# Early Life Adversity and Empathy: A Scoping Review of Past Research and Recommendations for Future Directions

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## Abstract

Early life adversity (ELA) describes stressful experiences that may increase risk for psychopathology and impact emotion regulation and executive functioning systems. The influence of ELA on the development of empathy—the ability to understand and resonate with others' thoughts and emotions—remains understudied, despite the fact that empathy development relies on cognitive and emotional abilities often affected by ELA. This scoping review summarized 43 empirical articles on ELA and empathy to clarify the muddled literature and address limitations to inform future research. Across various operationalizations of ELA and empathy, 15 articles suggested that ELA was associated with *increased* empathy, 19 that ELA was associated with *decreased* empathy, and 12 pointed to a null association. ELA and empathy showed differing associations across developmental periods, with ELA being more related to higher affective empathy and lower cognitive empathy in youth and higher personal distress in adulthood. Categorization by type of adversity revealed a lack of studies on deprivation and environmental adversity, while examination of empathy operationalization revealed a need for the assessment of empathy components among youth and more task-based measures of empathy. Recommendations for future research include the need to (a) clarify operationalizations of ELA, (b) explore empathy components and naturalistic measures, and (c) focus on outcomes in adolescence. Continued efforts to understand the connection between ELA and empathy will provide valuable insight into the impact of adversity on socioemotional development and guide psychosocial interventions for individuals at risk for maladaptive outcomes following adverse childhood experiences.

**Keywords** Childhood trauma · Early life adversity · Empathy · Socioemotional well-being · Dimensional models of adversity

## Introduction

Early life adversity (ELA) represents a spectrum of common and stressful experiences which can cascade to changes in emotion and stress regulation systems and escalate risk of externalizing and internalizing psychopathology. Despite the crucial role of socioemotional skills in mitigating psychopathology, the link between ELA and the development of skills such as empathy remains insufficiently examined. A scoping literature review is needed to examine extant research and suggest future recommendations given conflicting work in the field. Scoping reviews examine a body of literature that has not yet been comprehensively reviewed or is too complex for a systemic review (Grant and Booth, 2009), appropriate in this case due to the many operationalizations of ELA and subcomponents of empathy. A scoping review thus examines the extent and nature of past theoretical and empirical work on a topic and identifies opportunities for future research (Arksey and O'Malley, 2005).

### Early Life Adversity and Empathy

ELA encompasses a diverse range of stressful environmental experiences including childhood maltreatment, exposure to neighborhood violence, and chronic discrimination (McLaughlin and Sheridan, 2016; Polanco-Roman et al.,

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2021). ELA is quite common; over 46% of individuals under the age of 18 in the United States (U.S.), or approximately *34 million children*, report at least one instance of ELA (Bethell et al., 2017). In a survey of over 50000 adults in 21 countries, 38% of respondents reported at least one ELA before age 18 (Kessler et al., 2010).

Evidence abound demonstrates that ELA increases the risk for an array of maladaptive consequences throughout the lifespan (Cicchetti, 2016). These include outcomes that predict poor psychosocial functioning such as externalizing psychopathology (Braga et al., 2018), internalizing psychopathology (Cicchetti and Natsuaki, 2014), and the development of emotion recognition, regulation, and responding skills (Ackerman et al., 1998; Beeghly and Cicchetti, 1994; Izard et al., 2002). One such skill is *empathy*, or the capacity to understand and resonate with others' thoughts, perspectives, and emotions (Bernhardt and Singer, 2012). Empathy is the basis for healthy social functioning, interpersonal bonds, and prosocial behavior (Decety and Meyer, 2008). Further, low levels of empathy have been linked to challenges in mental health and well-being (Blair, 2008; Marsh, 2016), including increased aggression (Schultz et al., 2004) and risk for disruptive behavioral disorders among youth (Zahn-Waxler et al., 1995).

The connection between ELA and empathy remains ambiguous despite the importance of empathy, ubiquity of ELA, and underlying psychological processes linked to both constructs. Empathic abilities recruit various processes that are notoriously impacted by ELA including executive functioning and emotion regulation (Pollak et al., 2000, 2005). Understanding these nuanced associations is critical, as empathy is a key precursor to successful social relationships (Decety and Meyer, 2008), which in turn serve as a central component of psychosocial and physical well-being (House et al., 1988; Yang et al., 2016). Clearer insights into the ELA-empathy connection could inform interventions to promote positive outcomes among vulnerable individuals.

## The Definition and Development of Empathy

The empathy response is complex and most often distilled into two components: affective and cognitive empathy. Affective empathy describes sharing the emotion of someone else (*"I feel what you feel"*), while cognitive empathy describes understanding how someone is feeling (*"I know what you feel"*). We briefly summarize the development of empathy throughout infancy into youth and empathy's reliance on emotion regulation and executive functioning skills before next reviewing environmental influences on empathy development.

Scholars have traditionally argued that the affect-sharing aspect of empathy is innate in typically-developing individuals, with precursors to affective empathy appearing in the first year of life. The nascent empathy response is often operationalized as an infant's reaction to an emotional display, also referred to as *personal distress, empathic arousal*, or *emotional contagion* (Hoffman, 1982). Reaction to the distress of others has been observed as early as at birth, with newborns crying more strongly in response to the cries of another infant compared to other noises (Sagi and Hoffman, 1976). Empirical and theoretical work have suggested that the capacity to feel concern for others develops throughout the first and second year of life in synchrony with implicit self-other differentiation and the development of an explicit sense of self, language abilities, and emotional regulation and executive functioning skills (Hoffman, 1975, 1984, 2001). This idea has also been used to conceptualize that cognitive empathy, defined as one's ability to infer the mental state of someone else, also develops later than the initial personal distress response. In toddlers, cognitive empathy is often operationalized as *theory of mind*, which describes the ability to take the perspective of another person, particularly when that perspective conflicts with one's own knowledge or experience (Hughes et al., 2016; Wellman et al., 2001). Some researchers have argued that cognitive empathy emerges around age 4 or 5 due to its reliance on advanced language and executive functioning abilities (Liu et al., 2008; Wellman et al., 2001).

In contrast, other emerging work has suggested that self-other differentiation is in fact intact at birth and that other-oriented affective empathy and cognitive empathy develop alongside self-oriented affect sharing (Davidov et al., 2013). Research has found that infants aged 8- to 16-months demonstrate both affective and cognitive empathy components (Roth-Hanania et al., 2011), suggesting that these abilities are intact during the first year of life (Davidov et al., 2021; Liddle et al., 2015). These abilities continue to differentially develop throughout childhood, with the trajectory of affective empathy increasing during year two and otherwise being relatively stable, and the cognitive empathy trajectory increasing over the second and third years of life (Uzefovsky and Knafo-Noam, 2016). Studies following youth from childhood into adolescence highlight similar trajectories, with affective empathy being relatively stable and cognitive empathy increasing with age (Dadds et al., 2008; Van Lissa et al., 2014).

While the ability to engage in affective empathy, cognitive empathy, and personal distress may be present as early as the first year of life, the extent to which an individual can regulate their cognitions and emotions determines whether their empathy response is self-focused (i.e., personal distress) or other-focused (i.e., affective and cognitive empathy) (Davidov et al., 2013). The ability to regulate one's emotions and express concern for others relies on the maturity of foundational skills such as executive functioning and emotion regulation (Decety and Meyer, 2008) that develop

throughout childhood and adolescence. These skills support accurate interpersonal understanding, emotional response regulation, working memory, and complex verbal and non-verbal cue integration (Zaki et al., 2009). For example, when someone (an observer) sees an emotion expressed in another person (a target), the observer may experience an automatic emotion-sharing response. Executive functioning and emotion regulation skills then come "online" to regulate cognitions and emotions, helping the observer react to the target's experience and not their own emotions (see Fig. 1 for a visualization of the role of these skills in the empathy response). In this way, attentional control, cognitive flexibility, and emotion regulation modulate self/other awareness to produce an empathic response (Decety and Meyer, 2008).

## Influences on Empathy Development

The development of empathy is susceptible to environmental influences throughout the first several years of life (Eisenberg, 2018; Knafo et al., 2009), providing empirical support for an influence of ELA on empathy development. Aspects of parenting such as attachment style, directing children to label emotions, and modeling emotional expressivity contribute to the development of children's empathy skills and later prosocial behavior with peers (Sroufe, 2005; Taylor et al., 2013). For example, positive parenting has been linked with increased empathy in adolescents via attachment theory, as secure attachment styles are associated with higher empathy (Goering and Mrug, 2023). Further, social learning theory enumerates the many ways in which parental behavior may foster empathy in children. These may include through parental modeling of empathic responses, preventing or eliminating coercive exchanges between the child and their parents (or between parents) through calm and non-physical conflict resolution skills, and promoting warm, positive interactions through positive parenting strategies (Eisenberg and Valiente, 2002; Hawes and Allen, 2016). Conversely, negative parenting such as harsh discipline and maltreatment
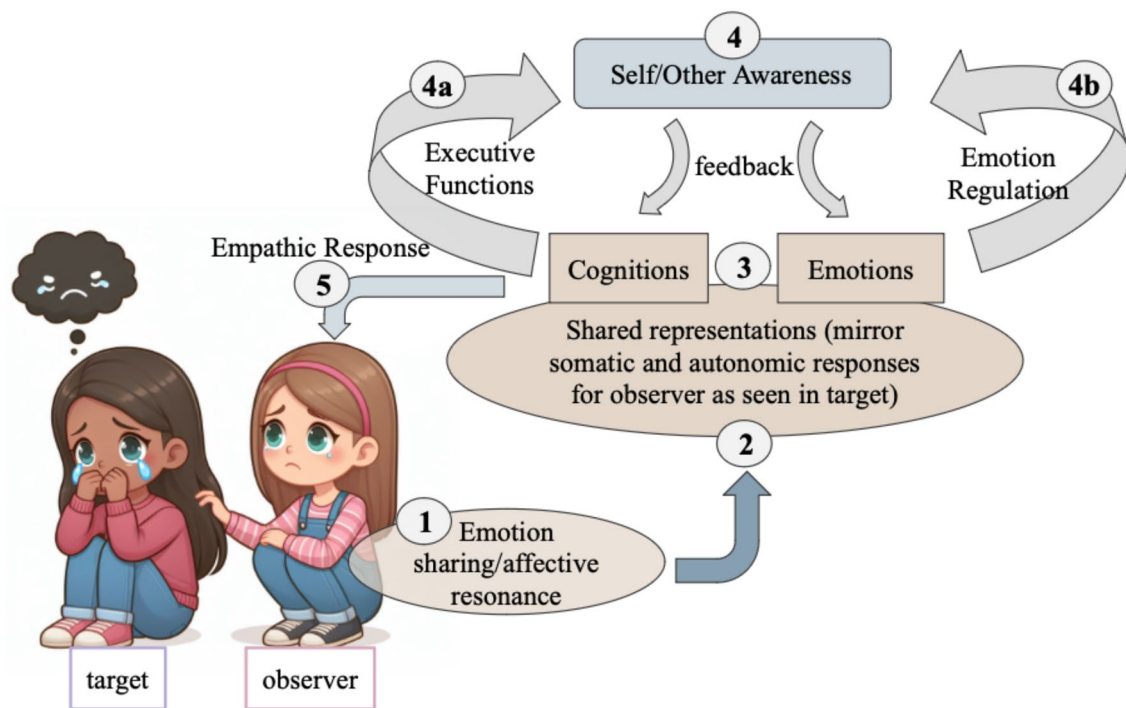


**Fig. 1** The role of executive functions and emotion regulation skills in modulating and producing an empathic response. Executive functioning and emotion regulation skills may modulate the empathy response in the following manner. (1) A target (left) has an emotional response that is perceived by an observer (right). If target is motivated or able to empathize, they experience an automatic emotion or affective sharing response. (2) This affective response is underpinned by shared somatic and autonomic responses in the observer that mirror what is seen in the target. (3) These shared representations give rise to cognitions and emotions about the situation, the target, similar experiences the observer has had, etc. (4) Self/other awareness "determines an understanding of whose feelings belong to whom" and employs skills to regulate cognitions and emotions to help the observer attend to the target. Based on feedback from the target, cognitions/emotions continue to be regulated throughout the interaction. (4a) Executive functions such as selective attention regulate the observer's cognitions to help them focus on the target's experience. (4b) Emotion regulation skills such as inhibition and self-regulation modulate the observer's emotions to help them focus on the target's experience. (5) Depending on the observer's success in regulating their cognitions and emotions, they produce an empathic response to support the target. This figure drew inspiration from a figure by Decety and Meyer (2008). The image of two young people was generated from Bing.com image creator

has been linked to decreased empathy in children (Eisenberg et al., 2006; Krevans and Gibbs, 1996). Harsh discipline may foster a moral orientation based on fear of punishment—an internally oriented emotion—instead of other-oriented emotions such as opposition to harming others (Hoffman, 2001).

Further, one's relationship with caregivers serves as the template to understand one's own emotions and relate to others (Pears and Fisher, 2005). When this modeling or instruction by caregivers is poor or inconsistent, children may have an insufficient understanding of how to relate to others' thoughts and emotions (Luke and Banerjee, 2012) or develop alterations in attachment behavior (Cicchetti and Toth, 2005). Insensitive, emotionally insecure, and harmful experiences such as maltreatment are significant deviations of the average expected environment, causing difficulty navigating important developmental transitions (Cicchetti and Banny, 2014).

Taken together, literature on environmental influences on socioemotional development underscores that parenting and family factors may shape empathy development through various mechanisms such as modeling the expression of emotions or fostering moral principles. Environmental and social cues not only shape the development of empathy but also impact many of the same foundational skills that enable one to empathize. Previous research has found that some forms of ELA impact executive functioning skills (Sheridan et al., 2017) and emotion regulation abilities (Hébert et al., 2018; Tottenham et al., 2010), processes that are then recruited by

the empathy response. This theoretical and empirical rationale for the study of adverse childhood experiences shaping empathy is bolstered by research that has demonstrated links between ELA and empathy—however, such literature is muddled and inconsistent.

## Existing Literature on ELA and Empathy

The generation of the empathy response may rely on both *motivations* to care for others and *abilities* to regulate one's own feelings and understand the feelings of others (Weisz and Zaki, 2018). Accordingly, ELA could enhance or dampen empathy by modulating one's empathic motivations or abilities (see Fig. 2). For example, experiences of ELA may heighten one's empathy motivations by fostering empathy based on shared experiences (Lim and DeSteno, 2020). ELA could enhance one's empathy abilities by increasing sensitivity to others' emotional distress cues (Benz et al., 2023). On the other hand, ELA may decrease empathy motivations by increasing negative affect toward certain individuals, such as those who do not share the same adversity history. ELA may impair one's empathic abilities by reducing one's capacity to tolerate the distress involved in supporting another person's emotions (Troop-Gordon et al., 2017).

Consistent with hypotheses presented in Fig. 2 that empathy could be positively or negatively associated with empathy, empirical research exploring ELA and empathy has produced mixed findings. Some studies indicate that exposure to
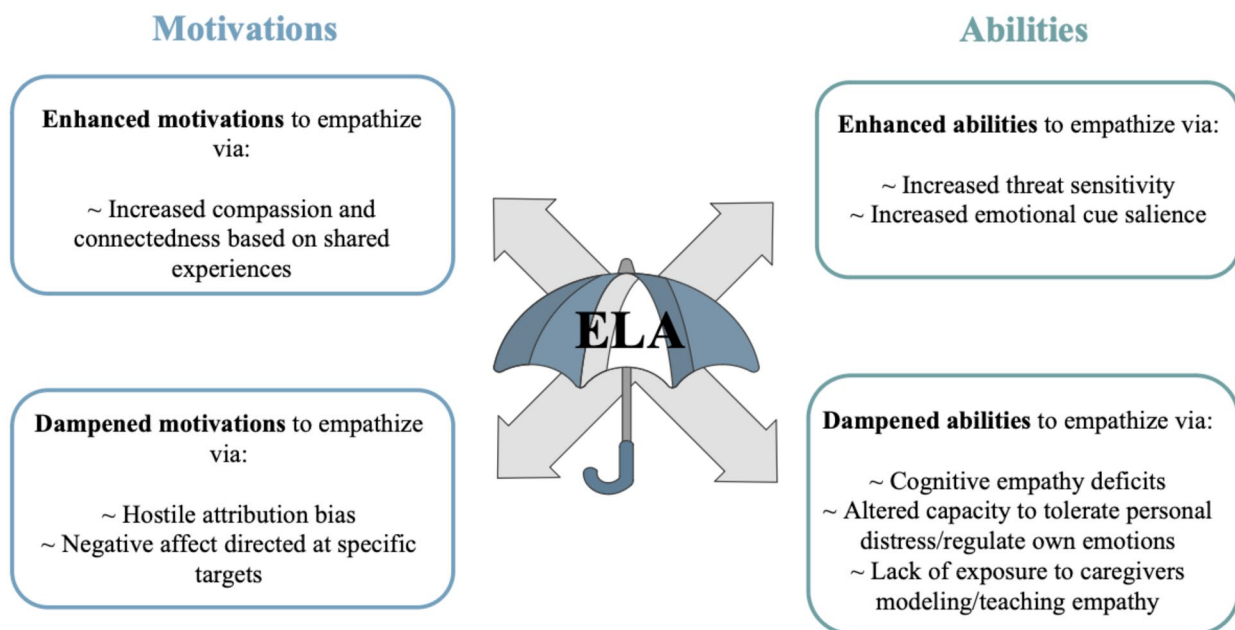


**Fig. 2** Conceptual model of the ways in which ELA may enhance or dampen empathy motivations and abilities. Examples of the ways in which experiences of early life adversity (ELA) may alter empathic motivations (left column) and empathic abilities (right column). The top row represents how ELA could *enhance* empathic motivations and abilities and the bottom row represents how ELA could *dampen* empathic motivations and abilities

adverse experiences in childhood may lead to *higher* levels of empathy (Greenberg et al., 2018; Liu et al., 2023), while others have found that traumatic childhood experiences are associated with *decreased* empathy (Narvey et al., 2021; Sun et al., 2020). It remains unclear how various aspects of ELA may predict increases or decreases in empathy. The nature of the influence of ELA on empathy likely depends on many factors including the severity, chronicity, and dimension of adversity.

ELA is notoriously challenging to operationalize; the conceptualization and measurement of ELA is at the center of contemporary debates in psychopathology. Historically, work on ELA and empathy has examined specific adversities or general adversity indices that combine across diverse experiences. Recent empirical and theoretical advances facilitate the exploration of ELA by turning the focus away from specific adversities or composite "cumulative risk" scores. Recently, *shared dimensions* of adversity have been emphasized, taking into account the reality that adverse experiences frequently co-occur (Debowska et al., 2017; Gonzalez et al., 2014), that there is little replicable evidence for specific effects of distinct adversities, and that observed changes do not necessarily map onto biologically meaningful alterations (Smith and Pollak, 2021).

For example, one dimensional model of adversity distinguishes between experiences of *threat* (fear of harm to oneself, e.g., physical abuse) and experiences of *deprivation* (a lack of expected inputs or resources, e.g., poverty) (Humphreys and Zeanah, 2015; Sheridan et al., 2017). Evidence has found that these two dimensions of ELA give rise to distinct patterns of brain and behavior challenges. *Unpredictability* is another ELA dimension that describes stochastic changes in the environment such as caregiver or household transitions (Ellis et al., 2009). Yet another dimensional perspective distinguishes experiences of *interpersonal* ELA—relationship stressors such as harsh parenting or childhood maltreatment (Palacios-Barrios et al., 2024)—from *environmental* ones (i.e., adversity not directly related to human actors, such as an earthquake).

Measuring and categorizing experiences of ELA into dimensions may indicate differential associations with empathic abilities, as empathy components rely on distinct abilities and brain regions (Zaki and Ochsner, 2012). Accordingly, some forms of empathy are likely more vulnerable to certain ELA dimensions than others. For example, children who experience deprivation and unpredictability are at greater risk of executive function and cognitive deficits due to the absence of complex environmental and social inputs (Hildyard and Wolfe, 2002; McLaughlin et al., 2014). Executive functioning skills play a role in modulating self/other awareness (Decety and Meyer, 2008), suggesting that individuals suffering from deprivation or unpredictability may struggle more with cognitive empathy. Conversely, children exposed to the threat dimension may show atypical processing of emotional information caused by alterations in emotional reactivity and regulation pathways (Miller et al., 2018; Pollak et al., 2005). Thus, individuals exposed to *threat* or *interpersonal* adversity may experience alterations in affective empathy or personal distress due to associated impacts on emotion-regulatory systems. Complicating this distinction is the reality that dimensions of adversity frequently co-occur (Smith and Pollak, 2021) and that research on ELA and empathy has not been conducted within dimensional frameworks.

Further, it is likely that patterns between ELA and empathy differ across developmental periods. That is, while research on ELA focuses on adverse experiences that occur in childhood, correlates of ELA may differ based on whether the participants are currently in childhood, adolescence, or adulthood. Adults impacted by adversity in their childhood have had more time for their emotion regulation and executive functioning skills to develop based on other risk or resilience factors, whereas the same might not be true of younger populations. Understanding how ELA is associated with empathy development across the transition from childhood to adolescence is particularly important for several reasons. First, very little is known about normative empathy development in emerging adolescents (Uzefovsky and Knafo-Noam, 2016). Further, while empathy is a key building block for social relationships throughout life, it is especially connected to positive outcomes during adolescence as the salience, complexity, and importance of peer network increase (Brown et al., 2009; Portt et al., 2020). Empathy skills provide adolescents with the tools needed to navigate, nurture, and maintain intricate social networks and meaningful connections. For example, empathy in adolescents is associated with higher levels of conflict resolution skills (de Wied et al., 2007), social competence (Chow et al., 2013), and friendship quality (Portt et al., 2020). Despite the importance of empathy during this period, the preponderance of empathy development research in youth has focused on infancy and early childhood, leaving empathy development during the transition from late childhood to adolescence relatively understudied.

## The Current Review

A review clarifying connections between ELA and empathy is needed to encourage progress within this inconclusive body of work. Illuminating differences in empathic abilities within dimensions of ELA could have implications for interventions and ultimately for the reduction of maladaptive outcomes that frequently befall adversity-exposed individuals. This scoping review will overcome limitations in the literature by first summarizing empirical findings on ELA and empathy by developmental period,

illuminating potential differences in how ELA is associated with empathy across childhood, adolescence, and adulthood (Sect. 3.0). Second, this review categorizes studies based on similar operationalizations of ELA (Sect. 4.0). A contemporary perspective will be applied to investigate *shared dimensions* of adversity, considering the reality that adverse experiences frequently co-occur and may have distinct behavioral and neurobiological correlates. This has the potential to illuminate differences between specific dimensions of adverse experiences and empathy components.

Next, associations among specific components of empathy, including affective empathy, cognitive empathy, and personal distress, as well as questionnaire-based versus task-based measurements, will be examined (Sect. 5.0). Empathy is a muddled construct, and this review focuses on empathy *specifically* and not adjacent constructs such as prosocial behavior or callous-unemotional traits. That is, while callous-unemotional (CU) traits describe a potential <u>lack</u> of empathy, the construct also includes the absence of guilt, low desire for social affiliation, and insensitivity to punishment (Frick and White, 2008). CU traits are not conceptualized here as existing on a unipolar dimension with empathy and instead reflect a different (although related) construct. Lastly, this review translates several gaps in the literature into recommendations for future studies investigating associations between ELA and empathy (Sect. 6.0).

## Method

Article selection and reporting was guided by recommendations for scoping reviews (Arksey and O'Malley, 2005) and The Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018). Articles were identified via multiple methods including PubMed, Google Scholar, and two Artificial-Intelligence powered tools called Elicit and Research Rabbit. Initial searches were conducted through December 2023 and updated on January 27, 2025. All methods used the following search terms.

### ELA Terms

[early life] adversity/stress/trauma, poverty, socioeconomic status, war, racism, adverse childhood experiences, [sexual/physical/emotional/childhood] abuse, childhood neglect/trauma, emotional neglect, maltreatment, [toxic/minority] stress, racism, discrimination, homophobia, transphobia, peer victimization, bullying, cyberbullying.

### Empathy Terms

[affective/cognitive] empathy [development], theory of mind, perspective-taking, empathic concern, personal distress, compassion, empathic accuracy, callous-unemotional traits.

### Inclusion Criteria

Only peer-reviewed, empirical studies were included. Studies were included if participants experienced early life adversity, defined as the presence of at least one significant life stressor any time *before the age of 18*. While participants needed to have experienced ELA before the age of 18, samples of children, adolescents, and adults were included. Childhood was defined as younger than 13 years of age, adolescence was defined as 13 to 18, and adulthood was defined as 18 or older. Papers were considered to include adolescents if they reported an age range that included any age 13 to 18, and/or if the sample mean (plus or minus one standard deviation) included any age 13 to 18.

Various stressors were surveyed across contexts to comprehensively review the broad literature, including family-based stressors such as caregiver abuse, peer-based stressors such as bullying, and environment-based stressors such as war exposure. Only studies containing questionnaire or task-based measures of empathy were included. Broad prosocial measures where empathy scores were not dissociable were excluded (e.g., composite scores including related constructs such as helping behavior). Callous-unemotional traits were included as a search term since research teams commonly collect measures of empathy alongside explorations of CU traits and report these data in correlation tables.

### Elicit Search

The Elicit tool was prompted: "what is the association between [list of ELA search terms, separated by commas] and [list of empathy search terms, separated by commas]?" Elicit generates eight relevant articles at a time. The search generator was refreshed until two rounds of eight newly refreshed articles were deemed not relevant upon initial abstract screening. The Elicit search, initially completed on May 21, 2023, and updated on January 27, 2025, identified a total of 197 records, of which 14 were novel and relevant after applying exclusion criteria.

## Results by Developmental Period

To facilitate interpretation of results, Sect. 3 reports associations by developmental period of empathy assessment (i.e., childhood, adolescence, and adulthood). Next, Sect. 4

reports findings by operationalization of ELA. Section 5 reports findings by operationalization and measurement of empathy. As depicted in Fig. 3, the initial search yielded 6,895 articles that entered title/abstract review; 286 of these articles entered full-text review, and 43 peer-reviewed, empirical articles on ELA and empathy were included in the final scoping review. Most manuscripts presented multiple associations between types of ELA and components of empathy—for example, childhood maltreatment with affective *and* cognitive empathy. As a result, many articles reported a mix of positive/negative and null findings (Table 1).

Approximately, one-third of the research surveyed reported a positive association between ELA and empathy (*N* = 15; 35%), such that increased severity or frequency of stressful childhood experiences was significantly associated with increased empathy. Three of these 15 papers focused on outcomes during childhood, six during adolescence, and six during adulthood. Nineteen of the 43 manuscripts surveyed (44%) reported that increased levels of ELA were linked with *decreased* levels of empathy. Three of these 19 papers focused on outcomes during childhood, nine during adolescence, and seven during adulthood. Twelve manuscripts (28%) reported no statistically significant associations

**Fig. 3** Flow diagram demonstrating the screening of abstracts and final selection of papers. Flow diagrams demonstrating the screening of abstracts and final selection of papers for a total of 43 unique articles. Initial search occurred through December 2023. An updated search completed on January 27, 2025 produced 12 novel records, of which 2 met study criteria and were included
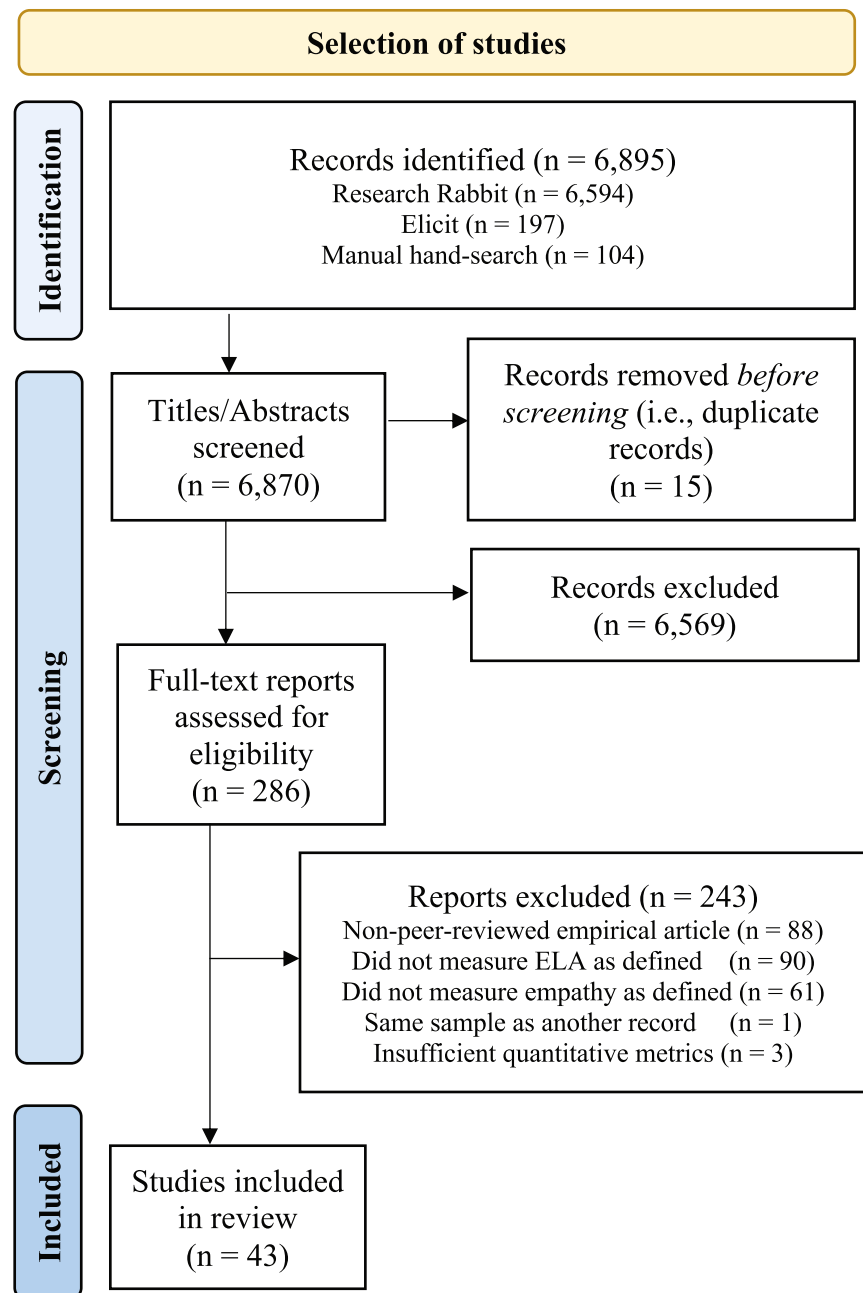


**Selection of studies**

**Identification**

Records identified (n = 6,895)
Research Rabbit (n = 6,594)
Elicit (n = 197)
Manual hand-search (n = 104)

**Screening**

Titles/Abstracts screened
(n = 6,870)

Records removed *before screening* (i.e., duplicate records)
(n = 15)

Records excluded
(n = 6,569)

Full-text reports assessed for eligibility
(n = 286)

Reports excluded (n = 243)
Non-peer-reviewed empirical article (n = 88)
Did not measure ELA as defined (n = 90)
Did not measure empathy as defined (n = 61)
Same sample as another record (n = 1)
Insufficient quantitative metrics (n = 3)

**Included**

Studies included in review
(n = 43)

**Table 1** Sample characteristics, measures, and findings for 43 identified manuscripts

| Manuscript | | Sample Characteristics | | | | | Early Life Adversity | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Sampling Approach; Location | Total *N*; % Female | Sample Age | Race | Other Sample Demographics | Operationalization; *Dimension* † | Measurement (questionnaire unless otherwise noted) | Informant* | Age |
| 1989 | Barnett | College students; Kansas, USA | *N*=111; 50% | *Not reported* | *Not reported* | *None reported* | Distressing experiences in childhood; *general* | Distress Experiences in Childhood | SR | < 14 years |
| 2002 | Simons | Incarcerated adults sexual offenders; Colorado, USA | *N*=188; 0% | M=39 years | 75% Caucasian, 15% Mexican American, and 10% African American | *None reported* | Abuse (sexual & physical); *threat, interpersonal* | The Redirecting Sexual Aggression Sexual History Questionnaire (SHD) | SR | < 18 years |
| 2003 | Coleman | 7th and 8th grade private school students; Southeast, USA | *N*=52; 57.6% | Range=12–14 years | Predominantly White | Predominantly upper-middle class; 80.8% permanent residence with both parents | Peer victimization; *threat, interpersonal* | Peer Victimization Self-Report Scale (Ladd and Ladd, 1998) | SR & TR | Lifetime |
| 2005 | Poteat | 8th grade students; Illinois, USA | *N*=191; 52% | *Not reported* | 95% White, 5% African American, 1% Asian, 1.6% Hispanic, 5% biracial, 1.6% NA | *None reported* | Peer victimization; *threat, interpersonal* | Homophobic Content Agent Target Scale (HCAT); University of Illinois Victimization Scale (UIVS; Espelage & Holt, 2001); Relational Victimization Scale (Crick, 1996) | SR | Lifetime |
| 2008 | Correia | Students in the 7th-9th grade; Portugal | *N*=187; 48.1% | M=14.51 years (SD=1.40) | *Not reported* (all Portuguese) | *None reported* | Peer victimization; *threat, interpersonal* | Self-Reported Victimization (Rigby & Slee, 1993) | SR | Lifetime |
| 2009 | Gleason | Middle school students; USA | *N*=116; 50% | M=12.18 years (Range 10–14 years) | 77.6% White, 16.4% Hispanic, 4.3% African American, 1.7% Aisan American | *None reported* | Peer victimization (relational and overt); *threat, interpersonal* | Modified version of the Peer Nomination Inventory (PNI; Wiggins & Winder, 1961) | Peer-report | Lifetime |
| 2010 | Malti | Kindergarten children; Switzerland | *N*=175; 49% | M=6.1 years (SD=0.19) | *Not reported* | 90% primary caregivers were mothers. Average parental education score=3.53 (1=no education or low-level secondary education, 6=university degree) | Peer victimization; *threat, interpersonal* | Self-report Berkeley Puppet Interview (Task); Parent and teacher report | SR, PR, &TR | Lifetime |

**Table 1** (continued)

| | Manuscript | Sample Characteristics | | | | | Early Life Adversity | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Sampling Approach; Location | Total *N*; % Female | Sample Age | Race | Other Sample Demographics | Operationalization; *Dimension* † | Measurement (questionnaire unless otherwise noted) | Informant* | Age |
| 2010 | Raskauskas | Students in grades 4–8; New Zealand | *N* = 1168; 52% | M = 10.6 years (SD = 1.4) | Selected schools represented ethnic diversity of New Zealand school population (70% European; 15% Māori; 10% Asian; 5% Pacific nations) | *None reported* | Peer victimization; *threat, interpersonal* | Peer Relations Questionnaire (PRQ) Short Version for Children (Rigby 1997) | SR | Lifetime |
| 2010 | Caravita | Primary school students; Northern Italy | *N* = 211; 53.5% | M = 10:2 years (SD = 6 months) | 84% Italian origin; other 16% includes African, Asian, South American, or Eastern European | 30.9% of families were low-to-medium SES; 54.1% had a medium SES, and 7.2% of families had medium-to high-SES (other 7.8% not reported) | Peer victimization; *threat, interpersonal* | Italian Participant Role Questionnaire (PRQ; Menesini & Gini, 2000) | SR & peer-report | Lifetime |
| 2012 | Belacci | 3 Kindergarten classrooms; Italy | *N* = 188; 46% | M = 4.10 years (Range 3–6 years) | *Not reported* | Working- and middle-class backgrounds | Peer victimization; *threat, interpersonal* | Participants 8 Roles Questionnaire: Victim Role (Belacci & Farina, 2010) | TR | Lifetime |
| 2012 | Kokkinos | 6th graders; Greece | *N* = 206; 53.9% | Range = 10–13 years | *Not reported* (12.7% classified as immigrants) | *None reported* | Peer victimization; *threat, interpersonal* | Bullying and Victimization Scale (Kokkinos & Kipritsi, 2012) | SR | Lifetime |
| 2013 | Barhight | Students in 4th and 5th grade; mid-Atlantic state, USA | *N* = 79; 50.6% | M = 10.80 years | 63.9% European American, 11.7% Latino American, 12.6% African American, 2.4% Asian American, 7.5% mixed/other race | Range from $0 (unemployed) to $400,000 (Mdn. = $70,000) | Peer victimization; *threat, interpersonal* | Peer Victimization Scale (Neary & Joseph, 1994) | SR & peer-report | Lifetime |

**Table 1** (continued)

| Manuscript | | Sample Characteristics | | | | | Early Life Adversity | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Sampling Approach; Location | Total *N*; % Female | Sample Age | Race | Other Sample Demographics | Operationalization; *Dimension* † | Measurement (questionnaire unless otherwise noted) | Informant* | Age |
| 2013 | Sticca | 7th graders across 43 classrooms; Switzerland | *N*=835; 49% | M=13.2 years (SD=0.64 years) | *Not reported* | *None reported* | Peer victimization (cybervictimization and traditional victimization); *threat, interpersonal* | Self-report of cybervictimization; adapted Traditional Bullying and Victimization Scale (Alsaker, 2003) | SR | Past 4 months |
| 2014 | Ciucci | Middle school students; Italy | *N*=529; 53.4% | M=12:7 years (SD=1:2 years) | *Not reported* (91.12% Italian) | 48% of fathers and 56% mothers earned high school or university degree | Peer victimization; *threat, interpersonal* | Self-report questionnaire (Menesini et al., 2012) | SR | Lifetime |
| 2016 | Williford | 4th and 5th grade students from 28 urban elementary schools; USA | *N*=431; 52% | M=10.18 years (SD=0.45) | 52% Latino, 18% African American, 11% Non-Latino White, 3% American-Indian, 3% Asian, 13% other | *None reported* | Peer victimization; *threat, interpersonal* | Revised Olweus Bully/Victim Questionnaire (Olweus, 1996) | SR | Since beginning of school year |
| 2015 | van Noorden | Thirty-four 3rd to 5th grade classrooms across 11 elementary schools; the Netherlands | *N*=800; 49.5% | M=10.01 years (SD=1.01 years, Range=7–12 years) | *Not reported* | 97% born in the Netherlands | Peer victimization; *threat, interpersonal* | Revised Olweus Bully/Victim Questionnaire (Olweus, 1996) | SR, & peer-report | Lifetime |
| 2015 | Germine | Adults recruited online via TestMyBrain.or g; English- speaking, industrialized countries | N=2,242; 66% | M=32.7 years (SD=13.3 years) | 74% non-Hispanic White, 4% non-Hispanic Black, 6% Hispanic, 16% other | Years of education: M=15 | Adverse childhood experiences; *threat, deprivation, interpersonal* | The TestMyBrain Childhood Experiences Questionnaire | SR | < 18 years |

**Table 1** (continued)

| Manuscript | | Sample Characteristics | | | | | Early Life Adversity | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Sampling Approach; Location | Total *N*; % Female | Sample Age | Race | Other Sample Demographics | Operationalization; *Dimension* † | Measurement (questionnaire unless otherwise noted) | Inform-ant* | Age |
| 2017 | Quas | Swazi children and adolescents recruited from a) out-of-home-placement (i.e., foster care), b) impoverished rural village, or c) private school; Swaziland, Africa | N = 123; 49% | M = 14.04 years (Range = 11–22 years) | Not reported | Percentage of group with one or both parent deceased: Comparison group = 7.3%; Foster group = 35.6%; Rural group = 29.4% | General adversity index; *deprivation, unpredictability, interpersonal, environmental* | Items adapted from The World Bank Child Needs Assessment Toolkit (*deprivation*) and the World Bank Social Capital Assessment Tool-Community Questionnaire (*threat*) | SR | Lifetime |
| 2018 | Greenberg (Study 1) | Adults on Mturk | N = 387; 69.5% | M = 34.84 years (SD = 11.72 years) | 78% White | None reported | General trauma; *threat, unpredictability, interpersonal* | Childhood Traumatic Events Scale (Pennebaker & Susman, 1988) | SR | < 17 years |
| 2018 | Greenberg (Study 2) | Adults on Mturk | N = 442; 62% | M = 34.94 years (SD = 11.90 years) | 79% White | None reported | General trauma; *threat, unpredictability, interpersonal* | Childhood Traumatic Events Scale (Pennebaker & Susman, 1988) | SR | < 17 years |
| 2018 | Antoniadou | Students across various grades (5th/6th grade, junior high school, senior high school); Greece | N = 420; 50.5% | Range = 10–18 years | Not reported | None reported | Peer victimization (cyber-bullying, traditional bullying); *threat, interpersonal* | Cyber-Bullying and Victimization Experiences Questionnaire (CBVEQ) (Antoniadou et al. 2016); Student Survey of Bullying BehaviorRevised 2 (SSBB-R2) | SR | Lifetime |
| 2018 | Espelage | Middle schools students; Midwest, USA | N = 310; 50% | M = 12.59 years (SD = 0.91 years) | 47% White, 38% African American, 5% Hispanic, 9% Biracial, 1% other | None reported | Peer victimization; *threat, interpersonal* | University of Illinois Victim Scale (UIVS; Espelage & Holt, 2001) | SR | Last 30 days |

**Table 1** (continued)

| Year | First Author | Sampling Approach; Location | Total N; % Female | Sample Age | Race | Other Sample Demographics | Operationalization; Dimension† | Measurement (questionnaire unless otherwise noted) | Informant* | Age |
|---|---|---|---|---|---|---|---|---|---|---|
| 2019 | Rodríguez-Hidalgo | Students; Spain and Ecuador | N=25,190; 49.9% | M=13.92 years (SD=1.306 years) | Not reported | None reported | Peer victimization; *threat, interpersonal* | European Bullying Intervention Project Questionnaire (EBIPQ; Ortega-Ruiz et al., 2016) | SR | Lifetime |
| 2019 | Fourie | Adults; South Africa | N=36; 50% | M=40.55 years (SD=5.09 years) | 50% Black African, 50% White | All participants achieved minimum education of grade 12 | Early childhood adversity; *general* | Childhood Trauma Questionnaire—Short Form (Bernstein et al., 2003) | SR | <18 years |
| 2019 | Simón | Adults from clinical and community sample; Hungary | N=92; 67% | M=32.94 years (SD=8.07 years) | Not reported | M. education=13.6 year M. IQ=111 | Early childhood adversity; *general, threat, deprivation, interpersonal* | Structured Interview Childhood Trauma Questionnaire (Bernstein et al., 2003); 27-item Early Trauma Inventory—Self-Report (ETI, Bremner et al., 2007) | SR | <18 years |
| 2019 | Antoniadou | Junior high school students; Greece | N=1097, 51% | M=13.95 years | Not reported | None reported | Peer victimization (cyber-bullying, traditional bullying); *threat, interpersonal* | Cyber-Bullying and Victimization Experiences Questionnaire (CBVEQ) (Antoniadou et al. 2016) and Student Survey of Bullying BehaviorRevised 2 (SSBB-R2) | SR | Lifetime |
| 2019 | Colasante | 4- and 8-year olds; Canada | N=131 total (age 4=65, 59%; age 8=66, 47%) | M=4.68 years (SD=0.44 years), M=7.96 years (SD=0.38 years) | 30% Western Euro., 19% Asian, 11% Eastern Euro., 10% Central & Sout Amer., 2 African, 23% other, 5% NA | Caregiver education=39% University, 32% Postgraduate, 16% College, 7% High School, 6% NA | Peer victimization; *threat, interpersonal* | Self-reported victimization based on aggressive behavior (adapted from Perren & Alsaker, 2006) | SR | Lifetime |

**Table 1** (continued)

| Manuscript | | Sample Characteristics | | | | | Early Life Adversity | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Sampling Approach; Location | Total N; % Female | Sample Age | Race | Other Sample Demographics | Operationalization; Dimension† | Measurement (questionnaire unless otherwise noted) | Informant* | Age |
| 2020 | Dittrich | Mothers from a clinical and community sample; Germany | N=251; 100% | M=38.84 years (SD=5.80 years) | Not reported | M. education=16.84 years; Nationality=91.2% German; Partnership status=57.4% in relationship with father of child, 13.1% with partner not the father of child, 29.6% single | Early childhood adversity; threat, deprivation, interpersonal | Childhood Experience of Care and Abuse Interview (Bifulco et al., 1994) | SR | <17 years |
| 2020 | Segura | Adolescents across four secondary compulsory education schools; Spain | N=1318; 53% | M=13.8 years (SD=1.32 years) | Not reported | None reported | Cybervictimization; threat, interpersonal | Cybervictimization (CYBVIC-R; Buelga, Cava, & Musitu, 2010) | SR | Lifetime |
| 2020 | Farrell | Middle and high school children across 51 schools; Ontario, Canada | N=609; 54.9% | Range=13–16 years | 76.2% White | Median parent reported household income=$70,000-$80,000; median completed parent education level=college diploma or trades certificate | Peer victimization; threat, interpersonal | Olweus Bully/Victim Questionnaire (Olweus, 1996) | SR | Lifetime |
| 2020 | Sun | Students from 3 universities; Beijing and Liaoning Provinces, China | N=626; 41.1% | M=20.39 years (SD=1.46 years) | Not reported | Students' educational background: 54.5% engineering, 18.2% science, 27.3% liberal arts | Childhood maltreatment; deprivation, interpersonal | The Children's Psychological Maltreatment Scale (CPMS; Pan et al., 2010) | SR | Childhood |

**Table 1** (continued)

| Manuscript | | Sample Characteristics | | | | | | Early Life Adversity | | | |
| | | | | | | | | | | | |
| Year | First Author | Sampling Approach; Location | Total N; % Female | Sample Age | Race | Other Sample Demographics | | Operationalization; Dimension † | Measurement (questionnaire unless otherwise noted) | Inform-ant* | Age |
| 2020 | Heleniak | Children in the community; Washington, USA | N=246; 46.7% | M=12.61 years (SD=2.60 years) | 26.0% Black, 11.8% Hispanic/Latino. 11.4% Asian, 40.7% as White, 10.2% other | Demographics in manuscript reported by subgroup (classified by violence exposure) | | Violence and maltreatment exposure, childhood trauma; *threat, deprivation, interpersonal* | Childhood Experiences of Care and Abuse Interview (CECA; Bifulco et al., 1994) Violence Exposure Scale for Children-Revised Interview (VEX-R; Raviv et al., 2001) Childhood Trauma Questionnaire (CTQ; Bernstein et al., 1997) UCLA PTSD Reaction Index (PTSD-RI; Steinberg et al., 2004) | SR | Lifetime |
| 2021 | Kara | Children; Eastern Turkey | N=115; 52% | M=68.22 months (S=14.62 months) | *Not reported* | Mother education=28.3% illiterate, 54.4% some primary school, 15.2% secondary-high school, 2.2% university; Father education=10.8% illiterate, 39.4% at least some primary school, 33.4% secondary-high school, 7.6% university; Mother employment: 96.8% unemployed; Father employment: 31.5% unemployed, 47.3% full-time job, 21.5% parttime/seasonal job; SES=97.8% of families living in "extreme poverty" | | Armed conflict exposure and socioeconomic status; *threat, deprivation, interpersonal, environmental* | Childhood War Trauma Questionnaire (Macksoud, 1992) | PR | lifetime |

**Table 1** (continued)

| Manuscript | | Sample Characteristics | | | | | Early Life Adversity | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Sampling Approach; Location | Total N; % Female | Sample Age | Race | Other Sample Demographics | Operationalization; Dimension † | Measurement (questionnaire unless otherwise noted) | Informant* | Age |
| 2021 | Struck | Adults recruited from outpatient and inpatient facilities and the community; Germany | N=111; 50% | M=42.13 years (SD=13.55 years) | Not reported | M. education=13.8 years; 42.5% of sample married | Childhood trauma; *threat, deprivation* | Childhood Trauma Questionnaire (Bernstein et al., 2003) | SR | <18 years |
| 2021 | Wang | Adults who are incarcerated; Jiangsu Province, China | N=1321; 0% | M=39.98 years (SD=8.87 years) | Not reported | Education: 16.6% primary school and below, 60.2% junior high school, 16.2% high school, 7% college and above; Marital status: 36.2% unmarried, 27.2% divorced, 2% widowed, 36.6% married | Childhood trauma (accident, nonrelational trauma, relational trauma, other); *general, threat, interpersonal, environmental* | Brief Betrayal Trauma Survey (Goldberg & Freyd, 2006) | SR | <18 years |
| 2021 | Narvey | Adolescents who are incarcerated; Florida, USA | N=11,053; M=16.45 years 15% | M=16.45 years (SD=1.306 years) | 52.6% Black, 11.5% Hispanic | Age at first arrest (M=13–14 years), prior felony arrests (M=1-2), prior violent felony arrests (M=0–2), 10% prior residential placement; self-report history of gang-involvement=13% | Adverse childhood experiences; *general* | Adverse Childhood Experiences | SR | Lifetime |

**Table 1** (continued)

| Manuscript | | Sample Characteristics | | | | | Early Life Adversity | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Sampling Approach; Location | Total N; % Female | Sample Age | Race | Other Sample Demographics | Operationalization; Dimension † | Measurement (questionnaire unless otherwise noted) | Informant* | Age |
| 2022 | Peterson | English-speaking adults recruited online via TestMyBrain.org | N = 2200; 66.3% | 41% of sample between 1825; Range = 18–56 + years | 5.2% Hispanic, 81.2% White, 4.4% Black, 9.3% Others | Education: 15.4% high school or lower, 38.6% some college, 24.8% college degree, 21.3% masters or higher; Parent education: 44% high school or lower, 27.9% some college, 15.5% college degree, 12.6% masters or higher; self-perceived childhood SES compared to the average household: 8.6% much lower, 22.2% lower, 38.3% same, 24.6% higher, 6.3% much higher | Adverse childhood experiences; *threat, deprivation, interpersonal* | Childhood Experiences Questionnaire | SR | <17 years |
| 2022 | Dillon-Owens | Middle school students; Southeastern, USA | N = 321; 56% | Range = 11–15 years | 34% African American/ Black, 27% Hispanic, 19% Caucasian/ NonHispanic, 12% Multiethnic, 8% Other | 72% of students at school qualified for free lunch; income level for majority of students was at/below 130% of the poverty level | Victimization; *threat, interpersonal* | Social Experience Questionnaire Self-Report (Crick & Gropeter, 1996) | SR | Lifetime |

**Table 1** (continued)

| Manuscript | | Sample Characteristics | | | | | | Early Life Adversity | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | First Author | Sampling Approach; Location | Total *N*; % Female | Sample Age | Other Sample Demographics | Race | | Operationalization; *Dimension* † | Measurement (questionnaire unless otherwise noted) | Informant* | Age |
| 2023 | Cerqueira | Adults; Portugal | *N* = 92; M = 81.5% | M = 40.23 years (SD = 12.1 years) | Marital status: 43.5% married, 31.5% single, 12% divorced, 10.9% in consensual union, 2.2% separated/widowed; Education: 48.9% higher education, 43.5% secondary education, 4.3% other qualifications, 3.3% basic education; Employment status: 78.3% employed, 8.3% students, 7.6% unemployed, 2.2% retired, 3.3% other | *Not reported* (all Portuguese) | | Adverse childhood experiences; *threat, deprivation, interpersonal* | Childhood History Questionnaire (Felitti & Anda, 1998; Pinto et al., 2014) | SR | < 16 years |
| 2023 | Trach | Youth across grades 3–8; Finland | *N* = 15713; 51.6% | M = 13.2 years (SD = 2.01 years) | 92.3% born to Finnish-speaking parents | *Not reported* | | Peer victimization; *threat, interpersonal* | Self-reported victimization via Olweus Bully/Victim Questionnaire (Olweus, 1996) and peer-reported victimization via Participant Role Questionnaire (PRQ: Salmivalli & Voeten, 2004) | SR & peer-report | Peer victimization in the "last couple months" at 3 timepoints within 1 year |
| 2023 | Benz | Adults recruited online; Germany | *N* = 228; 83% | M = 30.51 years (SD = 9.88 years) | Education: 14% less than university, 30% university qualification exam (Abitur), 15% vocational training, 41% university degree (Bachelor, Master, PhD); 59% in a relationship | *Not reported* | | Childhood adversity; *threat, deprivation, interpersonal* | Childhood Trauma Questionnaire (German version; Bernstein et al., 2003) and Parental Bonding Instrument (PBI: Parker el al., 1979) | SR | < 18 years (CTQ) & < 16 years (PBI) |
| 2023 | Liu | Middle school Students; Northern China | *N* = 253; 55.34% | M = 12.58 years (SD = 0.98 years) | 49.4% low-SES, 50.6% high-SES | *Not reported* (all Chinese) | | Socioeconomic status; *deprivation, environmental* | Monthly household income | PR | Family monthly income |

**Table 1** (continued)

| Manuscript | | Sample Characteristics | | | | | Early Life Adversity | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Sampling Approach; Location | Total N; % Female | Sample Age | Race | Other Sample Demographics | Operationalization; Dimension† | Measurement (questionnaire unless otherwise noted) | Informant* | Age |
| 2023 | Chen | College students; China | N=1,569; 59% | M=18.17 years (Range 16–22 years) | Not reported (all Chinese) | 54% from urban areas, 22.1% from towns, 23.9% from rural areas; 30.1% are the only child | Childhood adversity; threat, deprivation, interpersonal | Childhood Trauma Questionnaire-Short Form (Chinese version; Bernstein et al., 2003; Zhao et al., 2005) | SR | <18 years |
| 2024 | Panagou | Community-based and clinical sample; the United Kingdom | N=571; 81.6% | M=36.17 years, (SD=11.36 years) | 93.9% White 3.5% Multi-ethnic 1.6% Asian 0.4% Black 0.7% Other | 22.9% Student 65.8% Employed 10% Unemployed 16% High School or Vocational Training 29.4% Undergraduate Degree 48.5% Postgraduate Degree | Adverse childhood experiences; general | Adverse Childhood Experiences (Feletti et al., 1998) | SR | <18 years |

| Manuscript | | Empathy | | Findings/Results | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Empathy-ELA Association | Empathy-ELA Effect Size § | Age | Informant* | Evidence for Empathy-ELA association? | Direction |
| 1989 | Barnett | Study 1: affective empathy (emotional responsivity) Study 2: Affective empathy and personal distress | Study 1: abbreviated Mehrebian and Epstien (1972) Empathy Scale (Q) Study 2: Emotion Experience to Videos (T) and ratings on Batson et al. (1983) measure | 1) Childhood distress and self-report empathy (Study 1) 2) Childhood distress and task-based empathy (Study 2) | 1) $r=0.287, p<0.05$ 2) $r=0.243, p<0.05$ | Not reported | SR | Yes; more ELA, higher empathy | (+) |
| 2002 | Simons | Cognitive empathy | Child Empathy Test (T), Empathy for Women Test (T) | 1) Sexual abuse and empathy for children 2) Sexual abuse and empathy for women 3) Physical abuse and empathy for children 4) Physical abuse and empathy for women | 1) $r=-0.45, p<0.001$ 2) $r=0.06, ns$ 3) $r=0.14, ns$ 4) $r=-0.32, p<0.001$ | M=39 years | SR | Yes; more ELA, lower empathy | (−) **and NA** |
| 2003 | Coleman | General empathy | Emotional Empathy Scale (Q) (Mehrabian & Epstein, 1972) | 1) Victimization and empathy | 1) $r=-0.12, ns$ | 12–14 years | SR & TR | No | NA |

**Table 1** (continued)

| Manuscript | | Empathy | | | Age | Findings/Results | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | Direction |
| 2005 | Poteat | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy) | Interpersonal Reactivity Index (Q) (Davis, 1980) | SR | 8th grade | 1) Target of homophobia and cognitive empathy 2) Target of homophobia and affective empathy 3) Victimization and cognitive empathy 4) Victimization and affective empathy 5) Relational victimization and cognitive empathy 6) Relational victimization and affective empathy | 1) $r = -0.32, p < 0.01$ 2) $r = -0.23, p < 0.01$ 3) $r = -0.20, p < 0.05$ 4) $r = -0.07, ns$ 5) $r = -0.24, p < 0.01$ 6) $r = -0.13, ns$ | Yes; experiencing victimization and homophobia related to decreased cognitive empathy | (−) & NA |
| 2008 | Correia | General empathy | Index of Empathy for Children and Adolescents (Q) (Bryant, 1982) | SR | 12–18 years (M = 14.51, SD = 1.40) | 1) Victimization and empathy | 1) $r = -0.04, ns$ | No | NA |
| 2009 | Gleason | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy), personal distress (PD), fantasy | Interpersonal Reactivity Index (Q); Empathic Accuracy Video Task (T) | SR | 10–14 years (M = 12.18) | 1) Relational victimization and empathic accuracy 2) Overt victimization and empathic accuracy | 1) $r = -0.20, p < .04$ 2) $r = -0.13, ns$ | Partial support; link between empathy and relational victimization but not overt victimization | (−) & NA |
| 2010 | Malti | Affective empathy | Self-report empathy (Q), mother and teacher report empathy (Q) | SR, PR, & TR | T1 age = average 6.1 years (SD = 0.19) T2 = 1 year later | 1) T1 peer victimization and T1 empathy 2) T1 peer victimization and T2 empathy 3) T2 peer victimization and T1 empathy | 1) $r = -0.07, ns$ 2) $r = -0.1, ns$ 3) $r = -0.20, ns$ | No; ELA and empathy not associated cross-sectionally or longitudinally | NA |
| 2010 | Raskauskas | General empathy | Index of Empathy for Children and Adolescents (Q) (Bryant, 1982) | SR | 8–13 years (M = 10.6 years, SD = 1.4) | 1) Victimization and general empathy | 1) $r = 0.01, ns$ | No | NA |

**Table 1** (continued)

| Manuscript | | Empathy | | Informant* | Age | Findings/Results | | Evidence for Empathy-ELA association? | Direction |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | | | Empathy-ELA Association | Empathy-ELA Effect Size § | | |
| 2010 | Caravita | Affective empathy, Theory of Mind (ToM; cognitive empathy) | How I feel in Different Situations (Q) (HIFDS; Feshbach et al., 1991); 10 Theory of Mind Tasks modified version (T) (Gini et al., 2007) of Happé, and Sutton and colleagues task (Happé, 1994; Sutton et al., 1999) | SR | 9–11 years (M = 10:2, SD = 6 months) | 1) Victimization and affective empathy 2) Victimization and ToM | 1) $r = 0.17$, $p < 0.05$ 2) $r = -0.10$, $ns$ | Partial support; more victimization related to more affective empathy but not ToM | (+) & NA |
| 2012 | Belacci | Cognitive and affective empathy | Empathic Responsiveness Scale (modified version of Interpersonal Reactivity Index Perspective-Taking and Empathic Concern subscales) (Q) (Davis, 1980) | TR & SR | 3–6 years (M = 4.10 years) | 1) Victimization and total empathy 2) Victimization and affective empathy 3) Victimization and cognitive empathy | 1) $r = -0.10$, $ns$ 2) $r = -0.02$, $ns$ 3) $r = -0.13$, $ns$ | No | NA |
| 2012 | Kokkinos | Cognitive and affective empathy | Feeling & Thinking Instrument (Garton & Gringart, 2005), modified Interpersonal Reactivity Index (Q) (Davis 1980) | SR | 10–13 years | 1) Victimization and total empathy 2) Victimization and affective empathy 3) Victimization and cognitive empathy | 1) $r = 0.01$, $ns$ 2) $r = -0.15$, $p < 0.05$ 3) $r = -0.16$, $p < 0.05$ | Yes; more ELA, less affective an cognitive empathy | (−) & NA |
| 2013 | Barhight | Affective empathy | Basic Empathy Scale (Q) (Jolliffe and Farrington 2006) | SR | 9.25–12.59 years (M = 10.58) | 1) Victimization and affective empathy | 1) $r = -0.10$, $ns$ | No | NA |
| 2013 | Sticca | Empathic concern (affective empathy) | German version of empathy scale (Q) by Zhou, Valiente, and Eisenberg (2003) | SR | T1 age = mean 13.2 years (SD = 0.64) T2 = half year after | 1) T1 cybervictimization and empathic concern 2) T1 traditional victimization and empathic concern | 1) $r = -0.06$, $ns$ 2) $r = -0.01$, $ns$ | No | NA |
| 2014 | Ciucci | Cognitive and affective empathy | "How I feel in different situations" Scale (Q) (HIFDS; Feshbach et al., 1991) | SR | 10:6–15 years (M = 12:7, SD = 1:2) | 1) Victimization and affective empathy 2) Victimization and cognitive empathy | 1) $r = 0.05$, $ns$ 2) $r = 0.01$, $ns$ | No | NA |

**Table 1** (continued)

| Manuscript | | Empathy | | | | Findings/Results | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | Age | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | Direction |
| 2016 | Williford | Cognitive empathy | Interpersonal Reactivity Index Perspective-Taking Scale (5-item modified version) (Q) (Davis, 1980) | SR | M=10.18 years (SD=0.45) | 1) Victimization and cognitive empathy | 1) $b=-0.05$ [$-0.10$, $-0.00$] | Yes; more victimization was associated with less cognitive empathy | $(-)$ & NA |
| 2015 | van Noorden | Cognitive and affective empathy | Adapted version of the Basic Empathy Scale (Q) (Joliffe & Farrington, 2006) | SR | 7–12 years (M=10.01, SD=1.01) | 1) Victimization frequency and cognitive empathy 2) Victimization frequency and affective empathy 3) Victimization severity and cognitive empathy 4) Victimization severity and affective empathy | 1) $r=0.03$, ns 2) $r=0.11$, $p<0.01$ 3) $r=0.05$, ns 4) $r=0.16$, $p<0.001$ | No evidence for ELA~cognitive empathy link; main effect of victimization frequency & severity o affective empathy | $(+)$ & NA |
| 2015 | Germine | Theory of Mind (ToM) (cognitive empathy) | Reading the Mind in the Eyes test (T) (RMET; Baron-Cohen et al., 2001) | SR | M=32.7 years (SD=13.3) | 1) Parental maltreatment and ToM 2) Parental maladjustment and ToM 3) Parental neglect and ToM 4) Sexual abuse/institutional care and ToM | 1) $\beta=-0.067$, $p<0.01$ 2) $\beta=-0.075$, $p<0.001$ 3) $\beta=-0.005$, ns 4) $\beta=-0.042$, ns | Yes, for certain subtypes of ELA (parental maltreatment and parental maladjustment) | $(-)$ & NA |
| 2017 | Quas | Empathic concern (affective empathy) | Emotional Image task (T) | SR | 11–22 years (M=14.04) | *For ambiguous stimuli* 1) Rural youth versus comparison group showed main effect of group (i.e., adversity exposure) on empathic concern 2) No main effect of foster versus comparison group on empathic concern *For negative stimuli* 3) No main effect of rural versus comparison group 4) No main effect of foster versus comparison group | Unstandardized regression coefficients 1) $c$ path $=-1.38$, Cohen's $d=-0.050$ 2) $c$ path $-0.12$, Cohen's $d=-0.042$ 3) $-0.41$, Cohen's $d=-0.14$ 4) $0.87$, Cohen's $d=0.311$ | Limited support; only youth in rural settings (i.e., unpredictability) had decreased empathy for ambiguous stimuli | $(-)$ & NA |

**Table 1** (continued)

| Manuscript | | | Empathy | | | | Findings/Results | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | Age | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | Direction |
| 2018 | Greenberg (Study 1) | | General empathy, cognitive empathy, affective empathy | 40-item Empathy Quotient (Q) (EQ; Baron-Cohen et al., 2004) | SR | 19–65 years (M = 34.84, SD = 11.72) | *Threat* 1) Sexual abuse and general empathy 2) Sexual abuse and affective empathy 3) Sexual abuse and cognitive empathy 4) Violence and general empathy 5) Violence and affective empathy 6) Violence and cognitive empathy *Unpredictability* 7) Death and general empathy 8) Death and affective empathy 9) Death and cognitive empathy 10) Parental upheaval and general empathy 11) Parental upheaval and affective empathy 12) Parental upheaval and cognitive empathy | *Threat* 1) $r = 0.18$, *ns* 2) $r = 0.26$, $p < 0.05$ 3) $r = 0.09$, *ns* 4) $r = 0.27$, $p < 0.05$ 5) $r = 0.10$, *ns* 6) $r = 0.08$, *ns* *unpredictability* 7) $r = 0.19$, $p < 0.01$ 8) $r = 0.13$, *ns* 9) $r = 0.15$, $p < 0.05$ 10) $r = 0.20$, $p < 0.05$ 11) $r = 0.20$, $p < 0.01$ 12) $r = 0.10$, *ns* | Yes; more unpredictability-related adversity was more consistently related to increased empathy across subtypes compared to threat adversity | (+) **& NA** |

**Table 1** (continued)

| Manuscript | | Empathy | | | | Findings/Results | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | Age | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | Direction |
| 2018 | Greenberg (Study 2) | General empathy, cognitive empathy, affective empathy | Interpersonal Reactivity Index (Q) (Davis, 1980) | SR | 18–65 years (M=34.94, SD=11.90) | *Threat* 1) Sexual abuse and general empathy 2) Sexual abuse and affective empathy 3) Sexual abuse and cognitive empathy 4) Violence and general empathy 5) Violence and affective empathy 6) Violence and cognitive empathy *Unpredictability* 7) Death and general empathy 8) Death and affective empathy 9) Death and cognitive empathy 10) Parental upheaval and general empathy 11) Parental upheaval and affective empathy 12) Parental upheaval and cognitive empathy | *Threat* 1) $r=0.25, p<0.05$ 2) $r=0.18, ns$ 3) $r=0.16, ns$ 4) $r=0.19, ns$ 5) $r=0.11, ns$ 6) $r=0.08, ns$ *Unpredictability* 7) $r=0.24, p<0.01$ 8) $r=0.29, p<0.01$ 9) $r=0.17, p<0.01$ 10) $r=0.14, ns$ 11) $r=0.23, p<0.01$ 12) $r=0.08, ns$ | Yes; more unpredictability-related adversity was more consistently related to decreased empathy across subtypes compared to threat adversity | (−) & NA |
| 2018 | Antoniadou | Cognitive and affective empathy | Basic Empathy Scale (Q) (Jolliffe & Farrington, 2006) | SR | 30% 5th & 6th grade, 32.6% junior high school, 37.4% senior high school (range 10–18 years) | 1) Cybervictimization and cognitive empathy 2) Cybervictimization and affective empathy3) Traditional victimization and cognitive empathy 2) Traditional victimization and affective empathy | 1) $r=-0.07, ns$ 2) $r=-0.10, p<0.05$ 3) $r=-0.04, ns$ 4) $r=-0.05, ns$ | Limited support; cybervictimization associated with decreased affective empathy | (−) & NA |
| 2018 | Espelage | Cognitive and affective empathy | Interpersonal Reactivity Index (Q) (Davis, 1980); responses to Seven Theory of Mind Vignettes (T) | SR | M=12.59 years (SD=0.91 years) | 1) Victimization and cognitive empathy 2) Victimization and affective empathy 3) Victimization and theory of mind | 1) $r=0.057, ns$ 2) $r=0.067, ns$ 3) $r=0.072, ns$ | No | NA |

**Table 1** (continued)

| Manuscript | | Empathy | | | | Findings/Results | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | Age | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | Direction |
| 2019 | Rodríguez-Hidalgo | Cognitive and affective empathy | Basic Empathy Scale (Q) (Jolliffe and Farrington, 2006; 2011) | SR | M=13.92 years (SD=1.31) | 1) Cognitive empathy predicting peer victimization in Spanish sample 2) Affective empathy predicting peer victimization in Spanish sample 3) Cognitive empathy predicting peer victimization in Ecuadorian sample 4) Affective empathy predicting peer victimization in Ecuadorian sample | 1) $\beta=0.009, p=0.173$ 2) $\beta=0.026, p=0.000$ 3) $\beta=0.037, p=0.002$ 4) $\beta=0.039, p=0.000$ | Yes; more cognitive and affective empathy predicted more peer victimization (Cognitive empathy did not predict victimization in Spanish sample) | (+) & NA |
| 2019 | Fourie | Compassion/ empathic concern (affective empathy) | Compassion ratings in response to > 10 s video clips of perpetrators and victims of race-related crimes (5 conditions: Victim forgiving, victim unforgiving, perpetrator apologetic, perpetrator unapologetic, neutral) (T) | fMRI data & SR of emotional feelings after watching the clips | M=40.55 years (SD=5.09) | 1) Childhood trauma and compassion for forgiving victim 2) Childhood trauma and compassion for unforgiving victim 3) Childhood trauma and compassion for apologetic perpetrator 4) Childhood trauma and compassion for unapologetic perpetrator | 1) $r=-0.43, p<0.01$ 2) $r=-0.26, ns$ 3) $r=-0.38, p<0.05$ 4) $r=-0.02, ns$ | Yes; for forgiving victim and unapologetic perpetrator, more adversity was correlated with less compassion | (−) & NA |
| 2019 | Simón | Theory of Mind (ToM) (cognitive empathy) | Reading the Mind in th Eyes Test (T) (RMET; Baron-Cohen et al., 2001) | SR | M=32.94 years (SD=8.07) | 1) CTQ Total and ToM *Threat* 2) Physical abuse and ToM 3) Emotional abuse and ToM 4) Sexual abuse and ToM *Deprivation* 5) Emotional neglect and ToM 6) Physical neglect and ToM | 1) $r=-0.232, p<0.05$ 2) $r=-0.220, p<0.05$ 3) $r=-0.234, p<0.05$ 4) $r=-0.176, ns$ 5) $r=-0.214, p<0.05$ 6) $r=0-.204, ns$ | Partial support; more threat-type childhood trauma was generally associated with less theory of mind | (−) & NA |

**Table 1** (continued)

| Manuscript | | Empathy | | | | Findings/Results | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | Age | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | Direction | |
| 2019 | Antoniadou | Cognitive and affective empathy | Basic Empathy Scale (Q) (Jolliffe & Farrington, 2006) | SR | M=13.94 years | 1) Cybervictimization and cognitive empathy 2) Cybervictimization and affective empathy 3) Traditional victimization and cognitive empathy 2) Traditional victimization and affective empathy | 1) $r = -0.04$, $ns$ 2) $r = 0.04$, $ns$ 3) $r = -0.08$, $p < 0.05$ 4) $r = 0.05$, $ns$ | Limited support; traditional victimization associated with lower cognitive empathy | (−) & NA | |
| 2019 | Colasante | "Sympathy" (affective empathy) | Caregiver-rated sympathy measure (Q) (Eisenberg et al., 1996) | PR | M=4.68 years (SD=0.44 years) M=7.96 years (SD=0.38 years) | 1) Victimization and sympathy | 1) $r = -0\,0.21$, $p < 0.05$ | Yes; more victimization related to less sympathy | (−) | |
| 2020 | Dittrich | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy), personal distress (PD) | Interpersonal Reactivity Index (Q) (Davis, 1980) | SR | M=38.84 years (SD=5.80) | 1) Early life maltreatment and empathic concern 2) Early life maltreatment and perspective-taking 3) Early life maltreatment and personal distress | 1) $\beta = -0.093$, $p = 0.168$ 2) $\beta = 0.098$, $p = 0.143$ 3) $\beta = 0.051$, $p = 0.428$ | No | NA | |
| 2020 | Segura | Perspective-taking and emotional understanding (cognitive empathy), empathic stress and empathic joy (affective empathy) | Cognitive and Affective Empathy Scale (Q) (TECA; López-Pérez et al., 2009) | SR | 11–17 years (M = 13.8, SD = 1.32) | 1) Perspective-taking across Low, Medium, and High cybervictimization groups 2) Emotional understanding across Low, Medium, and High cyber-victimization groups 3) Empathic stress across Low, Medium, and High cybervictimization groups 4) Empathic joy across Low, Medium, and High cybervictimization groups | 1) $F = 0.51$, $p = 0.60$, Cohen's $d = -0.04$ 2) $F = 0.96$, $p = 0.39$, Cohen's $d = 0.04$ 3) $F = 0.08$, $p = 0.93$, Cohen's $d = 0.04$ 4) $F = 2.24$, $p = 0.11$, Cohen's $d = 0.10$ | No | NA | |

**Table 1** (continued)

| Manuscript | | Empathy | | | Age | Findings/Results | | | Direction |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | |
| 2020 | Farrell | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy) | Interpersonal Reactivity Index (Q) (Davis, 1980) | SR | 13–16 years | For empathic concern and perspective-taking, trajectory models identified 3 groups: Low-stable, moderate-stable, and high-increasing<br>1) Peer victimization and moderate-stable vs low-stable on EC<br>2) Peer victimization and moderate-stable vs high-increasing on EC<br>3) Peer victimization and high-increasing versus low-stable on EC<br>4) Peer victimization and moderate-stable vs low-stable on PT<br>5) Peer victimization and moderate-stable vs high-increasing on PT<br>6) Peer victimization and high-increasing versus low-stable on PT | OR = odds ratio differentiating each group on empathy outcome<br>1) $OR = 0.944$, $ns$, 95% CI [0.695, 1.281]<br>2) $OR = 1.367$, $p < 0.05$, 95% CI [1.119, 1.670]<br>3) $OR = 0.739$, $ns$, 95% CI [0.536, 1.018]<br>4) $OR = 0.995$, $ns$, 95% CI [0.792, 1.250]<br>5) $OR = 1.176$, $ns$, 95% CI [0.929, 1.487]<br>6) $OR = 0.805$, $ns$, 95% CI [0.581, 1.115] | Limited; lower levels of peer victimization increased odds of being in the moderate-stable versus high-increasing for EC only | (+) **& NA** |
| 2020 | Sun | Emotional empathy (affective empathy) and cognitive empathy | Basic Empathy Scale (Q) (Jolliffe & Farrington, 2006) | SR | 17–23 years (M = 20.39, SD = 1.46) | 1) Maltreatment and affective empathy<br>2) Maltreatment and cognitive empathy | 1) $r = -0.20$, $p < 0.01$<br>2) $r = -0.21$, $p < 0.01$ | Yes; path models indicate this effect is true specifically for boys | (−) |

**Table 1** (continued)

| Manuscript | | Empathy | | | | Findings/Results | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | Age | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | Direction |
| 2020 | Heleniak | Cognitive and affective empathy | Cognitive and affective theory of mind (ToM) accuracy task (T) (Sebastian et al., 2012) | SR | M = 12.61 years (SD = 2.60 years) | *Threat* 1) Physical/Sexual Abuse and Cognitive ToM 2) Physical/Sexual Abuse and Affective ToM 3) Emotional Abuse and Cognitive ToM 4) Emotional Abuse and Affective ToM 5) Domestic Violence Exposure and Cognitive ToM 6) Domestic Violence Exposure and Affective ToM *Deprivation* 9) Poverty and Cognitive ToM 10) Poverty and Affective ToM 11) Emotional Neglect and Cognitive ToM 12) Emotional Neglect and Affective ToM | 1) $r = -0.13, p \leq 0.05$ 2) $r = -0.09, ns$ 3) $r = -0.15, p \leq 0.05$ 4) $r = -0.19, p \leq 0.01$ 5) $r = -0.11, ns$ 6) $r = -0.03, ns$ 7) $r = -0.17, p \leq 0.01$ 18) $r = 0.19, p \leq 0.05$ 9) $r = -0.06, ns$ 10) $r = -0.03, ns$ 11) $r = -0.11, ns$ 12) $r = -0.05, ns$ | Partial; more *threat* ELA, lower empathy Higher rates of violence exposure, higher affective empathy | (+) (−) & **NA** |
| 2021 | Kara | Theory of Mind (cognitive empathy), empathy for pain (affective empathy) | 5 Theory of Mind tasks: Unexpected Change of Location, Unexpected Contents, Misleading Picture, Ice Cream Man, Chocolate Bar Story; computerized empathy for pain task (T) | SR | M = 68.22 months (SD = 14.62 months) | 1) Armed conflict experience and ToM 2) Armed conflict experience and affective empathy 3) Socioeconomic status and ToM 4) Socioeconomic status and affective empathy | 1) $r = -0.02, ns$ 2) $r = 0.19, p < 0.05$ 3) $r = 0.22, p < 0.05$ 4) $r = 0.08, ns$ | Partial support; armed conflict experience related to more affective empathy, not cognitive empathy. Higher socioeconomic status related to more cognitive empathy, not affective empathy | (+) & **NA** |

**Table 1** (continued)

| Manuscript | | Empathy | | | | Findings/Results | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | Age | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | Direction |
| 2021 | Struck | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy), personal distress (PD), Theory of Mind | Shortened German Interpersonal Reactivity Index (Q) (Paulus, 2009); Reading the Mind in the Eyes Test (T) (RMET; Baron-Cohen et al., 2001) | SR | M=42.13 years (SD=13.55) | 1) Childhood maltreatment and EC 2) Childhood maltreatment and PT 3) Childhood maltreatment and PD 4) Childhood maltreatment and RMET errors5) Childhood maltreatment and RMET anger accuracy 6) Childhood maltreatment and RMET happiness accuracy 7) Childhood maltreatment and RMET sadness accuracy | 1) $r=0.18$, $ns$ 2) $r=-0.17$, $ns$ 3) $r=0.45$, $p<0.001$ 4) $r=-0.08$, $ns$ 5) $r=0.11$, $ns$ 6) $r=-0.20$, $ns$ 7) $r=0.14$, $ns$ | Limited support; more childhood maltreatment positively associated with increased empathic distress | (+) & NA |
| 2021 | Wang | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy), personal distress (PD), fantasy | Interpersonal Reactivity Index (Q) (Davis, 1980) | SR | M=39.98 years | 1) Accident and PT 2) Accident and PD 3) Accident and EC 4) Non-relational trauma and PT 5) Non-relational trauma and PD 6) Non-relational trauma and EC 7) Relational trauma and PT 8) Relational trauma and PD 9) Relational trauma and EC 10) Other trauma and PT 11) Other trauma and PD12) Other trauma and EC | 1) $r=0.06$, $p<0.05$ 2) $r=0.09$, $p<0.001$ 3) $r=-0.01$, $ns$ 4) $r=0.01$, $ns$ 5) $r=0.10$, $p<0.001$ 6) $r=-0.01$, $ns$ 7) $r=0.03$, $ns$ 8) $r=0.17$, $p<0.001$ 9) $r=-0.06$, $p<0.05$ 10) $r=-0.01$, $ns$ 11) $r=0.13$, $p<0.001$ 12) $r=-0.08$, $p<0.01$ | Partial support; all childhood traumas were related to increased personal distress Relational and Other trauma were related to decreased empathic concern | (+) (−) & NA |
| 2021 | Narvey | General empathy | Residential Positive Achievement Change Tool (Q) (R-PACT; empathy for victim, property, authority, and responsibility) | SR | T1 age=M 16.5 years (at admission) T2 age=at release (length of time in residential placement=M 244 days) | 1) Ad childhood experiences and empathy at admission 2) Adverse childhood experiences and change in empathy during placement | 1) $r=-0.20$, $p<0.05$ 2) $r=0.12$, $p<0.05$ | Yes; higher ACES predicted lower empathy at admission | (−) |

**Table 1** (continued)

| Manuscript | | Empathy | | | | Findings/Results | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q = questionnaire, T = task) | Informant* | Age | Empathy–ELA Association | Empathy–ELA Effect Size § | Evidence for Empathy–ELA association? | Direction |
| 2022 | Peterson | Theory of Mind (ToM) (cognitive empathy) | Reading the Mind in the Eyes Test (T) (RMET; Baron-Cohen et al., 2001) | SR | 18–56+ (41.8% 18–25, 24.5% 26–35, 13.3% 36–45, 11.5% 46–55, 8.9% 56+) | 1) General childhood trauma exposure and ToM 2) Child maltreatment and ToM 3) Interpersonal loss and ToM | 1) $\beta = -0.34$, $p = 0.189$ 2) $\beta = -0.21$, $p = 0.369$ 3) $\beta = -0.25$, $p = 0.170$ | No | NA |
| 2022 | Dillon-Owens | Affective empathy (emotional contagion, emotional disconnection) and cognitive empathy | Basic Empathy Scale (Q) (Jolliffe & Farrington, 2006) | SR | 11–15 years | 1) Victimization and emotion contagion 2) Victimization and emotional disconnection 3) Victimization and cognitive empathy | 1) $r = 0.22$, $p < 0.01$ 2) $r = 0.02$, $ns$ 3) $r = -0.09$, $ns$ | Limited support; more victimization linked to increased emotion contagion | (+) & NA |
| 2023 | Cerqueira | perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy), personal distress (PD), fantasy | Interpersonal Reactivity Index (Q) (Davis, 1980) | SR | 10–63 years (M = 40.23, SD = 12.1) | *Threat* 1) Emotional abuse and PT, EC, and PD 2) Physical abuse and PT, EC, and PD 3) Sexual abuse and PT, EC, and PD 4) Exposure to domestic violence and PT, EC, and PD *deprivation* 5) Emotional neglect and PT, EC, and PD 6) Physical neglect and PT, EC, and PD | 1) $r = -0.09$ ns, $r = -0.30$ $p < 0.01$, $r = -0.09$, $ns$ 2) $r = -0.28$ $p < 0.01$, $r = -0.20$ ns, $r = -0.16$ ns, 3) $r = -0.17$ ns, $r = 0.01$ ns, $r = 0.10$ ns 4) $r = -0.09$ ns, $r = 0.20$ ns, $r = -0.12$ ns 5) $r = -0.23$ $p < 0.01$, $r = -0.11$ ns, $r = -0.02$ ns 6) $r = -0.13$ ns, $r = -0.11$ ns, $r = 0.02$ ns | Limited support; when correlations between childhood adversity and empathy subscales were significant, they were negative | (−) & NA |

**Table 1** (continued)

| Manuscript | | Empathy | | Informant* | Age | Findings/Results | | | Direction |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | | | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | |
| 2023 | Trach | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy) | Empathy Toward Victims Scale (Q) (Kärnä et al., 2013) | SR | T1 age=M 13.2 years (SD=2.01) T2=after half year T3=1 year after T1 | 1) Self-reported victimization at T1 and PT at T1, T2, and T3 2) Self-reported victimization at T2 and PT at T1, T2, and T3 3) Self-reported victimization at T3 and PT at T1, T2, and T3 4) Self-reported victimization at T1 and EC at T1, T2, and T3 5) Self-reported victimization at T2 and EC at T1, T2, and T3 6) Self-reported victimization at T3 and EC at T1, T2, and T3 7) Peer-reported victimization at T1 and PT at T1, T2, and T3 8) Peer-reported victimization at T2 and PT at T1, T2, and T3 9) Peer-reported victimization at T3 and PT at T1, T2, and T3 10) Peer-reported victimization at T1 and EC at T1, T2, and T3 11) Peer-reported victimization at T2 and EC at T1, T2, and T3 12) Peer-reported victimization at T3 and EC at T1, T2, and T3 | 1) $r=0.13$ $p<0.01$, $r=0.11$ $p<0.01$, $r=0.06$ $p<0.01$ 2) $r=0.12$ $p<0.01$, $r=0.12$ $p<0.01$, $r=0.08$ $p<0.01$ 3) $r=0.06$ $p<0.01$, $r=0.06$ $p<0.01$, $r=0.04$ $p<0.01$ 4) $r=0.06$ $p<0.01$, $r=0.09$ $p<0.01$, $r=0.07$ $p<0.01$ 5) $r=0.08$ $p<0.01$, $r=0.10$ $p<0.01$, $r=0.09$ $p<0.01$ 6) $r=0.05$ $p<0.01$, $r=0.05$ $p<0.01$, $r=0.02$ $p<0.05$ 7) $r=0.03$ $p=0.007$, $r=0.03$ $p<0.01$, $r=0.02$ $p<0.05$ 8) $r=0.05$ $p<0.01$, $r=0.05$ $p<0.01$, $r=0.03$ $p<0.01$ 9) $r=0.04$ $p<0.01$, $r=0.05$ $p<0.01$, $r=0.03$ $p=0.002$ 10) $r=-0.02$ $p<0.05$, $r=-0.02$ ns, $r=-0.02$ ns 11) $r=0.00$ ns, $r=0.01$ ns, $r=0.00$ ns 12) $r=0.01$ ns, $r=0.01$ ns, $r=0.01$ ns | Yes; most robust for cognitive empathy with both self- and peer-report victimization. No associations between peer-report victimization and affective empathy | (+) & NA |

**Table 1** (continued)

| Manuscript | | Empathy | | | | Findings/Results | | | Direction |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q=questionnaire, T=task) | Informant* | Age | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | |
| 2023 | Benz | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy), personal distress (PD), fantasy, charitable action | Interpersonal Reactivity Index (Q) (German version; Davis, 1980); behavioral task offering ability to donate funds to a charity (T) | SR | 18–60 years (M = 30.51, SD = 9.88) | *Threat* 1) Emotional abuse and PT, EC, and PD 2) Physical abuse and PT, EC, and PD3) Sexual abuse and PT, EC, and PD *deprivation* 4) Emotional neglect and PT, EC, and PD 5) Physical neglect and PT, EC, and PD | 1) $r = -0.06$ ns, $r = -0.01$ ns, $r = 0.43$ $p < 0.001$ 2) $r = -0.07$ ns, $r = -0.03$ $p < 0.001$ 3) $r = -0.02$ ns, $r = 0.10$ ns, $r = 0.35$ $p < 0.001$ 4) $r = 0.01$ ns, $r = -0.02$ ns, $r = 0.39$ $p < 0.001$ 5) $r = -0.03$ ns, $r = 0.02$ ns, $r = 0.41$ $p < 0.001$ | Yes; increased levels of emotional, physical, and sexual abuse, and emotional and physical neglect were positively correlated with personal distress in response to others' suffering | (+) & NA |
| 2023 | Liu | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy), altruistic action | Interpersonal Reactivity Index Perspective-Taking and Empathic Concern Subscales (Q) (Chinese version; Davis, 1980); resource allocation in a game (T) | SR | 11–16 years (M = 12.58, SD = 0.98) | 1) dictator's socioeconomic status on total empathy 2) dictator's socioeconomic status on cognitive empathy 3) dictator's socioeconomic status on affective empathy | 1) $\beta = -0.58$, $p < 0.001$ 2) $\beta = -0.47$, $p < 0.01$ 3) $\beta = -0.51$, $p < 0.001$ | Yes; increased socioeconomic adversity was associated with higher levels of total, cognitive, and affective empathy | (+) |

**Table 1** (continued)

| Manuscript | | Empathy | | Informant* | Age | Findings/Results | | | Direction |
|---|---|---|---|---|---|---|---|---|---|
| Year | First Author | Operationalization‡ | Measurement (Q = questionnaire, T = task) | | | Empathy-ELA Association | Empathy-ELA Effect Size § | Evidence for Empathy-ELA association? | |
| 2023 | Chen | Perspective-taking (PT; cognitive empathy), empathic concern (EC; affective empathy), personal distress (PD), fantasy, prosocial tendencies | Interpersonal Reactivity Index (Q) (Chinese version; Davis, 1980) | SR | 16–22 years (M = 18.17) | *Threat* 1) overall abuse and PT, EC, and PD 2) emotional abuse and PT, EC, and PD 3) physical abuse and PT, EC, and PD4) sexual abuse and PT, EC, and PD *deprivation* 5) overall neglect and PT, EC, and PD 6) emotional neglect and PT, EC, and PD 7) Physical neglect and PT, EC, and PD | 1) $r = -0.010$ ns, $r = -0.078$ ns, $r = 0.164\ p < 0.001$ 2) $r = -0.014$ ns, $r = -0.071$ ns, $r = 0.196\ p < 0.001$ 3) $r = -0.039$ ns, $r = -0.061$ ns, $r = 0.076$ ns 4) $r = 0.062\ p < 0.05$, $r = -0.012$ ns, $r = -0.002$ ns 5) $r = -0.114\ p < 0.001$, $r = -0.119\ p < 0.001$, $r = 0.108\ p < 0.01$ 6) $r = -0.106\ p < 0.01$, $r = -0.125\ p < 0.001$, $r = 0.113\ p < 0.01$ 7) $r = -0.095 < 0.05$, $r = -0.075$ ns, $r = 0.079$ ns | Mixed support; more emotional neglect was associated with less PT and EC; more emotional abuse predicted more PD (and then in turn less prosocial behavior) | (+) (−) & NA |
| 2024 | Panagou | Cognitive and affective empathy | Questionnaire of Cognitive and Affective Empathy (QCAE; Reniers et al., 2011) | SR | M = 36.17 years, (SD = 11.36 years) | 1) adverse childhood experiences and cognitive empathy 2) adverse childhood experiences and affective empathy | 1) $r = -0.01$, *ns* 2) $r = 0.18$, $p \leq 0.01$ | Yes; more ELA, higher affective empathy | (+) & NA |

Citations are provided for ELA and empathy measures where available. Where used, T1 indicates an assessment at timepoint 1 and T2 indicates an assessment at timepoint 2. SES = socioeconomic status, M = mean, SD = standard deviation.

†This author categorized ELA into the following dimensions: *General, threat, deprivation, unpredictability, interpersonal,* and *environmental*. Where a general adversity index or composite measure was reported and not dissociable into subtypes, it was categorized as *general*.

*Informants: SR = Self-Report, PR = Parent-Report, TR = Teacher-Report, O = Other.

‡Empathy measures were categorized into *general empathy, affective empathy, cognitive empathy,* or *personal distress* either by study authors or by the author of this review. For example, a subscale of "empathic responsivity" would be categorized as *affective empathy*. While some studies employing the full Interpersonal Reactivity Index (IRI) also measured the Fantasy subscale, results are not depicted here due to the low number of such studies and the lack of relevance of this subscale to the literature.

§For the statistics reported, some effects/correlations are attenuated by covariates, while some are not

between ELA and empathy or any of its components. Four of these 12 papers focused on outcomes during childhood, six on adolescence, and two on adulthood.

## ELA and Empathy in Childhood

### ELA is Positively Associated with Empathy in Childhood

Across three papers examining empathy in childhood, affective empathy (and not cognitive empathy) was associated with increased reports of ELA, including exposure to armed conflict (Kara & Selcuk, 2021) and peer victimization (Caravita et al., 2010). One study suggested that the intensity and frequency of ELA matters, with victims reporting more severe and frequent peer victimization having higher affective empathy scores than those reporting mild or no victimization (van Noorden et al., 2016).

### ELA is Negatively Associated with Empathy in Childhood

Two of the three papers reporting an association between ELA and decreased empathy in children found this link for cognitive empathy specifically (Colasante et al., 2019). For example, decreased cognitive empathy was connected to peer victimization (Williford et al., 2016) and socioeconomic adversity (Kara & Selcuk, 2021).

### ELA is Unrelated to Empathy in Childhood

All four papers finding null associations between ELA and empathy in childhood period examined peer victimization and employed questionnaire-based measures of empathy (Barhight et al., 2013; Belacchi & Farina, 2012; Raskauskas et al., 2010). While most of this work was cross-sectional, Malti et al. (2010) found that peer victimization was not related to affective empathy reported by youth, parents, or teachers either cross-sectionally *or* longitudinally.

## ELA and Empathy in Adolescence

### ELA is Positively Associated with Empathy in Adolescence

Six studies found that ELA was related to increased affective empathy in adolescents (Dillon-Owens et al., 2022; Farrell & Vaillancourt, 2021); for example, higher rates of violence exposure among adolescents were related to greater levels of task-based affective empathy (Heleniak & McLaughlin, 2020). Further, other studies uncovered positive links between ELA and cognitive empathy. Trach et al. (2023) found that peer victimization was robustly connected to cognitive empathy, and not affective empathy, via both self- and peer-report. Rodríguez-Hidalgo et al. (2019) discovered that peer victimization was linked to higher cognitive *and*

affective empathy in their Ecuadorian sample but only linked to higher affective empathy in their Spanish sample. Lastly, Liu et al. (2023) found overall positive associations between increased socioeconomic adversity and higher levels of general, affective, *and* cognitive empathy.

### ELA is Negatively Associated with Empathy in Adolescence

Nine papers found ELA to be negatively associated with empathy among adolescents, with three of these relating ELA to decreased cognitive empathy (Gleason et al., 2009). The remaining studies connected ELA to decreases in general empathy and/or affective empathy. Higher levels of adverse childhood experiences predicted lower general empathy among youth admitted to prison (Narvey et al., 2021), and lower affective empathy was related to cyber-victimization (Antoniadou & Kokkinos, 2018) and deprivation-type adversity (Quas et al., 2017). Decreased affective *and* cognitive empathy were connected to emotional neglect (Chen et al., 2023), emotional abuse (Heleniak & McLaughlin, 2020), and peer victimization (Kokkinos & Kipritsi, 2012).

### ELA is Unrelated to Empathy in Adolescence

As in the case of the papers finding null associations *only* between ELA and empathy in childhood, all six papers finding null results in adolescence examined peer victimization. General, affective, and cognitive empathy were measured predominately through self-report questionnaires (Ciucci & Baroncelli, 2014; Coleman & Byrd, 2003; Correia & Dalbert, 2008; Segura et al., 2020).

## ELA and Empathy in Adulthood

### ELA is Positively Associated with Empathy in Adulthood

Three of the six studies that examined ELA and empathy in adulthood found that ELA was associated with increased personal distress, or a self-oriented response in reaction to the emotional experience of someone else. Childhood maltreatment (Struck et al., 2021), interpersonal trauma (Wang et al., 2021), emotional, physical, and sexual abuse, and emotional and physical neglect (Benz et al., 2023) were all associated with increased personal distress. Another paper found that adverse childhood experiences were correlated with increased affective empathy in adulthood (Panagou & Macbeth, 2024). The remaining manuscripts finding a positive association between ELA and empathy in adults considered "general" empathy.

## ELA is Negatively Associated with Empathy in Adulthood

Seven manuscripts linked ELA to dampened empathy in adults (Cerqueira & Almeida, 2023; Fourie et al., 2019; Simons et al., 2002). Four suggested stronger links between decreased cognitive empathy and types of ELA including physical and emotional abuse (Simón et al., 2019), childhood maltreatment (among males and not females; Sun et al., 2020), and parental maladjustment and maltreatment (Germine et al., 2015). ELA was associated not just with cognitive empathy, but also with general and affective empathy in adulthood. In one study, relational trauma specifically was linked with decreased affective empathy (Wang et al., 2021). Cerqueira and Almeida (2023) found mostly non-significant correlations between various aspects of ELA and empathy, but they reported significant negative correlations between (a) emotional abuse and neglect with affective empathy and (b) physical abuse with cognitive empathy.

## ELA is Unrelated to Empathy in Adulthood

The two studies finding null associations only between ELA and empathy in adulthood examined general childhood adversity. Dittrich et al., 2020 found no effect of early life maltreatment on empathy components in mothers when controlling for diagnoses of major depression and borderline personality disorder. In a large sample of English-speaking adults, Peterson et al., 2022 found no connection between cognitive empathy and general childhood trauma, child maltreatment, or interpersonal loss.

## Interim Summary and Discussion of Findings by Developmental Period

Work among child and adolescent populations suggested that ELA may be related to higher levels of affective empathy in youth. In a related body of work considering lifetime exposure to adversity (i.e., not *childhood* adversity specifically), affective empathy, compared to cognitive empathy, more strongly predicted a tendency to be concerned about alleviating the suffering of others in two samples of adults (Lim & DeSteno, 2016). This suggests that adversity may be particularly linked to increases in sharing another person's affect. A tentative pattern most consistent in childhood and early adolescence emerged between ELA and lower levels of cognitive empathy. ELA being associated with lower cognitive empathy in youth may reflect the ongoing development of cognitive empathy. Alternatively, certain types of ELA may be especially influential over cognitive, versus affective, empathy.

Ten out of 12 of the articles finding null associations only between ELA and empathy examined peer victimization; further, all ten of these manuscripts examined child

and adolescent populations. Peer victimization was not associated with affective, cognitive, or general empathy across a collective 4,841 youth. Connections between peer victimization and empathy were only examined during childhood or adolescence, implying that patterns might not be as obvious while empathy skills are fluid. Studies have established that empathy increases throughout life (Oh et al., 2020), with adolescence being a period of particularly rapid empathy development (Van Der Graaff et al., 2014). Beyond considering the fluctuation in empathy skills associated with youth, there may be features unique to peer victimization as an ELA that contribute to null association.

Lastly, literature underscored that ELA is more related to increased *affective empathy* in youth but increased *personal distress* in adults. As depicted in Fig. 1, a regulated emotion-sharing response gives rise to affective and cognitive empathy; if this response is not regulated, it may evolve into *personal distress*. Indicative of this distinction is the fact that affective empathy is linked to superior emotion recognition, while personal distress is associated with poor emotion recognition (Israelashvili et al., 2020), pointing to a lack of self-versus-other distinction in a response dominated by personal distress. Across nine studies in childhood and adolescence, no studies examined personal distress, suggesting that questionnaires assessing affective empathy in youth are capturing both a self-oriented and other-oriented emotional response. As such, future work should strive to parse apart personal distress from affective empathy in youth.

## ELA and Empathy: Operationalization of ELA

Consistent with contemporary frameworks, this review applied dimensional models of adversity to explore unique associations with ELA and empathy, categorizing the 41 manuscripts into the following ELA dimensions: *General, threat, deprivation, unpredictability, interpersonal,* and *environmental* (see Table 1, column *ELA Operationalization; Dimension*). Papers were categorized into multiple dimensions where appropriate. Work has established other factors as important in considering associations with ELA such as informant (Kahhale et al., 2023) and timing of adversity (Manly et al., 1994; Smith & Pollak, 2021). Accordingly, Table 1 notes the informant and age range for which ELA was assessed, as well as the informant and age of empathy assessment. Table 2 depicts associations between these dimensions and empathy color coded by developmental period (pink = childhood, purple = adolescence, black = adult). Due to the large number of papers examining peer victimization (N = 23), these papers are emphasized in bold.

**Table 2** Adversity Dimensions and Empathy

| | | | Adversity Dimension | | | | |
|---|---|---|---|---|---|---|---|
| | | General | Threat | Deprivation | Unpredictability | Interpersonal | Environmental |
| Empathy | (+) | Barnett (1989), Wang (2021), Panagou (2024) | **Caravita (2010), van Noorden (2015), Kara (2021)** **Rodríguez-Hidalgo (2019), Farrell (2020),** Heleniak (2020), **Dillon-Owens (2022), Trach (2023)** Greenberg (2018), Struck (2021), Benz (2023), Chen (2023) | Kara (2021) Liu (2023) Struck (2021), Benz (2023), Chen (2023) | Greenberg (2018) | **Caravita (2010), van Noorden (2015), Kara (2021)** **Rodríguez-Hidalgo (2019), Farrell (2020),** Heleniak (2020), **Dillon-Owens (2022), Trach (2023)** Greenberg (2018), Wang (2021), Benz (2023) | Kara (2021) Liu (2023) |
| | (-) | Narvey (2021) Fourie (2019), Simón (2019) | **Williford (2016), Colasante (2019)** **Poteat (2005), Gleason (2009), Kokkinos (2012), Antoniadou (2018), Antoniadou (2019),** Heleniak (2020) Simons (2002), Germine (2015), Simón (2019), Wang (2021), Cerqueira (2023), Chen (2023) | Quas (2017) Simón (2019), Sun (2020), Cerqueira (2023), Chen (2023) | | **Williford (2016), Colasante (2019)** **Poteat (2005), Gleason (2009), Kokkinos (2012), Antoniadou (2018), Antoniadou (2019),** Heleniak (2020) Simons (2002), Germine (2015), Simón (2019), Sun (2020), Cerqueira (2023) | Quas (2017) Wang (2021) |
| | Null | Fourie (2019), Wang (2021), Panagou (2024) | **Raskauskas (2010), Caravita (2010), Malti (2010), Belacci (2012), Barhight (2013), van Noorden (2015), Williford (2016), Kara (2021)** **Coleman (2003), Poteat (2005), Correia (2008), Gleason (2009), Kokkinos (2012), Sticca (2013), Ciucci (2014), Antoniadou (2018), Espelage (2018), Rodríguez-Hidalgo (2019), Antoniadou (2019), Segura (2020), Farrell (2020), Dillon-Owens (2022), Trach (2023)** Simons (2002), Greenberg (2018), Dittrich (2020), Simón (2019), Struck (2021), Wang (2021), Peterson (2022), Cerqueira (2023), Benz (2023), Chen (2023) | Kara (2021) Quas (2017), Heleniak (2020) Germine (2015), Dittrich (2020), Simón (2019), Struck (2021), Peterson (2022), Cerqueira (2023), Benz (2023), Chen (2023) | Quas (2017) Greenberg (2018) | **Malti (2010), Raskauskas (2010), Caravita (2010), Belacci (2012), Barhight (2013), Williford (2016), van Noorden (2015), Kara (2021)** **Coleman (2003), Poteat (2005), Correia (2008), Gleason (2009), Kokkinos (2012), Sticca (2013), Ciucci (2014), Quas (2017), Antoniadou (2018), Espelage (2018), Rodríguez-Hidalgo (2019), Antoniadou (2019), Segura (2020), Dillon-Owens (2022), Trach (2023)** Simons (2002), Greenberg (2018), Simón (2019), Dittrich (2020), Wang (2021), Peterson (2022), Cerqueira (2023), Benz (2023) | Kara (2021) Quas (2017) Wang (2021) |

**Note**: Table depicts first author and year only. Articles on child outcomes are pink, adolescent outcomes are purple, and adult outcomes are black. All peer victimization articles are counted in *threat* and *interpersonal* and emphasized in **bold** due to the large number (23 of 43 articles, or 53%).

## Operationalization of ELA in Children and Adolescents

Examination of Table 1, *Informant* and *Age* data, reveals that most of the literature on youth samples relied on self-report measures of adversity, with 6 papers combining self-report measures with other informants (e.g., caregiver, peer) and 4 relying on other informants only. Very few (N=4) manuscripts reported more fine-grained assessments of developmental timing of adversity beyond *lifetime* adversity for youth, with all papers that explored timing of adversity among child and adolescent samples being peer victimization papers.

Scarce articles examined youth outcomes outside of the studies on peer victimization. The one study investigating non-victimization ELA in children found that *threat* and *interpersonal* adversity were positively related to affective and not cognitive empathy, while *deprivation* and *environmental* adversity were related to more cognitive and not affective empathy (Kara & Selcuk, 2021). These results are consistent with what might be expected from the literature, as threat is associated with altered emotion-regulatory systems (potentially affecting affective empathy)

and deprivation is related to cognitive changes (potentially affecting cognitive empathy).

Only four papers investigated non-victimization ELA in adolescents. Narvey et al. (2021) found that *general adversity* was associated with low empathy among juveniles who were incarcerated. Heleniak and McLaughlin (2020) found that more *threat* adversity (e.g., physical abuse, domestic violence exposure) was associated with *lower* cognitive empathy in adolescents and found no significant associations with *deprivation* adversity. Quas et al. (2017) established that Swazi youth exposed to *deprivation* perceived less sadness from ambiguous emotional stimuli than did youth in a comparison group. This finding suggests that less empathy among impoverished youth may be due to difficulty recognizing emotions, a key first step to empathizing. Research examining non-victimization ELA among childhood and adolescent samples do not converge on a consistent pattern of results, with evidence indicating positive, negative, and null associations within various dimensions of ELA. The limited number of papers considering the many forms of ELA to which children and adolescents are exposed highlights the need for more studies on ELA in youth.

## Peer Victimization in Children and Adolescents

A preponderance of the literature in this review on youth samples considered peer victimization as the ELA ($N = 23$; categorized as *threat* and *interpersonal* adversity). All four manuscripts exploring more specific timing of ELA were peer victimization papers as well, with work assessing peer victimization since the beginning of school year (Williford et al., 2016), past four months (Sticca et al., 2013), past couple months (Trach et al., 2023), and last 30 days (Espelage et al., 2018).

Among the papers that found non-null associations in child samples, a pattern emerged between peer victimization and increased *affective* empathy. For example, victimization was associated with greater affective empathy among primary school students in Italy (Caravita et al., 2010) and a large sample of elementary school students in the Netherlands (van Noorden et al., 2016). In the adolescent period, findings were less straightforward with work connecting peer victimization to *increased* affective and cognitive empathy, as well as *decreased* affective and cognitive empathy. Apart from these muddled findings, most of the associations between peer victimization and empathy in children and adolescents were not significantly positive or negative.

## Operationalization of ELA in Adults

Scarce work in this review measured nuanced developmental timing of adversity among adult samples. While Barnett and McCoy (1989) measured general adversity under the age of 14, only two others specified ELA under the age of 16, and three specified ELA under the age of 17. The remaining studies of ELA among adults reported that adversity was measured below the age of 18 (or specified "childhood" adversity broadly). Adult empathy studies binned by ELA dimension (black text in Table 2) revealed a lack of literature in dimensions such as unpredictability and environmental adversity. Null, positive, and negative findings existed for every dimension of adversity explored besides unpredictability. While the number of null findings for *threat*, *deprivation*, and *interpersonal* ELA appears sizeable, only two studies on adults found null associations only between ELA and empathy. Most of the literature in adults found at least some significant positive or negative connections between ELA and empathy components.

## Interim Summary and Discussion of ELA Operationalization

A lack of consistent findings between dimensions of ELA and empathy may reflect the fact that dimensions are constructs developed by researchers and do not represent "natural" categories (Smith & Pollak, 2021). There may

be distinction between what a researcher may categorize as a specific type of adversity and the subjective experience; for example, the experience of food insecurity may be categorized as *deprivation* but conceivably may be experienced as *threatening* to survival (Hein & Monk, 2017). Experiences of adversity often comprise multiple dimensions and categories (Thomason & Marusak, 2017) and do not necessarily map onto how the ELA is experienced by the individual or biological systems (Hein & Monk, 2017). It is critical to measure the way an *exposure* to an event is *experienced* by a child and assess for an individual's subjective distressing experience (or lack thereof) of an ELA (Kahhale et al., 2023). Further, research suggests that several features of ELA not captured by dimensional models, such as the developmental timing, chronicity, intensity, and severity of ELA (Manly et al., 2001; Woodard & Pollak, 2020), potentially contribute to negative outcomes. Scholars have advocated for updated operationalizations that incorporate an understanding of mechanistic effects and the perspectives of those experiencing the adversity, including developmental timing and individual difference factors (Smith & Pollak, 2021).

Null findings among peer victimization papers could be due to the heterogeneity of peer victimization, the importance of considering peer victimization in tandem with other ELAs, the failure to consider personal distress, and/or the proximity of peer victimization to the outcome of interest. Peer victimization has been parsed into subtypes such as *direct/overt victimization* (being the target of teasing, threatening, or hitting) versus *relational victimization* (bullying that targets social relationships via spreading rumors or exclusion) (Poteat & Espelage, 2005), or cybervictimization versus traditional victimization. While a subsection of these studies did parse peer victimization into such subtypes, no clear patterns emerged. Further, peer victimization has been identified as a potent risk factor compounding worse social outcomes among youth who have already been exposed to other ELA (e.g., maltreatment) (Rogosch et al., 1995), highlighting the importance of studying peer victimization concurrently with other ELAs.

Unclear findings among children and adolescents could also be due to the lack of exploration of personal distress—a precursor to the empathy response (Fig. 1)—in youth samples. No associations with personal distress were reported across the 23 papers on peer victimization. Personal distress is particularly important to assess in the context of peer victimization, as a history of negative peer interactions might then predispose maltreated individuals to view innocuous interactions as intentional rejections by peers (Cicchetti & Walker, 2001). Lastly, peer victimization questionnaires typically assess whether victimization is *currently* happening in contrast to other adversity

measures that assess ongoing *and* past exposure to ELA. Zero studies investigated how peer victimization in youth impacts adult outcomes; it may be that when peer victimization and empathy are measured concurrently in youth, potentially detrimental effects of victimization on empathy have yet to manifest.

## ELA and Empathy: Operationalization and Measure of Empathy

Empathy is a multifaceted skill that has been conceptualized in many ways from empathic concern (affective empathy) to "Theory of Mind" and perspective-taking (cognitive empathy). In addition to various conceptualizations, studies have relied on multiple measures including self-report questionnaires and tasks. Section 5 examines how associations might differ based on these variations. Table 3 depicts articles within dimensions of ELA as they pertain to the following empathy components: General empathy, affective empathy, cognitive empathy, or personal distress. Papers were categorized based on the provided descriptions of empathy measures when authors did not identify what empathy components were explored. Studies using task-based measures of empathy are bolded and articles are color coded by developmental period (pink = childhood, purple = adolescence, black = adulthood).

### General Empathy

General empathy was assessed via self-report and included a limited number of studies across childhood, adolescence, and adulthood. Two studies found that various dimensions of adversity were associated with increased general empathy (Greenberg et al., 2018; Liu et al., 2023), while the remaining studies found null associations.

### Affective Empathy

Results connecting ELA to affective empathy differed by developmental period. During childhood, ELA was linked to *increases* in affective empathy, whereas in adolescence, ELA (mostly operationalized as peer victimization) was more commonly linked to *decreases* in affective empathy. In adulthood, findings connecting ELA and affective empathy were mostly null, potentially because adult self-report measures separate affective empathy from personal distress, whereas these constructs may be confounded in younger samples. An exception to this is that Panagou and Macbeth (2024) found a general adversity index to be correlated with increased affective empathy among adults.

### Cognitive Empathy

Findings between ELA and cognitive empathy underscore mostly negative and null associations across all developmental periods and multiple ELA dimensions. Interestingly, most task-based empathy measures were of cognitive empathy. The relatively high number of significant findings between ELA and cognitive empathy, compared to other empathy components, highlights the potential ecological validity of task-based empathy measures.

### Personal Distress

Various dimensions of ELA were connected to *increased* levels of personal distress, which was only examined in adult samples. This link between ELA and an increased self-oriented affective response (i.e., personal distress) in adults, combined with the lack of delineation of a self- versus other-oriented affective response in children and adolescents (by only measuring affective empathy), suggests that ELA *could* be linked to increased personal distress across developmental periods, but that it is not being adequately measured in youth.

### Interim Summary and Discussion on Operationalization of Empathy

Four patterns emerged across operationalizations of empathy. First, findings with "general" empathy tended to be null across developmental periods, underscoring the heterogeneity of this construct and the importance of considering empathy components that likely have different associations with ELA across developmental periods. Second, the link between ELA and affective empathy varied across development, with associations most likely to be positive in children, negative in adolescents, and null in adults. This fluctuation potentially reflects the emergence and maturity of skills regulating emotional responses. Third, cognitive empathy—the most likely to be measured via a task—was mostly negatively or not associated with ELA. Lastly, personal distress, a construct reflecting self-oriented emotions, was frequently linked with more ELA in adults.

### Measurement of Empathy

The 43 studies relied predominantly on self-report questionnaires to measure empathy, including the Interpersonal Reactivity Index (IRI, $N = 15$), the Basic Empathy Scale (BES, $N = 7$), and other questionnaires ($N = 13$). The IRI, despite being the most popular self-report measure in this review, has been found to have low construct validity (Chrysikou & Thompson, 2016) and poor correlations with

naturalistic measures of empathy in clinical (Lee et al., 2011) and non-clinical populations (Herrera et al., 2018). An advantage of the IRI is that it has a subscale for measuring personal distress; however, no study authors included this subscale in any investigation of youth samples, instead relying on the empathic concern (affective empathy) and perspective-taking (cognitive empathy) subscales.

Far fewer studies employed task-based measures such as the Reading the Mind in the Eyes Test ($N = 4$) which involves choosing a word that best describes how a person in a photo is feeling. Other tasks ($N = 11$) included rating the emotions of subject in an image or providing compassion ratings in response to a video clip. All the studies using task-based measures were with adolescent and adult samples, and most yielded negative or null associations between ELA and empathy. However, one study found that higher rates of violence exposure among adolescents were correlated with increase task-based affective empathy (Heleniak & McLaughlin, 2020). Notably, this manuscript was the only study to use a task to measure affective empathy in addition to cognitive empathy.

## Discussion and Recommendations for Future Directions

Based on findings across developmental period (Sect. 3.0), operationalizations of ELA (Sect. 4.0), and conceptualizations of empathy (Sect. 5.0), this review proposes concrete recommendations for future research in this subfield (Sect. 6.0). These include (1) updating and expanding operationalizations of ELA, (2) operationalizing a broader set of empathy components via ecologically valid measures, and (3) focusing on outcomes in adolescence as a sensitive period.

### Updating and Expanding Operationalizations of ELA

Modern conceptualizations of adversity allow research to examine shared features among different experiences and incorporate the reality that distinct forms of adversity frequently co-occur. This review categorized operationalizations of ELA into dimensions post hoc; future research on ELA and empathy should evolve with recent theoretical advances and incorporate dimensions of adversity and topographical approaches into study design. For example, the dimension of *unpredictability* can be assessed by the Questionnaire of Unpredictability in Childhood (QUIC; Glynn et al., 2019). Where individual questionnaires do not exist, a composite measure of multiple experiences along a dimension is a viable option. A recent study created a *deprivation* composite variable from parental education status, a child interview on neglect, and a parent-report cognitive

stimulation questionnaire and a *threat* composite score from a child interview on violence exposure, a parent-report measure of intimate partner violence, and a parent-report measure of physical abuse (Machlin et al., 2019). Composite scores with multi-modal measures comprise a more comprehensive assessment of an adversity dimension beyond measuring a single form of ELA and can be further enriched by incorporating more objective environmental measures such as neighborhood crime or socioeconomic status.

Researchers should also measure factors such as timing, perpetrator(s), severity, informant, and the number of developmental periods across which ELA occurred, consistent with a "topological" framework that seeks to model various meaningful aspects of ELA (Smith & Pollak, 2021). Information about these parameters could further clarify individual differences in neurobiological and psychological development. As evidenced by Table 1, scarce studies identified in this review considered details such as timing of adversity, severity, and chronicity, features known to be particularly predictive of negative outcomes (Manly et al., 1994).

While dimensional and topographical perspectives have several benefits, investigating a *specific* ELA has the advantage of exploring consequences that are relevant to that ELA. Where establishing unique correlates of specific adversities is of interest (e.g., to influence public policy), work on ELA and empathy should explore an expanded set of ELAs. Discrimination based on race, gender, or sexual identity is widespread and only tangentially explored in the reviewed literature via studying peer victimization. For example, while 73% of queer youth report having experience discrimination based on their gender or sexual identity in their lifetime (The Trevor Project, 2022), only one study in this review considered such discrimination and found that being the target of homophobia was related to decreased affective ($r = -0.32$) and cognitive ($r = -0.23$) empathy in U.S. 8th graders (Poteat & Espelage, 2005). Other adversities that received limited, or no, attention in the literature on ELA and empathy are racism, transphobia, homelessness, and exposure to intimate partner violence.

Adjacent work studying correlates of adverse experiences across the lifespan, referred to as *Altruism Born of Suffering* (ABS; Lim, 2017; Staub, 2005; Staub & Vollhardt, 2008), could incorporate changes in order to complement literature on ELA. Key differences between the ABS literature and the present review include the development period of interest, proposed influences through which adversity affects empathy, and types of adversity investigated. While adversity at any age can be impactful, research on psychosocial and neurobiology functioning demonstrates unique and deleterious correlates of adversity in childhood. Yet, ABS literature does not focus on adverse experiences in *childhood* specifically, instead exploring lifetime adversity in samples of adults and finding associations with increased empathy and prosocial

**Table 3** Adversity dimensions and links with empathy components

| Empathy Component | | General | Threat | Deprivation | Unpredictability | Interpersonal | Environmental |
|---|---|---|---|---|---|---|---|
| | | | | **Adversity Dimension** | | | |
| General/ Total Empathy | (+) | | Greenberg (2018) | **Liu (2023)** | Greenberg (2018) | Greenberg (2018) | **Liu (2023)** |
| | (−) | Narvey (2021) | | | | | |
| | Null | | Raskauskas (2010), Malti (2010), Belacci (2012); Coleman (2003), Correia (2008), Kokkinos (2012); Greenberg (2018) | | | Raskauskas (2010), Malti (2010), Belacci (2012); Coleman (2003), Correia (2008), Kokkinos (2012); Greenberg (2018) | |
| Affective Empathy | (+) | **Barnett (1989)**, Panagou (2024) | Caravita (2010), van Noorden (2015), **Kara (2021)**; Farrell (2020), **Heleniak (2020)**, Dillon-Owens (2022), Trach (2023); Greenberg (2018) | **Liu (2023)** | Greenberg (2018) | Caravita (2010), van Noorden (2015), **Kara (2021)**; Farrell (2020), **Heleniak (2020)**, Dillon-Owens (2022), Trach (2023); Greenberg (2018), Wang (2021) | **Liu (2023)** |
| | (−) | **Fourie (2019)**, Wang (2021) | Colasante (2019); Poteat (2005), Kokkinos (2012), Antoniadou (2018), Rodríguez-Hidalgo (2018), **Heleniak (2020)**, Trach (2023); Wang (2021), Cerqueira (2023) | **Quas (2017)**; Sun (2020), Chen (2023) | | Colasante (2019); Poteat (2005), Kokkinos (2012), Antoniadou (2018), Rodríguez-Hidalgo (2018), **Heleniak (2020)**, Trach (2023); Sun (2020), Wang (2021), Cerqueira (2023) | **Quas (2017)**; Wang (2021) |
| | Null | **Fourie (2019)** | Belacci (2012), Barhight (2013); Poteat (2005), Sticca (2013), Ciucci (2014), Espelage (2018), Antoniadou (2018), Antoniadou (2019), Segura (2020), Farrell (2020), Dillon-Owens (2022); Greenberg (2018), Dittrich (2020), Wang (2021), Struck (2021), Benz (2023), Chen (2023), Cerqueira (2023) | **Kara (2021)**, **Quas (2017)**, **Heleniak (2020)**; Struck (2021), Dittrich (2020), Cerqueira (2023), Chen (2023), Benz (2023) | **Quas (2017)**; Chen (2023) | Belacci (2012), Barhight (2013); Poteat (2005), Sticca (2013), Ciucci (2014), **Quas (2017)**, Espelage (2018), Antoniadou (2018), Antoniadou (2019), Segura (2020), Farrell (2020), Dillon-Owens (2022); Greenberg (2018), Dittrich (2020), Cerqueira (2023), Benz (2023), Chen (2023) | **Kara (2021)**, **Quas (2017)**; Wang (2021) |
| Cognitive Empathy | (+) | | Rodríguez-Hidalgo (2019), Trach (2023); Wang (2021), Chen (2023) | **Kara (2021)**; **Liu (2023)** | Greenberg (2018) | Rodríguez-Hidalgo (2019), Trach (2023); Chen (2023) | **Kara (2021)**; **Liu (2023)**; Wang (2021) |
| | (−) | **Simón (2019)** | **Caravita (2010)**, van Noorden (2015), Williford (2016); Poteat (2005), **Gleason (2009)**, Kokkinos (2012), Antoniadou (2019), Rodríguez-Hidalgo (2019), **Heleniak (2020)**; **Simons (2002)**, **Germine (2015)**, **Simón (2019)**, **Cerqueira (2023)** | **Simón (2019)**, Chen (2023), Sun (2020), Cerqueira (2023), | | **Caravita (2010)**, van Noorden (2015), Williford (2016); Poteat (2005), **Gleason (2009)**, Kokkinos (2012), Rodríguez-Hidalgo (2019), Antoniadou (2019), **Heleniak (2020)**; **Simons (2002)**, **Germine (2015)**, **Simón (2019)**, Sun (2020), **Cerqueira (2023)** | |
| | Null | **Peterson (2022)**, Wang (2021), Panagou (2024) | Williford (2016), Belacci (2012), **Kara (2021)**; **Gleason (2009)**, Ciucci (2014), **Espelage (2018)**, Rodríguez-Hidalgo (2019), Antoniadou (2018), Antoniadou (2019), Segura (2020), Farrell (2020), **Heleniak (2020)**, Dillon-Owens (2022); **Simons (2002)**, **Simón (2019)**, Greenberg (2018), Dittrich (2020), Wang (2021), **Struck (2021)**, **Peterson (2022)**, Benz (2023), Chen (2023), Cerqueira (2023) | **Heleniak (2020)**; **Germine (2015)**, **Simón (2019)**, Dittrich (2020), **Peterson (2022)**, **Struck (2021)**, Benz (2023) | | Williford (2016), Belacci (2012), **Kara (2021)**; **Gleason (2009)**, Ciucci (2014), **Espelage (2018)**, Rodríguez-Hidalgo (2019), Antoniadou (2018), Antoniadou (2019), Segura (2020), Farrell (2020), **Heleniak (2020)**, Dillon-Owens (2022); **Simons (2002)**, **Simón (2019)**, Greenberg (2018), Dittrich (2020), Wang (2021), **Peterson (2022)**, Cerqueira (2023), Benz (2023), Chen (2023) | Wang (2021) |
| Personal Distress | (+) | **Barnett (1989)**, Wang (2021) | Struck (2021), Wang (2021), Benz (2023), Chen (2023) | Benz (2023), Chen (2023) | Struck (2021) | Wang (2021), Benz (2023), Chen (2023) | Wang (2021) |
| | (−) | | | | | | Wang (2021) |
| | Null | | Dittrich (2020), Cerqueira (2023), Chen (2023) | Dittrich (2020), Chen (2023), Cerqueira (2023) | | Dittrich (2020), Cerqueira (2023), Chen (2023) | |

**Note**: Table depicts first author and year only. Articles on child outcomes are pink, adolescent outcomes are purple, and adult outcomes are black. Findings with task-based measures are emphasized in **bold**. Where studies used a mix of questionnaire- and task-based measures, only findings with task-based measures are bolded.

behavior, such as charitable giving and helping a stranger (Lim & DeSteno, 2016, 2020). Altruism may be "born of suffering" when adversity is experienced in adulthood compared to vulnerable periods earlier in development.

Central to the rationale for studying ELA and empathy is the fact that ELA impacts the development of skills that scaffold empathy and may modulate empathic motivations *or* abilities (Fig. 2). The ABS literature has focused on adversity's influence on *motivations* to empathize, such as fulfilling a desire for social integration following trauma. ABS researchers acknowledge that adversity can have the opposite effect if personal distress is elevated, as someone may "become so engulfed in their own pain that they cannot be […] open to the pain of others" (Chaitin & Steinberg, 2008). ABS research should determine under which circumstances suffering may lead to prosociality. Vollhardt (2009) outlined "volitional factors" that may inhibit or increase a prosocial response such as regulation of distress (see Figs. 3 and 4 in Vollhardt, 2009); however, this work has been largely theoretical and needs to be empirically tested.

Further, ABS research has distinguished *individually-experienced* suffering from *collectively-experienced* suffering and *intentionally-inflicted harm* from harm *inflicted without intention* (Vollhardt, 2009) and has concentrated on collectively experienced and intentionally inflicted harms (e.g., wars). This focus has been justified because intergroup conflict carries "a particular risk of perpetuating suffering through defensive violence and large-scale cycles of revenge" (Vollhardt, 2009). However, this overlooks widespread and chronic adversities that do not fit into these dimensions. While 44–82% of children witness some form of neighborhood, community, or intimate partner violence (Stein et al., 2003), it is unclear how to categorize such ELAs within ABS dimensions. Other experiences such as racial discrimination, homophobia, and childhood maltreatment may be intentionally inflicted but not clearly collectively experienced or not. The dimensions proposed by ABS may be less useful for categorizing many ELAs.

A last consideration for researchers interested in ELA and empathy concerns the statistical modeling of such associations. Analytical models could examine potential non-linear associations between ELA and empathy to mitigate inconsistent findings. Recently, a Hormesis model was suggested for the link between on adversity and psychopathology (Oshri, 2023), underscoring non-linear associations throughout development. Such a non-linear correlation could in theory be applied to empathy. For example, a low level of exposure to ELA could encourage more empathic identification and emotional sensitivity, but a high level of ELA exposure may hinder empathic response through influencing emotion regulation abilities or increased personal distress.

Taken together, research on ELA and empathy should explore an expanded set of ELAs (e.g., racism, homophobia) and operationalize these adversities through contemporary dimensional and topographic perspectives, assessing key features of adversity such as chronicity, severity, and timing. ABS research should contribute an understanding of how adversity impacts outcomes through emphasizing adversity in youth and examining empathic motivations and abilities. Work should also consider analytic approaches that model non-linear associations.

## Empathy Operationalizations and Measures

There are many opportunities for advancements in literature connecting ELA to empathy including emphasizing empathy components, prioritizing consistent language for construct clarity, investigating the physiological basis of empathy, exploring empathic motivations and abilities, prioritizing naturalistic empathy measures, and incorporating longitudinal studies.

Empathy research should continue to choose operationalizations and measures that allow for analysis of components. The empathy response recruits several distinct skills (Fig. 1); as such, broadband empathy measures tapping into different constructs are not very informative. Many of the reviewed studies reported to study empathy broadly when in fact a certain component was measured and only divulged in the methods section (e.g., "authors used a measure of cognitive empathy…"). Disagreement exists about what comprises empathy and individual empathy components, such as whether affective empathy is synonymous with empathic responsivity or empathic concern. It is also poorly understood how popular terms (e.g., compassion, sympathy) fit into these conceptualizations. Unclear results revealed by this review may be due to measures purporting to study the same concept but in fact assessing distinct components of empathy.

This review underscored that certain empathy components may be more connected to ELA than others. ELA was associated with increased affective empathy in childhood, decreased affective empathy in adolescence, and consistently linked to increased personal distress in adults. However, research considering self- versus other-oriented emotional responses in youth is notably lacking. Personal distress consists of multiple components including thoughts, emotions, and physiological sensations; these physiological sensations are sometimes described as *somatic empathy* (Decety & Lamm, 2009), or the viscerally and physiologically mirrored experience of another person (Van der Graaff et al., 2016). Somatic empathy is an antecedent to affective and cognitive empathy (Preston & De Waal, 2002) and is associated with less psychopathology and increased

psychological well-being (Hanley et al., 2017). Somatic empathy has already emerged as a protective factor against aggression in at-risk adolescents (Kahhale et al., 2024) and could be a viable target for interventions, as an individual's awareness of their internal bodily sensations can be fostered via mind–body protocols (Bornemann et al., 2015; Price & Hooven, 2018). As such, it may be particularly important to study somatic empathy in the context of ELA.

Additionally, future work should align with contemporary theories of empathy by considering both empathic motivations and abilities. Someone may be *able* to empathize with a target but not particularly *motivated* to do so due to ELA—for example, if the target reminds them of a perpetrator. On the other hand, an observer could be *motivated* to empathize but have poor regulatory *abilities* and therefore be unable to inhibit their own emotional response. Extant self-report questionnaires do not delineate empathy motivations versus abilities.

Employing multi-modal, naturalistic, or task-based measures may be one way to improve assessment of empathy. Incorporation of multi-modal assessments—for example, physiological indices of arousal—may enrich self-report measures of empathy. While most of the empathy tasks were indices of *cognitive empathy*, these tasks could be modified to measure affective empathy or personal distress by directing observers to reflect on their internal emotional processes. For example, in addition to asking observers to identify a target's emotional expression, they may be prompted about the emotions or sensations they feel. Exploring empathy for specific targets, such as a stranger versus a close friend, could be one way to measure empathic motivations versus abilities, as an observer may be more motivated to empathize with a familiar target. This review also revealed a need to apply task-based measures to youth samples.

Incorporating longitudinal and multiple informant reports of empathy may also clarify associations between ELAs experienced concurrently with empathy measures (e.g., peer victimization). Only one of the reviewed studies on peer victimization used multiple informants and timepoints, finding that victimization was not related to affective empathy reported by youth, parents, or teachers either cross-sectionally or longitudinally (Malti et al., 2010). More longitudinal studies extending assessments beyond childhood or adolescence into adulthood may help clarify the long-term implications of adversity experienced in childhood.

## Adolescence

Adolescence is a sensitive period during which the influence of ELA has already begun to manifest on the brain and behavior and during which empathy plays a key role in establishing social connections and support. Adolescents who have experienced ELA already have higher rates of psychopathology, poorer academic achievement, and increased likelihood of aggression (Kessler et al., 2010; Wade et al., 2022). Neuroimaging studies highlight protracted neural development into adolescence in areas of the brain involved in emotion regulation and executive functioning (Giedd & Rapoport, 2010), rendering these systems susceptible to the impact of traumatic experiences (Cabrera et al., 2020; Carlson, 2013). Literature investigating the impact of chronic stress on developmentally sensitive brain regions has underscored differences in brain volume and gray matter in the prefrontal cortex, the hippocampus, the amygdala, and other areas among individuals with chronic stress (Hanson et al., 2010, 2012, 2015; Mallett & Schall, 2019).

Adolescence is a vulnerable stage due not only to the influence of ELA but also the fluctuations unique to this period. At the same time that the salience and importance of peers is increasing (Brown et al., 2009), biological and cognitive maturation drive the search for autonomy, individual identity, and independence from caregivers (Branje, 2018). A subsequent increase in caregiver-child conflict (Collins et al., 1997; Pinquart & Silbereisen, 2002) may contribute to an overall lack of stability in resilience factors that may leave adolescents especially vulnerable to other ELAs. Despite the importance and vulnerability of the adolescent period, limited work has considered the association between ELA and empathy in adolescents. Eighteen papers investigated adolescent samples, but peer victimization was the ELA of interest in 15 of them. We encourage the study of an expanded set of ELAs in adolescence to other experiences such as socioeconomic deprivation, abuse, inconsistent caregiving, and discrimination. Surveying the findings on adolescence overall, four manuscripts reported negative associations between ELA and empathy, eight reported positive associations, and six reported null associations only. These muddled results highlight the need to understand how exactly ELA is connected to empathy in adolescence given the crucial role empathy plays in supporting healthy interpersonal behavior (Chow et al., 2013). For example, lower empathy is linked to more bullying behavior, whereas higher empathy is linked to intervening on peer victimization (Gini et al., 2007), underscoring the need to continue examining socioemotional outcomes in adolescence.

## Conclusion

The continued study of ELA and empathy, integrating methodological and conceptual advancements outlined above, holds promising insights for developmental psychology. Empathy is a foundational socioemotional skill that governs all manner of interpersonal interactions. It therefore may serve as a viable treatment target used to buffer positive

outcomes transdiagnostically, consistent with research indicating that empathy interventions among youth lead to better socioemotional outcomes. For example, a brief (3-session, computer-based) empathy intervention among middle school students ($n = 857$) resulted in greater motivations to empathize with others, increased peer-reported prosocial behaviors, and lower levels of loneliness and aggression (Weisz et al., 2022). Among college first-year students ($n = 292$), a similar intervention predicted improved empathic accuracy for other's emotions and a greater number of new friends compared to individuals who did not receive an empathy intervention (Weisz et al., 2021).

However, given the muddled findings in this review suggesting that ELA can be associated with increased *or* decreased empathy, we should not assume that all youth exposed to ELA would benefit from empathy interventions. Research should first determine under what circumstances ELA results in too little empathy—subsequently becoming a target for intervention—versus too much empathy, becoming a risk factor for emotion dysregulation during interpersonal interactions. Progress in this space will identify who among ELA-exposed youth is likely to benefit from empathy-enhancing interventions versus protocols aimed at self-regulation or differentiating between one's own and others' emotions.

This review provided a rationale for the study of ELA and empathy (Sect. 1.0) before surveying 43 peer-reviewed articles on ELA and empathy (Sect. 2.0) to summarize patterns across the literature by developmental period (Sect. 3.0). ELA was more likely linked to increased affective empathy in childhood and adolescence and decreased cognitive empathy across the lifespan, although cognitive empathy findings were most consistent in childhood. The muddled findings in adolescence and adulthood may reflect the emergence and maturity of cognitive empathy throughout later stages of development. In adulthood, ELA was positively associated with personal distress; methodological differences (i.e., no studies measured personal distress in youth) may underlie these diverging findings. Almost one-third of the manuscripts reported null associations between ELA and empathy, with 10 of these 12 papers being youth samples in which peer victimization was examined as the ELA.

Next, this review considered the literature through the operationalizations of ELA (Sect. 4.0), categorizing adversity into dimensions with no clear patterns emerging with empathy. Most studies of child and adolescent populations measured peer victimization as the primary ELA, illuminating a gap in the literature. Peer victimization was mostly not associated with empathy, and where it was significantly related to empathy outcomes, it was more often linked to increases in affective empathy. Dimensional categorization revealed a lack of literature in unpredictability and environmental adversity dimensions among adults.

Examining operationalizations of empathy (Sect. 5.0) revealed that "general" empathy showed non-significant associations with ELA. Within specific empathy components, affective empathy differed by developmental stage (i.e., positive in children, negative in adolescence, and null in adults), cognitive empathy was negatively or not associated with ELA across development, and personal distress was not measured in youth and positively linked to ELA in adulthood. Most studies relied on self-report questionnaires, with the most popular assessment being the IRI followed by the BES. Most task-based measures of empathy (used in 13 papers) explored cognitive empathy and yielded negative or null associations with ELA; the only study exploring a task-based measure of affective empathy yielded positive associations with ELA.

Finally, this review described concrete recommendations for future studies on ELA and empathy (Sect. 6.0), including the need to (a) broaden the operationalization of adversity in research on ELA, (b) explore components and naturalistic measures of empathy, and (c) focus on outcomes in adolescence. Incorporating these recommendations into future work will contribute a more informed perspective to how experiences of ELA come to effect socioemotional functioning and cascade to outcomes across the lifespan.

## Declarations

**Competing Interests** The authors have no relevant financial or non-financial competing interests to disclose.

**Ethical Approval** This reivew synthesizes existing research and did not involve the direct collection or manipulation of data. This review paper adheres to ethical guidelines and principles; all data and findings are presented accurately and without bias.

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