Received: 28 November 2021 | Revised: 17 January 2022 | Accepted: 18 January 2022

DOI: 10.1002/cpp.2712

COMPREHENSIVE REVIEW

WILEY

Adolescent maladaptive schemas and childhood abuse and neglect: A systematic review and meta-analysis

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Abstract

This study aimed to review evidence on the associations between childhood emotional, physical and sexual abuse; neglect and bullying and early maladaptive schemas, as measured in adolescence. PubMed, PsycInfo and CINAHL were searched to identify peer-reviewed studies reporting original quantitative data on the association between early maladaptive schemas or schema domains (e.g., Disconnection and Rejection) and childhood emotional, physical and sexual abuse; neglect and bullying, measured in individuals aged up to 18 years. Meta-analyses were conducted to estimate the magnitude of the associations between schemas and childhood experiences. Twelve studies were included: Seven explored schemas, and five examined schema domains. Most studies had somewhat representative samples that were adequate in size, and all used validated measures of schemas or schema domains. Three studies explored emotional neglect, two each for emotional abuse, physical abuse and peer problems, one explored family violence and one adolescent stressors. Meta-analyses indicated small to medium pooled associations between emotional abuse and Emotional Deprivation, $r = .33$ (95% CI [.19, .46]) and Subjugation, $r = .32$ (95% CI [.14,.47]) and emotional neglect and Mistrust Abuse, $r = .41$ (95% CI [.32, .49]), Abandonment, $r = .25$ (95% CI [.22, .28]), Social Isolation $r = .23$ (95% CI [.10, .35]) and Failure, $r = .35$ (95% CI [.26, .44]). Associations between childhood abuse and neglect experiences and schemas were evident in adolescents. There were limited data on some adverse experiences including sexual abuse and neglect. The evidence thus far suggests that maladaptive schemas are related to experiences of childhood emotional abuse and neglect and are evident before adulthood.

KEYWORDS
bullying, childhood abuse and neglect, early maladaptive schemas, meta-analysis, systematic review

1 | INTRODUCTION

Adolescence is characterized by important developmental advancements in cognitive, affective and social capacities. It is simultaneously associated with increased sensation seeking and risk taking and heightened sensitivity to social evaluation. These developmental changes can contribute to interpersonal and psychological problems, including substance use, accidents, violence and criminal activity, as well as depression, anxiety and suicidality (Bor et al., 2014; Evans et al., 2004; Tarter et al., 2002). To adaptively navigate the transition from adolescence to adulthood, as at other life stages, it is crucial that individuals can regulate their emotional experiences (Nicol et al., 2020). Davey et al. (2003) suggest that correlates of resilience during this time include self-worth, coping skills and personality traits pertaining to agreeableness, conscientiousness and being open to new experiences.

These individual characteristics are more likely to develop within the context of a secure parent–child attachment (Gillath et al., 2016). In secure caregiver relationships, the necessary 'scaffolding' has developed and can buffer the increased vulnerability experienced during adolescence. Sensitive and attuned parenting is associated with improved interpersonal, academic and achievement-related outcomes in early to late adolescence (Fraley & Heffernan, 2013). Conversely, childhood maltreatment is a strong predictor of psychological disorders during adolescence and across the lifespan (Calvete, 2014). In particular, emotional abuse and neglect contribute to cognitive vulnerabilities associated with increased risk of psychopathology (Calvete, 2014).

Beck's (1979) Cognitive Theory identifies these underlying vulnerabilities as the focus of clinical interventions, as they underpin and maintain psychological disorders. Young and colleagues (Young, 1999; Young et al., 2003) extended the original schema work of Beck and identified *early maladaptive schemas* (EMSs). An EMS is defined as 'a broad, pervasive theme or a pattern, comprised of memories, emotions, cognitions, and bodily sensations, regarding oneself and one's relationships with others, developed during childhood or adolescence, elaborated throughout one's lifetime, and is dysfunctional to a significant degree' (Young et al., 2003, p. 7). Young identified 18 schemas grouped into five domains as detailed in Table 1. Schema domains have recently been reorganized (Bach et al., 2018; Yalcin et al., 2020) into four domains based on factor analyses. However, as the literature on EMS in adolescence has thus far only used the scoring based on five domains, we have retained this structure in the current review.

EMSs are theorized to result in biased filtering of information to confirm the schema, further entrenching and elaborating them in one's life (Young, 1999; Young et al., 2003). In childhood, they are theorized to be representations of the early environment and adaptive coping responses (Young, 1999; Young et al., 2003). However, in adulthood, they are considered maladaptive as they fight for consistency and, when activated by interpersonal situations, they distort perceptions, trigger emotional distress, anxiety, depression and personality pathology (Wright et al., 2009). A review by Hawke and Provencher (2011) concluded that schemas discriminate between clinical disorders and are therefore considered to be stable underlying character traits that reflect more than just symptom states.

Key Practitioner Message

- Quantitative evidence on associations between childhood abuse and neglect and adolescent early maladaptive schemas were meta-analysed.
- Small to medium associations between childhood emotional abuse and neglect and adolescent measured schemas were evident.
- There was a lack of studies exploring sexual abuse and childhood neglect.
- Findings support the theory that adverse childhood experiences result in maladaptive schemas which are evidence from adolescence.

Schemas are theorized to develop in response to adverse childhood experiences (i.e., toxic frustration of needs, traumatization and victimization, overindulgence or overprotection and selective internalization) when core emotional needs for safety, security, love, independence, limits, spontaneity, fun and freedom to express feelings and opinions are not met (Young et al., 2003). These core childhood needs were identified based on Bowlby's attachment theory (Bowlby, 1973). Adverse childhood experiences have been defined as experiences where the child is required to adjust psychologically, socially and neurodevelopmentally to experiences outside the normal expected environment (McLaughlin & Sheridan, 2016). These may include physical, sexual and emotional abuse; emotional and physical neglect; peer victimization and bullying; witnessing violence at home or in the community; poverty and racism (Lacey & Minnis, 2020; McLaughlin & Sheridan, 2016; Moore et al., 2017). Childhood adverse experiences may persist into adolescence, extending the length of exposure and increasing the risk of psychopathology (Dunn et al., 2011; Flaherty et al., 2013). Adverse childhood experiences can also increase adolescents' risk of substance misuse and suicidal behaviour, resulting in additional adverse experiences (Dube et al., 2006; Thompson et al., 2012). Adverse childhood experiences also increase the likelihood that an adolescent will perpetrate interpersonal and self-directed violence (Duke et al., 2010).

Although there is a broad evidence base for EMSs in adulthood and their associations with psychopathology and childhood trauma, the literature on adolescence is still emerging. Calvete et al. (2013) examined schemas in adolescence and identified schemas relating to disconnection and rejection (e.g., Defectiveness Shame, Mistrust Abuse and Social Isolation), impaired autonomy (e.g., Failure) and excessively focusing on the desires, feelings and responses of others (e.g., Approval Seeking and Subjugation) as particularly relevant. These schemas were identified as salient to central developmental tasks during this phase of development, including interpersonal, worthiness,

TABLE 1 Early maladaptive schemas domains and definitions

Domain	Schema	Definition
Disconnection and Rejection	Emotional Deprivation	The expectation that one's desire for a normal degree of emotional support will not be adequately met by others.
	Abandonment	The perceived instability or unreliability of those available for support and connection.
	Mistrust Abuse	The expectation that others will hurt, abuse, humiliate, cheat, lie, manipulate or take advantage.
	Social Isolation	The feeling that one is isolated from the rest of the world, different from other people and/or not part of any group or community.
	Defectiveness Shame	The feeling that one is flawed, bad, inferior or worthless and that one would be unlovable to others if exposed.
Impaired Autonomy and Performance	Failure	The belief that one has failed, will inevitably fail or is fundamentally inadequate relative to one's peers in areas of achievement (school, career, sports, etc.).
	Dependence Incompetence	The belief that one is unable to handle one's everyday responsibilities in a competent manner, without considerable help from others (e.g., take care of oneself, solve daily problems, exercise good judgement, tackle new tasks and make good decisions).
	Vulnerability to Harm	Exaggerated fear that imminent catastrophe will strike at any time and that one will be unable to prevent it.
	Enmeshment	Excessive emotional involvement and closeness with one or more significant others (often parents) at the expense of full individuation or normal social development.
Impaired Limits	Entitlement	The belief that one is superior to other people, entitled to special rights and privileges or not bound by the rules of reciprocity that guide normal social interaction.
	Insufficient Self-Control	Pervasive difficulty or refusal to exercise sufficient self-control and frustration tolerance to achieve one's personal goals or to restrain the excessive expression of one's emotions and impulses.
Other Directednesss	Subjugation	Excessive surrendering of control to others because one feels coerced—submitting in order to avoid anger, retaliation or abandonment.
	Self-Sacrifice	Excessive focus on voluntarily meeting the needs of others in daily situations at the expense of one's own gratification.
	Approval Seeking	Excessive emphasis on gaining approval, recognition or attention from other people or on fitting in at the expense of developing a secure and true sense of self.

(Continues)

TABLE 1 (Continued)

Domain	Schema	Definition
Overvigilance and Inhibition	Emotional Inhibition	The excessive inhibition of spontaneous action, feeling, or communication, usually to avoid disapproval by others, feelings of shame or losing control of one's impulses.
	Unrelenting Standards	The underlying belief that one must strive to meet very high internalized standards of behaviour and performance, usually to avoid criticism.
	Negativity Pessimism	A pervasive, lifelong focus on the negative aspects of life (pain, death, loss, disappointment, conflict, guilt, resentment, unsolved problems, potential mistakes, betrayal, things that could go wrong, etc.) while minimizing or neglecting the positive or optimistic aspects.
	Punitiveness	The belief that people should be harshly punished for making mistakes. Involves the tendency to be angry, intolerant, punitive and impatient with those people (including oneself) who do not meet one's expectations or standards.

Note: Definitions reproduced from Young et al. (2006).

identity, achievement and competency-related tasks. These appear to be consistent with Stage 5 of Erikson's theory of psychosocial development whereby adolescents contend with identity versus role confusion (Erikson, 1959).

Empirical support for the theorized link between childhood adverse experiences and the development of maladaptive schemas is provided by cross-sectional studies exploring associations between these constructs in adults. Our recent systematic review explored the associations between childhood abuse and neglect and schemas as measured in adulthood (Pilkington et al., 2020). Small to large pooled effect sizes were found, the largest being between maternal emotional neglect and the Emotional Deprivation schema ($r = .51$, 95% CI [.42, .59]). Emotional neglect and emotional abuse had the strongest and most consistent associations with EMSs. The cross-sectional findings indirectly support the contention that EMSs develop when core emotional needs are inadequately met in childhood. Although there have been fewer studies exploring the link between childhood adverse experiences and EMSs in adolescence, a synthesis of this literature is warranted, given this crucial stage of development and the implications for early intervention.

2 | THE CURRENT REVIEW

The aim of this systematic review and meta-analysis was to synthesize the evidence on the association between maladaptive schemas as measured in adolescence and childhood emotional, physical and sexual abuse; neglect and bullying. We explored the type of adverse experience separately rather than using a cumulative score for adverse experiences (Lacey & Minnis, 2020; McLaughlin & Sheridan, 2016). Based on Young's schema model, it was expected there would be significant associations between these adverse childhood experiences and EMSs.

3 | METHOD

A systematic review and meta-analysis of the evidence on the relationship between adverse experiences and EMSs in adolescence was completed in accordance with the PRISMA statement (Moher et al., 2009). The protocol was registered with the PROSPERO database of systematic reviews (CRD42020154823).

3.1 | Search strategy

Electronic databases PsycInfo, MEDLINE and CINAHL were searched on 26 November 2019 using the search terms 'Young AND Schema'. Search terms could appear anywhere in the full text. Where possible, searches were limited to articles that were peer reviewed and written in English. No publication date limits were applied. Additional sources were identified by hand searching reference lists of included studies from the initial search, and by screening papers citing these studies in Web of Science. The forward and hand citation searches were completed on 20 June 2020.

3.2 | Selection criteria

Studies were required to fulfil the following inclusion criteria: (a) employed a case–control, longitudinal, cross-sectional or retrospective study design; (b) published in a peer-reviewed journal; (c) analysed one or more adverse experience as a predictor variable; (d) analysed one or more of Young's 18 EMSs OR one or more of the five EMS domains as an outcome variable; (e) assessed schemas when all participants were aged 18 years or younger and (f) reported association/s between adverse experiences and schema scores in sufficient detail for unadjusted effect sizes to be calculated.

Studies were excluded if (a) the article did not report original data (e.g., the article was a review or discussion paper), (b) the article was not in English, (c) measures were administered following exposure to an intervention, (d) adverse experiences were combined into a composite score, (e) EMSs were analysed as the total YSQ score or (f) the outcome was schema modes (e.g., the Schema Mode Inventory). The third author (PP) screened all the potential studies for inclusion based on the article title and abstract and, if necessary, the full text. The first author (TM) independently confirmed that all studies included after screening met the inclusion criteria. See Figure 1.

3.3 | Data extraction and management

TM and PP independently extracted data using a standardized spreadsheet. Data were collated by TM, and discrepancies were resolved through discussion. The data extracted included descriptive information about the sample, the predictor and outcome variables and the effect size and direction. Decision hierarchies were used to manage articles that reported multiple associations for the variables of interest or duplicate data. Where studies used the same cohort, only the study reporting the largest cohort was used.

3.4 | Meta-analysis procedures

Meta-Essentials software (Suurmond et al., 2017) was used to complete meta-analyses of the associations between each predictor (emotional abuse and emotional neglect) and the 18 EMSs. The correlation coefficient *r* was selected as the summary effect size metric. When interpreting the pooled effect sizes, *r* of at least .1 is considered to be small, .3 medium and .5 large (Cohen, 1992). If authors reported an effect size other than a correlation coefficient, it was converted to

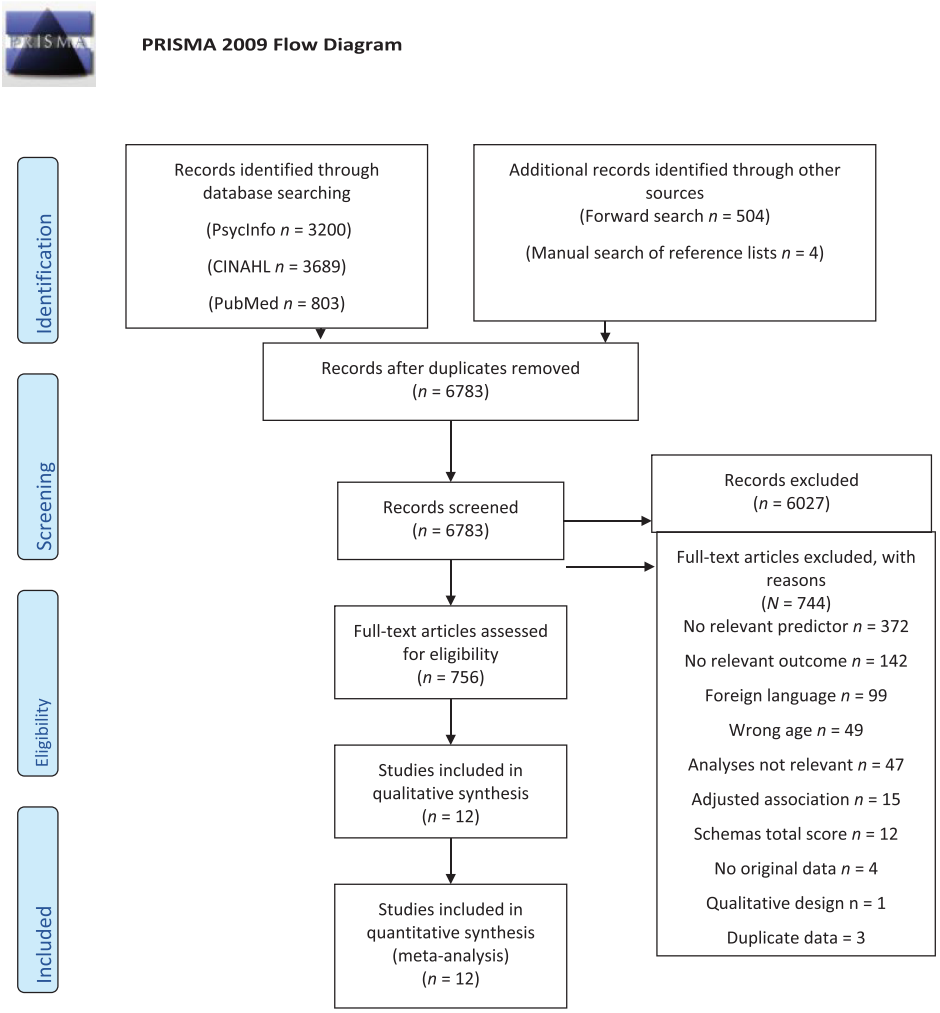

FIGURE 1 PRISMA flow diagram of selected studies

r using the on-line *Practical Meta-Analysis Effect Size Calculator* (Wilson, 2001).

Meta-analyses were only completed where there were three or more correlations. If multiple time points were reported correlations between baseline measures of childhood events and follow-up measures of schemas were used. This was the case for three included studies of schema domains (as noted in Table 5). Where the same study reported correlations for both the mother and father, the maternal correlation was used. Some correlations were based on measures where lower scores rather than higher scores represented negative childhood experiences. In these cases, correlations were reversed such that higher correlations indicate schema associations with more childhood negative experiences.

3.5 | Assessment of heterogeneity and publication bias

Given that heterogeneity was anticipated, a random-effects model was used for all analyses. Heterogeneity was assessed using the I^2 statistics, with higher scores indicating greater heterogeneity (25% low, 50% moderate and 75% substantial). The minimum number of studies required for subgroup analyses and publication bias tests to be meaningful is 10 per meta-analysis (Higgins & Green, 2011). As none of the meta-analyses included more than 10 studies, these tests were not conducted.

4 | RESULTS

Figure 1 shows the flow diagram of the selected studies. Of 6783 studies, 16 met inclusion criteria. Of these, seven studies explored individual schemas and nine studies explored schema domains. Of the studies exploring schema domains, seven explored the same cohort, and four were excluded as they explored overlapping schema domains (Alba et al., 2018; Calvete, 2014; Calvete, Orue, & Hankin, 2015). Only those with unique domains or the largest sample when domains were the same were included. This resulted in five studies that explored schema domains. This resulted in 12 of the 16 studies included in the final review (see Table 2). Three studies explored emotional neglect, two emotional abuse, two physical abuse, two peer problems and one of each explored family violence and adolescent stressors. No studies were identified which explored sexual abuse or other types of experiences.

4.1 | Characteristics of included studies

All 12 included studies reported correlational data. Sample sizes ranged from 21 to 1328 participants (median $N = 274$). A total of nine studies reported balanced participant gender and the remaining three favoured female participants (Lumley & Harkness, 2007; Turner et al., 2005; Yiğit et al., 2018) with one of these only recruiting female participants (Turner et al., 2005). Participants' ages ranged from 10 to 17 years across the studies, with the average being 14.9 years. Six studies recruited participants from community settings, and six recruited participants from both clinical and community settings. Studies were conducted in Spain ($n = 4$) and the Netherlands ($n = 4$), Turkey ($n = 2$), Canada ($n = 1$) and the United Kingdom ($n = 1$).

4.2 | Quality assessment

Table 3 shows the results of the quality assessment. Four studies had a representative sample, and the remaining eight had somewhat representative samples. Eight studies had an adequate sample size. All studies used validated measures of maladaptive schemas and childhood experiences, which were self-report. All studies used either the short or long form of the Young Schema Questionnaire, except one study that used the Early Maladaptive Schema Questionnaires Set for Children and Adolescents (SQS) (Güner, 2017). Childhood experiences were measured using a range of measures including the Cyberbullying Questionnaire (Calvete et al., 2016), Childhood Experience of Care and Abuse interview and rating system (CECA) (Lumley & Harkness, 2007), Parental Bonding Inventory (Turner et al., 2005), Egna Minnen Beträffande Uppfostran (my memory of upbringing) for Children (EMBU-C) (Muris, 2006; Zonnevijlle & Hildebrand, 2019), Inventory of Parent and Peer Attachment (IPPA) (Güner, 2017; Roelofs et al., 2013), Adolescent Perceived Events Scale (APES) (Calvete et al., 2013), Conflict Tactics Scales-Parent-to-Child Version (CTS-PC) (Calvete et al., 2018), Child-to-Parent Aggression Questionnaire (Calvete, Orue, Gámez-Guadix, & Bushman, 2015) and the Childhood Trauma Questionnaire (Yiğit et al., 2018). The measures of childhood experiences were retrospectively completed at the same time as the measurement of schemas, except for one longitudinal study (Calvete, Orue, Gámez-Guadix, & Bushman, 2015).

4.3 | Associations between childhood experiences and schemas

There were sufficient correlations for emotional abuse (three studies, 15 schemas) and emotional neglect (five studies, 15 schemas) to run meta-analyses. These results are presented in Table 4. For emotional abuse, three studies resulted in small pooled correlations for Defectiveness Shame, Failure, Dependence Incompetence, Vulnerability to Harm, Enmeshment, Self-Sacrifice and Entitlement. There were medium pooled correlations with emotional abuse and Emotional Deprivation, Abandonment, Mistrust Abuse, Social Isolation, Subjugation, Emotional Inhibition and Insufficient Self-Control. Emotional deprivation had low heterogeneity and a pooled correlation of .33 with 95% confidence intervals in the small to medium range and similarly for Subjugation, $r = .32$ (95% CI [.14, .47]). All other schemas had lower limit confidence intervals crossing into the non-significant association level or had high heterogeneity.

TABLE 2 Characteristics of included studies

Author and year	*N*	% female	Mean age and SD at baseline	Sample type	Sample description	Study type	Study location (country)
Calvete et al. (2016)	1015	58%	15.43 (1.09)	Non-clinical	Adolescents from educational centres	Longitudinal	Spain
Calvete et al. (2018)	1328	45%	15.05 (1.37)	Non-clinical	Adolescents from educational centres	Longitudinal	Spain
Calvete et al. (2013)	1187	46%	13.42 (1.3)	Non-clinical	Adolescents from educational centres	Longitudinal	Spain
Calvete, Orue, Gámez-Guadix, and Bushman (2015)	591	42%	14.17 (1.11)	Non-clinical	Adolescents from educational centres	Longitudinal	Spain
Güner (2017)	983	49%	10 to 16	Mixed	Students, 905 non-clinical and 78 clinical from private practices	Cross-sectional	Turkey
Lumley and Harkness (2007)	76	71%	15.80 (1.56)	Mixed	Depressed adolescents recruited from a mid-sized community in eastern Ontario via schools or mental health services	Cross-sectional	Canada
Muris (2006)	173	50%	13.32 (0.95)	Non-clinical	Students from secondary schools	Retrospective	Netherlands
Roelofs et al. (2011)	222	62%	14.7 (1.6)	Non-clinical	Students from secondary schools	Cross-sectional	Netherlands
Roelofs et al. (2013)	82	44%	14.21 (1.67)	Mixed	Adolescents from outpatient treatment centres	Cross-sectional	Netherlands
Turner et al. (2005)	23	100%	17.8 (0.42)	Mixed	Overweight female adolescents recruited through secondary schools	Retrospective	United Kingdom
Yiğit et al. (2018)	325	69%	15.29 (1.14)	Mixed	Adolescents, 193 clinical from a psychiatric assessment unit and 132 non-clinical school students	Retrospective	Turkey
Zonnevijlle and Hildebrand (2019)	21	58%	16.2 (1.6)	Mixed	Adolescents attending a youth care facility under (formal) supervision by the children's judge because of serious problems in their family or had committed an offence.	Cross-sectional	Netherlands

For emotional neglect, there were four to five studies included across analyses, as detailed in Table 4. There was a small pooled association between emotional neglect and Abandonment, Social Isolation, Defectiveness Shame, Vulnerability to Harm and a medium pooled association with Emotional Deprivation, Mistrust Abuse, Failure, Emotional Inhibition, Insufficient Self-Control and Entitlement. The pooled association between emotional neglect and Mistrust Abuse was the strongest, .41 (95% CI [.32, .49]), with confidence limits within the medium range. Other schemas that had confidence intervals with a lower limit within the small association range and low heterogeneity were Abandonment, $r = .25$ (95% CI [.22, .28]), Social Isolation $r = .23$ (95% CI [.10, .35]) and Failure, $r = .35$ (95% CI [.26, .44]).

There were three types of childhood abuse and neglect with insufficient correlations to conduct meta-analyses. For parental physical abuse, Lumley and Harkness (2007) reported associations ranging from small to medium for schemas within the disconnection and rejection domain with the highest being a medium correlation for Emotional Deprivation. For schemas in the impaired autonomy domain, there was no association with Enmeshment, but small to medium associations with the other schemas, the highest being a medium correlation with Vulnerability to Harm. There were small associations with Subjugation, Self-Sacrifice, Emotional inhibition and Unrelenting standards, no association with Entitlement and a small association with Insufficient Self-Control.

Lumley and Harkness (2007) also explored parental sexual abuse and schema associations finding small associations with Disconnection and Rejection schemas. They found small to medium correlations with impaired autonomy schemas, the highest being medium associations for Failure, Dependency-Incompetence and Vulnerability to Harm. There were small associations with the Other Directedness and Impaired Limits schemas, no correlation with Entitlement and a small correlation with Emotional Inhibition.

Calvete et al. (2016) explored the association between peer bullying and schemas. They found small associations with bullying and Mistrust Abuse and Defectiveness Shame schemas.

TABLE 3 Quality assessment for the included studies

Author and year	(1) Representativeness of the sample: (a) truly representative of the average in the target population (all subjects or random sampling), (b) somewhat representative of the average in the target population (non-random sampling) and (c) unclear or no description of the sampling strategy	(2) Sample size: (a) justified and satisfactory and (b) not justified ($N < 100$)	(3) Ascertainment of the exposure (risk factor): (a) validated measurement tool, (b) non-validated measurement tool, but the tool is available or described and (c) no description of the measurement tool	(4) Assessment of outcome: (a) independent blind assessment, (b) record linkage, (c) self-report and (d) no description
Calvete et al. (2016)	Truly	Satisfactory	Validated	Self-report
Calvete et al. (2018)	Truly	Satisfactory	Validated	Self-report
Calvete et al. (2013)	Truly	Satisfactory	Validated	Self-report
Calvete, Orue, Gámez-Guadix, and Bushman (2015)	Truly	Satisfactory	Validated	Self-report
Güner (2017)	Somewhat	Satisfactory	Validated	Self-report
Lumley and Harkness (2007)	Somewhat	Not satisfactory	Validated	Self-report
Muris (2006)	Somewhat	Satisfactory	Validated	Self-report
Roelofs et al. (2011)	Somewhat	Satisfactory	Validated	Self-report
Roelofs et al. (2013)	Somewhat	Not satisfactory	Validated	Self-report
Turner et al. (2005)	Somewhat	Not satisfactory	Validated	Self-report
Yiğit et al. (2018)	Somewhat	Satisfactory	Validated	Self-report
Zonnevijlle and Hildebrand (2019)	Somewhat	Not satisfactory	Validated	Self-report

4.4 | Associations between childhood experiences and schema domains

There were insufficient studies to calculate pooled associations via meta-analyses. Table 5 summarizes the findings of the individual studies. For emotional abuse, there were consistent medium associations across two studies for Disconnection and Rejection and small associations with Impaired Autonomy. There were also consistent medium associations across two studies for peer problems and Disconnection and Rejection. For parental emotional neglect two studies reported small to medium associations with the Disconnection and Rejection domain. Physical abuse had small to medium associations with Disconnection and Rejection. The other findings were reported by only one study each as summarized in Table 5. Only one study explored longitudinal findings with Time 1 childhood events having small to medium associations with Time 2 schemas domains measured one year later (Calvete, Orue, Gámez-Guadix, & Bushman, 2015).

5 | DISCUSSION

This aim of this systematic review and meta-analysis was to synthesize the evidence on the association between adverse childhood experiences and schemas and schema domains in adolescence. Schemas are theorized to develop from core childhood needs not being met, which is likely to occur when a child experiences abuse and neglect from the early caregiving environment. The findings of this review generally supported the link between adverse childhood experiences and schemas, but confidence in the findings is limited by the small number of available studies, the heterogeneity of measures used to assess childhood experiences and the predominance of cross-sectional data.

We found moderate pooled associations between emotional abuse and the Emotional Deprivation and Subjugation schemas. In our review on ACEs and schemas in adulthood (Pilkington et al., 2020), we found moderate ($r = .38$ to $.44$) associations between emotional abuse and Emotional Deprivation, which was similar to the moderate ($r = .33$) association found in adolescence in this review. For Subjugation and emotional abuse, the pooled association for adolescence was moderate ($r = .32$), with our adult review reporting similar moderate associations of $r = .27$ to $r = .35$ (Pilkington et al., 2020). This suggests that in adolescence, with the average age across the studies in this review being only 14.9 years (range 10–17 years), EMSs show relationships with adverse experiences similar in magnitude to those found in adulthood (range 19–43 years).

TABLE 4 Meta-analysis of correlations between adolescent schemas and early childhood experiences

	Emotional abuse	Emotional neglect
Emotional Deprivation	**$r(3) = .33$ (.19, .46), $I^2 = 0\%$**	**$r(5) = .39$ (.11, .62), $I^2 = 80.0\%$**
Abandonment	**$r(3) = .33$ (.04, .57), $I^2 = 14.9\%$**	**$r(5) = .25$ (.22, .28), $I^2 = 0\%$**
Mistrust Abuse	**$r(3) = .30$ (−.16, .66), $I^2 = 64.7\%$**	**$r(5) = .41$ (.32, .49), $I^2 = 20.2\%$**
Social Isolation	**$r(3) = .38$ (.01, .65), $I^2 = 28.0\%$**	**$r(4) = .23$ (.10, .35), $I^2 = 0\%$**
Defectiveness Shame	**$r(3) = .29$ (−.08, .59), $I^2 = 38.8\%$**	**$r(5) = .20$ (.07, .33), $I^2 = 48.6\%$**
Failure	**$r(3) = .24$ (−.25, .63), $I^2 = 45.5\%$**	**$r(5) = .35$ (.26, .44), $I^2 = 37.2\%$**
Dependence Incompetence	**$r(3) = .27$ (−.02, .51), $I^2 = 9.5\%$**	$r(5) = .19$ (−.05, .41), $I^2 = 73.59\%$
Vulnerability to Harm	**$r(3) = .26$ (.07, .43), $I^2 = 0\%$**	**$r(5) = .22$ (.08, .36), $I^2 = 66.3\%$**
Enmeshment	**$r(3) = .23$ (−.60, .82), $I^2 = 81.6\%$**	$r(5) = .12$ (−.09, .32), $I^2 = 75.2\%$
Subjugation	**$r(3) = .32$ (.14, .47), $I^2 = 0\%$**	$r(5) = .16$ (−.04, .35), $I^2 = 83.6\%$
Self-Sacrifice	**$r(3) = .21$ (.00, .41), $I^2 = 0\%$**	$r(4) = .07$ (−.25, .38), $I^2 = 9.3\%$
Emotional Inhibition	**$r(3) = .31$ (−.27, .72), $I^2 = 77.5\%$**	**$r(4) = .32$ (−.16, .68), $I^2 = 68.6\%$**
Unrelenting Standards	$r(3) = .05$ (−.36, .44), $I^2 = 37.45\%$	$r(4) = .19$ (−.24, .56), $I^2 = 70.6\%$
Insufficient Self-Control	**$r(3) = .33$ (−.13, .68), $I^2 = 57.1\%$**	**$r(5) = .32$ (.13, .49), $I^2 = 84.8\%$**
Entitlement	**$r(3) = .27$ (.01, .49), $I^2 = 0\%$**	**$r(5) = .35$ (.12, .53), $I^2 = 91.1\%$**

Note: Correlations of .20 or higher are in bold.

TABLE 5 Summary of associations between type of early childhood experience and schema domains

Study	Type early childhood experience	Target of experience	Disconnection and rejection	Impaired autonomy	Other directedness	Vigilance inhibition	Impaired limits
Roelofs et al. (2013)	Emotional neglect	Parents	M	S	S	S	S
Roelofs et al. (2013)	Emotional neglect	Peers	L	L	S	M	S
Calvete, Orue, Gámez-Guadix, and Bushman (2015)	Emotional neglect	Parents	S[a]				
Yiğit et al. (2018)	Emotional abuse	General	M	S			
Calvete et al. (2018)	Emotional abuse	Family	M	S			
Calvete, Orue, Gámez-Guadix, and Bushman (2015)	Physical abuse	Mother	S[a]				
Yiğit et al. (2018)	Physical abuse	General	M	M			
Calvete, Orue, Gámez-Guadix, and Bushman (2015)	Family violence	Family	M[a]				
Calvete et al. (2013)	Adolescent stressors	General	M	M			
Roelofs et al. (2013)	Peer problems	Peers	M	S	N	S	M
Calvete et al. (2018)	Peer problems	Peers	M	M			

Note: S, small correlation .1 to .29; M, medium correlation .3 to .49; L, large correlation .5+; N = no correlation.
[a]Schema domains measured 1 year after childhood events measured.

Young et al. (2003) theorizes that schemas can be categorized into Unconditional and Conditional Schemas, with Emotional Deprivation being Unconditional and Subjugation being Conditional. Individuals with the Emotional Deprivation schema struggle to maintain satisfying connections, not expecting to receive nurturance, care or understanding from others, which in turn influences their self-perception of their value as a person (e.g., 'I don't matter') (Young et al., 2003). Although the current results are cross-sectional and so causation cannot be established, findings are consistent with the theory that, as early as adolescence, individuals in an emotionally abusive environment may learn to subjugate (i.e., not expressing needs, wants, desires, or opinions that differ to others') to reduce the risk of retaliation and maintain connection with caregivers. This fear-driven interpersonal style may continue into adulthood, thus maintaining interpersonal dysfunction and dissatisfaction. These findings are consistent with the literature,

whereby childhood maltreatment is associated with hypervigilance to rejection-relevant cues in interpersonal relationships (Downey et al., 2000).

Moderate correlations between emotional neglect and Mistrust Abuse, Abandonment, Social Isolation and Failure were also found. There were similar associations in the adult and adolescent reviews between emotional neglect and Abandonment (.19–.24 vs. .25) and Social Isolation (.20–.34 vs. .23) (Pilkington et al., 2020). Early experiences of neglect may hinder the ability to develop felt security in relationships well into adulthood. Rather, neglect elicits distress and uncertainty about others' intentions and one's capacity to self-validate, which impairs the exploration of one's social world. These cognitive vulnerabilities (schemas) are associated with specific mental health problems including affective disorders, personality and eating pathology and post-traumatic stress disorders (Gillath et al., 2016) that start in adolescence (Nicol et al., 2020) and continue into adulthood (Arntz et al., 2005).

The pooled association between emotional neglect and Mistrust Abuse was $r = .41$ in adolescents, which was slightly higher than that found in our adult review where associations between schemas and paternal, maternal or general emotional neglect ranged from $r = .15$ to .30 (Pilkington et al., 2020). Similarly, for Failure, the adult review found a pooled association with emotional neglect ranging from .11 to .25, compared with $r = .35$ for adolescents in this review. These higher associations in this adolescent review may be due to a lack of data and variability across studies. It could also be that the relationship between some schemas and adverse events are elevated in the adolescent period and may reduce over time in adulthood. Coping mechanisms evolve as the individual matures and may be stronger at different developmental stages (Di Giuseppe et al., 2019; Diehl et al., 2014) potentially masking underlying schemas. The magnitude of the associations between adversity and schema endorsement could also be influenced by factors relating to the conditions and developmental tasks of adolescence, in contrast to the reduced influence of family members and ability to live independently in adulthood. Adolescence is a time whereby attachment-related tasks (i.e., proximity seeking, safe haven and secure base Bowlby, 1973) move from family to peers, and there is greater emphasis on establishing meaningful relationships. Early insecure relational templates about the intentions and stability of others may be heightened due to the importance of peer relationships at this time. Longitudinal studies are needed to track the associations over time.

One group of authors of four studies in this review explored longitudinal associations between stressful events, EMSs and psychopathology (Calvete et al., 2016, 2018; Calvete, Orue, Gámez-Guadix, & Bushman, 2015; Calvete, Orue, & Hankin, 2015). In one study, they investigated adolescents aged 13 years of age and followed up after 6 and 12 months (Calvete, 2014). They found partial support for the relationship between adverse events, schemas and psychopathology finding bullying, but not parental abuse, predicted a worsening of schemas at follow-up. They also found in another study that cyberbullying at mean age 15 years predicted some schemas measured 6 months later (Calvete et al., 2016) and parental emotional neglect at mean age 14 years predicted some schemas at 15 years of age (Calvete, Orue, Gámez-Guadix, & Bushman, 2015). Longer follow-up times and earlier measures of schemas and adverse events are needed to better understand these relationships and to tease apart the impact of more recent events from early childhood experiences on early schema formation.

Although the findings of this review are based on cross-sectional studies, they are consistent with the theory that childhood maltreatment results in schemas that effect an adolescent's ability to balance autonomy needs and belonging needs. The findings suggest that emotional abuse and neglect are correlated with schemas that pertain to autonomy, self-esteem, performance and relational issues, thus potentially complicating developmental tasks, exacerbating stress and increasing the likelihood of psychopathology. Thus, mastering goals associated with the formation of identity, including the ability to regulate strong emotions, self-soothe and recognize emotions in others without becoming overwhelmed (Loose, 2020), is compromised. These variables will have a direct impact on the subsequent psychosocial stages to follow.

5.1 | Clinical implications

Adolescence is an ideal time for intervention. It is a period of significant neuroplasticity, with the brain undergoing extensive reorganization (Ismail et al., 2017). Therefore, it is a time of malleability whereby the brain is receptive to both positive (resilience enhancing) and negative (vulnerability inducing) influences (Schore, 2001). These factors make adolescence an ideal time for therapeutic and resilience-enhancing interventions where the consolidation of personality occurs (Malhi et al., 2019).

Intervening during adolescence could mitigate the perpetuating nature of schemas and reduce adulthood psychopathology (Young et al., 2003). During this life stage, individuals are increasingly able to think about their thoughts and feelings and re-evaluate emotional reactions and responses to situations. This could facilitate recognition of cognitive biases, identification of schema-related triggers and promotion of behavioural modification. Intervening in this way could help with the self-regulatory skills that have been compromised by these adverse experiences in their early environment (Schore, 2001).

Young people are still in environments where schemas are being shaped and maintained. Poverty results in an environment where adverse experiences cluster together and more systemic interventions are likely needed at the societal level to reduce this risk factor (Lacey et al., 2020). Where intervention at the individual level is possible, targeting schemas may improve psychosocial adjustments. Prevention could include education to schools and families on positive parenting patterns identified as meeting core needs and associated with positive mental health outcomes (Louis et al., 2020). Given that schemas appear to impact early adolescence, midadolescence to late adolescence, research looking into interventions at various stages and subsequent developmental and pathological outcomes will assist in the

minimization of the legacy of adverse childhood experiences into adulthood.

5.2 | Strengths and limitations

Strengths of this study include using a methodological approach compliant with PRISMA guidelines. Meta-analysis allowed the strength of associations to be pooled, but there are several limitations. While there were 12 studies included in this review, meta-analyses for each association ranged from three to five studies only. Studies included numerous different measures of childhood adverse events, and together with few studies, some analyses demonstrated high heterogeneity. Not all types of childhood adverse experiences had been explored in relation to schemas. The validity of the Young Schema Questionnaire in regard to measuring five domains has also been questioned by recent factor analytic studies (Kriston et al., 2012; Yalcin et al., 2020). For example, a recent study reported only four factors emerging: 'Disconnection and Rejection', 'Impaired Autonomy and Performance', 'Excessive Responsibility & Standards' and 'Impaired Limits' (Bach et al., 2018). Thus, analysis of individual schemas may be more robust than using the schema domains that were focus of some of the studies reviewed here.

The presence of high heterogeneity across several of the meta-analyses lowers our certainty in the estimates. Unfortunately, there were not enough studies to perform subgroup analyses to explore the impact of factors such as socioeconomic status and the influence of poverty, age of schema assessment, gender and participant recruitment methods. For example, there may be gender differences in the likelihood of certain adverse experiences resulting in gender-specific schema profile elevations. Poverty has also been linked to a clustering of adverse experiences (Lacey et al., 2020) and the possibility that socioeconomic status moderates the association between childhood adversity and EMSs in adolescents should be explored in future research.

In most studies, childhood emotional, physical and sexual abuse or neglect and bullying were assessed based on adolescent self-report, generally measured concurrently with schemas. As such, causal associations cannot be made. As most studies were cross-sectional, temporal associations could not be established and the impact of any concurrently occurring events that may have confounded associations could not be examined. Future longitudinal studies that measure current events may be able to illuminate the influence of these factors. There is also the potential for unmeasured variables being responsible for the observed correlations. We did not explore any partial correlations or associations adjusted for possible confounding covariates. Accuracy of retrospective reports of abuse and neglect from parents and peers were subjective and may result in bias (Reuben et al., 2016).

Temperament was also not explored in this review. Young's theory conceptualizes schema formation as resulting from the interaction between temperament and adverse experiences. For example, the same adverse experience may contribute differently to the development of maladaptive schemas depending on the child's temperament. Therefore, future studies should consider evaluating the role of child temperament in the genesis of schemas.

5.3 | Conclusions

This review found evidence for moderate pooled associations between the adverse experience of emotional abuse and the Emotional Deprivation and Subjugation schemas and for the adverse experience of emotional neglect and Mistrust Abuse, Abandonment, Social Isolation and Failure schemas. Further research exploring the temporal associations of these findings and their interaction with temperament and later psychopathology is required to further validate Young's theory of EMS development. Complex longitudinal, bidirectional models between schemas, temperament and adverse childhood experiences, controlling for a range of potential confounding factors, will likely be needed to understand these relationships.

The findings from the current review echo those found in adults who have a history of childhood adversity (Pilkington et al., 2020). The inability of the early caregiving environment to meet the emotional needs of an individual, and negative peer experiences, are associated with schemas from as early as 10 years of age. This is consistent with a large body of research linking adverse childhood experiences to poor health outcomes including poor mental health (Hughes et al., 2017). Given the strong evidence base for Schema Therapy in adults, intervening early, potentially in the adolescent period using schema therapy may be warranted to improve the mental health trajectories for youth.

ACKNOWLEDGEMENT

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors. Open access publishing facilitated by Monash University, as part of the Wiley - Monash University agreement via the Council of Australian University Librarians. WOA Institution: Monash University Blended DEAL: CAUL 2022.

CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

Data are available on request.

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REFERENCES

Alba, J., Calvete, E., Wante, L., Van Beveren, M.-L., & Braet, C. (2018). Early maladaptive schemas as moderators of the association between bullying victimization and depressive symptoms in adolescents. *Cognitive Therapy and Research*, *42*(1), 24–35. https://doi.org/10.1007/s10608-017-9874-5

Arntz, A., Klokman, J., & Sieswerda, S. (2005). An experimental test of the schema mode model of borderline personality disorder. *Journal of*

Behavior Therapy and Experimental Psychiatry, *36*(3), 226–239. https://doi.org/10.1016/j.jbtep.2005.05.005

Bach, B., Lockwood, G., & Young, J. E. (2018). A new look at the schema therapy model: Organization and role of early maladaptive schemas. *Cognitive Behaviour Therapy*, *47*(4), 328–349. https://doi.org/10.1080/16506073.2017.1410566

Beck, A. T. (1979). *Cognitive therapy and the emotional disorders*. Penguin.

Bor, W., Dean, A. J., Najman, J., & Hayatbakhsh, R. (2014). Are child and adolescent mental health problems increasing in the 21st century? A systematic review. *Australian & New Zealand Journal of Psychiatry*, *48*(7), 606–616. https://doi.org/10.1177/0004867414533834

Bowlby, J. (1973). *Attachment and loss: Volume II: Separation, anxiety and anger* (pp. 1–429). The Hogarth Press and the Institute of Psycho-Analysis.

Calvete, E. (2014). Emotional abuse as a predictor of early maladaptive schemas in adolescents: Contributions to the development of depressive and social anxiety symptoms. *Child Abuse & Neglect*, *38*(4), 735–746. https://doi.org/10.1016/j.chiabu.2013.10.014

Calvete, E., Fernández-González, L., González-Cabrera, J. M., & Gámez-Guadix, M. (2018). Continued bullying victimization in adolescents: Maladaptive schemas as a mediational mechanism. *Journal of Youth and Adolescence*, *47*(3), 650–660. https://doi.org/10.1007/s10964-017-0677-5

Calvete, E., Orue, I., & Gámez-Guadix, M. (2016). Cyberbullying victimization and depression in adolescents: The mediating role of body image and cognitive schemas in a one-year prospective study. *European Journal on Criminal Policy and Research*, *22*(2), 271–284. https://doi.org/10.1007/s10610-015-9292-8

Calvete, E., Orue, I., Gámez-Guadix, M., & Bushman, B. J. (2015). Predictors of child-to-parent aggression: A 3-year longitudinal study. *Developmental Psychology*, *51*(5), 663–676. https://doi.org/10.1037/a0039092

Calvete, E., Orue, I., & Hankin, B. (2015). A longitudinal test of the vulnerability-stress model with early maladaptive schemas for depressive and social anxiety symptoms in adolescents. *Journal of Psychopathology and Behavioral Assessment*, *37*(1), 85–99. https://doi.org/10.1007/s10862-014-9438-x

Calvete, E., Orue, I., & Hankin, B. L. (2013). Transactional relationships among cognitive vulnerabilities, stressors, and depressive symptoms in adolescence. *Journal of Abnormal Child Psychology*, *41*(3), 399–410. https://doi.org/10.1007/s10802-012-9691-y

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

Davey, M., Eaker, D. G., & Walters, L. H. (2003). Resilience processes in adolescents: Personality profiles, self-worth, and coping. *Journal of Adolescent Research*, *18*(4), 347–362. https://doi.org/10.1177/0743558403018004002

Di Giuseppe, M., Gennaro, A., Lingiardi, V., & Perry, J. C. (2019). The role of defense mechanisms in emerging personality disorders in clinical adolescents. *Psychiatry*, *82*(2), 128–142. https://doi.org/10.1080/00332747.2019.1579595

Diehl, M., Chui, H., Hay, E. L., Lumley, M. A., Grühn, D., & Labouvie-Vief, G. (2014). Change in coping and defense mechanisms across adulthood: Longitudinal findings in a European American sample. *Developmental Psychology*, *50*(2), 634–648. https://doi.org/10.1037/a0033619

Downey, G., Feldman, S., & Ayduk, O. (2000). Rejection sensitivity and male violence in romantic relationships. *Personal Relationships*, *7*(1), 45–61. https://doi.org/10.1111/j.1475-6811.2000.tb00003.x

Dube, S. R., Miller, J. W., Brown, D. W., Giles, W. H., Felitti, V. J., Dong, M., & Anda, R. F. (2006). Adverse childhood experiences and the association with ever using alcohol and initiating alcohol use during adolescence. *Journal of Adolescent Health*, *38*(4), 444.e1–444.e10. https://doi.org/10.1016/j.jadohealth.2005.06.006

Duke, N. N., Pettingell, S. L., McMorris, B. J., & Borowsky, I. W. (2010). Adolescent violence perpetration: Associations with multiple types of adverse childhood experiences. *Pediatrics*, *125*(4), e778–e786. https://doi.org/10.1542/peds.2009-0597

Dunn, V. J., Abbott, R. A., Croudace, T. J., Wilkinson, P., Jones, P. B., Herbert, J., & Goodyer, I. M. (2011). Profiles of family-focused adverse experiences through childhood and early adolescence: The ROOTS project a community investigation of adolescent mental health. *BMC Psychiatry*, *11*(1), 109. https://doi.org/10.1186/1471-244X-11-109

Erikson, E. H. (1959). *Identity and the life cycle: Selected papers*. International Universities Press.

Evans, E., Hawton, K., & Rodham, K. (2004). Factors associated with suicidal phenomena in adolescents: A systematic review of population-based studies. *Clinical Psychology Review*, *24*(8), 957–979. https://doi.org/10.1016/j.cpr.2004.04.005

Flaherty, E. G., Thompson, R., Dubowitz, H., Harvey, E. M., English, D. J., Proctor, L. J., & Runyan, D. K. (2013). Adverse childhood experiences and child health in early adolescence. *JAMA Pediatrics*, *167*(7), 622–629. https://doi.org/10.1001/jamapediatrics.2013.22

Fraley, R. C., & Heffernan, M. E. (2013). Attachment and parental divorce: A test of the diffusion and sensitive period hypotheses. *Personality and Social Psychology Bulletin*, *39*(9), 1199–1213. https://doi.org/10.1177/0146167213491503

Gillath, O., Karantzas, G. C., & Fraley, R. C. (2016). *Adult attachment: A concise introduction to theory and research*. Academic Press.

Güner, O. (2017). Psychometric properties and normative values of early maladaptive schema questionnaires set for children and adolescents (SQS). *Clinical Psychology & Psychotherapy*, *24*(2), 534–554. https://doi.org/10.1002/cpp.2049

Hawke, L. D., & Provencher, M. D. (2011). Schema theory and schema therapy in mood and anxiety disorders: A review. *Journal of Cognitive Psychotherapy*, *25*(4), 257–276. https://doi.org/10.1891/0889-8391.25.4.257

Higgins, J. P. T., & Green, S. (2011). *Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 [updated March 2011]*. The Cochrane Collaboration. Retrieved from http://www.handbook.cochrane.org

Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., Jones, L., & Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: A systematic review and meta-analysis. *The Lancet Public Health*, *2*(8), e356–e366. https://doi.org/10.1016/S2468-2667(17)30118-4

Ismail, F. Y., Fatemi, A., & Johnston, M. V. (2017). Cerebral plasticity: Windows of opportunity in the developing brain. *European Journal of Paediatric Neurology*, *21*(1), 23–48. https://doi.org/10.1016/j.ejpn.2016.07.007

Kriston, L., Schäfer, J., von Wolff, A., Härter, M., & Hölzel, L. P. (2012). The latent factor structure of Young's early maladaptive schemas: Are schemas organized into domains? *Journal of Clinical Psychology*, *68*(6), 684–698. https://doi.org/10.1002/jclp.21846

Lacey, R. E., Howe, L. D., Kelly-Irving, M., Bartley, M., & Kelly, Y. (2020). The clustering of adverse childhood experiences in the Avon Longitudinal Study of Parents and Children: Are gender and poverty important? *Journal of Interpersonal Violence*, 0886260520935096. https://doi.org/10.1177/0886260520935096

Lacey, R. E., & Minnis, H. (2020). Practitioner review: Twenty years of research with adverse childhood experience scores—Advantages, disadvantages and applications to practice. *Journal of Child Psychology and Psychiatry*, *61*(2), 116–130. https://doi.org/10.1111/jcpp.13135

Loose, C. (2020). *Schema therapy with children and adolescents: A practitioner's guide*. Pavilion Publishing & Media.

Louis, J. P., Davidson, A. T., Lockwood, G., & Wood, A. (2020). Positive perceptions of parenting and their links to theorized core emotional needs. *Journal of Child and Family Studies*, *29*(12), 3342–3356. https://doi.org/10.1007/s10826-020-01807-0

Lumley, M. N., & Harkness, K. L. (2007). Specificity in the relations among childhood adversity, early maladaptive schemas, and symptom profiles in adolescent depression. *Cognitive Therapy and Research*, *31*(5), 639–657. https://doi.org/10.1007/s10608-006-9100-3

Malhi, G. S., Das, P., Bell, E., Mattingly, G., & Mannie, Z. (2019). Modelling resilience in adolescence and adversity: A novel framework to inform research and practice. *Translational Psychiatry*, *9*(1), 1–16. https://doi.org/10.1038/s41398-019-0651-y

McLaughlin, K. A., & Sheridan, M. A. (2016). Beyond cumulative risk: A dimensional approach to childhood adversity. *Current Directions in Psychological Science*, *25*(4), 239–245. https://doi.org/10.1177/0963721416655883

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine*, *151*(4), 264–269. https://doi.org/10.7326/0003-4819-151-4-200908180-00135

Moore, S. E., Norman, R. E., Suetani, S., Thomas, H. J., Sly, P. D., & Scott, J. G. (2017). Consequences of bullying victimization in childhood and adolescence: A systematic review and meta-analysis. *World Journal of Psychiatry*, *7*(1), 60–76. https://doi.org/10.5498/wjp.v7.i1.60

Muris, P. (2006). Maladaptive schemas in non-clinical adolescents: Relations to perceived parental rearing behaviours, big five personality factors and psychopathological symptoms. *Clinical Psychology & Psychotherapy: An International Journal of Theory & Practice*, *13*(6), 405–413. https://doi.org/10.1002/cpp.506

Nicol, A., Mak, A. S., Murray, K., Walker, I., & Buckmaster, D. (2020). The relationships between early maladaptive schemas and youth mental health: A systematic review. *Cognitive Therapy and Research*, *44*, 715–751. https://doi.org/10.1007/s10608-020-10092-6

Pilkington, P., Bishop, A., & Younan, R. (2020). Adverse childhood experiences and early maladaptive schemas in adulthood: A systematic review and meta-analysis. *Clinical Psychology & Psychotherapy*.

Reuben, A., Moffitt, T. E., Caspi, A., Belsky, D. W., Harrington, H., Schroeder, F., Hogan, S., Ramrakha, S., Poulton, R., & Danese, A. (2016). Lest we forget: Comparing retrospective and prospective assessments of adverse childhood experiences in the prediction of adult health. *Journal of Child Psychology and Psychiatry*, *57*(10), 1103–1112. https://doi.org/10.1111/jcpp.12621

Roelofs, J., Lee, C., Ruijten, T., & Lobbestael, J. (2011). The mediating role of early maladaptive schemas in the relation between quality of attachment relationships and symptoms of depression in adolescents. *Behavioural and Cognitive Psychotherapy*, *39*(4), 471–479.

Roelofs, J., Onckels, L., & Muris, P. (2013). Attachment quality and psychopathological symptoms in clinically referred adolescents: The mediating role of early maladaptive schema. *Journal of Child and Family Studies*, *22*(3), 377–385. https://doi.org/10.1007/s10826-012-9589-x

Schore, A. N. (2001). Effects of a secure attachment relationship on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal: Official Publication of the World Association for Infant Mental Health*, *22*(1–2), 7–66. https://doi.org/10.1002/1097-0355(200101/04)22:1<7::AID-IMHJ2>3.0.CO;2-N

Suurmond, R., van Rhee, H., & Hak, T. (2017). Introduction, comparison, and validation of Meta-essentials: A free and simple tool for meta-analysis. *Research Synthesis Methods*, *8*(4), 537–553. https://doi.org/10.1002/jrsm.1260

Tarter, R. E., Kirisci, L., Vanyukov, M., Cornelius, J., Pajer, K., Shoal, G. D., & Giancola, P. R. (2002). Predicting adolescent violence: Impact of family history, substance use, psychiatric history, and social adjustment. *American Journal of Psychiatry*, *159*(9), 1541–1547. https://doi.org/10.1176/appi.ajp.159.9.1541

Thompson, R., Proctor, L. J., English, D. J., Dubowitz, H., Narasimhan, S., & Everson, M. D. (2012). Suicidal ideation in adolescence: Examining the role of recent adverse experiences. *Journal of Adolescence*, *35*(1), 175–186. https://doi.org/10.1016/j.adolescence.2011.03.003

Turner, H. M., Rose, K., & Cooper, M. (2005). Schema and parental bonding in overweight and nonoverweight female adolescents. *International Journal of Obesity*, *29*(4), 381–387. https://doi.org/10.1038/sj.ijo.0802915

Wilson, D. B. (2001). Practical Meta-Analysis Effect Size Calculator [online calculator]. Retrieved from https://campbellcollaboration.org/research-resources/effect-size-calculator.html

Wright, M. O. D., Crawford, E., & Del Castillo, D. (2009). Childhood emotional maltreatment and later psychological distress among college students: The mediating role of maladaptive schemas. *Child Abuse & Neglect*, *33*(1), 59–68. https://doi.org/10.1016/j.chiabu.2008.12.007

Yalcin, O., Lee, C., & Correia, H. (2020). Factor structure of the Young Schema Questionnaire (Long Form-3). *Australian Psychologist*, *55*, 546–558. https://doi.org/10.1111/ap.12458

Yiğit, İ., Kılıç, H., Yiğit, M. G., & Çelik, C. (2018). Emotional and physical maltreatment, early maladaptive schemas, and internalizing disorders in adolescents: A multi-group path model of clinical and non-clinical samples. *Current Psychology*, 1–11.

Young, J. E. (1999). *Cognitive therapy for personality disorders: A schema-focused approach*. Professional Resource Press/Professional Resource Exchange.

Young, J. E., Klosko, J. S., & Weishaar, M. E. (2003). *Schema therapy* (Vol. 254). Guilford Press.

Young, J. E., Klosko, J. S., & Weishaar, M. E. (2006). *Schema therapy: A practitioner's guide*. Guilford Press.

Zonnevijlle, M., & Hildebrand, M. (2019). Like parent, like child? Exploring the association between early maladaptive schemas of adolescents involved with C hild P rotective S ervices and their parents. *Child & Family Social Work*, *24*(2), 190–200. https://doi.org/10.1111/cfs.12602

How to cite this article: May, T., Younan, R., & Pilkington, P. D. (2022). Adolescent maladaptive schemas and childhood abuse and neglect: A systematic review and meta-analysis. *Clinical Psychology & Psychotherapy*, *29*(4), 1159–1171. https://doi.org/10.1002/cpp.2712