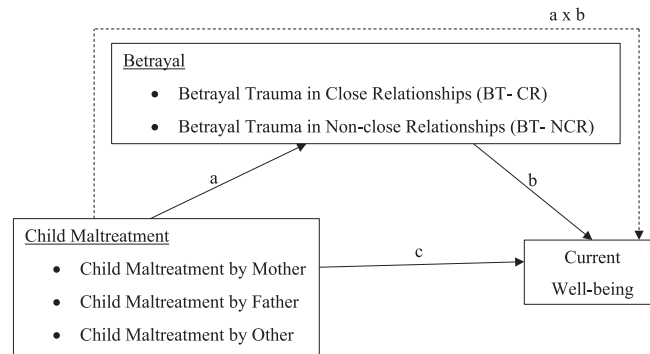


Fig. 2. Expected model illustrating the total effects of child maltreatment on current well-being (path c), and the mediation effects of betrayal trauma (paths a and b), among young adults.

They were invited to complete an anonymous survey online through Qualtrics. The study was advertised via social networks on Facebook (including paid boosted posts), Twitter, LinkedIn, and Instagram to include an international sample. Additionally, academic lecturers in tertiary education promoted the study to undergraduate psychology students (on campus and online nationally) who attend a university in Melbourne, Australia.

The inclusion criteria comprised providing informed consent, being 18–25 years old and reporting proficient English language abilities. The study was approved by the authors' institutional human research ethics committee HREC (approval number: 2023-3054H). A-priori power analyses (power = 80 %, $\alpha = 0.05$) indicated that a sample size of 153 participants was required to detect moderate analysis effects. Therefore, a total sample size of 468 respondents was sufficient for the multiple regressions and mediation analyses to detect moderate effect sizes. This is consistent with Jankovic et al. (2022) obtaining small to moderate effect sizes with 537 participants.

5.2. Measures

5.2.1. Demographics

Participants answered questions on age, residency, English proficiency, gender, sexual identity, sex assigned at birth, relationship status, and highest education level.

5.2.2. PERMA-profiler- overall well-being subscale (Butler & Kern, 2016)

The overall well-being subscale assesses current experiences of psychological well-being. It comprises one happiness item and 15 items measuring the positive emotions, engagement, relationships, meaning, and accomplishment (PERMA) dimensions (Butler & Kern, 2016). Participants indicated the extent to which the items reflect their well-being (e.g., How often do you feel joyful?) using an 11-point frequency rating scale, from 0 (*never/terrible*) to 10 (*always/completely*). The overall well-being score was calculated as the mean of the 16 items, with higher scores denoting greater current psychological well-being. The subscale displayed strong internal consistency ($\alpha = 0.95$) in the current study, consistent with previous research ($\alpha = 0.93$; Jankovic et al., 2022).

5.2.3. Brief betrayal trauma survey (BBTS; Goldberg & Freyd, 2006)

The 12-item BBTS measures the severity of betrayal trauma experienced following maltreatment by someone close, not close, or from non-interpersonal events. Participants indicated the frequency of betrayal experienced (before age 18) and, if interpersonal, the relational closeness with the perpetrator by rating their responses via a 3-point frequency scale from 0 (*Never*), 1 (*one or two times*), to 2 (*More than that*). Items referring to having experienced a non-interpersonal trauma or maltreatment by 'someone not close' (e.g., you were made to have sexual contact with someone by whom you were not close) were summed to compute the Betrayal Trauma in Non-close Relationships (BT- NCR) subscale. Items referring to maltreatment by 'someone close' were summed to compute a Betrayal Trauma in Close Relationships (BT- CR) subscale, higher scores reflect a greater sense of betrayal trauma in either 'non-close' or 'close relationships'. The BBTS has good construct validity and test-retest reliability (Goldberg & Freyd, 2006). The BT- CR subscale displayed moderate internal consistency in the current study ($\alpha = 0.76$) while the BT- NCR subscale displayed poor internal consistency ($\alpha = 0.53$).

5.2.4. Comprehensive child maltreatment scale (CCMS) for adults (Higgins & McCabe, 2001b)

The CCMS assesses self-reported child maltreatment experiences before age 18, utilising 22 items. Using a 5-point frequency scale from 0 (*never/almost never*) to 4 (*very frequently*), participants rated the frequency that they endured witnessing family violence, neglect, and physical or psychological abuse, indicating whether it was by their mother, father, or another adult (18 years or older). Sexual abuse items were rated on a 6-point scale from 0 (*never*) to 5 (*>20 times*). To form three perpetrator child maltreatment subscales, scores for child maltreatment perpetrated by the mother, father, and other adults were calculated by summing the physical, sexual, psychological, and neglect items for each perpetrator, consistent with Jankovic et al. (2022). Higher scores reflect greater

frequency of maltreatment by each perpetrator.

The CCMS is highly correlated ($r = 0.86$) with the Child Abuse Trauma (CAT), and thus, has strong concurrent and criterion validity (Higgins & McCabe, 2001b). The current study exhibited strong internal consistency for Mother ($\alpha = 0.85$), Father ($\alpha = 0.90$), and Other ($\alpha = 0.93$) perpetrators, consistent with Jankovic et al. (2022).

5.2.4.1.1. Multi-type maltreatment. The CCMS was used to assess whether individuals experienced more than one type of child maltreatment (regardless of the perpetrator). Items for each maltreatment type (physical, sexual, psychological, neglect, and witnessing family violence) were summed to create the respective maltreatment type subscales. Scores were coded as 0 = no maltreatment, 1 = experienced that form of maltreatment. Consistent with Higgins et al. (2023), the child maltreatment type subscales were then summed to create the multi-type maltreatment score, from 0 = no maltreatment to 5 = all types. The multi-type maltreatment subscale displayed moderate internal consistency ($\alpha = 0.60$).

5.3. Procedure

Upon consenting, participants completed an online 20-minute Qualtrics survey at a convenient time and location. Participants were informed that participation is anonymous and voluntary. Due to the sensitive nature of the survey, trigger warnings were included before and after the betrayal trauma and maltreatment questions; support numbers were accessible throughout these sections. Participants completed the survey in fixed order (see measures), to enable access to content warnings and support information.

Upon completion of the survey, participants could enter a prize draw to win one of four AUD\$50 Visa gift vouchers. Then, participants read a debriefing statement with contact details for support services.

5.4. Statistical analyses

Data were analysed using IBM SPSS Statistics Version 29, indirect effects were calculated using the Sobel Test (Preacher & Leonardelli, 2003). First, assumption checks and data screening were conducted. Zero-order correlations were computed to identify interrelationships between the study variables. A linear regression was used to assess the extent to which multi-type maltreatment predicted current psychological well-being. A multiple regression was computed to measure the extent to which child maltreatment by mother, father, and other adult, predicted well-being. Following Baron and Kenny (1986), six separate mediation analyses were conducted to examine the extent that betrayal trauma in close or non-close relationships mediates the relationship between well-being and child maltreatment by mother, father, or another adult. All analyses were based on $\alpha < 0.05$.

6. Results

6.1. Data screening

The data screening process comprised identifying missing values and ensuring the analysis assumptions were met. From the initial sample ($N = 736$), 25 % did not complete the questionnaire, having dropped out, and 6 % of participants did not meet the eligibility criteria. Cases were deleted due to missing >50 % of each of the betrayal trauma subscales or the child maltreatment type subscales. Consistent with Haslam et al. (2023), given the low non-response rate, if >50 % of the scales were validly completed, blank responses were conservatively categorised as having not experienced the relevant maltreatment type.

6.2. Descriptive statistics

Table 1 presents the descriptive statistics outlining the demographic information for the sample ($N = 468$). This sample of young adults had a mean age of 21.74 years ($SD = 2.47$) and ranged from 18 to 25. There were 365 cisgender females, 49 cisgender males, and 23 participants identifying as non-binary.

The descriptive statistics and correlations for the study variables are presented in Table 2. As displayed, the degree of child maltreatment experienced by young adults in this sample ranged from none to severe/frequent, representing a wide range of maltreatment experiences. There were moderate, significant positive correlations among the child maltreatment perpetrator variables, illustrating the likelihood for child maltreatment to be endured from various perpetrators. The perpetrator child maltreatment variables had moderate significant positive correlations with multi-type maltreatment, indicating the tendency for individuals to experience various types of child maltreatment by perpetrators. Each child maltreatment variable had weak to moderate significant negative correlations with well-being. There were strong significant positive correlations between BT-CR and the child maltreatment variables, BT-NCR had strong significant correlations with child maltreatment by another adult.

6.3. Multi-type maltreatment and child maltreatment by perpetrator predicting well-being

Multi-type maltreatment significantly predicted poorer current well-being, $F(1, 466) = 38.66$ $p < .001$, adjusted $R^2 = 0.08$, accounting for 8 % of the variation in well-being. The full model comprising child maltreatment perpetrated by mother, father, and other

Table 1
Demographic information for the sample.

Demographics	N	Percentage
Gender		
Female	365	78.0
Male	49	10.5
Non-binary	23	4.9
Ethnicity		
Caucasian	361	77.0
Asian	51	10.9
African	7	1.5
Hispanic, Latino or Spanish	4	0.9
Indigenous Australian	3	0.6
Middle Eastern or North African	9	1.9
Other	9	1.9
No response	9	1.9
Education ^a		
Completed some secondary school	28	6.0
Completed year 12	159	24.0
Certificate III/IV	33	7.1
Diploma/adv. diploma	33	7.1
Bachelor degree	137	29.3
Graduate diploma/graduate certificate	15	3.2
Postgraduate degree	44	9.4
Relationship status		
Single	211	45.1
Dating	105	22.4
Committed, not living together	58	12.4
Polyamorous	7	1.5
De-facto/married	56	12.0

Note. N = total number of responses.

^a Percentages correspond to the highest level of education completed.

adults significantly predicted poorer current well-being, $F(4, 464) = 25.35, p < .001$, adjusted $R^2 = 0.14$, collectively accounting for 14 % of the variation of well-being. In terms of unique predictors, a greater extent of child maltreatment by one's mother ($B = -0.05, p < .001$) or father ($B = -0.03, p < .001$) significantly predicted poorer well-being, whereas maltreatment by another adult ($B = -0.01, p = .095$) did not significantly uniquely predict well-being.

6.4. The role of betrayal trauma in mediating the relationship between child maltreatment and well-being

Mediation analyses were conducted (see Fig. 2) using a linear regression (testing path a) and a hierarchical regression¹ (testing paths b, and c). These examined the mediating effect of betrayal trauma in close relationships (BT- CR) and non-close relationships (BT- NCR) on the association between child maltreatment by Mother (MothCM), Father (FathCM), Other adult (OtherCM) and current well-being (Overall Wellbeing). Before proceeding with the mediation analyses, the child maltreatment predictors were confirmed to significantly predict the betrayal trauma variables, Table 3 presents the mediation results.

6.5. Child maltreatment by mother and mediators

6.5.1. BT- CR

In step 1 of the hierarchical regression, child maltreatment by mother significantly predicted poorer wellbeing, $F(1,464) = 56.49, p < .001$, explaining 11 % of the variation in well-being. In step 2, BT- CR ($b = -0.13, p < .001$) significantly added to the prediction of well-being, $F(2,463) = 35.37, p < .001$, resulting in a small but significant increase of 0.02 in $R^2, F_{change} = 12.81, p < .001$. Thus, BT- CR partially mediated the relationship between child maltreatment by mother and well-being, a Sobel Test revealed that this was a significant indirect effect ($B = -0.02, p = .001, 95\% \text{ CI } [-0.03, -0.01]$).

6.5.2. BT- NCR

In step 1, child maltreatment by mother significantly predicted poorer wellbeing, $F(1,464) = 56.49, p < .001$, explaining 11 % of the variation in well-being. In step 2, BT- NCR ($b = -0.11, p = .035$) significantly added to the prediction of well-being, $F(2,463) = 30.70, p < .001$, resulting in a small but significant increase of 0.01 in $R^2, F_{change} = 4.49, p = .035$. However, a Sobel Test revealed that BT- NCR did not have significant indirect effects ($B = -0.01, p = .661, 95\% \text{ CI } [-0.03, -0.02]$).

¹ Computing a standard regression and then a hierarchical regression computed the same results as three separate standard regressions did, which was initially suggested by Baron and Kenny (1986). Thus, the current method was used for efficiency.

Table 2

Descriptives and intercorrelations for the scale measures.

Variable	α	M (SD)	Possible range	Observed range	1	2	3	4	5	6	7
1. Overall WB	0.95	5.75 (1.74)	0–10	0.38–9.8***	–						
2. MTM	0.60	3.53 (1.27)	0–5	0–5	–0.28***	–					
3. MothCM	0.85	7.86 (8.18)	0–81	0–50	–0.33***	0.52***	–				
4. FathCM	0.90	8.38 (10.45)	0–91	0–81	–0.27***	0.49***	0.34***	–			
5. OtherCM	0.93	8.71 (14.03)	0–91	0–78	–0.23***	0.50***	0.36***	0.39***	–		
6. Wit. FV	0.70	2.85 (2.18)	0–8	0–8	–0.21***	0.58***	0.41***	0.42***	0.29***	–	
7. BT- CR	0.76	2.39 (2.43)	0–10	0–10	–0.29***	0.65***	0.47***	0.55***	0.50***	0.53***	–
8. BT- NCR	0.53	1.39 (1.52)	0–10	0–7	–0.17***	0.34***	0.25***	0.35***	0.55***	0.23***	0.54***

Note. $N = 468$. WB = Well-being; MTM = Multi-type maltreatment; MothCM = Mother perpetrated child maltreatment; FathCM = Father perpetrated child maltreatment; OtherCM = Other adult perpetrated child maltreatment; Wit. FV = Witnessing Family Violence; BT- CR = Betrayal Trauma in Close Relationships; BT- NCR = Betrayal Trauma in Non-close Relationships; M = Mean; SD = Standard Deviation.

* $p < .05$.

** $p < .01$.

*** $p < .001$ (2-tailed).

Table 3
Mediation effect of betrayal trauma on the relationship between well-being and child maltreatment by mother, father, and other adult.

Child maltreatment	Mediator	Effect of IV on mediator (a) ^b			Total effect (c)		Direct effect (c')		Indirect effect (ab) ^a		
		F	B (SE)	adj. R ²	B (SE)	adj. R ²	B (SE)	adj. R ²	B (SE)	95 % CI Lower upper	
MothCM	BT- CR	132.72***	0.14 (0.01)***	0.22	-0.07 (0.01)***	0.11	-0.05 (0.01)***	0.13	-0.02 (0.01)**	-0.03	-0.01
	BT- NCR	31.06***	0.05 (0.01)***	0.06	-0.07 (0.01)***	0.11	-0.07 (0.05)***	0.11	-0.01 (<0.01)	-0.01	<0.01
FathCM	BT- CR	199.01***	0.13 (0.01)***	0.30	-0.05 (0.01)***	0.07	-0.03 (0.01)**	0.10	-0.02 (0.01)***	-0.03	-0.01
	BT- NCR	66.15***	0.05 (0.01)***	0.12	-0.05 (0.01)***	0.07	-0.04 (0.01)***	0.08	-0.01 (<0.01)	-0.01	<0.01
OtherCM	BT- CR	56.56***	0.09 (0.01)***	0.25	-0.03 (0.01)***	0.05	-0.01 (0.01)*	0.09	-0.02 (<0.01)***	-0.02	-0.01
	BT- NCR	156.56***	0.06 (<0.01)***	0.30	-0.03 (0.01)***	0.05	-0.03 (0.01)***	0.05	<-0.01 (<0.01)	-0.01	<0.01

Note. $N = 468$. adj. $R^2 =$ adjusted R^2 , $B =$ unstandardized regression coefficient, $SE =$ standard error. MothCM = Mother perpetrated child maltreatment; FathCM = Father perpetrated child maltreatment; OtherCM = Other adult perpetrated child maltreatment. BT- CR = Betrayal Trauma in Close Relationships; BT- NCR = Betrayal Trauma in Non-close Relationships. All coefficients reported are unstandardized slopes with the corresponding standard error of the slope in parentheses.

* $p < .05$.

** $p < .01$.

*** $p < .001$ (2-tailed).

^a Indirect effect was calculated using the Sobel Test (Preacher & Leonardelli, 2003).

^b The degrees of freedom (df_{reg} , df_{res}) for the F statistic for all analyses of path 'a' = 1, 464.

6.6. Child maltreatment by father and mediators

6.6.1. BT- CR

In step 1, child maltreatment by father significantly predicted poorer well-being, $F(1,464) = 37.90, p < .001$, explaining 7 % of the variation in well-being. In step 2, BT-CR ($b = -0.15, p < .001$) significantly added to the prediction of well-being, $F(2,463) = 26.89, p < .001$, resulting in a small but significant increase of 0.03 in $R^2, F_{change} = 14.77, p < .001$. BT-CR partially mediated the relationship between child maltreatment by father and well-being ($B = -0.02, p < .001, 95\% \text{ CI} [-0.03, -0.01]$).

6.6.2. BT- NCR

In step 1, child maltreatment by father significantly predicted poorer well-being, $F(1,464) = 37.90, p < .001$, explaining 7 % of the variation in well-being. In step 2, BT- NCR ($b = -0.10, p = .072$) did not significantly increase $R^2, F_{change} = 3.25, p = .072$, or significantly add to the prediction of well-being, $F(2,463) = 20.66, p < .001$. Child maltreatment by father ($b = -0.04, p = .008$) remained a significant predictor, thus, BT- NCR was not a mediator.

6.7. Child maltreatment by another adult and mediators

6.7.1. BT- CR

In step 1, child maltreatment by another adult significantly predicted poorer well-being, $F(1,464) = 26.71, p < .001$, explaining 5 % of the variation in well-being. In step 2, BT- CR ($b = -0.17, p < .001$) significantly added to the prediction of well-being $F(2,463) = 24.382, p < .001$, resulting in a small but significant increase of 0.04 in $R^2, F_{change} = 20.91, p < .001$. Thus, BT- CR partially mediated the relationship between child maltreatment by another adult ($B = -0.02, p < .001, 95\% \text{ CI} [-0.02, -0.01]$).

6.7.2. BT- NCR

In step 1, child maltreatment by another adult significantly predicted poorer well-being, $F(1,464) = 26.71, p < .001$, explaining 5 % of the variation in well-being. In step 2, BT- NCR ($b = -0.07, p = .234$) did not significantly increase $R^2, F_{change} = 1.42, p = .234$, or significantly add to the prediction of well-being, $F(2,463) = 14.08, p < .001$. Child maltreatment by another adult ($b = -0.03, p < .001$) remained a significant predictor, thus, BT- NCR was not a mediator.

7. Discussion

The aim of this study was to understand the ramifications of child maltreatment on young adults' psychological well-being, by considering the perpetrator of child maltreatment, multi-type maltreatment, and the role of betrayal trauma.

The first prediction that young adults who experienced a greater number of different types of child maltreatment (i.e., multi-type maltreatment) would report poorer current psychological well-being was supported. These findings are consistent with studies highlighting the accumulative effects and long-term burden of experiencing various types of child maltreatment on well-being (Arata et al., 2005; Higgins et al., 2003; Higgins et al., 2023). Well-being may be hindered by developing mental health conditions (Scott et al., 2023) or performing high-risk behaviours, following multi-type maltreatment (Lawrence et al., 2023). This exemplifies the importance of supporting young adult victim-survivors following multi-type maltreatment, given their increased risk of experiencing poorer well-being.

The second prediction that individuals who report experiencing a greater extent of child maltreatment by their parents will report poorer current well-being than those with fewer maltreatment experiences or maltreatment by an adult other than their parents, was supported. Both maternal and paternal child maltreatment predicted well-being, but not maltreatment by another adult. These findings are consistent with Jankovic et al. (2022), who argued that the severity of betrayal trauma from parents potentially explains this pattern. To our knowledge, the current study is the first to establish these findings among an international sample of young adults and therefore, current findings validate results by Jankovic et al. (2022) across various ethnic populations. Nonetheless, these findings contradict Kiser et al. (2014), who found that abuse by non-caregiver perpetrators (i.e., other adult) significantly burden youth's well-being. The contradictory results may stem from different developmental ages of the samples, a child-adolescent sample was used in Kiser et al. (2014). Thus, it is possible that younger participants may be more vulnerable to experiencing betrayal blindness to protect their relationship with a carer, whom they rely on (Birrell & Freyd, 2006). Whereas, young adults have greater developmental maturity and independence and therefore potentially have a reduced need to protect their relationships with caregivers and a greater capacity to perceive the harmful nature of the child maltreatment.

Moreover, the current study's finding is plausible given that child maltreatment perpetrators are typically biological parents (Hurren et al., 2018), who are highly responsible for children's safety and well-being (CFCA, 2014; Suldo & Fefer, 2013; Videon, 2005). Betrayal trauma theory posits that maltreatment by a caregiver can severely violate a child's trust and impair their ability to trust others (Gobin & Freyd, 2014) by shattering their assumptions of being safe (Janoff-Bulman, 1992). The consequences of betrayal trauma can be detrimental to one's well-being during young adulthood, as research shows that individuals who were maltreated by their parents report greater betrayal trauma and PTSD symptoms than those maltreated by other adults (Delker & Freyd, 2014; Lev-Wiesel et al., 2004). This emphasises the importance of the parent-child relationship for an individual's future well-being.

The third prediction, that betrayal trauma will mediate the relationship between child maltreatment and well-being, was partially supported: greater severity of betrayal trauma in close relationships had a mediating effect, but not in non-close relationships. The partial mediation indicates that in addition to having experienced a greater extent of child maltreatment, greater relational closeness to

the perpetrator (either a parent or another adult) and subsequent betrayal trauma may partly explain the ramifications of child maltreatment on well-being. Although these specific relationships have not been explored by previous research, the novel findings are consistent with studies revealing that poorer well-being outcomes (e.g., anxiety, depression, and PTSD) often occur when individuals experience betrayal trauma from being maltreated by someone they are relationally close to, rather than someone not close (Goldsmith et al., 2012; Tang & Freyd, 2012). According to Birrell and Freyd (2006), relational closeness and subsequent well-being depend on the strength of the child's bond with the perpetrator, hence, violation of this bond is greater when maltreated by someone close than not close. Alternatively, in non-close relationship contexts (e.g., stranger perpetrator), maltreatment specifically may be more critical than the victim-perpetrator relationship as betrayal trauma may not be as profound, and therefore, has fewer psychological costs on well-being during young adulthood (Tang & Freyd, 2012). This highlights the importance of relationships in healing from child maltreatment (Birrell & Freyd, 2006).

7.1. Strengths

The study's primary strength is its contribution to our understanding of the impact of child maltreatment on well-being experienced during young adulthood, illustrating the implications of the victim-perpetrator relationship and betrayal trauma on future well-being. The study empirically supports Jankovic et al.'s (2022) findings by indicating the relative influence of the perpetrator of child maltreatment on young adult's psychological well-being and addresses the paucity of literature on this. Additionally, it empirically established the relevance of betrayal trauma theory in understanding how greater levels of relational closeness are associated with poorer well-being among trauma-exposed young adults. Thus, this study demonstrates the importance of examining the degree of betrayal trauma and the victim-perpetrator relationship to accurately understand the ramifications of child maltreatment on young adults' well-being (Tang & Freyd, 2012).

Importantly, assessing multi-type child maltreatment indicates the accumulative effects of maltreatment types on the well-being of young adults and is a more robust approach than focusing on specific maltreatment types (Higgins, 2004; Price-Robertson et al., 2013). Measuring multi-type maltreatment prevents the distinct types of maltreatment (e.g., sexual abuse) from confounding the results, enhancing the accuracy of the conclusions on the relationship between child maltreatment and well-being (Higgins, 2003). Measuring multi-type maltreatment with the inclusion of witnessing family violence more accurately captures child maltreatment experiences among the young adult population. Finally, the study includes a community sample of culturally diverse young adults. The findings are likely generalisable to young adults in various cultural contexts given the universality of child maltreatment experiences.

Finally, current findings are clinically relevant by necessitating clinicians to better understand the impact of child maltreatment by assessing the degree of the victim-survivor's relational closeness to the perpetrator, and the violation of trust experienced (Birrell & Freyd, 2006). To improve well-being outcomes following child maltreatment, clinicians can focus on fostering healthy parent-child relationships, and healing betrayal trauma using relational therapeutic interventions to repair interpersonal skills (Tang & Freyd, 2012). This may include clinicians modelling healthy boundary setting and trust within the therapeutic relationship (Carr et al., 2020; Tang & Freyd, 2012) to empower victim-survivors to build growth-fostering relationships that promote the processing of betrayal trauma (Birrell & Freyd, 2006).

7.2. Limitations and future directions

The generalisability of the findings is limited as the sample mainly comprised women, under-representing men and diverse-gender individuals. This restricts the generalisability of the mediation effects of betrayal trauma, as boys are likely to be maltreated by someone not relationally close, while girls are typically maltreated by someone close (Goldberg & Freyd, 2006). Additionally, as displayed by the ACMS, the extent of multi-type maltreatment is highest among gender-diverse individuals (Higgins et al., 2023, 2024), warranting a more gender-representative sample to accurately examine the impacts of multi-type maltreatment on young adults' well-being. Finally, cultural background may influence the probability of disclosure of maltreatment (Tang et al., 2008) and how well-being is experienced. Therefore, cross-cultural validation of the findings is required (Jankovic et al., 2022).

The child maltreatment data were obtained by young adults' retrospective self-reports rather than substantiated, enhancing the risk of social desirability and memory bias in recalling events (Jankovic et al., 2022). This can threaten the data validity (Dovran et al., 2016) due to potential under or over-reporting of maltreatment (Higgins & McCabe, 2001b). However, as self-reported child maltreatment data is the most practical and common method (Higgins et al., 2023), the survey was anonymous and voluntary, and the reported maltreatment experiences were wide-ranging, the young adults likely reported with integrity (Jankovic et al., 2022).

A further limitation of the measurement used is the poor internal consistency of the BT- NCR subscale. This may have affected the ability to accurately determine whether betrayal in non-close relationships has a mediating role in the relationship between child maltreatment and well-being during young adulthood. Previous research on the BTTS subscales used in this study is limited and therefore, future studies should evaluate the validity of this subscale.

The adaptive role of external factors in enhancing well-being following child maltreatment should be considered in future research (Jankovic et al., 2022). This includes social support from friends and family (Meng et al., 2018), as emotional support by non-perpetrator caregivers following disclosure of maltreatment can prevent psychological damage by enhancing resilience and well-being (Rosenthal et al., 2003). The role of therapy in enhancing well-being and processing betrayal should be examined (Jankovic et al., 2022). Additionally, self-identity and intimate relationships, which are imperative to young adult's well-being (Arnett et al., 2014), can be focused on in therapy to promote well-being among trauma-exposed young adults (Jankovic et al., 2022). Future studies should also explore the relationship between victim-survivors and caregiver perpetrators who are not biological parents as this study

highlights that relational closeness can influence well-being outcomes although this type of specific perpetrator was not evaluated.

Finally, although the sample size was large enough to detect moderate effects, it may not have been adequately powered to detect potential small mediating effects of betrayal in non-close relationships. Thus, future studies should recruit a larger sample size to substantiate the statistical significance of the findings (Higgins et al., 2023).

8. Conclusion

This study investigated child maltreatment by perpetrator, multi-type maltreatment, betrayal trauma and well-being among young adults, addressing the paucity of literature on this. The findings highlight the potential impacts of multi-type maltreatment and maltreatment by a mother or father on young adults' well-being, as well as the context in which betrayal trauma can mediate well-being outcomes. Clinicians should prioritise implementing interventions that promote healthy parent-child relationships to support healing betrayal trauma in close relationships and enhance well-being among young adult victim-survivors of child maltreatment.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CRedit authorship contribution statement

Cassandra Jankovic: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Daryl Higgins:** Writing – review & editing, Supervision, Methodology, Formal analysis, Conceptualization. **Megan L. Willis:** Writing – review & editing, Supervision, Formal analysis, Conceptualization.

Declaration of competing interest

None.

Data availability

Due to the sensitive nature of the survey questions, participants in the study were assured that raw research data would remain confidential and therefore is not accessible by the public.

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