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Research paper

Do purpose in life and self-directedness mediate the effects of child abuse on anxiety and depression symptoms 18 years later?

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ABSTRACT

Background: Childhood maltreatment is a transdiagnostic risk factor that is robustly associated with the development of anxiety and depressive disorder symptoms in adulthood. This study thus aimed to investigate potential mediators between early childhood abuse and adult psychopathology severity using data from an 18-year longitudinal study among community-dwelling adults in the U.S. population.

Method: Retrospective self-reports of maternal and paternal abuse from Wave 1 (W1) were used to predict symptom severity of Generalized Anxiety Disorder (GAD) and Major Depressive Disorder (MDD) at Wave 3 (W3) for a sample of 3,294 adults. Self-reported purpose in life and self-directedness measured at Wave 2 (W2) were examined as potential mediators of this relationship. Each assessment wave was spaced about nine years apart. All models adjusted for W1 symptom severity.

Results: Results from longitudinal structural equation modeling (SEM) revealed a significant mediating effect of lower W2 purpose in life in the relationship between higher W1 maternal and paternal child abuse and greater W3 GAD and MDD symptoms in adulthood (Cohen's d range = 0.221–0.279). Further, lower W2 self-directedness mediated the association between greater W1 paternal child abuse and higher W3 GAD severity ($d = 0.209$) but not between W1 maternal abuse and W3 GAD symptoms in adulthood. W2 self-directedness also did not mediate the effects of child abuse on adulthood MDD symptoms.

Discussion: Raising a sense of purpose in life and self-directedness might be key treatment targets to treat and prevent GAD and MDD in adults who experienced maltreatment in childhood.

1. Introduction

The prevalence of common mental disorders (CMDs), such as generalized anxiety disorder (GAD) and major depressive disorder (MDD), among adults presents a concern for the health and well-being of the global population. Rates of mental illness among U.S. adults stood at approximately 23.1% in 2022 (Substance Abuse and Mental Health Services Administration, 2023). Adult mental illnesses such as GAD and MDD have become a burden on both economic and societal levels (Kessler et al., 2009; Salleh, 2018; Vigo et al., 2016) and are among the most substantial causes of mortality worldwide (Walker et al., 2015). Efforts to uncover risk factors contributing to psychiatric problems in adulthood have pointed to genetic predispositions (de Graaf et al., 2002; Polderman et al., 2015), temperament traits (Clauss and Blackford, 2012), and stressful or traumatic life events (Overstreet et al., 2017). Among the most well-substantiated risk factors of adult mental illnesses is that of adverse childhood experiences (ACEs), including parental child abuse (Chapman et al., 2007). In the U.S. alone, rates of child abuse, including physical abuse and neglect, were reported to be 8.1 per 1,000 children in 2021, translating to roughly 600,000 victims in that year (U.S. Department of Health & Human Services et al., 2023). The global rate of maltreatment among children aged 2–4 years is nearly 75% (World Health Organization, 2022). Experiences of child maltreatment have been robustly associated with a variety of mental illnesses, such as emotional, mood, and substance use disorders in adulthood (Copeland et al., 2018; de Graaf et al., 2002; Green et al., 2010; Kessler et al., 2010; Kisely et al., 2020; McKay et al., 2021).

Myriad forms of child maltreatment, including emotional and physical parental abuse, have been linked to symptoms of anxiety and depression (Gardner et al., 2019). Empirical research suggested that it is during childhood, when experiences critically shape development (Weder and Kaufman, 2011), that individuals were at higher risk for

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developing psychiatric disorders after experiencing childhood maltreatment, but were less at risk if these events occurred later in life (McCauley et al., 1997). It is proposed that neglect and abuse experienced in childhood leave a lasting impact on neurobiological circuitry and manifest later in maladaptive psychological and emotional functioning (McCrory et al., 2012). Furthermore, the specific impact of abuse on children's mental health has been found to vary depending on which parent perpetrated the abuse (Wang et al., 2016), giving rise to questions about whether maternal and paternal child abuse have unique pathways to mental disorders experienced in adulthood. Given the centrality of childhood trauma to the development of CMD symptoms, such as increased GAD and MDD severity in adulthood, a priority in clinical research is to define and understand the mediators and moderators of this relationship. Identifying plausible prevention and treatment targets might reduce the negative impact of childhood trauma if they are addressed in evidence-based psychotherapies. Recent systematic reviews have highlighted the role of various protective factors that promote adaptive psychological outcomes in victims of childhood trauma (Domhardt et al., 2015; Meng et al., 2018). It is tenable that such protective factors might also constitute a mechanism (or mediator) of the pathway between child abuse and resultant adulthood CMD symptoms.

Purpose in life is a crucial factor contributing to resilience and motivation in life, which may protect against future psychopathological symptoms among victims of child abuse. Purpose in life grants individuals meaning and direction, can minimize the impact of negative past experiences, and enhances overall health and well-being (Frankl, 1992; McKnight and Kashdan, 2009). A recent meta-analysis highlighted the significant effects of having greater purpose in life on anxiety and depression outcomes, especially in clinical populations (Boreham and Schutte, 2023). It is also well-substantiated that childhood abuse is associated with lower psychological well-being, including having lower purpose in life (Herrenkohl et al., 2012). Therefore, having a greater purpose in life could plausibly mediate the robust relationship between stronger child abuse and more GAD and MDD symptoms in adulthood. In addition, the perception that one is an autonomous individual and can take charge of one's own life, also known as self-directedness (Cloninger et al., 1993), may also mediate the association between childhood trauma and the severity of adulthood psychopathology (Leiting et al., 2024). Self-directedness as a trait is known to be low in patients with anxiety or depression (Cloninger et al., 2012; Richter and Eisemann, 2002), as low levels of self-directedness pose vulnerability to mood disturbances (Garcia et al., 2020). Self-directedness levels were also found to be negatively associated with experiences of past child abuse (Berglund et al., 2023). Empirically, self-directedness mediated the relationship between childhood trauma and personality disorders later on (Perrini et al., 2024) and between childhood trauma and well-being (Leiting et al., 2024). Moreover, greater self-directedness predicted better treatment outcomes for depression (Baeken et al., 2014). Together, lower purpose in life and self-directedness show great promise as mediators (potential mechanisms) for the relationship between parental child abuse and GAD and MDD severity in adulthood.

Although prior literature on parental child abuse, self-directedness, purpose in life, and adult psychopathology has yielded important insights, several gaps remain. Specifically, no studies have investigated the potential mediating effects of self-directedness and purpose in life on GAD and MDD severity in individuals who self-reported experiencing child maltreatment. Investigating these constructs as plausible mechanisms in the association between child abuse and adulthood GAD and MDD symptoms is essential due to their adjustable nature in psychotherapies and related treatments (Berglund et al., 2023; Li et al., 2020). Further, most studies did not examine the unique effects of maternal and paternal abuse or abuse sub-types (emotional abuse, physical abuse, severe abuse) on adult CMD symptoms, which may offer important insights into diverging caregiving roles, interactional patterns, and subsequent effects on child mental health (Cui et al., 2018), as well as the impact of specific types of abuse on adults' well-being (Martins et al., 2014).

The current study, therefore, drew on data collected in the national survey of Midlife Development in the United States (MIDUS; Brim et al., 2020; Ryff et al., 2019; Ryff et al., 2021) to address this knowledge gap. We specifically tested the hypothesis that purpose in life would significantly mediate the relationship between maternal and paternal child abuse and greater MDD and GAD severity in adulthood. Further, we hypothesized that self-directedness would mediate the effect of maternal and paternal child abuse on MDD and GAD severity in adulthood.

2. Method

2.1. Participants

Participants in the present study comprised a subsample of individuals who participated in the MIDUS study and for whom complete data were available at all three time points. The study was a nationally representative longitudinal investigation designed to examine the interaction and influence of psychological, social, and biological factors on health and well-being throughout the lifespan. Data were collected at Wave 1 (W1; 1995-1996), Wave 2 (W2; 2004-2005), and Wave 3 (W3; 2012-2013; Brim et al., 2020; Ryff et al., 2019; Ryff et al., 2021). Of the 7,108 eligible participants at W1, 4,963 individuals were available at W2 and 3,294 at W3. Therefore, the current study utilizes data from 3,294 participants who completed the survey across all three measurement waves. The mean age of the sample at W1 was 46.61 years (SD = 11.41, range = 20–74), with 54.95% of the participants being female. The racial composition of the sample was as follows: 89.74% were White, 3.37% were African American, 0.33% were Native American, 0.49% were Asian, 0.85% were Multiracial, 1.30% reported 'Other,' and the remaining 3.92% did not report or had missing race information. Approximately a third of the sample (30.87%) held a college degree or higher.

2.2. Procedure

Participants with data at all three time points participated in telephone interviews and self-report measurements, collecting data on the severity of their psychopathological GAD and MDD symptoms at W1 and W3. Participants also completed assessments measuring the frequency of retrospective childhood emotional, physical, and severe physical abuse by maternal and paternal figures at W1. At W2, participants completed self-administered questionnaires that measured self-directedness and life purpose. A detailed description of each measure is provided below.

2.3. Measures

2.3.1. W1 childhood retrospective parental abuse

Participants' experiences with parental child abuse were assessed retrospectively at W1 via the Revised Conflict Tactics Scale (CTS2; Straus et al., 1996). This scale assessed parental child abuse through three domains (emotional abuse, physical abuse, and severe physical abuse), with an item for each domain. Participants rated their experiences with these incidents on a 4-point Likert scale (1 representing '*never,*' 4 representing '*often*'). Participants rated the experience separately for maternal figures (e.g., mothers) and paternal figures (e.g., fathers). The emotional abuse item asked participants if the respective parental figure "Insulted you or swore at you," "Sulked or refused to talk to you," "Stomped out of the room," "Did or said something to spite you," "Threatened to hit you," or "Smashed or kicked something in anger." The following item, physical abuse, inquired if each parental figure "Pushed, grabbed, or shoved you," "Slapped you," or "Threw something at you." The last item, severe physical abuse, asked for participants' recollection of whether their parental figures "Kicked, bit, or hit you with a fist," "Hit or tried to hit you with something," "Beat you up," "Choked you," or "Burned or scalded you." Scores on the CTS2

demonstrated acceptable internal consistency, with the Cronbach's alpha (α) value at .88. The CTS2 has previously demonstrated robust construct validity and retest reliability scores in use with diverse populations (Chapman and Gillespie, 2019; Jones et al., 2017).

2.3.2. W2 Purpose in Life

Participants at W1 were recontacted at W2 to complete self-administered questionnaires assessing their psychological well-being (Ryff, 1989; Ryff and Keyes, 1995). Participants responded on a 7-point Likert scale (coded as 0 representing '*Strongly disagree*' to 7 representing '*Strongly agree*') to 7 items on a subscale measuring Purpose in Life: "I live life one day at a time and don't really think about the future," "I have a sense of direction and purpose in life," "I don't have a good sense of what it is I'm trying to accomplish in life," "My daily activities often seem trivial and unimportant to me," "I enjoy making plans for the future and working to make them a reality," "Some people wander aimlessly through life, but I am not one of them," and "I sometimes feel as if I've done all there is to do in life." The scale demonstrated acceptable internal consistency (α = .72). The purpose-in-life scale scores have shown good retest reliability and construct validity (Francis et al., 2019; Reker and Cousins, 1979).

2.3.3. W2 Self-Directedness

Participants self-reported their skills in planning and making sense of the past through the same self-administered questionnaires at W2. This measure was adapted from the Prenda and Lachman (2001) study of planning for the future. A subscale measuring self-directedness via the use of a 4-point Likert scale (coded as 1 representing '*Not at all,*' 4 representing '*A lot*') comprised 3 items: planning for the future, goal setting, and knowing what one wants out of life. The scale demonstrated satisfactory internal consistency herein (α = .74). This measure has also evidenced good construct validity (Chen et al., 2013; Li and Chow, 2024).

2.3.4. W1 and W3 psychopathological symptom severity

GAD and MDD severity at W1 and W3 were determined using the Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition (DSM-III) criteria (American Psychiatric Association, 1987) through the administration of the World Health Organization (WHO) Composite International Diagnostic Interview-Short Form (CIDI-SF; Kessler et al., 1998). Participants were asked to report GAD and MDD severity in the past 12 months. For GAD, participants indicated whether they experienced excessive or uncontrollable worry in response to the following 10 items: difficulty focusing, irritability, feeling keyed up or on edge, low energy, muscle soreness or fatigue, memory problems, restlessness, and sleep difficulties, including challenges with falling asleep and staying asleep. Their responses to each item were coded as either 0 (*never*) or 1 (*worries for more days than not or most days*), resulting in a total score between 0 and 10 (0 being '*lowest worry*' to 10 being '*highest worry*'). The GAD measure demonstrated good internal consistency at both waves (α = .98 at W1 and W3). Items measuring MDD severity were captured on a scale of 0 (*lowest depression*) to 7 (*highest depression*). They assessed symptoms associated with depressed affect and anhedonia: losing interest in most things, feeling tired or low on energy, loss of appetite, issues falling asleep and concentrating, low self-esteem, and thoughts about death. Both depressed affect and anhedonia subscales showed acceptable internal consistency (α = .93 and α = .90, respectively). The CIDI-SF has previously demonstrated good reliability and consistency scores (Gigantesco and Morosini, 2008; Wittchen, 1994).

2.3.5. Data preprocessing

Missing data (40.6% of the dataset) were addressed by multiple imputation using the *mice R* package (van Buuren and Groothuis-Oudshoorn, 2011), which is the gold-standard approach for managing missing data that occur randomly (Lee and Shi, 2021). Before model analysis, we assessed the data to check for univariate and multivariate normality, multicollinearity, presence of outliers, homoscedasticity, and tolerance. This check confirmed satisfactory fulfillment of the conditions, allowing us to proceed with the analysis.

2.3.6. Data analyses

We conducted longitudinal structural equation modeling (SEM) using the *lavaan R* package (Rosseel, 2012) in *RStudio* (*R* Version 4.3.2) (RStudio Team, 2023). The model was first evaluated for its goodness of fit using the chi-square statistic (χ^2) (Hu & Hu and Bentler, 1999) model degrees of freedom (*df*) and probability of null effect (*p*) indices (Kline, 2016). A model is considered to have a satisfactory fit if its CFI values fall between .90 and 1.00 (Bentler, 1990) and its RMSEA values fall below .10 (Steiger, 1990). The SEM mediation analyses were conducted using the product-of-coefficients approach to assess the indirect effects of recalled childhood parental abuse (W1) on self-directedness and purpose in life ratings (W2; "*a*" path) and the impact of self-directedness and purpose in life ratings on anxiety and depression severity (W3; "*b*" path). We also conducted SEM mediation analyses using the various child abuse types (emotional, physical, and severe physical abuse; W1) to assess the impact on self-directedness and W2 purpose in life ("*a*" path) and the impact of self-directedness and purpose in life on anxiety and depression symptoms in adulthood (W3; "*c*" path). Similar to the first mediation model, we treated purpose in life and self-directedness, as reported at W2, as mediators of this relationship. Unstandardized regression coefficients (*b*) and *p*-values are reported, and standard errors (*SE*) were obtained by bootstrapping with 3,000 resampling iterations with robust maximum likelihood estimators.

The effect size in the mediation analysis represents the ratio of the indirect effect (a*b) to the total effect (c = a*b + c) (Preacher and Kelley, 2011). It represents the percentage of variance that is explained by the focal mediator, self-directedness or purpose in life, in the predictive association between parental abuse and its various sub-components at W1 and psychopathology in adulthood at W3. We controlled for baseline psychopathology by adding W1 GAD or MDD severity as a covariate in the mediation analyses. We omitted T1 self-directedness and purpose in life ratings as covariates, as their inclusion may hinder the observation of mediation effects (D'Onofrio et al., 2020). We also computed Cohen's *d* effect sizes for regression estimates to enhance the interpretability of the findings (Lakens, 2013).

All models were followed up with a path analysis. This series of path analyses examined whether parental child abuse and the abuse subtypes predict both lower purpose in life or self-directedness, and increased anxiety and depressive symptoms in adulthood. We adopted this approach to allow an examination of both direct and indirect causal pathways in the mediation model for a more comprehensive understanding of how childhood abuse predicts mental disorder symptoms.

3. Results

3.1. W1 retrospective parental abuse predicting W3 MDD severity via W2 purpose in life

This specific model showed acceptable model fit ($\chi^2(df = 425) = 2756.05$, $p < .001$, CFI = .913, RMSEA = .066, SRMR = .049). Higher frequency of maternal abuse ("*a1*" path; $b = -0.046$, $SE = 0.014$, $z = -3.180$, $p = .001$, $d = -0.308$) and paternal abuse ("*a2*" path; $b = -0.032$, $SE = 0.013$, $z = -2.475$, $p = .013$, $d = -0.240$) significantly predicted lower W2 purpose in life. Higher W2 purpose in life, in turn predicted greater W3 MDD severity ("*b*" path; $b = -0.102$, $SE = 0.025$, $z = -4.143$, $p < .001$, $d = -0.402$). Furthermore, W2 purpose in life significantly mediated the association between W1 maternal abuse and W3 MDD severity ("*a1b*" indirect effect: $b = 0.005$, $SE = 0.002$, $z = 2.877$, $p = .004$, $d = 0.279$) as well as between W1 paternal abuse and W3 MDD severity ("*a2b*" indirect effect: $b = 0.003$, $SE = 0.001$, $z = 2.278$, $p = .023$, $d = 0.221$). Specifically, lower purpose in life significantly

explained the relationship between higher maternal and paternal child abuse and greater MDD severity (proportion mediated = 6.5–10.9%). The results of this mediation model are presented in Table 1 (see Table S1 in the online supplementary materials [OSM] for more detailed information).

The model examining the direct and indirect effects of W1 maternal and paternal child abuse on W3 MDD severity via W2 purpose in life displayed acceptable model fit ($\chi^2(df = 426) = 2808.93$, $p < .001$, CFI = .911, RMSEA = .067, SRMR = .074; Tables 2 and S2). Higher frequency of maternal abuse (b = -0.046, SE = 0.014, z = -3.207, p = .001) and paternal abuse (b = -0.032, SE = 0.013, z = -2.445, p = .014) significantly predicted lower purpose in life. Only a higher frequency of maternal abuse significantly predicted greater MDD severity (b = 0.055, SE = 0.012, z = 4.591, $p < .001$), but paternal abuse did not (b = 0.003, SE = 0.011, z = 0.265, p = .791).

Table 1
Wave 1 (W1) parental abuse predicting Wave 3 (W3) MDD severity via Wave 2 (W2) purpose in life

Parameter	*b*	(SE)	z	*p*	LCI	UCI
Factor loadings						
W1 CMA Item 1	1.000	(0.000)	–	–	–	–
W1 CMA Item 2	0.979*	(0.021)	46.924	.000	0.938	1.019
W1 CMA Item 3	0.553*	(0.022)	24.926	.000	0.510	0.597
W1 CPA Item 1	1.000	(0.000)	–	–	–	–
W1 CPA Item 2	1.002*	(0.019)	52.463	.000	0.965	1.040
W1 CPA Item 3	0.639*	(0.021)	30.076	.000	0.598	0.681
W2 PIL Item 1	1.000	(0.000)	–	–	–	–
W2 PIL Item 2	3.939*	(0.508)	7.749	.000	2.943	4.935
W2 PIL Item 3	4.563*	(0.582)	7.846	.000	3.423	5.703
W2 PIL Item 4	3.981*	(0.508)	7.834	.000	2.985	4.977
W2 PIL Item 5	3.203*	(0.407)	7.869	.000	2.405	4.001
W2 PIL Item 6	3.637*	(0.469)	7.747	.000	2.717	4.557
W2 PIL Item 7	1.780*	(0.240)	7.425	.000	1.310	2.250
W3 MDD Item 1	1.000	(0.000)	–	–	–	–
W3 MDD Item 2	1.147*	(0.032)	35.823	.000	1.084	1.210
W3 MDD Item 3	0.213*	(0.028)	7.558	.000	0.158	0.269
W3 MDD Item 4	0.728*	(0.038)	19.166	.000	0.653	0.802
W3 MDD Item 5	0.566*	(0.050)	11.427	.000	0.469	0.663
W3 MDD Item 6	0.889*	(0.038)	23.612	.000	0.816	0.963
W3 MDD Item 7	1.078*	(0.033)	32.482	.000	1.013	1.143
W3 MDD Item 8	0.809*	(0.036)	22.667	.000	0.739	0.879
W3 MDD Item 9	0.778*	(0.039)	20.142	.000	0.703	0.854
W1 MDD Item 1	1.000	(0.000)	–	–	–	–
W1 MDD Item 2	1.099*	(0.027)	40.511	.000	1.046	1.152
W1 MDD Item 3	0.249*	(0.026)	9.766	.000	0.199	0.299
W1 MDD Item 4	0.650*	(0.033)	19.549	.000	0.585	0.715
W1 MDD Item 5	0.429*	(0.042)	10.205	.000	0.347	0.512
W1 MDD Item 6	0.862*	(0.033)	26.153	.000	0.798	0.927
W1 MDD Item 7	1.071*	(0.028)	38.461	.000	1.017	1.126
W1 MDD Item 8	0.801*	(0.030)	26.829	.000	0.743	0.860
W1 MDD Item 9	0.732*	(0.033)	22.147	.000	0.667	0.796
Regressions						
W1 CMA → W2 PIL	-0.046*	(0.014)	-3.180	.001	-0.074	-0.018
W1 CPA → W2 PIL	-0.032*	(0.013)	-2.475	.013	-0.058	-0.007
W2 PIL → W3 MDD	-0.102*	(0.025)	-4.143	.000	-0.150	-0.054
W1 CMA → W3 MDD	0.037*	(0.011)	3.311	.001	0.015	0.060
W1 CPA → W3 MDD	0.000	(0.010)	0.040	.968	-0.019	0.020
W1 MDD → W3 MDD	0.185*	(0.025)	7.352	.000	0.136	0.235
Defined parameters						
W1 CMA → W2 PIL → W3 MDD	0.005*	(0.002)	2.877	.004	0.001	0.008
W1 CPA → W2 PIL → W3 MDD	0.003*	(0.001)	2.278	.023	0.000	0.006
Total effect	0.046*	(0.008)	5.531	.000	0.030	0.062

Note. CMA = Child Maternal Abuse; CPA = Child Paternal Abuse; PIL = Purpose in Life; MDD = Major Depressive Disorder.
* indicates significance at the $p < .05$ level.

Table 2
Wave 1 (W1) parental abuse predicting Wave 3 (W3) MDD severity via Wave 2 (W2) purpose in life path analysis

Parameter	*b*	(SE)	z	*p*	LCI	UCI
Factor loadings						
W1 CMA Item 1	1.000	(0.000)	–	–	–	–
W1 CMA Item 2	0.976*	(0.021)	46.906	.000	0.936	1.017
W1 CMA Item 3	0.553*	(0.022)	24.912	.000	0.510	0.597
W1 CPA Item 1	1.000	(0.000)	–	–	1.000	1.000
W1 CPA Item 2	1.002*	(0.019)	52.458	.000	0.965	1.039
W1 CPA Item 3	0.639*	(0.021)	30.076	.000	0.598	0.681
W2 PIL Item 1	1.000	(0.000)	–	–	–	–
W2 PIL Item 2	3.950*	(0.511)	7.731	.000	2.949	4.952
W2 PIL Item 3	4.574*	(0.584)	7.828	.000	3.429	5.719
W2 PIL Item 4	3.990*	(0.510)	7.815	.000	2.989	4.990
W2 PIL Item 5	3.211*	(0.409)	7.851	.000	2.409	4.012
W2 PIL Item 6	3.646*	(0.472)	7.730	.000	2.722	4.571
W2 PIL Item 7	1.782*	(0.241)	7.405	.000	1.311	2.254
W3 MDD Item 1	1.000	(0.000)	–	–	–	–
W3 MDD Item 2	1.147*	(0.032)	36.135	.000	1.085	1.209
W3 MDD Item 3	0.213*	(0.028)	7.623	.000	0.158	0.268
W3 MDD Item 4	0.728*	(0.038)	19.339	.000	0.654	0.802
W3 MDD Item 5	0.566*	(0.049)	11.525	.000	0.470	0.662
W3 MDD Item 6	0.890*	(0.037)	23.821	.000	0.816	0.963
W3 MDD Item 7	1.078*	(0.033)	32.759	.000	1.013	1.142
W3 MDD Item 8	0.808*	(0.035)	22.861	.000	0.739	0.878
W3 MDD Item 9	0.778*	(0.038)	20.309	.000	0.703	0.853
W1 MDD Item 1	1.000	(0.000)	–	–	–	–
W1 MDD Item 2	1.099*	(0.027)	40.462	.000	1.046	1.152
W1 MDD Item 3	0.249*	(0.025)	9.765	.000	0.199	0.299
W1 MDD Item 4	0.650*	(0.033)	19.551	.000	0.585	0.715
W1 MDD Item 5	0.430*	(0.042)	10.206	.000	0.347	0.512
W1 MDD Item 6	0.863*	(0.033)	26.182	.000	0.798	0.927
W1 MDD Item 7	1.071*	(0.028)	38.457	.000	1.017	1.126
W1 MDD Item 8	0.801*	(0.030)	26.810	.000	0.743	0.860
W1 MDD Item 9	0.732*	(0.033)	22.139	.000	0.667	0.796
Regressions						
W1 CMA → W2 PIL	-0.046*	(0.014)	-3.207	.001	-0.074	-0.018
W1 CPA → W2 PIL	-0.032*	(0.013)	-2.445	.014	-0.057	-0.006
W1 CMA → W3 MDD	0.055*	(0.012)	4.591	.000	0.031	0.078
W1 CPA → W3 MDD	0.003	(0.011)	0.265	.791	-0.018	0.023

Note. CMA = Child Maternal Abuse; CPA = Child Paternal Abuse; PIL = Purpose in Life; MDD = Major Depressive Disorder.
* indicates significance at the $p < .05$ level.

3.2. *W1 retrospective parental abuse predicting W3 GAD severity via W2 purpose in life*

This particular model displayed acceptable model fit ($\chi^2(df = 486) = 2911.65$, $p < .001$, CFI = .962, RMSEA = .050, SRMR = .044; Tables 3 and S3). Higher maternal abuse frequency (*"a1"* path; b = -0.043, SE = 0.014, z = -3.056, p = .002, d = -0.277) and paternal abuse (*"a2"* path; b = -0.034, SE = 0.013, z = -2.592, p = .010, d = -0.235) at W1 significantly predicted lower W2 purpose in life. In turn, lower W2 purpose in life significantly predicted greater W3 GAD severity (*"b"* path; b = -0.432, SE = 0.081, z = -5.322, $p < .001$, d = -0.483). The association between W1 maternal abuse and W3 GAD severity was significantly mediated by W2 purpose in life (*"a1b"* indirect effect: b = 0.019, SE = 0.006, z = 3.057, p = .002, d = 0.277), as was the effect of W1 paternal abuse on W3 GAD severity (*"a2b"* indirect effect: b = 0.014, SE = 0.006, z = 2.578, p = .010, d = 0.234). Therefore, lower purpose in life significantly explained the association between higher maternal and paternal abuse reported at W1 and greater W3 GAD severity (proportion mediated = 17.7–24.1%).

The model examining the direct effects of W1 maternal and paternal child abuse on W3 GAD severity via W2 purpose in life displayed acceptable model fit ($\chi^2(df = 487) = 3058.09$, $p < .001$, CFI = .960, RMSEA = .051, SRMR = .106; Tables 4 and S4). Higher frequency of maternal abuse (b = -0.043, SE = 0.014, z = -3.066, p = .002) and paternal abuse (b = -0.033, SE = 0.013, z = -2.574, p = .010)

Table 3
Wave 1 (W1) parental abuse predicting Wave 3 (W3) GAD severity via Wave 2 (W2) purpose in life

Parameter	*b*	(SE)	z	*p*	LCI	UCI
Factor loadings						
W1 CMA Item 1	1.000	(0.000)	–	–	–	–
W1 CMA Item 2	0.980*	(0.021)	46.647	.000	0.939	1.021
W1 CMA Item 3	0.553*	(0.022)	24.902	.000	0.509	0.596
W1 CPA Item 1	1.000	(0.000)	–	–	–	–
W1 CPA Item 2	1.001*	(0.019)	52.449	.000	0.964	1.039
W1 CPA Item 3	0.639*	(0.021)	30.059	.000	0.597	0.680
W2 PIL Item 1	1.000	(0.000)	–	–	–	–
W2 PIL Item 2	3.982*	(0.519)	7.675	.000	2.965	4.999
W2 PIL Item 3	4.619*	(0.595)	7.768	.000	3.453	5.784
W2 PIL Item 4	4.026*	(0.519)	7.759	.000	3.009	5.043
W2 PIL Item 5	3.238*	(0.416)	7.791	.000	2.423	4.053
W2 PIL Item 6	3.680*	(0.480)	7.672	.000	2.740	4.620
W2 PIL Item 7	1.797*	(0.244)	7.363	.000	1.319	2.276
W3 GAD Item 1	1.000	(0.000)	–	–	–	–
W3 GAD Item 2	0.993*	(0.020)	49.374	.000	0.953	1.032
W3 GAD Item 3	0.991*	(0.022)	45.770	.000	0.948	1.033
W3 GAD Item 4	1.117*	(0.022)	50.053	.000	1.074	1.161
W3 GAD Item 5	1.113*	(0.023)	47.694	.000	1.067	1.159
W3 GAD Item 6	1.042*	(0.024)	44.114	.000	0.996	1.088
W3 GAD Item 7	1.158*	(0.025)	47.011	.000	1.110	1.206
W3 GAD Item 8	1.161*	(0.023)	50.118	.000	1.116	1.207
W3 GAD Item 9	1.184*	(0.024)	49.654	.000	1.137	1.230
W3 GAD Item 10	1.233*	(0.026)	46.853	.000	1.182	1.285
W1 GAD Item 1	1.000	(0.000)	–	–	–	–
W1 GAD Item 2	0.998*	(0.018)	55.102	.000	0.963	1.034
W1 GAD Item 3	0.961*	(0.019)	49.581	.000	0.923	0.999
W1 GAD Item 4	1.124*	(0.021)	53.764	.000	1.083	1.165
W1 GAD Item 5	1.156*	(0.022)	51.982	.000	1.113	1.200
W1 GAD Item 6	1.024*	(0.020)	50.422	.000	0.984	1.064
W1 GAD Item 7	1.189*	(0.024)	48.973	.000	1.141	1.237
W1 GAD Item 8	1.148*	(0.023)	50.764	.000	1.104	1.193
W1 GAD Item 9	1.193*	(0.022)	53.814	.000	1.149	1.236
W1 GAD Item 10	1.226*	(0.024)	51.335	.000	1.179	1.273
Regressions						
W1 CMA → W2 PIL	-0.043*	(0.014)	-3.056	.002	-0.071	-0.016
W1 CPA → W2 PIL	-0.034*	(0.013)	-2.592	.010	-0.059	-0.008
W2 PIL → W3 GAD	-0.432*	(0.081)	-5.322	.000	-0.591	-0.273
W1 CMA → W3 GAD	0.053	(0.031)	1.695	.090	-0.008	0.115
W1 CPA → W3 GAD	-0.007	(0.029)	-0.253	.800	-0.064	0.050
W1 GAD → W3 GAD	0.268*	(0.021)	12.895	.000	0.227	0.308
Defined parameters						
W1 CMA → W2 PIL → W3 GAD	0.019*	(0.006)	3.057	.002	0.007	0.031
W1 CPA → W2 PIL → W3 GAD	0.014*	(0.006)	2.578	.010	0.003	0.025
Total effect	0.079*	(0.024)	3.238	.001	0.031	0.127

Note. CMA = Child Maternal Abuse; CPA = Child Paternal Abuse; PIL = Purpose in Life; GAD = Generalized Anxiety Disorder.
* indicates significance at the $p < .05$ level.

Table 4
Wave 1 (W1) parental abuse predicting Wave 3 (W3) GAD severity via Wave 2 (W2) purpose in life path analysis

Parameters	*b*	(SE)	z	*p*	LCI	UCI
Factor loadings						
W1 CMA Item 1	1.000	(0.000)	–	–	–	–
W1 CMA Item 2	0.979*	(0.021)	46.607	.000	0.937	1.020
W1 CMA Item 3	0.552*	(0.022)	24.886	.000	0.509	0.596
W1 CPA Item 1	1.000	(0.000)	–	–	1.000	1.000
W1 CPA Item 2	1.001*	(0.019)	52.436	.000	0.963	1.038
W1 CPA Item 3	0.639*	(0.021)	30.053	.000	0.597	0.680
W2 PIL Item 1	1.000	(0.000)	–	–	–	–
W2 PIL Item 2	4.026*	(0.530)	7.596	.000	2.987	5.065
W2 PIL Item 3	4.673*	(0.608)	7.686	.000	3.481	5.864
W2 PIL Item 4	4.070*	(0.530)	7.678	.000	3.031	5.109
W2 PIL Item 5	3.272*	(0.424)	7.712	.000	2.441	4.104
W2 PIL Item 6	3.719*	(0.490)	7.594	.000	2.759	4.679
W2 PIL Item 7	1.815*	(0.249)	7.294	.000	1.327	2.303
W3 GAD Item 1	1.000	(0.000)	–	–	–	–
W3 GAD Item 2	0.993*	(0.020)	49.986	.000	0.954	1.032
W3 GAD Item 3	0.991*	(0.021)	46.347	.000	0.949	1.033
W3 GAD Item 4	1.117*	(0.022)	50.681	.000	1.074	1.161
W3 GAD Item 5	1.113*	(0.023)	48.299	.000	1.068	1.158
W3 GAD Item 6	1.042*	(0.023)	44.667	.000	0.996	1.088
W3 GAD Item 7	1.158*	(0.024)	47.602	.000	1.110	1.206
W3 GAD Item 8	1.161*	(0.023)	50.749	.000	1.116	1.206
W3 GAD Item 9	1.184*	(0.024)	50.288	.000	1.138	1.230
W3 GAD Item 10	1.233*	(0.026)	47.457	.000	1.182	1.284
W1 GAD Item 1	1.000	(0.000)	–	–	–	–
W1 GAD Item 2	0.998*	(0.018)	55.092	.000	0.963	1.034
W1 GAD Item 3	0.961*	(0.019)	49.562	.000	0.923	0.999
W1 GAD Item 4	1.124*	(0.021)	53.772	.000	1.083	1.165
W1 GAD Item 5	1.156*	(0.022)	51.984	.000	1.113	1.200
W1 GAD Item 6	1.024*	(0.020)	50.442	.000	0.984	1.064
W1 GAD Item 7	1.189*	(0.024)	48.961	.000	1.141	1.237
W1 GAD Item 8	1.148*	(0.023)	50.735	.000	1.104	1.193
W1 GAD Item 9	1.193*	(0.022)	53.809	.000	1.149	1.236
W1 GAD Item 10	1.226*	(0.024)	51.317	.000	1.179	1.273
Regressions						
W1 CMA → W2 PIL	-0.043*	(0.014)	-3.066	.002	-0.071	-0.016
W1 CPA → W2 PIL	-0.033*	(0.013)	-2.574	.010	-0.058	-0.008
W1 CMA → W3 GAD	0.108*	(0.033)	3.237	.001	0.043	0.173
W1 CPA → W3 GAD	0.024	(0.031)	0.789	.430	-0.036	0.084

Note. CMA = Child Maternal Abuse; CPA = Child Paternal Abuse; PIL = Purpose in Life; GAD = Generalized Anxiety Disorder.
* indicates significance at the $p < .05$ level.

significantly predicted lower purpose in life. Higher frequency of maternal abuse significantly predicted greater GAD severity ($b = 0.108$, $SE = 0.033$, $z = 3.237$, $p = .001$), but higher frequency of paternal abuse did not ($b = 0.024$, $SE = 0.031$, $z = 0.789$, $p = .430$).

3.3. W1 retrospective parental abuse predicting W3 MDD severity via W2 self-directedness

This specific model demonstrated acceptable model fit ($\chi^2(df = 315) = 2169.17$, $p < .001$, CFI = .913, RMSEA = .075, SRMR = .044; Tables 5 and S5). Higher frequency of W1 maternal abuse significantly predicted lower levels of W2 self-directedness (*"a1"* path; $b = -0.074$, $SE = 0.032$, $z = -2.281$, $p = .023$, $d = 0.257$). Similarly, higher frequency of paternal abuse at W1 significantly predicted lower levels of W2 self-directedness (*"a2"* path; $b = -0.066$, $SE = 0.030$, $z = -2.188$, $p = .029$, $d = 0.247$). Lower levels of W2 self-directedness in turn predicted greater W3 MDD severity (*"b"* path; $b = -0.020$, $SE = 0.007$, $z = -3.043$, $p = .002$, $d = 0.343$). However, W2 self-directedness was neither a significant mediator of the relationship between W1 maternal abuse and W3 MDD severity (*"a1b"* indirect effect: $b = 0.002$, $SE = 0.001$, $z = 1.839$, $p = .066$, $d = 0.207$), nor of the relationship between W1 paternal abuse and W3 MDD severity (*"a2b"* indirect effect: $b = 0.001$, $SE = 0.001$, $z = 1.775$, $p = .076$, $d = 0.200$).

The model testing the direct effects of maternal and paternal W1 child abuse on W3 MDD severity via W2 self-directedness demonstrated good model fit ($\chi^2(df = 316) = 2222.02$, $p < .001$, CFI = .910, RMSEA = .076, SRMR = .078; Tables 6 and S6). Higher frequency of maternal abuse ($b = -0.074$, $SE = 0.032$, $z = -2.30$, $p = .021$) and paternal abuse at W1 ($b = -0.065$, $SE = 0.030$, $z = -2.173$, $p = .030$) significantly predicted lower W2 self-directedness. Only a higher frequency of W1 maternal abuse significantly predicted greater W3 MDD severity ($b = 0.055$, $SE = 0.012$, $z = 4.585$, $p < .001$). W1 Paternal abuse was not a significant predictor of W3 MDD severity ($b = 0.003$, $SE = 0.011$, $z = 0.275$, $p = .783$).

3.4. WI retrospective parental abuse predicting W3 GAD severity via W2 self-directedness

This particular model showed acceptable model fit ($\chi^2(df = 368) =$

Table 5
Wave 1 (W1) parental abuse predicting Wave 3 (W3) MDD severity via Wave 2 (W2) self-directedness

Parameters	*b*	(SE)	z	*p*	LCI	UCI
Factor loadings						
W1 CMA Item 1	1.000	(0.000)	–	–	1.000	1.000
W1 CMA Item 2	0.985*	(0.021)	47.051	.000	0.944	1.026
W1 CMA Item 3	0.554*	(0.022)	24.934	.000	0.511	0.598
W1 CPA Item 1	1.000	(0.000)	–	–	1.000	1.000
W1 CPA Item 2	1.006*	(0.019)	52.453	.000	0.969	1.044
W1 CPA Item 3	0.640*	(0.021)	30.093	.000	0.598	0.681
W2 SD Item 1	1.000	(0.000)	–	–	1.000	1.000
W2 SD Item 2	0.803*	(0.027)	29.346	.000	0.749	0.856
W2 SD Item 3	0.723*	(0.024)	29.844	.000	0.676	0.771
W3 MDD Item 1	1.000	(0.000)	–	–	1.000	1.000
W3 MDD Item 2	1.147*	(0.032)	35.992	.000	1.085	1.210
W3 MDD Item 3	0.213*	(0.028)	7.600	.000	0.158	0.268
W3 MDD Item 4	0.728*	(0.038)	19.272	.000	0.654	0.802
W3 MDD Item 5	0.566*	(0.049)	11.490	.000	0.470	0.663
W3 MDD Item 6	0.889*	(0.037)	23.739	.000	0.816	0.963
W3 MDD Item 7	1.078*	(0.033)	32.645	.000	1.013	1.143
W3 MDD Item 8	0.809*	(0.035)	22.788	.000	0.739	0.878
W3 MDD Item 9	0.778*	(0.038)	20.248	.000	0.703	0.854
W1 MDD Item 1	1.000	(0.000)	–	–	1.000	1.000
W1 MDD Item 2	1.099*	(0.027)	40.520	.000	1.046	1.152
W1 MDD Item 3	0.249*	(0.026)	9.767	.000	0.199	0.299
W1 MDD Item 4	0.650*	(0.033)	19.550	.000	0.584	0.715
W1 MDD Item 5	0.429*	(0.042)	10.205	.000	0.347	0.512
W1 MDD Item 6	0.862*	(0.033)	26.151	.000	0.798	0.927
W1 MDD Item 7	1.071*	(0.028)	38.461	.000	1.017	1.126
W1 MDD Item 8	0.801*	(0.030)	26.832	.000	0.743	0.860
W1 MDD Item 9	0.731*	(0.033)	22.148	.000	0.667	0.796
Regressions						
W1 CMA → W2 SD	-0.074*	(0.032)	-2.281	.023	-0.137	-0.010
W1 CPA → W2 SD	-0.066*	(0.030)	-2.188	.029	-0.124	-0.007
W2 SD → W3 MDD	-0.020*	(0.007)	-3.043	.002	-0.034	-0.007
W1 CMA → W3 MDD	0.040*	(0.011)	3.518	.000	0.018	0.062
W1 CPA → W3 MDD	0.002	(0.010)	0.243	.808	-0.017	0.022
W1 MDD → W3 MDD	0.198*	(0.025)	7.796	.000	0.148	0.248
Defined parameters						
W1 CMA → W2 SD → W3 MDD	0.002	(0.001)	1.839	.066	0.000	0.003
W1 CPA → W2 SD → W3 MDD	0.001	(0.001)	1.775	.076	0.000	0.003
Total effect	0.045*	(0.008)	5.453	.000	0.029	0.061

Note. CMA = Child Maternal Abuse; CPA = Child Paternal Abuse; SD = Self-Directedness; MDD = Major Depressive Disorder.
* indicates significance at the $p < .05$ level.

2390.03, $p < .001$, CFI = .964, RMSEA = .055, SRMR = .030; Table S7). Higher frequency of maternal abuse (*"a1"* path; b = -0.070, SE = 0.032, z = -2.165, p = .030, d = 0.226) and paternal abuse at W1 significantly predicted lower W2 self-directedness (*"a2"* path; b = -0.068, SE = 0.030, z = -2.287, p = .022, d = 0.238). In turn, lower levels of W2 self-directedness significantly predicted higher W3 GAD severity (*"b"* path; b = -0.087, SE = 0.022, z = -3.978, $p < .001$, d = 0.415). W2 self-directedness significantly mediated the association between W1 paternal abuse and W3 GAD severity (*"a2b"* indirect effect: b = 0.006, SE = 0.003, z = 2.004, p = .045, d = 0.209) but did not significantly mediate the association between W1 maternal abuse and W3 GAD severity (*"a1b"* indirect effect: b = 0.006, SE = 0.003, z = 1.903, p = .057, d = 0.198). Therefore, lower levels of self-directedness significantly explained the relationship between W1 paternal abuse reported and W3 GAD severity (proportion mediated = 7.9%).

The model examining direct effects of W1 maternal and paternal abuse on W3 GAD severity via W2 self-directedness showed acceptable model fit ($\chi^2(df = 369) = 2541.55$, $p < .001$, CFI = .961, RMSEA = .057, SRMR = .114; Table S8). Higher W1 frequency of maternal abuse (b = -0.070, SE = 0.032, z = -2.172, p = .030) and paternal abuse (b = -0.068, SE = 0.030, z = -2.288, p = .022) both significantly predicted lower W2 self-directedness. Higher frequency of W1 maternal abuse significantly predicted greater W3 GAD severity (b = 0.108, SE = 0.033, z = 3.230, p = .001), but the same was not found for paternal abuse (b = 0.024, SE = 0.031, z = 0.796, p = .426).

Table 6
Wave 1 (W1) parental abuse predicting Wave 3 (W3) MDD severity via Wave 2 (W2) self-directedness path analysis

Parameters	*b*	(SE)	z	*p*	LCI	UCI
Factor loadings						
W1 CMA Item 1	1.000	(0.000)	–	–	1.000	1.000
W1 CMA Item 2	0.982*	(0.021)	47.026	.000	0.941	1.023
W1 CMA Item 3	0.554*	(0.022)	24.918	.000	0.510	0.598
W1 CPA Item 1	1.000	(0.000)	–	–	1.000	1.000
W1 CPA Item 2	1.006*	(0.019)	52.450	.000	0.968	1.043
W1 CPA Item 3	0.640*	(0.021)	30.091	.000	0.598	0.681
W2 SD Item 1	1.000	(0.000)	–	–	1.000	1.000
W2 SD Item 2	0.805*	(0.027)	29.470	.000	0.752	0.859
W2 SD Item 3	0.725*	(0.024)	29.969	.000	0.678	0.772
W3 MDD Item 1	1.000	(0.000)	–	–	1.000	1.000
W3 MDD Item 2	1.147*	(0.032)	36.089	.000	1.085	1.209
W3 MDD Item 3	0.213*	(0.028)	7.623	.000	0.158	0.268
W3 MDD Item 4	0.728*	(0.038)	19.338	.000	0.654	0.802
W3 MDD Item 5	0.566*	(0.049)	11.523	.000	0.470	0.662
W3 MDD Item 6	0.890*	(0.037)	23.814	.000	0.816	0.963
W3 MDD Item 7	1.078*	(0.033)	32.732	.000	1.013	1.143
W3 MDD Item 8	0.808*	(0.035)	22.853	.000	0.739	0.878
W3 MDD Item 9	0.778*	(0.038)	20.299	.000	0.703	0.853
W1 MDD Item 1	1.000	(0.000)	–	–	1.000	1.000
W1 MDD Item 2	1.099*	(0.027)	40.461	.000	1.046	1.152
W1 MDD Item 3	0.249*	(0.025)	9.765	.000	0.199	0.299
W1 MDD Item 4	0.650*	(0.033)	19.551	.000	0.585	0.715
W1 MDD Item 5	0.430*	(0.042)	10.206	.000	0.347	0.512
W1 MDD Item 6	0.863*	(0.033)	26.182	.000	0.798	0.927
W1 MDD Item 7	1.071*	(0.028)	38.457	.000	1.017	1.126
W1 MDD Item 8	0.801*	(0.030)	26.809	.000	0.743	0.860
W1 MDD Item 9	0.732*	(0.033)	22.139	.000	0.667	0.796
Regressions						
W1 CMA → W2 SD	-0.074*	(0.032)	-2.300	.021	-0.137	-0.011
W1 CPA → W2 SD	-0.065*	(0.030)	-2.173	.030	-0.124	-0.006
W1 CMA → W3 MDD	0.055*	(0.012)	4.585	.000	0.031	0.078
W1 CPA → W3 MDD	0.003	(0.011)	0.275	.783	-0.018	0.024

Note. CMA = Child Maternal Abuse; CPA = Child Paternal Abuse; SD = Self-Directedness; MDD = Major Depressive Disorder.
* indicates significance at the $p < .05$ level.

3.5. W1 abuse types predicting W3 MDD and GAD severity via W2 purpose in life and self-directedness

3.5.1. Purpose in life as mediator

All models in this analysis demonstrated good model fit (Table S9). The results of the mediation analyses using emotional abuse, physical abuse, and severe abuse as separate predictors of MDD and GAD severity via purpose in life or self-directedness are presented in Tables S10–S13. No significant mediation effects were found in any of the four models. However, in the association between W1 emotional, physical, and severe abuse, W2 purpose in life, and W3 MDD severity, the direct effect of a higher frequency of W1 emotional abuse significantly predicted lower W2 purpose in life (b = -1.618, SE = 0.697, z = -2.320, p = .020). The direct effect of a higher W1 frequency of physical abuse also significantly predicted greater W2 purpose in life (b = 1.810, SE = 0.816, z = 2.219, p = .026).

3.5.2. Self-directedness as mediator

In the association between W1 emotional, physical and severe abuse, W2 self-directedness and W3 MDD severity, the direct effects of a lower frequency of emotional abuse (b = -2.945, SE = 1.196, z = -2.463, p = .014) and a higher frequency of physical abuse (b = 3.245, SE = 1.411, z = 2.300, p = .021) significantly predicted greater self-directedness.

Lastly, in the association between W1 emotional, physical, and severe abuse, W2 self-directedness and W3 GAD severity, the direct effect of a lower frequency of emotional abuse (b = -1.716, SE = 0.605, z = -2.835, p = .005) and a higher frequency of physical abuse (b = 1.825, SE = 0.718, z = 2.544, p = .011) significantly predicted greater self-directedness. Lower self-directedness also significantly predicted greater GAD severity (b = -0.111, SE = 0.046, z = -2.398, p = .016).

4. Discussion

The present study investigated the mediating effects of sense of purpose in life and self-directedness on the relationship between parental child abuse and adulthood MDD and GAD severity. We observed three main findings. First, W2 purpose in life significantly mediated the relationship between W1 maternal and paternal child abuse and higher W3 MDD and GAD severity. W2 self-directedness neither significantly mediated the relationship between W1 parental abuse and W3 MDD severity, nor did it significantly mediate the relationship between W1 maternal abuse and W3 GAD severity. However, W2 self-directedness significantly mediated the relationship between W1 paternal child abuse and W3 GAD severity. The following potential accounts are put forth to foster more replication efforts and build frameworks on the topic of possible theoretical mechanisms between parental child abuse and resultant adulthood CMD severity.

Lower W2 purpose in life emerged as a significant mediator of the relationship between stronger W1 maternal and paternal child abuse and higher W3 adulthood MDD and GAD severity. This finding aligned with previous research, which suggested that a purpose in life was a crucial aspect of building resilience and promoting recovery (Boreham and Schutte, 2023; Ostafin and Proulx, 2020) in the context of various types of trauma (Morse et al., 2024). Purpose in life functions as a behavioral stimulant, encouraging victims of childhood trauma to overcome obstacles by managing their environment, finding and maintaining motivation, and being persistent in goal pursuit (McKnight and Kashdan, 2009). Our results and past studies have suggested that childhood trauma diminishes later life's purpose (Herrenkohl et al., 2012), making it an essential consideration in psychological treatments. Purpose in life is known to foster health behaviors that promote overall well-being and is, therefore, a critical, valuable target for prevention efforts and evidence-based interventions (Kim et al., 2022; Kim et al., 2020). For instance, recent therapy techniques targeting building greater purpose have seen positive results in the treatment of social anxiety disorder (Kashdan and McKnight, 2013) and hence show great promise for the treatment and prevention of GAD and MDD.

Our second finding suggests that W2 self-directedness did not mediate the relationship between W1 maternal and paternal child abuse and W3 MDD severity, contradicting our initial hypothesis. Therefore, self-directedness is probably not a viable mechanism through which early parental abuse predicts depressive symptoms in adulthood based on the current sample. Although existing research suggests that low levels of self-directedness are a correlate of depression (Richter and Eisemann, 2002; Smith et al., 2005) and predicted treatment outcomes in depressed patients (Baeken et al., 2014), it does not explain the relationship between parental child abuse and long-term depressive symptoms in adulthood. Future research may benefit from investigating whether self-directedness levels measured at concurrent time points with depressive symptoms better explain the relationship between parental child abuse and depression in adulthood.

Finally, our results demonstrated that W2 self-directedness uniquely mediated the relationship between W1 paternal abuse and W3 GAD severity, but not between W1 maternal abuse and W3 GAD severity. Plausibly, childhood trauma exerts a negative impact on the victim's sense of identity and the perception of their ability to achieve goals (Perrini et al., 2024), and these, in turn, are associated with anxiety (Aloi and Segura-García, 2019). Little research has been conducted on the unique effects of paternal abuse, but some existing studies suggest that parental child abuse impacts victims differently depending on which parent perpetrated the abuse (Cui et al., 2018; Oshio and Umeda, 2016). In the U.S., male perpetrators of abuse were biological fathers only half the time, whereas 86% of female perpetrators were biological mothers (U.S. Department of Health and Human Services, 2004). Further, rates of child abuse were lowest in households with both biological parents and disproportionally higher in single-parent households where surrogate fathers were typical (Radhakrishna et al., 2001; Sedlak et al., 2010). These statistics suggest that other risk factors, such as the biological father's absence, may compound the effects of paternal abuse. It is, therefore, possible that the circumstances within which paternal abuse occurs uniquely impact victims' perceived efficacy and sense of self-competence later in life, which in turn culminates in excessive pathological worry cardinal to GAD. Our findings additionally imply that raising the level of self-directedness in victims of paternal child abuse during psychotherapy is a practicable method to reduce GAD severity. Generally, fathers contribute uniquely to their children's overall development (Sarkadi et al., 2008; Zainal et al., 2024), and their abuse, neglect, and absence robustly contribute to maladaptive outcomes (e.g., Choi et al., 2021; McLanahan et al., 2013). More research is needed to understand the specific ways in which paternal abuse lowers victims' self-directedness in the long term.

Compounding the findings on differences in pathways for maternal and paternal perpetrators, our results also revealed direct pathways between maternal child abuse and later adulthood psychopathology. The same was not observed for paternal abuse, which only directly predicted purpose in life and self-directedness. These findings underscore the pivotal effect that maternal child abuse exerts on mental health in adulthood. Women make up the majority of caregivers and are more likely to be involved in caretaking responsibilities early in life (Wood and Repetti, 2004), the disruption of which may confer a profound impact on children's healthy development (e.g., Dreidi et al., 2024).

Our findings also suggest that purpose in life and self-directedness were not plausible mediators of the relationship between specific subtypes of abuse and psychopathology in adulthood. However, an analysis of direct effects revealed that the experience of physical abuse in childhood paradoxically strengthened resolve and resilience later in life, i.e., there was a positive relationship between physical abuse ratings and purpose in life and self-directedness ratings. Conversely, emotional abuse reduced ratings of purpose in life and self-directedness. It has been suggested that emotional abuse is particularly damaging to well-being (Dye, 2020), while physical abuse may be exerting a different effect on adaptive functioning. For example, Gross and Keller (1992) found that self-esteem was lower in subjects who reported psychological abuse only or both psychological and physical abuse, as opposed to non-abused subjects. The present and prior research might thus suggest that psychological abuse might be particularly damaging to self-esteem, but the same could not be said of physical abuse. Further research will aid in uncovering the specific effect physical abuse has on resilience and adaptive functioning later in life.

The current study had a few notable limitations. First, measures of maternal and paternal child abuse were reported retrospectively, and other psychosocial measures, including well-being and self-direction, were also self-reported, which introduced unavoidable recall, interpretive, and response biases (Baldwin et al., 2024). Secondly, we did not explore potential links between the mediators, which precluded us from observing their unique or combined roles in predicting adulthood psychopathology. Third, the lack of a repeated measures design in evaluating purpose in life, self-directedness, and psychopathology symptoms similarly precludes our understanding of how they interact longitudinally. Future studies could remedy this limitation and conduct more advanced analyses (e.g., latent change approaches) (Zainal and Newman, 2019) to determine dynamic change-to-change relations when exploring the mechanisms of child abuse and adulthood psychopathology. Lastly, the current study sample was predominantly White and had little representation from minority races, which compromised its

generalizability. It is especially crucial to sample racially diverse populations, as some racial groups face unique barriers to seeking help for mental health issues, and rates of mental health problems and incidences of child abuse tend to be higher in racially and ethnically minoritized groups (Harris et al., 2005; Wildeman et al., 2014).

However, the present study also had a few notable strengths. First, the longitudinal design, spanning an 18-year data collection period, allowed researchers to track and observe potentially causal relationships between variables, explore patterns of change in variables of interest, and identify risk factors for maladaptive outcomes. Most importantly, the present study aimed to identify important mechanisms responsible for adulthood psychopathology after abuse, which contribute to our understanding of the etiology of increased CMD symptoms and how they can be targeted in psychological therapies. Although our study relied on self-reported measures, these measurements were all psychometrically reliable and valid. Lastly, our study provided a crucial contribution to the dearth of literature on potential mechanisms of the link between paternal abuse and adulthood mental health.

In summary, purpose in life emerged as a notable mediator of adulthood MDD and GAD severity in the context of higher parental child abuse. Self-directedness uniquely mediated the relationship between paternal child abuse and GAD severity. The findings broaden our understanding of parental child abuse as a distal risk factor and the mechanisms through which it negatively impacts psychological functioning in adulthood, which can then be capitalized on in treatments such as psychotherapy. Recent research has substantiated the viability of therapies focusing on self-directedness (Terock et al., 2015) and purpose in life (Kashdan and McKnight, 2013) in reducing symptoms of emotional disorders. Although the top priority in healthcare is to reduce the incidence of parental child abuse, lowering rates of CMDs and preventing their emergence from such abusive experiences is imperative to ensuring that the abuse cycle does not continue into the next generation (Stith et al., 2009).

CRediT authorship contribution statement

Sarah Josephine Rajendra: Writing – review & editing, Writing – original draft, Investigation, Conceptualization. **Natalia Van Doren:** Writing – review & editing, Supervision, Investigation, Data curation, Conceptualization. **Nur Hani Zainal:** Writing – review & editing, Validation, Supervision, Software, Methodology, Investigation, Formal analysis, Conceptualization.

Author statement

All authors take full responsibility for the data, the accuracy of analyses and interpretation, and the conduct of the research. This study was performed following the Declaration of Helsinki.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. This study utilized data from the MIDUS (Midlife in the United States) project, which has been funded by the John D. and Catherine T. MacArthur Foundation Research Network and the National Institute on Aging (P01-AG020166 and U19-AG051426) since 1995. The original MIDUS project investigators and funding agencies are not responsible for the analyses or interpretations presented in this study.

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Appendix A. Supplementary data

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