

**Protective factors for externalising behaviour problems in children and adolescents
living in out-of-home care: A systematic review.**

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Declaration

This dissertation contains no material which has been accepted for the award of any other degree or diploma in any University, and, to the best of my knowledge, contains no materials previously published except where due reference is made. I give permission for the digital version of my dissertation to be made available on the web, via the University's digital research repository, the Library Search, and also through web search engines, unless permission has been granted by the School to restrict access for a period of time.

21 November 2021

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Abstract

Children and adolescents in out-of-home care (OOHC) often display disproportionate levels of externalising behaviour problems compared to the general population, which are further linked with detrimental outcomes. Yet, despite similar levels of vulnerability, not all children and adolescents in OOHC develop these behaviours. To inform effective prevention and intervention strategies, it is important to understand individual, familial, and environmental factors that are associated with reduced risk for externalising behaviour problems for children and adolescents living in OOHC. This systematic review aimed to identify and synthesise knowledge on protective factors for externalising behaviour problems in children and adolescents between 0 and 19 years old residing in OOHC. A systematic search was conducted in PubMed, PsycINFO, Embase, CINAHL, and the Proquest Social Abstracts and Social Services databases, with 28 included studies ($n=6814$). Findings were synthesised in accordance with the Ecological Systems Framework (Bronfenbrenner, 1979; 1994; 2005). Results indicated that protective factors associated with fewer externalising behaviour problems in the microsystem included a better self-concept, active or engaged coping styles, more community interactions, higher school engagement, better school stability, and better quality relationships with biological parents, siblings, caregivers, and peers. In the young person's exosystem, fewer children in the home and higher neighbourhood income were associated with fewer externalising behaviour problems. No studies in this review investigated protective interactions in the mesosystem, and further research is needed to understand how these could be associated with behaviour problems. Given the short and long-term consequences associated with externalising behaviours, professionals working with children and young people in OOHC should focus on identifying protective factors that can be targeted in prevention and intervention efforts. This review

indicated that prevention and intervention efforts can be aimed at individual, relational, and contextual factors.

Keywords: Children; Adolescents; Out-of-home-care; Protective factors; Externalising behaviours.

Children and young people who have been placed in OOHC have often experienced a combination of maltreatment, exposure to domestic and family violence, and other threats to their safety prior to entering care (Australian Institute of Health and Welfare (AIHW), 2020; Delfabbro et al., 2002; Fallon et al., 2020; Osborn et al., 2008; U.S. Department of Health and Human Services, 2020). Whilst placement in OOHC is intended to keep children safe and provide them with a stable home environment in the face of adversity, many children experience additional stressors related to living in OOHC. These stressors may include removal from their primary attachment figures, adjusting to (sometimes multiple) placement environments with a new foster family or residential care workers, and the severance of existing ties with family, friends or school when relocating to an unfamiliar community, contributing further to the distress experienced (Lawrence et al., 2006; Rubin et al., 2007). Furthermore, young people experience a disproportionate number of difficulties once they leave care compared to young people in the general population, including struggles with physical or mental health, education, employment, housing, substance abuse and criminal involvement (Gypen et al., 2017; Malvaso & Delfabbro, 2015; Stewart et al., 2014).

OOHC placements are not homogenous and their definition may vary across time and jurisdictions. Children can be placed into different types of care (e.g., family-based care such as foster or kinship care, or in group home), at different ages, for different reasons (e.g., exposure to maltreatment, significant behavioural problems, or other welfare reasons), and for varying lengths of time. Numerous studies have shown that young people in OOHC often have higher levels of externalising behaviours, relative to young people in the general population (Campos et al., 2019; Ford et al., 2007; Sawyer et al., 2007). Externalising behaviours are defined as overt and disruptive behaviours, that can involve the violation of societal norms, the destruction of property, or harm towards others. (Keil & Price, 2006; American Psychiatric Association, 2013). These behaviours can be challenging for caregivers

to manage, and increase the risk for problematic short- and long-term outcomes for children and adolescents in OOHC. For instance, externalising behaviours have been shown to reduce the likelihood of reunification (defined as children who are returned to live with their biological family after residing in OOHC) by half, even after controlling for background characteristics and type of maltreatment (Landsverk et al., 1996). Aarons et al. (2008) demonstrated that externalising behaviours were a risk factor for substance use and related disorders, and Flynn et al. (2013) showed that behavioural difficulties had a detrimental impact on educational success, which was in turn associated with further risk of psychosocial problems (Forsman et al., 2016). Externalising behaviours have also been highlighted as a significant predictor for placement breakdown (Chamberlain et al., 2006; Newton et al., 2000; Oosterman et al., 2007; Rock et al., 2015; Rubin et al., 2007; Van Rooij et al., 2015). Placement instability is another key factor linked with further longer-term detrimental impacts on the young person, such as offending behaviour in adolescence (Malvaso et al., 2017; Yoon et al., 2018). Additionally, Topitzes et al. (2011) found that externalising behaviour explained the association between child maltreatment and adult arrest.

However, not all children and adolescents in OOHC develop externalising behaviour problems and it is important to identify the factors that may be protective in this context. In understanding which factors may be protective against the development of behaviour problems, prevention and intervention approaches can target these factors in order to assist in improving outcomes for this vulnerable group of young people. Protective factors can include those that can be directly linked to better psychosocial outcomes across contexts, and those that mitigate the impact of different risk factors, resulting in better psychosocial outcomes (Narayan et al., 2018; Sattler & Font, 2018). In this study, protective factors were therefore conceptualised as *any* malleable factor measured that may either be able to moderate the

impacts of adverse childhood experiences on externalising outcomes, and/or positively contribute to lower externalising behaviours (Sattler & Font, 2018).

Theoretical Framework

The interplay between protective factors and externalising behaviour outcomes can be understood through ecological systems theory (Bronfenbrenner, 1979; 1994; 2005). Bronfenbrenner postulated in his ecological systems model that human behaviour and development is a dynamic interaction between a growing person and their ever-changing environment (Bronfenbrenner, 1979; 1994; 2005; Bronfenbrenner & Ceci, 1994). Bronfenbrenner (1979) suggested that the environment could be seen as an embedded arrangement of systems, including the microsystem, mesosystem, exosystem, macrosystem and chronosystem. The microsystem is considered to include the individual's assets (conceptualised as appearance, emotional skills and resources, and temperament) and what happens in a child's immediate environment, such as interactions with family, friends, school and their neighbourhood. The mesosystem includes relationships between the child's immediate environments (i.e., family interactions with school that impact the child); the exosystem refers to the environments and systems that may indirectly impact the child (i.e., leave policies at a parent's place of work). At a broader level, the macrosystem refers to ideologies and belief systems that impact the child from a societal level (e.g., the extent to which child maltreatment is tolerated); and the chronosystem refers to the impact of time. In essence, ecological systems theory proposes that it is key to understand not only a child's unique qualities, but also how the different systems, and the interactions between these systems impact child development (Bronfenbrenner, 1979; 1994; 2005; Bronfenbrenner & Ceci, 1994). With this in mind, it is likely that there could be protective factors from a single system, or an interplay between protective factors from various systems that are associated with lower externalising behaviours for children and adolescents in OOHC.

Protective Factors in the OOHC Literature

Due to the potential to improve outcomes for children in OOHC, protective factors have received recent attention in the literature. Reviews of protective and psychosocial factors in OOHC have identified individual qualities such as self-esteem, motivation, future vision, and possessing coping mechanisms and social skills as protective for resilience and psychosocial functioning outcomes (Khotari et al., 2020; Lou et al., 2018; Washington et al., 2018; Zabern & Bouteyre, 2017). Protective relational factors identified included regular contact with biological family and positive interpersonal relationships with carers, peers and significant others (Khotari et al., 2020; Lou et al., 2018; Washington et al., 2018; Zabern & Bouteyre, 2017). School connections were also emphasised as protective (Lou et al., 2018; Zabern & Bouteyre, 2017).

While there have been attempts to synthesise protective factors for children in OOHC, numerous questions still remain. For example, although factors that contributed to ‘resilience’ have been studied, the concept of resilience is not well-defined, resulting in a lack of clarity in measuring and interpreting the identified protective factors’ association with psychosocial outcomes (Zabern & Bouteyre, 2017). Additionally, previous reviews have included studies where at least part of the sample was not residing in OOHC, and included children who remained at home with their biological parents (Khotari et al., 2020; Zabern & Bouteyre, 2017). As children in OOHC can be considered a distinct population of significant policy and practice interest, it is important to understand whether specific protective factors may contribute to better outcomes. Similarly, previous reviews have not always included a wide variety of OOHC settings or age ranges, instead focusing on older children, or particular types of OOHC, e.g., residential care (Khotari et al., 2020; Lou et al., 2018; Washington et al., 2018). Additionally, while studies have investigated risk and protective factors in relation to psychosocial

functioning generally, specific associations between protective factors and externalising behaviours have not received attention (Lou et al., 2018; Zabern & Bouteyre, 2017).

Study Aim

Given the short and long-term consequences associated with externalising behaviours, an in-depth review of protective factors across multiple contexts and their association with better behavioural functioning, or reduced externalising behaviour, for children and adolescents in OOHC can provide further insight into prevention and early intervention opportunities. Further, there is a need to include variables pertaining to the individual themselves, their relationships with others, and influences from the broader environment. Therefore, the aim of this systematic review is to identify and synthesise protective factors associated with lower externalising behaviour problems for children and adolescents residing in OOHC, with a particular focus on identifying protective factors that can be promoted across their micro-, meso- and exosystems. The findings from this review could be utilised to inform professionals working with children and adolescents in OOHC, to increase the utility of applied intervention efforts to ameliorate externalising behaviour problems and their associated detrimental outcomes, as well as inform further research in this area.

Method

A systematic review was conducted according to the Preferred Reporting Items for Systematic Review and Meta-Analyses Guidelines (PRISMA; Moher et al., 2009) to identify relevant English-language, peer-reviewed studies that examined protective factors and externalising behaviour problems for children in OOHC.

Information Sources and Literature Search Strategy

PubMed, PsychINFO, Embase, CINAHL, and the Proquest Social Abstracts and Proquest Social Services databases were searched for eligible articles on April 16th, 2021.

The primary search focused on three categories, with articles that included the following combination of key words “*out-of-home care*”, and “*children*”, and “*protective factors*”. For each key word, relevant synonyms were identified. In each database, indexing terms based on the search terms were used to improve the relevance of the literature, and search terms were truncated (denoted by *) to allow for variations in spelling and plurality. This process was completed in consultation with an expert research librarian. The searches were combined with Boolean operators “AND” between the three categories, and “OR” between all related search terms within categories. A complete logic grid can be found in Appendix A. The search strategy was designed in the context of a larger project that aimed to identify associations between protective factors and all psychosocial behaviours among children in OOHC, whereas this study focuses specifically on the outcome of externalising behaviours.

The secondary searches included the examination of reference lists of related reviews (Khotari et al., 2020; Lou et al., 2018; Zabern & Bouteyre, 2017), and a Scopus citation search conducted between 28 July 2021 and 2 August 2021 to account for any further relevant studies.

Study Eligibility

For the purposes of the present review, OOHC was defined as care for children who are not able to safely reside with their biological families including non-family based foster care, kinship foster placements, residential care setting settings or other forms of accommodation that are not with the child’s biological parents AIHW (2020). Studies involving children living in secure facilities or detention, psychiatric treatment facilities, or disability units were excluded, as these children were likely engaged in specific rehabilitation efforts that were beyond the scope of this review. It is also noted that age ranges differed among children in OOHC from different countries. For example, some states in the United

States of America (USA) include young people up to 19 or 21 (Child Welfare Information Gateway, 2019), while in Romania, the state is responsible for a child up to the age of 26 if the young person is enrolled in education (Bunea et al., 2017). As this review focused on children and adolescents, the age range of 0-19 years was chosen, as the World Health Organisation deem a child to be any person under the age of 18, and adolescents to be any person aged between 10 and 19 years (WHO, 2019). Additionally, it is noted also that this study focuses specifically on modifiable characteristics which can be addressed by the child or adolescent and their context, rather than those factors that are mostly fixed such as gender, age, race/ethnicity and maltreatment history.

The inclusion criteria for this review were therefore: a) sample population consisting of children and adolescents from birth to age 19 in OOHC; b) studies that included at least one protective factor and which measured externalising behaviour problems; and c) quantitative research articles published in peer reviewed journals after 1998 and up to April 2021. The year 1998 was chosen as, after the Adverse Childhood Experiences study was published by Felitti et al. (1998), the research started to shift focus from risk to protective factors that could ameliorate outcomes for those in OOHC.

The exclusion criteria for this review were: a) the sample included adults and it was not possible to extract data for children or adolescents; b) the study did not clearly define in which type(s) of OOHC participants were living or the sample included types of living arrangements not consistent with our definition of OOHC; c) not published in a peer-reviewed journal article, or was not written in or translated into English, and; d) intervention studies from which baseline data were not able to be extracted, as the focus of the present review was on describing protective factors related to externalising behaviours in OOHC rather than specifically reviewing interventions.

Data collection and synthesis

Identified studies were imported into Covidence software (Veritas Health Innovation) and duplicates were removed. Eligibility screening was completed by the primary researcher, with a random subset of articles (10%) reviewed independently by a second reviewer. Screeners were in agreement for 94% of studies, corresponding to a weighted Kappa value of .6 for inter-rater reliability.

Search results and elimination processes are presented in a flow diagram (Figure 1) and reported narratively. Study features were analysed and tabulated in accordance with the research question, following the PRISMA framework (Moher et al., 2009). Information on the location and year of study, design, sampling method, demographic information, type of OOHC, research aims, protective factors (and where available, the measure(s) used to assess protective factors), externalising behaviours measured (and where available, measure(s) used to assess externalising behaviours), and overall study findings were recorded. A complete data extraction table is available in Appendix B.

Due to the diverse range of study characteristics (i.e., sample differences, study methodologies and measures) a narrative synthesis was employed following the Synthesis Without Meta-analysis guidelines (Campbell et al., 2020). Studies were grouped together as part of data synthesis, using ecological systems theory as a guiding framework in reporting the findings (Bronfenbrenner, 1979; 1994; 2005).

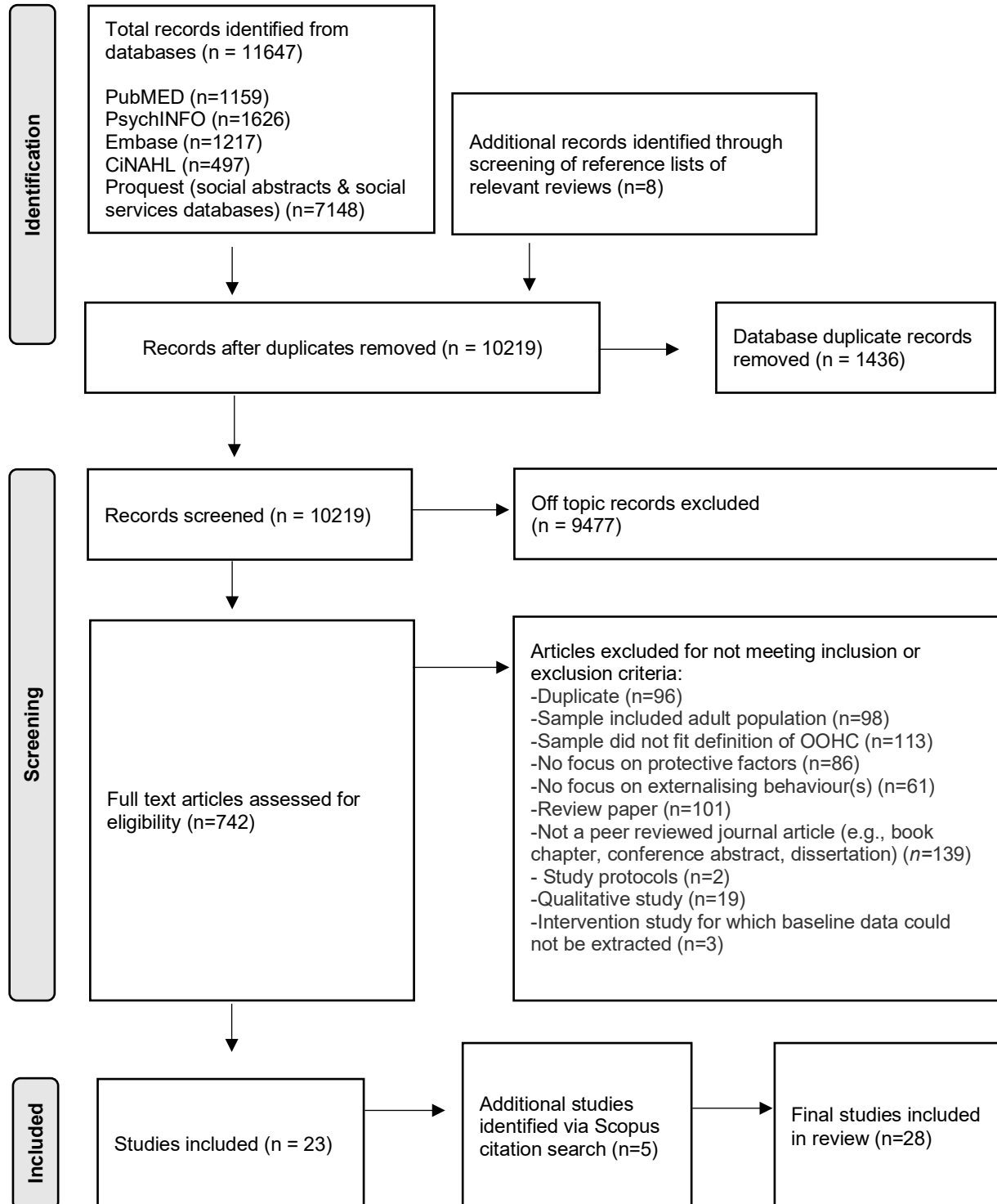
Quality assessment

Quality assessments were conducted using the QualSyst tool developed by Kmet et al. (2004). Each study was assessed on 14 criteria such as “analyses described and appropriate”, and “controlled for confounding” (for more information on criteria see Kmet et al., 2004),

with scoring options of *criteria not met* (0), *criteria partially met* (1), and *criteria met* (2), and *criteria N/A* (no score). Scores were extracted into a spreadsheet and a summary score was then calculated by dividing the score by the total possible score. Percentages of

Figure 1.

PRISMA flowchart detailing study selection.



studies meeting the 14 criteria were calculated. The primary researcher assessed all included studies, and a subset of five randomly selected articles were assessed independently by a second reviewer. Disagreements were resolved via discussion between the reviewers, and full consensus was reached.

Results

Study Selection

Figure 1 provides an overview of the study selection process. The database search resulted in a primary search of 11,647 studies, and manual review of reference lists of related systematic reviews resulted in a further eight studies. After 1436 duplicates were removed, 10,219 titles and abstracts were screened for eligibility. At the full text stage, 742 articles were reviewed in accordance with inclusion criteria, resulting in 23 included studies. The Scopus citation search yielded another five studies, resulting in a total of 28 included studies.

Studies conceptualised as near-misses included samples of children who resided with biological parents, studies in which parts of the sample were no longer in OOHC, or when measures encompassed outcomes not related to externalising behaviour and relevant data could not be extracted, i.e., Cooley et al., 2015; Fernandez et al., 2009; Filbert & Flynn, 2010; Griffin et al., 2009; Magalhaes et al., 2021; Taussig, 2002).

Study Characteristics

This review identified 28 studies with a total of 6814 participants that met inclusion criteria, which are displayed in Table 1. Studies were primarily conducted in the USA ($n=18$), followed by Canada ($n=6$), Portugal ($n=1$), Singapore ($n=1$), United Kingdom, ($n=1$) and Spain ($n=1$). Seventeen studies were cross-sectional and nine studies were longitudinal in design. Eleven studies utilised national datasets, such as the National Survey of Child and Adolescent Well-Being (NSCAW; $n=7$) and the Ontario Looking After

Children (OnLAC) study ($n=4$; U.S. Department of Health and Human Services, n.d.; Flynn et al., 2004). Six studies used baseline data from existing studies (i.e., randomised controlled trials) and 11 studies utilised samples of convenience.

Sample sizes ranged from 62 participants (Joseph et al., 2014) to 875 participants; (Osei & Gorey, 2019). Boys and girls were reasonably equally represented, with the exception of Pears et al. (2012), who focused solely on girls in foster care; Edmond et al. (2006), who focused on sexually abused girls in OOHC; and Linares et al. (2007) and Horn et al. (2018), who both did not state how many boys and girls were included. Participant ages were between 1 and 19 years old, and most studies included both children and adolescents¹ in their sample ($n=17$), whilst a smaller number focussed on adolescents only ($n=6$), or children only ($n=4$).

OOHC settings included a variety of environments ($n=9$), such as foster homes, kinship care, group homes or residential facilities, or other (i.e., shelter care, or other types of OOHC not with the biological family); group home or residential care only ($n=6$); foster and kinship care only ($n=4$); and one study specified their sample as foster care in a family setting only, with kinship care excluded (Linares et al., 2007). No studies were identified that focussed solely on kinship care. The remaining 8 studies included samples in foster care, but did not provide further details.

A wide variety of instruments were used to measure protective factors due to the investigating different factors, though included mostly validated measures. For example, the Arc's Self-Determination Scale (ARC) (Wehmeyer, 2016) and Developmental Assets Scale (Scales, 1999) are well validated. There were also some novel measures developed for the study such as the KILE=Kin Identification and Level of Engagement form (i.e., Leon &

¹ defined as those between 10 and 19 years of age (WHO, 2019)

Table 1

Design characteristics of studies investigating protective factors (n=28)

| Study | Country | Sample (age range, type of care, sample size (n)) | Measure of protective Factors* | Measure of externalising behaviours^ | Key findings† |
|---------------------------------|----------|---|--------------------------------|--------------------------------------|---|
| 1. Bai et al. (2016) | USA | 6-13 year-olds in foster care (n=171) | KILE form | CANS | A higher level of kinship involvement (engagement with extended family and wider network) was associated with a lower number of externalising behaviour problems |
| 2. Bell et al. (2013) | Canada | 5-9 year-olds in group homes, foster and kinship care (n=531) | DAS, PPS, AAR-C2, CPS data | SDQ | A higher number of internal developmental assets (commitment to learning, positive values, social competencies, and positive identity), predicted fewer conduct problems. Fewer number of placements, contact with biological parents, positive caregiver parenting, external developmental assets (boundaries and expectations) and worker-level characteristics (education, case load and time worked in child welfare) did not predict a reduction in conduct problems. |
| 3. Bell et al. (2015) | Canada | 6-9 year-olds in foster families and kinship care (n=313) | DAS, PPS, AAR-C2, CPS data | SDQ | More internal developmental assets (commitment to learning, positive values, social competencies, and positive identity), less children in the home, engagement with mental health treatment, and positive parenting predicted fewer conduct problems. Care type, placement stability, contact with biological parents, external developmental assets (boundaries and expectations), foster caregiver training and greater experience in fostering children were not associated with fewer conduct problems |
| 4. Campos et al. (2019) | Portugal | 11-18 year-olds in residential care centres (n=443) | YSR | YSR | Engagement in sports, hobbies and household chores were associated with reduced oppositional defiant behaviours and total externalising problems. Interaction with parents was associated with fewer oppositional defiant, aggressive, and total externalising behaviours. Contact with siblings was associated with less aggressive behaviours, but not total externalising problems, and academic achievement was associated with fewer attention problems and oppositional defiant behaviours. Number of friends was associated with an increase in oppositional defiant behaviours, but not with the total number of externalising problems. Participation in clubs and interactions with significant other adults were both not associated with a reduction in (any) externalising behaviours. |
| 5. Cooley et al. (2020) | USA | 11-17 year-olds in foster homes, group care, kinship care or other (n=234) | LSDQ, NSCAW, DFSOSQ | CBCL, YSR | Higher school engagement and a more positive relationship with one's foster caregiver were associated with lower externalising behaviours according to youth and foster parent reports. Higher satisfaction with peer relationships was protective of externalising behaviours when engagement with school was high, but when school engagement was low, high satisfaction with peer relationships contributed to even higher levels of externalising behaviours. |
| 6. Dubois-Comtois et al. (2015) | Canada | 1-7 year-olds in foster care, kinship care and foster care with intend to later adopt (though still in OOHC) (n=83) | TIMB, AAP, PCIS, CPS data | CBCL | Higher quality interactions (supportive, pleasant and harmonious) with the foster mother were associated with less behaviour problems compared to lower quality interactions (more unbalanced and chaotic). Greater foster caregiver commitment was associated with fewer externalising behaviours for children in kin and non-kin foster families, but not in foster-to- |

| | | | | | |
|-----------------------------|-----------|--|--------------------------------------|---------------|---|
| | | | | | adopt families. Foster mother attachment state of mind and commitment toward the child were not associated with externalising behaviours |
| 7. Edmond et al. (2006) | USA | 15-18 year-olds in group homes, residential centres, foster family or foster care homes (<i>n</i> =99) | LOT-R, CTQ, novel measures | YSR | Higher optimism about the future, higher certainty of educational plans, and more positive peer influences were associated with fewer behaviour problems in sexually abused girls. Family support, school stability, educational status and engagement in religion were not associated with fewer behaviour problems |
| 8. Go et al. (2017) | Singapore | 13-19 year-olds in children's homes (<i>n</i> =130) | CANS | CANS | Higher educational support, having talents/interest and possessing applied strengths were associated with fewer conduct problems, but good family relationships were not. Good family relationships and possessing applied strengths were associated with fewer anger control problems, but higher educational support and having talents/interest were not. Only applied strengths emerged as a significant main effect in the moderation analyses between maltreatment and both anger control and conduct problems. |
| 9. Hindt et al. (2020) | USA | 6-13 year-olds in foster care (<i>n</i> =274) | CPS data | CANS | For children in OOH with incarcerated fathers, receiving at least one visit with their fathers was associated with fewer externalising behaviours compared to children who did not have visits. |
| 10. Horn et al. (2018) | USA | 3-4 year-olds in foster care (<i>n</i> =88) | NEPSY | CBCL | Children with average or above average executive functioning scores were rated by caregivers as exhibiting fewer externalising problems compared to children with low executive functioning scores. |
| 11. Huffhines et al. (2020) | USA | 12-19 year-olds in kinship and foster care, residential facilities (<i>n</i> =283) | BISC | BASC-2 | Youth who used more direct coping (as compared to indirect action coping) had fewer externalising problems according to youth and caregiver reports. Prosocial and asocial coping were associated with an increase in externalising behaviours for adolescent, but not caregiver reports |
| 12. Joseph et al. (2013) | UK | 10-17 year-olds in foster care (<i>n</i> =62) | CAI | SDQ, CAPA | Fewer disruptive behaviours were associated with a secure attachment relationship with the foster mother compared to an insecure attachment. |
| 13. Lee et al. (2018) | USA | 16-18 year-olds in kinship and non-relative placements, and specialized placement settings (<i>note</i> : not profound disability units) (<i>n</i> =305) | ARC, MSPSS | YSR | Higher self-determination and social support were no longer associated with lower externalising scores once trauma experiences and hopelessness were incorporated in the analyses |
| 14. Legault et al. (2006) | Canada | 14-17 year-olds in foster homes, group homes, or other (<i>n</i> =220) | NLSCY-Cycle 3, AAR-C2, novel measure | NLSCY-Cycle 3 | More close friendships, better self-esteem, higher-quality relationship with the female caregiver, more frequent use of approach coping strategies, and fewer uses of avoidant coping strategies were associated with fewer aggressive behaviours. |
| 15. Leon & Dickinson (2019) | USA | 6-14 year-olds in foster care (<i>n</i> =221) | KILE form; CANS | CANS | General strengths (combined score of educational strengths, coping and savouring, optimism, talents/interests, spiritual/religious and involvement in the community) and kin involvement level were not associated with externalising behaviours as rated by caseworkers |
| 16. Leonard & Gudino (2016) | USA | Age range not reported, <i>M</i> =12.85 (<i>SD</i> =1.25) in foster homes, kin care | DFQOSQ, NSCAW data | YSR | Lower school instability (fewer school placements) was associated with fewer externalising behaviours. Average level of school engagement was not associated with externalising behaviours |

| | | settings, group homes, residential care, and other ($n=224$) | | | |
|------------------------------------|--------|---|---|----------------------|---|
| 17. Linares et al. (2007) | USA | 3-14 year-olds in non-kinship foster care ($n=156$, or 78 sibling pairs) | CPS data, SRQ | ECBI | Positive relationships between siblings was associated with fewer behavioural problems after 14 months. For those in the disrupted placement group (i.e., siblings who are not being continuously kept together or kept apart during placements) who initially show a low level of behaviour problems and were then separated, showed an increase in behaviour problems at follow-up. Siblings who had elevated levels of behaviour and conduct problems initially and were separated, a decrease in behaviour problems was shown at follow-up. |
| 18. McWey et al. (2010) | USA | 7-16 year-olds in foster care ($n=362$) | Novel measure | CBCL | Children with the more regular contact with their biological mothers exhibited fewer caregiver reported externalising behaviours compared to those with limited contact who were not observed to have significantly lower externalising scores (although lower externalising behaviour scores were observed). Those without contact were reported to have the highest externalising behaviour problems that fell in the clinically significant range. |
| 19. Mihalec-Adkins & Cooley (2020) | USA | 11-17 year-olds in foster care, kinship care, group/ residential care and other ($n=235$) | CDI (negative self-esteem subscale), SSRS, DFSOSQ | YSR, CBCL | Better engagement with school was associated with less self- and foster parent-reported externalising behaviours. Higher self-esteem and better social skills mediated the relationship between school engagement and both self- and foster parent-reported externalising behaviours. |
| 20. Milojevich et al. (2020) | USA | 6-17 year-olds in temporary residential care ($n=102$) | SRI | CAQ, SDQ | When children reported they had lived continuously with a close sibling, aggression was lower, and affection was not associated with aggression. When siblings had been in minimal contact with their close sibling, more affection toward their sibling was related to an increase in aggression. |
| 21. Osei & Gorey (2019) | Canada | 10-17 year-olds in group home care ($n=875$) | NPIS, OnLAC data | CPS (as part of SDQ) | Positive peer influences and smaller group homes with a lower number of residents were associated with fewer conduct problems. Positive peers were particularly protective against conduct problems in larger homes with more residents. |
| 22. Osei & Gorey (2020) | Canada | 10-14 year-olds in group home care ($n=173$) | NPIS, NHS data | CPS (as part of SDQ) | Positive peer influences and more resourceful, higher income neighbourhoods were associated with fewer conduct problems. |
| 23. Pears et al. (2012) | USA | Age range not reported, $M=11.59$ ($SD = 0.46$) in foster and kinship care ($n=75$) | CPS data, IPPA, SPPC | SEQ-R | Higher self-competence was associated with smaller reductions in aggressive behaviour from peers over time rather than bigger reductions. More support from caregivers was associated with lower levels of aggression against peers at time 2, but with higher levels of aggression against peers by time 3. More support from caregivers was not associated with aggression from peers. Placement changes was not a significant predictor of either aggression from or against peers. |
| 24. Rayburn et al. (2018) | USA | 11-16 year-olds in foster care ($n=175$) | RAPS-s | YSR, CBCL | Emotionally secure, more involved and highly structured relationships between adolescents and their foster carer mediated the relationship between exposure to violence and externalising behaviours based on adolescent self-report. |
| 25. Segura et al. (2017) | Spain | 12-17 year-olds in residential care facilities ($n=127$) | ARQ | YSR | School, self and family resources were associated with fewer behaviour problems, but peer and community resources were not. Self, school and peer support moderated the relationship |

| | | | | | |
|----------------------------|-----|--|--|-----------|---|
| | | | | | between victimisation and externalising behaviours, with adolescents with more self-resources and more school support reported fewer externalising problems, but those with more peer support reported more behaviour problems. Self-resources also mediated the association between victimisation and externalising behaviours, with more self-resources being associated with less externalising behaviours. |
| 26. Thompson et al. (2016) | USA | 11-16 year-olds in foster care, kinship care, group homes, residential facilities, or other (<i>n</i> =188) | CDI (Negative Self-Esteem Scale), LSDQ | CBCL, YSR | Better quality friendships were associated with less externalising and delinquent behaviours for both self- and caregiver-reports. Self-esteem mediated the relationships between both peers and externalising behaviours, and peers and delinquency based on self-report, but this was not the case for both outcomes based on caregiver-reports. |
| 27. Williams-Butler (2018) | USA | 13-18 year-olds in foster care (<i>n</i> =534) | CANS | CANS | A positive change in relationship stability over time, academic success, placement instability, and caregiver financial and social resources were not associated with a reduced likelihood to be involved in delinquent behaviours. Youth with stable relationships were less likely to be involved in delinquent behaviours in comparison to those with very stable relationship, indicating that increased relationship stability was associated with an increase in delinquency. |
| 28. Wojciak et al. (2017) | USA | 11-16 year-olds in foster care and kinship care (<i>n</i> =131) | Novel measure | YSR | Adolescent perception of closeness to a caregiver was associated with lower externalising behaviours, although after the contribution of trauma symptoms were taken into account in both moderation and mediation analyses, the association was no longer significant. |

*AAR-C2= Assessment and Action Record (Canadian adaptation) (Flynn et al., 2009); AAP=Adult Attachment Projective Picture System (George & West, 2012); ARC= Arc’s self-determination scale (Wehmeyer, 2016); ARQ=Adolescent Resilience Questionnaire (Garland et al, 2006); BISC= Behavioural Inventory of Strategic Control (Little et al., 2001); CAI= Child Attachment Interview (Schmueli-Goetz et al., 2008); CANS= Child and adolescent needs and strengths (Lyons & Anderson, 2001); CDI= Children’s Depression Inventory (Kovacs, 1992); CPS data= Child Protective Services data; CTQ=Childhood Trauma Questionnaire (Bernstein & Fink, 1998); DAS=Developmental Assets Scale (Scales, 1999) ; DFSOSQ=Drug Free Schools Outcome Study Questions (US Department for Education, n.d.); IPPA= Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987); KILE=Kin Identification and Level of Engagement (Leon & Dickinson 2019); LOT-R= Life Orientation Test-Revised (Scheier et al., 1994); LSDQ = Loneliness and Social Dissatisfaction Questionnaire (Asher & Wheeler, 1995); MSPSS=Multidimensional Scale of Perceived Social Support (Zimet et al., 1988); NHS= National Household Survey (Canada) (Statistics Canada, 2013); NEPSY=Developmental Neuropsychological Assessment (Korkman et al., 1998); NPIS=Negative Peer Influence Scale (first normed by Flynn et al., 2004); NLSCY-Cycle3= National Longitudinal Survey of Children and Youth (Statistics Canada and Human Resources Development, 1999); NSCAW=National Survey of Child and Adolescent Well-Being (Dowd et al., 2004, U.S Department of Health and Human Services, n.d.); OnLAC=Ontario Looking After Children (Flynn et al., 2004); PCIS= Parent–Child Interaction Scale (Moss et al., 1998); PPS= Parenting Practices Scale (Strayhorn & Weidman, 1988); RAPS-s= Rochester Assessment Package for Schools- Student (Wellborn & Connell, 1998); SPPC= Self-Perception Profile for Children (Harter, 1985); SRI=sibling relationship inventory (Stocker & McHale, 1992); SRQ= Sibling Relationship Questionnaire (Furman & Buhrmester, 1985); SSRS= Social Skills Rating System (Gresham & Elliot, 1990); TIMB= This is my Baby interview (Bates & Dozier, 1998); TRF=Teacher Report Form (Achenbach & Rescorla, 2001); YSR= Youth Self-Report (Achenbach & Rescorla, 2001).

^BASC-2=Behavioural Assessment System for Children, 2nd Edition (Reynolds & Kamphaus, 2004) ; CAQ=Child aggression questionnaire (Raine et al., 2006); CANS= Child and adolescent needs and strengths (Lyons & Anderson, 2001); CAPA= Child and Adolescent Psychiatric Assessment (Angold & Costello, 2000); CBCL= Child Behaviour Checklist (Achenbach & Rescorla, 2001); CPS (as part of SDQ)= Conduct Problem Scale (Goodman et al., 2000); ECBI=Eyberg Child Behaviour Inventory (Eyberg & Pincus, 1999); NLSCY-Cycle3= National Longitudinal Survey of Children and Youth (Statistics Canada and Human Resources Development, 1999); SEQ-R=Revised Social Experience Questionnaire (Paquette & Underwood, 1999); SDQ=Strengths and Difficulties Questionnaire (Goodman et al., 2000); TRF=Teacher Report Form (Achenbach & Rescorla, 2001); YSR= Youth Self-Report (Achenbach & Rescorla, 2001)

†Note: Only those study findings related to protective factors and externalising behaviours are listed.

Dickinson, 2019), or measures previously used in other studies which did not have validation statistics available, such as the educational engagement measure developed by Slonim-Nevo et al (1995), which was used in Edmond et al. (2008). Measures used to investigate externalising behaviours were well validated. The Youth Self Report measure ($n=9$) and Child Behaviour Checklist ($n=7$) were used most frequently (Achenbach & Rescorla, 2001), followed by the Strengths and Difficulties Questionnaire ($n=6$) (Goodman et al., 2000). A full overview of instruments used to measure protective factors and externalising behaviours can be found in Table 1.

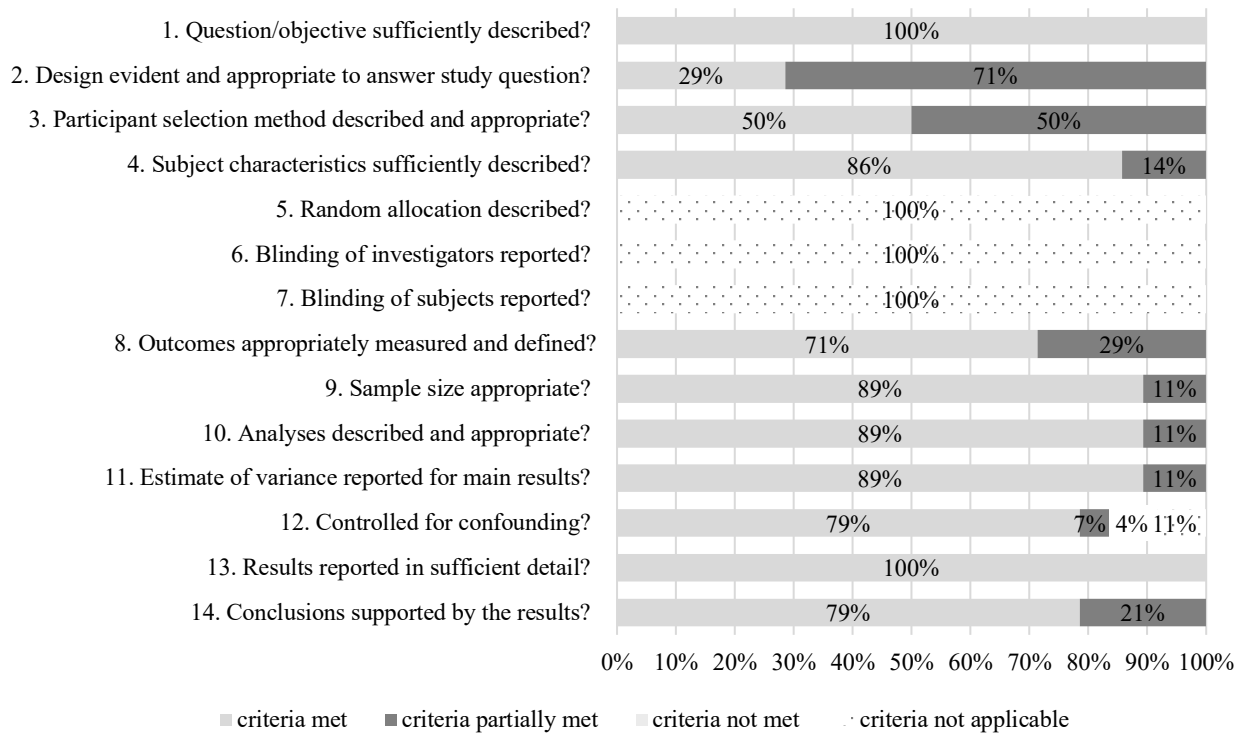
Quality Appraisal

The QualSyst tool(Kmet et al., 2004) includes guidelines to determine study quality. The average quality of included studies in this review was 0.90 (Median=.91, $SD=0.06$), range 0.77-0.95, indicating that all studies met the minimum threshold for inclusion of 0.75, as suggested by Kmet et al. (2004).

An overview of studies meeting each criterion is displayed in Figure 2. All studies clearly stated their aim (criterion 1, 100% achieved). Study design (criterion 2) was clearly stated only 29% of the time, but could usually be inferred and were appropriate to address the research question. Sample selection method was sometimes incomplete, though described enough not to have any detrimental effect (criterion 3, 50% achieved). Subject characteristics were described well (criterion 4, 86% achieved), and measures were generally defined appropriately (criterion 8, 71% fulfilled), however at times these lacked details, particularly response options in questionnaires. Criteria 5-7 were not applicable, as intervention studies were not the focus of this review. Overall, sample sizes were reasonable for study designs used and analytic methods were appropriately described (criterion 9, 89% achieved, criterion 10, 89% fulfilled respectively). Estimates of variance were generally reported (criterion 11, 89% fulfilled) and all reported their results in sufficient detail (criterion 13, 100% fulfilled).

Figure 2.

Proportions of studies meeting quality criteria on the QualSyst tool (Kmet et al., 2004).



Additionally, while the majority of the studies were cross-sectional in nature, studies regularly included some form of historical data as a covariate in the analyses (i.e., maltreatment history, severity, placement changes). In this regard, about threequarters of studies controlled for confounding (criterion 12, 79% fulfilled). The studies for which controlling for confounding was not considered specifically stated they were exploratory (11%). Conclusions were mostly supported by the results (criterion 14, 79% fulfilled), but at times lacked detail, did not take into account important confounders or outcomes were not worded carefully (Edmond et al., 2006; Go et al., 2017; Horn et al., 2018; Lee et al., 2018; Leon & Dickinson, 2019). In sum, sufficient information was provided to account for potential methodological bias.

Protective Factors Studied in the Microsystem

All studies included in this review (100%) investigated at least one protective factor in the child or adolescent’s microsystem and their association with externalising behaviours

in OOHC. These included individual assets, and interactions with the biological family, foster carer, peers, community, school, and social support. See Table 2 for an overview of protective factors investigated in the microsystem, and Figure 3 for factors identified as protective against externalising behaviours.

Individual Assets

Of the 28 studies, 13 studies (46%) investigated individual protective factors and their association with externalising behaviours for children and adolescents in OOHC, including positive self-concept, coping mechanisms and social skills.

Self-concept. Eleven studies investigated protective factors associated with self-concept (indicative of a more positive view of self), and a majority of these ($n=8$) found that children and adolescents with a better self-concept exhibited fewer behaviour problems. Higher self-esteem (suggestive of self-perceived worth or value) was associated with fewer externalising behaviours based on self-report, controlling for age, gender and placement characteristics (Legault et al., 2006; Mihalec-Adkins & Cooley, 2020). Self-esteem was also found to be a mediator in the relationship between school engagement and carer- and self-reported externalising behaviours, and between peer relationships and self-reported externalising behaviours. Self-esteem was not found to mediate the relationship between peer relationships and caregiver reported externalising behaviours, as a direct effect between self-esteem and peer relationship was found (Mihalec-Adkins & Cooley, 2020; Thompson, 2016). Additionally, self-resources, strengths and optimism about the future were associated with fewer caregiver and self-reported behaviour problems, with effects sustained longitudinally (Bell et al, 2013; Bell et al., 2015; Go et al., 2017; Segura et al., 2017). Furthermore, it was

Table 2
Protective factors investigated in each study

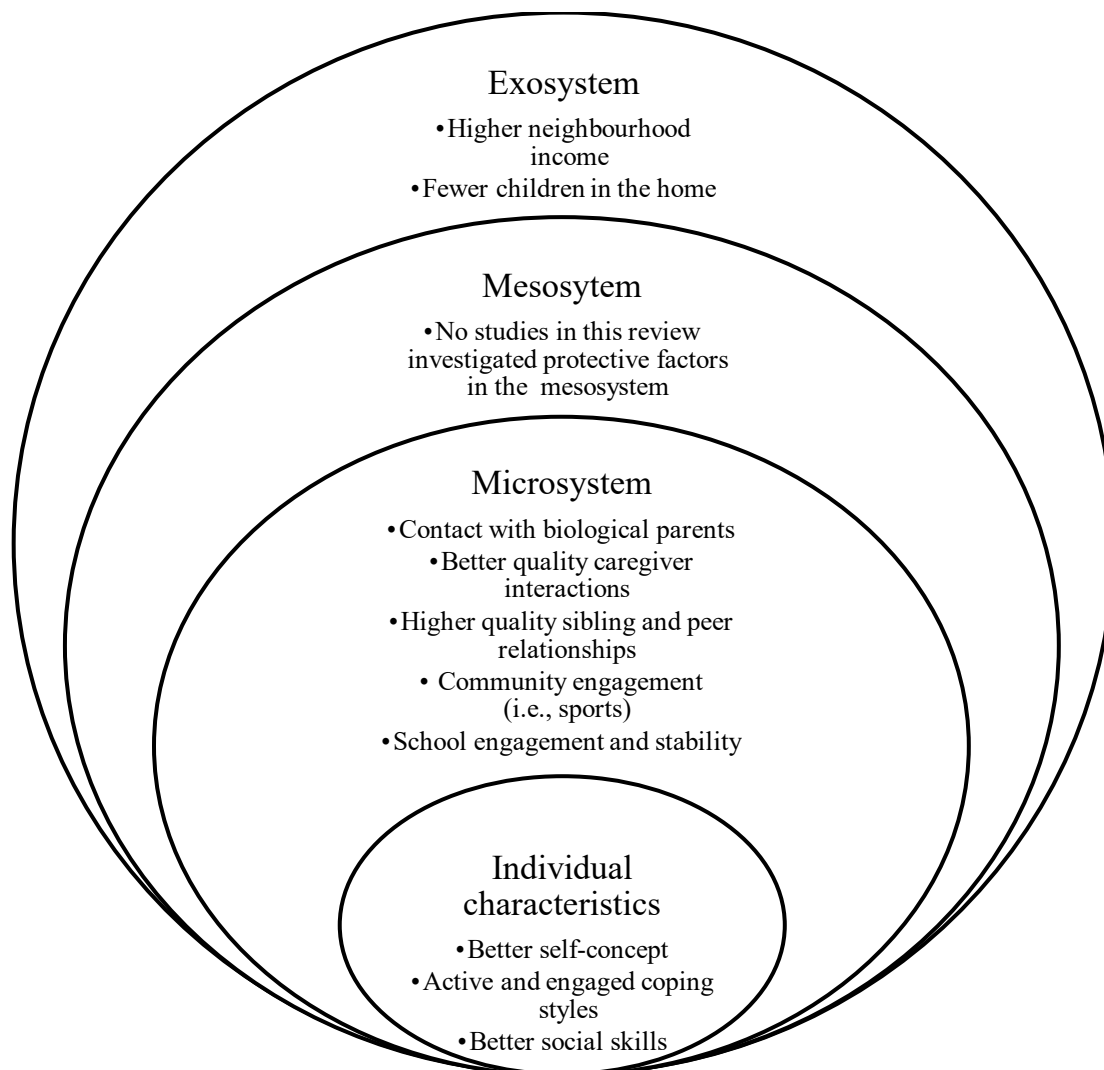
| Articles by first author, year | Design [^] | Microsystem factors | | | | | | | | | Exosystem factors | | | |
|----------------------------------|---------------------|--------------------------------|--------|---------------|----------|-----|--------------------|-------------------|----------------|------------------------|---------------------|---------------------------|------------------------------|----------------------|
| | | Biological family interactions | | | | | Carer interactions | Peer interactions | Social support | Community interactions | School interactions | Placement characteristics | Carer/worker characteristics | Neighbourhood income |
| | | Individual assets | Parent | (fictive) Kin | Siblings | | | | | | | | | |
| 1. Bai et al., 2016 | CS | | | X | | | | | | | | | | |
| 2. Bell et al., 2013 | CS | X | X | | | X | | X | | | X | X | | |
| 3. Bell et al., 2015 | LT | X | X | | | X | | X | X | | X | X | | |
| 4. Campos et al., 2019 | CS | | X | | X | | | X | X | X | | | | |
| 5. Cooley et al., 2020 | CS | | | | | X | | X | | X | | | | |
| 6. Dubois-Comtois et al., 2015 | CS | | | | | X | | | | | X | | | |
| 7. Edmond et al., 2006 | CS | X | | | | | | X | | X | | | | |
| 8. Go et al., 2017 | CS | X | X | | | | | | | X | | | | |
| 9. Hindt et al., 2020 | LT | | X | | | | | | | | | | | |
| 10. Horn et al., 2018 | CS | X | | | | | | | | | | | | |
| 11. Huffhines et al., 2020 | CS | X | | | | | | | | | | | | |
| 12. Joseph et al., 2014 | CS | | | | | X | | | | | | | | |
| 13. Lee et al., 2018 | CS | X | | | | | | X | | | | | | |
| 14. Legault et al., 2006 | CS | X | | | | X | X | | | | | | | |
| 15. Leon & Dickinson, 2019 | LT | X | | X | | | | | | | | | | |
| 16. Leonard & Gudino, 2016 | LT | | | | | | | | | X | X | | | |
| 17. Linares et al., 2007 | CS | | | | X | | | | | | | | | |
| 18. McWey et al., 2010 | CS | | X | | | | | | | | | | | |
| 19. Mihalec-Adkins & Cooley 2020 | CS | X | | | | | | | | X | | | | |
| 20. Milojevic et al., 2020 | CS | | | | X | | | | | | | | | |
| 21. Osei & Gorey, 2019 | LT | | | | | | | X | | | X | | | |
| 22. Osei & Gorey, 2020 | LT | | | | | | | X | | | | | X | |
| 23. Pears et al., 2012 | LT | X | | | | X | | | | | X | | | |
| 24. Rayburn et al., 2018 | CS | | | | | X | | | | | | | | |
| 25. Segura et al., 2017 | CS | X | | | | X | X | | X | X | | | | |
| 26. Thompson et al., 2016 | CS | X | | | | | X | | | | | | | |
| 27. Williams-Buttler, 2018 | LT | | | | | | | X | | X | X | X | | |
| 28. Wojciak et al., 2017 | CS | | | | | X | | | | | | | | |
| Totals (n) | | 13 | 6 | 2 | 3 | 10 | 8 | 6 | 3 | 8 | 7 | 3 | 1 | |
| Percentage* | | 46% | 21% | 7% | 11% | 36% | 29% | 21% | 11% | 29% | 25% | 11% | 4% | |

*Note: As some studies investigated more than 1 factor, percentages add up to greater than 100%

[^]LT=longitudinal, CS=cross-sectional

Figure 3.

Protective factors associated with fewer externalising behaviour problems.



demonstrated that caregivers of poly-victimised children with average or above average executive functioning scores reported fewer externalising problems (Horn et al., 2018).

However, three studies did not find an association between better self-concept and fewer externalising behaviours. Leon and Dickinson (2019) indicated that having general strengths (conceptualised as a combined score of educational strengths, coping and savouring, optimism, talents/interests, spiritual/religious and involvement in the community) was not associated with externalising behaviour trajectories longitudinally as rated by caseworkers. Go et al. (2017) found that possessing applied strengths, defined as a recognition of one's own

strengths, moderated the association between maltreatment and lower levels of conduct problems as rated by workers, but having talents and interests did not, indicating that the type of strength may be relevant, rather than possessing strengths globally. Lee et al. (2018) found that once trauma experiences and hopelessness was controlled for, higher self-determination (measured by the ARC's domains of autonomy, self-regulation, psychological empowerment, and self-realization) was not associated with lower externalising behaviours according to self-report. Additionally, Pears et al. (2012) found that self-competence in school (defined as the ability to perform well) did not predict lower levels of aggression against peers. Moreover, higher self-competence at school was related to smaller, not larger, reductions in aggression from peers over time. It is noted that self-competence was assessed only in the school context.

Coping Style. Coping style was reviewed in two studies and both identified that more active or engaged types of coping styles, as opposed to engagement in more avoidant types of coping, tended to be protective against externalising behaviour problems, controlling for gender, age and number of placement disruptions (Huffhines et al, 2020; Legault et al., 2006). Specifically, prosocial action coping (enlisting social support) was associated with higher levels of externalising behaviours based on young person report, but not caregiver-report.

Social Skills. One study investigated social skills (Mihalec-Adkins & Cooley, 2020) and found that better social skills mediated the association between school engagement and caregiver-reported externalising behaviours (while controlling for age, gender and placement type), indicating that youth who were better engaged at school possessed better social skills, which was then associated with a reduction in externalising behaviour problems at home.

Interactions with Members of the Biological Family

Of the 28 studies, 10 studies (36%) investigated whether interactions with biological family were related to externalising behaviours for children in OOHC. Six studies (21%)

examined child-parent interactions, three studies (11%) investigated sibling factors, and two studies (7%) investigated child-kin/fictive kin interactions. Kin is defined as extended family, whereas fictive kin is conceptualised as other network involvements such as a coach or teacher (Leon & Dickinson, 2019).

Parent Interactions. Interaction with biological parents were associated with lower externalising behaviours, based on caregiver and self-reports, and sustained longitudinally (Bell et al., 2015; Campos et al., 2019; Hindt et al., 2020; McWey et al., 2010). Importantly, McWey et al. (2010) found that the frequency of contact was important, with increased regularity of contact associated with fewer externalising problems compared with low frequency contact. However, even when frequency was low, a clinically significant reduction in externalising symptoms was found. Go et al. (2017) found a protective association between family relationship quality and anger control problems, but this was not found for conduct problems. It is possible that relationship quality is related to some but not all externalising behaviours, although the authors did not specify who was included in ‘family relationships’, indicating that there could be other relationships included beyond that of the child-biological parent. Further, data on the frequency of contact was also not included. In contrast, in a cross-sectional study Bell et al. (2013) did not find that contact with biological parents was related to fewer conduct problems, but that study relied on caregiver report of conduct problems only. However, they found that contact with a biological parent was associated with increased prosocial behaviour.

Sibling Interactions. All three studies in this category demonstrated that sibling relationships may be protective against behaviour problems, but that this was dependent upon type of externalising behaviour under investigation, a better relationship quality and sibling placement status being continuous (Campos et al., 2019; Linares et al., 2007; Milojevic et al., 2020). For example, contact with siblings was associated with less aggression, though while

in the right direction, was not associated with other externalising behaviours cross-sectionally (Campos et al., 2019). Additionally, while having a positive relationship with a sibling was found to be longitudinally protective against externalising behaviour overall, for siblings who were disrupted in their placement (compared to being continuously kept together or apart) an additional pattern was demonstrated (Linares et al., 2007). For those sibling groups who had higher behaviour and conduct problem scores at baseline, separation was protective as it was associated with lower problems at follow-up; whereas siblings who displayed lower behaviour problems at baseline, separation from their sibling was associated with more risk, as problems increased at follow up.

Kin/ Fictive Kin Interactions. The two studies investigating child-kin/fictive kin interactions were conflicting in their results. Bai et al. (2016) found that, after controlling for family dysfunction, child maltreatment, race/ethnicity and gender, a higher level of kinship involvement was related to a lower number of externalising behaviour problems cross-sectionally. However, Leon and Dickinson (2019) did not replicate this finding longitudinally, as this study found that kin involvement profile was not related to externalising behaviour problems.

Caregiver interactions

Ten studies (36%) investigated protective interactions between children and their caregivers in OOHC and seven of those found that better quality caregiver interactions were related to fewer externalising behaviours for children and adolescents in OOHC. This included when more positive relative relationships were observed by both youth and caregivers (Cooley et al., 2020; Legault et al., 2006), and when interactions were rated as higher by caregivers alone (Dubois-Comtois et al., 2015). In a longitudinal study Bell et al. (2015) also found that positive parenting was predictive of a reduction in conduct problems according to caregiver report and accounting for baseline behavioural functioning.

Additionally, caregiver-reported secure attachment, adolescent-perceived higher levels of emotional security, involvement and structure, and family resources such as connectedness and availability were associated with fewer behaviour problems. (Joseph et al., 2014; Rayburn et al., 2018; Segura et al., 2017).

In contrast, Bell et al. (2013) found no association between positive parenting and carer-reported conduct problems cross-sectionally, however the measure assessed frequency of parenting practices, rather than quality and meaning of these interactions. Wojciak et al. (2017) found that adolescent-reported closeness to a caregiver was associated with lower externalising behaviours cross-sectionally, although after the contribution of trauma symptoms were taken into account the association was no longer significant. Lastly, in a longitudinal study Pears et al. (2012) demonstrated that higher levels of caregiver support (conceptualised as feeling supported and close to maternal carer) fluctuated over time. They showed that higher averages of caregiver support over time, was associated with lower levels of aggression toward peers at the end of the first year of middle-school, but with higher levels of aggressions toward peers towards the end of middle school, although no control group was included and thus may represent a pattern also seen in non-foster care populations.

Peer Interactions

Of the 28 studies, eight studies (29%) considered peer interactions as protective factors. Higher quality friendships were largely found to be protective against externalising behaviour problems for children and adolescents in OOHC (Edmond et al., 2006; Legault et al., 2006; Thompson et al, 2016; Osei & Gorey 2019; Osei & Gorey, 2019). This effect was amplified in larger homes with eight or more adolescents in the home (Osei & Gorey; 2019; 2020). Two studies indicated that the number of peer interactions was associated with higher levels of externalising behaviours, with more self-perceived close friends predicting higher oppositional defiant behaviours, and peer resources (defined as connectedness and

availability of peers) associated with an increase in self-reported externalising symptoms. This association remained when gender, age and country of birth were controlling for (Campos et al., 2019; Segura et al., 2017). Furthermore, it appears from Cooley et al. (2020) that perceptions of satisfaction with peer relationships may be protective against or associated with risk for externalising behaviour dependent on the context. Higher satisfaction with peer relationships was protective for externalising behaviours when engagement with school was high, but when school engagement was low, high satisfaction with peer relationships contributed to even higher levels of externalising behaviours (Cooley et al., 2020).

Social support

Six studies (21%) assessed features of social support, and surprisingly, no significant associations with externalising behaviours were found for five of these studies (Bell et al., 2013, Bell et al., 2015; Campos et al., 2019; Edmond et al., 2006; Lee et al., 2018). One study investigated whether relational permanence (conceptualised as “having stable and significant relationships”) was associated with a reduction in the likelihood of delinquency (Williams-Butler, 2018, p.566). They found that while youth with stable relationships had a decreased likelihood of involvement in delinquent behaviours, youth with very stable relationships (even higher stable levels of support) actually increased their delinquency probability, though it is noted that it was not investigated who these relationships were with (Williams-Butler, 2018). Among the studies in this category, definitions of support varied, and were often broad in concept, such as ‘external developmental assets’ (conceptualised as support, empowerment, boundaries, expectations that are provided to youth by parents, school, peers, and community) or family support (Bell et al., 2013; Bell et al., 2015; Campos et al., 2019; Edmond et al., 2006; Lee et al., 2018). It is possible that the lack of specificity of definition and measurement for social support constructs may have accounted for multiple

potential factors thus limiting the extent to which associations with externalising behaviour could be ascertained.

Community Interactions

Three studies (11%) examined community interactions which were generally protective in their association with externalising behaviours. For instance, Bell et al. (2015) found that children in OOHC receiving mental health treatment exhibited less conduct problems longitudinally, compared to those that did not receive treatment. It is noted that no further contextual information was available about mental health service use and problem severity. Additionally, Campos et al. (2019) demonstrated that engagement in sports, hobbies and engaging in household chores was related to reduced oppositional defiant-related behaviours and total externalising problems based on self-report data, although participation in clubs was not significantly associated. Segura et al. (2017) found a trend towards association between community resources (such as connectedness) and reduced self-reported externalising symptoms cross-sectionally, although this was not statistically significant.

School Interactions

Eight studies (29%) investigated protective school related factors in relation to externalising behaviours. Overall, those who were more engaged with their schools and reported higher school stability endorsed fewer caregiver, worker and self-reported externalising behaviour problems. (Cooley et al., 2020; Go et al., 2017; Leonard & Gudino 2016; Mihalec-Adkins & Cooley, 2020; Segura et al., 2017). For instance, Cooley et al. (2020) and Mihalec-Adkins and Cooley (2020) found that higher school engagement was related with lower caregiver and self-reported externalising behaviours when controlling for gender; and age and placement type, respectively. Furthermore, school support was associated with both self-reported and worker reported reductions in externalising behaviours

(Go et al., 2017; Segura et al., 2017). However, protective associations between school engagement and fewer self-reported behaviour problems were not found by Leonard and Gudino (2016), although school engagement was averaged over the course of their study.

Additionally, school stability (a lower number of different school placements) appears to be another protective factor associated with reduced externalising behaviours (Leonard & Gudino, 2016). Interestingly, school stability was found to be a stronger predictor of externalising behaviour problems than home placement stability, although home and school stability were also correlated (Leonard & Gudino, 2016). Edmond et al (2006) also noted that those with greater school stability reported fewer externalising problems compared to those with less school stability, however the difference was not statistically significant. Data was based on self-report only. Furthermore, Williams-Butler (2018) and Campos et al. (2019) investigated school achievement as a factor, and while Campos et al. (2019) found that school achievement was associated with fewer attention and oppositional defiant problems, Williams-Butler (2018) did not endorse this for delinquency outcomes. It is possible that different types of school factors are important for different types of externalising behaviours.

Protective Factors Studied in the Mesosystem

No studies were identified that investigated protective factors in the child or adolescent's mesosystem, which contains relationships between the child's immediate environments (Bronfenbrenner, 1979).

Protective Factors Studied in the Exosystem

Eight studies included in this review (29%) investigated at least one protective factor in the child or adolescent's exosystem and their association with externalising behaviours in OOHC. These included placement characteristics, caregiver and caseworker characteristics, and neighbourhood income. Protective factors that were found to be associated with fewer externalising behaviours in the exosystem are displayed in Figure 3.

Placement Characteristics

Seven studies (25%) investigated placement characteristics as protective factors. Fewer children residing in the home was protective against externalising behaviour problems (Bell et al., 2015; Osei & Gorey; 2019). Care type was inconclusive, with Bell et al. (2015) suggesting there were no differences in externalising behaviour for children in kinship versus foster care, but findings from Dubois-Comtois (2015) showed that care type moderated the relationship between commitment from the foster carer and externalising behaviours; higher levels of commitment from the caregiver was protective of externalising behaviours for children in kinship and regular foster care, but not for those in foster-to-adopt families. However, fewer number of placements was not related to fewer conduct problems (Bell et al., 2013; Bell et al., 2015; Williams-Butler, 2018).

Caregiver and Caseworker Characteristics

Three studies (11%) investigated caregiver and caseworker characteristics as potential protective factors and found that these were not associated with a reduction in externalising behaviours for children and adolescents in OOHC. Bell et al. (2013; 2015) found that caseworker level of education, time worked in child welfare and caseload numbers showed no significant association with conduct problems cross-sectionally. Williams-Butler (2018, p.566) also found that the level of caregiver resources (conceptualised as “financial and social assets and resources”) was not related to delinquency.

Neighbourhood Income

One study (4%) by Osei and Gorey (2020) investigated whether neighbourhood income was a protective factor, and specifically, whether neighbourhood income moderated the association between peer influence and conduct problems. They found that more resourceful or higher income neighbourhoods were associated with lower conduct problems,

and that the association between negative peer relationships and conduct problems was reduced by living in a higher income neighbourhood.

Discussion

The aim of this review was to synthesise knowledge on protective factors and their association with externalising behaviours for children and adolescents living in OOHC. Twenty-eight studies of sufficient quality were identified for this review. Strong evidence for a number of protective factors associated with reduced externalising behaviours was found. However, the majority of this evidence was drawn from studies that focused on protective factors and behaviour problems in the microsystem ($n=28$), with a large portion investigating individual factors ($n=13$). Some studies also focussed on protective factors within the exosystem ($n=8$), however no studies investigated protective interactions in the mesosystem.

Protective Factors in the Microsystem

Individual factors associated with fewer externalising behaviours in the microsystem included having a better self-concept (including higher self-esteem), utilising active and engaged coping styles, and possessing better social skills, which is consistent with research investigating protective factors associated with other psychosocial outcomes (Khotari et al., 2020; Summersett-Williams et al., 2019).

Additionally, consistent with a systematic review by Zabern and Bouteyre (2017), more frequent interactions with biological parents was indicated as protective for externalising behaviours. Sibling interactions were protective depending on relationship quality and consistency of being placed together or apart. The quality of relationships with foster carers also appears important; higher quality foster carer interactions, rather than the frequency, were associated with reduced externalising behaviours. The importance of caregiver relationship quality has also been a consistent finding in qualitative studies; in

studies assessing protective factors for children with maltreatment experiences more broadly; and for other psychosocial outcomes for children in OOHC such as depression and substance use (Afifi & Macmillan, 2011; Guibord et al., 2011; Mateos Inchaurredo et al., 2015).

Interactions with kin/fictive kin were conflicting in their results, though it is noted that relationship quality was not measured in these studies.

In terms of protective factors in the broader microsystem, more frequent interactions with the community, such as engagement in sports and hobbies, as well as higher engagement in school and school stability were found to be associated with fewer externalising problems, which has been documented in both maltreatment literature and studies investigating other psychosocial outcomes (Abraczinskas et al., 2016; Lou et al., 2018; Meng et al., 2018; Shim-Pelayo & De Pedro, 2018). There was some evidence that indicates a higher number of friends could be associated with an increase in externalising behaviours (i.e., oppositional defiant behaviours); however, higher *quality* friendships, particularly in larger group homes and when young people were engaged with school, were found to be protective. Interestingly, social support was not associated with behaviour problems. This is somewhat at odds with findings in the maltreatment literature, as certain studies have identified social support as a protective factor (Meng et al., 2018). It may be that broad social support is not as influential as protective factor, or, that the construct defined in the included studies was too broad, particularly as more specific types of social support were deemed protective (i.e., interactions with caregivers, biological family).

Protective Factors in the Exosystem

Protective factors associated with fewer externalising behaviours in the exosystem included living in higher-income neighbourhoods and residing with fewer children in the home. Placement stability was not associated with fewer behaviour problems. This is somewhat inconsistent with existing literature considering a recent review by Zabern and

Bouteyre (2017) found that stability was associated with resilience for children in OOHC, and a systematic review by Oosterman et al. (2007) indicated that children and adolescents experiencing frequent placement disruptions experienced a higher level of behaviour problems. However, longitudinal research on placement disruptions has also demonstrated that instability was not found to be a risk factor for psychosocial development in children OOHC (Barber & Delfabbro, 2003). It is possible that for children and adolescents in OOHC, ties to the community and school take on a larger protective role in the expression of externalising behaviours, compared to the potentially frequently changing care environment. Caregiver resources and case worker characteristics such as more experience, a lesser case load, and higher education were not associated with a reduction in externalising problems.

Limitations

A number of limitations were identified, which impact on the generalisability of this review. Firstly, this study focused specifically on malleable individual protective factors. Hence, although we did not specifically investigate factors such as gender, race/ethnicity and maltreatment history, it is important that any prevention or intervention efforts are sensitive to the specific needs of children and adolescents of different ages, gender and cultural backgrounds, or who have experienced particular types of maltreatment.

Secondly, this review included studies conducted predominantly in Western nations, indicating that conclusions drawn about children and young people in OOHC are limited in their application to non-Western cultures. Differences in protective factors and externalising behaviours could exist cross-culturally, and there is a need for future research to better understand if associations between protective factors and externalising behaviours occur differently for children in non-Western OOHC settings. For example, it is possible that ties with kin may be of particular protective importance within collectivists cultures, given that

responsibilities, well-being and needs of the wider kinship group are considered (Guerin, 2004).

Thirdly, the focus of this review was to ascertain a descriptive account of protective factors in quantitative research and their association with externalising behaviours in OOHC, rather than a review of interventions or qualitative studies. A future review of qualitative research could provide more detailed perspectives on protective factors that may prevent or improve behaviour problems, and similarly, a future review of interventions could provide evidence of effectiveness for trialled interventions which can improve externalising behaviours.

Lastly, it is noted that the synthesis was complicated by heterogeneity in samples, methods, measures and reporting modes (i.e., self, carer, caseworker) in various OOHC settings. This is reflected in some of the findings, as at times, factors were protective in one context, but not in another. For example, sibling contact may be protective depending on relationship quality and placement status (Linares et al., 2007; Milojevic et al., 2020). However, in accordance with ecological systems theory, interactions between individuals and their environments are dynamic and ever changing, which may explain why factors are protective in some contexts but not others (Bronfenbrenner 1994; 2005).

Implications

Despite the limitations outlined, the findings of the present review have important implications for professionals working with children and young people in OOHC. Considering that the needs of children and adolescents in OOHC are complex and change frequently, it is important for professionals to engage in a thorough assessment of protective factors both at service entry, as well as throughout an individual's time in OOHC. For example, in Australia, national guidelines indicate that children and adolescents have their physical, developmental, psychosocial and mental health needs assessed in a timely fashion,

and ongoing monitoring of these needs is suggested (Australian Government Department of Health, 2011; Australian Government Department of Social Services, 2011). However currently, comprehensive health and development assessments conducted when children and adolescents enter care in Australia, are still largely risk and needs focused and as far as we are aware, no official national direction exists to also gather protective factors in multiple domains (Australian Government Department of Health, 2011). If protective factors are known at various time points, efforts can be made to preserve relationships and connections (and other existing protective factors). Rijbroek et al. (2019) proposed one such assessment tool for child protective services use in the Netherlands, and has demonstrated its utility in assessing both risk and protective factors within the contexts of the child, parent, family and environment (see also Ten Berge et al., 2014). Having such information could be used not just to inform effective case management, but taking into account the results of this study, prevention and intervention efforts could be targeted more specifically to improve protective factors in different parts of the systems connected to the child, thus serving to assist in reducing externalising behaviours for children or adolescents living in OOHC.

It was surprising that there were no studies with a focus on protective interactions in the mesosystem, considering that interactions between relationships in the child's immediate environment would occur frequently when in OOHC. For instance, it is possible that better quality relationships between caseworkers and caregivers, or between biological and foster families, or between carers and school staff could be associated with less behavioural problems. Indeed, evidence from a qualitative study suggested that a better relationship between foster family and social services, a collaborative relationship between foster family and school, as well as a good relationship between the foster and biological families were identified as protective factors (Mateos Inchaurredo et al., 2015). Further quantitative research is needed to understand whether the frequency and the quality of interactions (or

both) between young people's immediate environments in OOHC may be associated with fewer externalising behaviours.

Lastly, the findings of this systematic review underline the importance of developing and implementing effective prevention and intervention strategies, to improve individual assets such as a better self-concept, increase school engagement, and foster higher quality relationships in the child or adolescent's microsystem in an effort to reduce externalising behaviours in OOHC. One intervention worth noting is the Keeping Foster Parents Trained and Supported program, which aims to improve relationships between caregivers and children in OOHC (i.e., Chamberlain et al., 2008; Greeno et al., 2016). Consistent with the finding of this review, the intervention has demonstrated that an improvement in relationship quality between children and their caregiver decreased externalising behaviours. Another program worth mentioning is Treatment Foster Care Oregon (TFCO), which focuses on creating a supportive and consistent home environment, increase effective parenting, structure and supervision, promote prosocial peer relationships, and increase engagement with school and education to treat severe behavioural difficulties and delinquency, and in line with factors identified in the current review, TFCO has yielded promising results in reducing criminal behaviour (for a review of this intervention see Astrom et al. (2020) and Treatment Foster Care Oregon (n.d.)).

Conclusion

This review has highlighted a range of protective factors associated with fewer externalising problems, particularly in the microsystem. These included individual factors (i.e., those with a better self-concept, those who utilised active and engaged coping styles, and those who have better social skills), better quality interactions with caregivers, siblings and peers, more frequent interactions with the child or adolescent's biological parents and community engagement (i.e., higher engagement in school, sports and hobbies). In the

exosystem, fewer children in the home and higher neighbourhood income were also found to be associated with less externalising behaviour problems. More research is needed to understand protective factors in a child's mesosystem, which interventions can successfully address externalising problems, and understand how factors like age, gender and maltreatment type can influence the benefits of modifiable protective factors. Findings from this review provide avenues for professionals to promote individual, relational and environmental factors in efforts to prevent or reduce externalising behaviours among children and young people in OOHC.

Contribution Statement

[name removed for thesis submission] conducted the literary search, analysis and syntheses of the data, and wrote the first draft of the manuscript. [name removed for thesis submission] conducted validation of screening and quality assessments. [name removed for thesis submission] was the primary supervisor, with co-supervision provided by [names removed for thesis submission]. [names removed for thesis submission] all contributed to the review process and editing of the final manuscript.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A

Logic Grid

| Key Term | database | | | | |
|--------------------------|-----------------|---------------|------------------|-----------------|---|
| | Pubmed | PsycInfo | Embase | CINAHL | Proquest Social Services and Sociological Abstracts |
| Children/ adolescents | child[mh] | Infan*.mp | Infant/syn | MH infant+ | infan?? |
| | OR | OR | OR | OR | OR |
| | Infant[mh] | child*.mp | Infan* | TI infant | Child* |
| | OR | OR | OR | OR | OR |
| | Infan*[tw] | adolescen*.mp | Newborn* | AB infant | p*diatric* |
| | OR | OR | OR | OR | OR |
| | Newborn*[tw] | teen*.mp | Neonate* | MH child+ | adolescen* |
| | OR | OR | OR | OR | OR |
| | Neonate*[tw] | youth*.mp | Child/syn | TI child* | teen* |
| | OR | OR | OR | OR | OR |
| | child*[tw] | juvenil*.mp | Child* | AB child* | youth* |
| | OR | OR | OR | OR | OR |
| | minor*[tw] | minor*.mp | Minor* | MW pediatric* | juvenil* |
| | OR | OR | OR | OR | OR |
| | adolescent [mh] | Newborn*.mp | Adolescent/syn | TI pediatric* | minor* |
| | OR | OR | OR | OR | |
| | adolescen*[tw] | Neonate*.mp | Adolescen* | AB pediatric* | |
| | OR | OR | OR | OR | |
| | teen*[tw] | pediatrics.sh | Juvenile/syn | MW paediatric* | |
| | OR | OR | OR | OR | |
| | Youth* [tw] | Pediatric*.mp | Youth* | TI paediatric* | |
| | OR | OR | Or | OR | |
| | Juvenil* [tw] | Paediatric*.m | Teen* | AB paediatric* | |
| | OR | p | OR | OR | |
| | pediatric [mh] | | “minor | MH adolescence+ | |
| | OR | | (person)"/syn | OR | |
| | pediatric*[tw] | | OR | MW adolescen* | |
| | OR | | Minor* | OR | |
| | paediatric*[tw] | | OR | TI adolescen* | |
| | | | “early life” | OR | |
| | | | OR | AB adolescen* | |
| | | | 'pediatrics'/syn | OR | |
| | | | OR | MH teen* | |
| | | | p\$ediatric* | OR | |
| | | | | TI teen* | |
| | | | | OR | |
| | | | | AB teen* | |
| | | | | OR | |
| | | | | MH youth* | |
| | | | | OR | |
| | | | MW youth* | | |
| | | | OR | | |
| | | | AB youth* | | |
| | | | OR | | |
| | | | TI youth* | | |
| | | | OR | | |
| | | | MW juvenil* | | |
| | | | OR | | |
| | | | AB juvenil* | | |
| | | | OR | | |
| | | | TI juvenil* | | |

| | | | | | |
|--------------------|---|--|---|---|---|
| | | | | OR MW minor* OR AB minor* OR TI minor* | |
| Protective Factors | “protective factors”[mh] OR protective factor*[tw] OR factor, protective[tw] OR Factors, protective[tw] OR counter ACEs[tw] OR benevolent childhood experience*[tw] OR protective childhood experience*[tw] OR positive childhood experience*[tw] OR “Resilience, psychological”[mh] OR Resilience, psychological[tw] OR Resiliency, psychological[tw] OR psychological resilience*[tw] OR “adaptation, psychological”[mh] OR adaptive behavi*[tw] OR psychological adaptation*[tw] OR coping skill*[tw] | Protective factors.sh OR Protective factor*.mp OR Resilience.sh OR Resilience.mp OR Resilien*.mp OR Psychological endurance.sh OR Psychological endurance.mp OR Adaptability.sh OR Adaptability.mp OR Coping behaviour.sh OR Coping behaviour.mp OR counter ACEs.mp OR benevolent childhood experience*.mp OR protective childhood experience*.mp OR positive childhood experience*.mp OR promotive factor*.mp | “Adolescent Coping Orientation for Problem Experiences”/syn OR Resilience OR Resilient OR Resiliency OR “Coping behaviour”/syn OR “Coping behaviour” OR “adaptive behaviour”/syn OR “adaptive behaviour” OR “adaptive behaviour” OR “adaptive behaviour” OR “counter-ACE*” OR “benevolent childhood experience*” OR “positive childhood experience*” OR “protective factor*” OR “promotive factor*” | TI “Protective factor*” OR AB “protective factor*” OR TI “Positive childhood experience*” OR AB “Positive childhood experience*” OR OR TI “Benevolent childhood experience*” OR AB “Benevolent childhood experience*” OR TI “counter-ACE*” OR AB “counter-ACE*” OR MH hardiness OR TI hardiness OR AB hardiness OR MH “adaptation, Psychological”+ OR TI “adaptation, Psychological” OR AB “adaptation, Psychological” OR MH coping+ OR MW Coping* OR TI Coping* OR AB Coping* | Resilien* OR “Coping behav*r” OR “adaptive behav*” OR “counter-ACE*” OR “benevolent childhood experience*” OR “positive childhood experience*” OR “protective factor*” OR “protective childhood experience*” OR “promotive factor*” |

| | | | |
|---------------|----------------|----------------|-------------------|
| OR | Guardianship. | “child welfare | OR |
| emergency | mp | system” | TI “child |
| shelter[tw] | OR | OR | protection |
| OR | Children under | “residential | system” |
| child welfare | guardianship. | care” | OR |
| system[tw] | mp | | AB “child |
| OR | OR | | protection |
| residential | Out of home | | system” |
| care[tw] | placement.mp | | OR |
| | OR | | TI “out of home |
| | Emergency | | care” |
| | shelter.mp | | OR |
| | OR | | AB “out of home |
| | child welfare | | care” |
| | system.mp | | OR |
| | OR | | TI “out of home |
| | residential | | placement” |
| | care.mp | | OR |
| | | | AB “out of home |
| | | | placement |
| | | | OR |
| | | | TI “emergency |
| | | | shelter” |
| | | | OR |
| | | | AB “emergency |
| | | | shelter” |
| | | | OR |
| | | | TI “kinship care” |
| | | | OR |
| | | | AB “kinship care” |
| | | | OR |
| | | | TI “non-kinship |
| | | | care” |
| | | | OR |
| | | | AB “non-kinship |
| | | | care” |
| | | | OR |
| | | | TI “child welfare |
| | | | system” |
| | | | OR |
| | | | AB “child welfare |
| | | | system” |
| | | | OR |
| | | | TI “residential |
| | | | care” |
| | | | OR |
| | | | AB “residential |
| | | | care” |

Appendix B

Data Extraction Table

| | Author, year, location | Study design | Dataset used (if applicable) | Sample (n, age range, gender, type of care) | Research aims | Tool used ^a : Protective factor(s) measured | Tool used [^] : externalising behaviour measured | Key findings [†] |
|---|---|-----------------|---|--|--|--|---|---|
| 1 | Bai, Leon, Garbarino, & Fuller (2016) USA | Cross-sectional | | N=171 Range: 6-13 M:85, F:86 Foster care | -Examining the protective effect of kinship involvement on psychological adjustment for youth in foster care | KILE: Level of kinship involvement (high kinship involvement) | CANS: Externalising behaviours problems | -Greater kinship involvement was associated with fewer externalising behaviour problems *Controlling for family dysfunction, child maltreatment, race/ ethnicity, and gender. |
| 2 | Bell, Romano, & Flynn (2013) Canada | Cross-sectional | OnLAC project dataset year 6, then year 8/9 | N=531 Range:5-9 M:47.3%, F:52.7% Foster care 82.1% kinship care 12.8% group homes 5.1% | To identify the prevalence of behavioural resilience in an Ontario wide sample of school-age children living in out-of-home care. Our second goal was to identify the independent contribution of four levels of analysis (child, family, worker, and child welfare agency) on variation in the frequency of the three behavioural outcomes, namely conduct problems, emotional problems, and prosocial behaviour. The third goal was to identify the contribution of each independent variable within each level of the analysis. | -fewer number of placements, -contact with biological parents, -DAS (Developmental assets scale): higher number of developmental assets (internal and external) -PPS: a positive caregiver-child relationship -worker characteristics: (greater worker education, greater time worked in child welfare, smaller caseloads) | Caregiver completed SDQ: Conduct problems | - A higher number of internal developmental assets did predict a significantly lower frequency of conduct problems -A fewer number of placements, contact with biological parents, positive caregiver parenting, external developmental assets and worker-level characteristics (education, case load and time worked in child welfare) did not significantly predict a lower frequency of conduct problems. |
| 3 | Bell, Romano, & Flynn (2015) | Longitudinal | OnLAC data years 7, 8,9, 10, 11 | N=313 Range: 6-9 (time 1) | The current study aimed to investigate behavioural resilience over time among children living in | -care type (being in kinship care rather than foster care) | Caregiver completed SDQ: | Predictors of resilient trajectories for conduct problems included internal developmental assets (commitment to learning, positive values, social competencies, and positive identity), number of |

| | | | | | | | | |
|---|-------------------------------|-----------------|--|---|--|--|----------------------------------|---|
| | Canada | | | <p>M:55.6%, F: 44.4% Foster family: 83.7% Kinship care: 16.3%</p> | <p>out-of-home care, and to identify predictors of resilient functioning.</p> | <p>-number of children in the home -fewer placement changes -maintained contact with biological parents -DAS: greater developmental assets (internal and external) -mental health treatment received (yes/no) -PPS (positive parenting) -caregiver training & greater experience in fostering children</p> | <p>Conduct problems</p> | <p>children in the home, whether the child was receiving mental health treatment, and positive parenting.</p> <p>Care type, placement stability, contact with biological parents, external developmental assets, foster caregiver training and greater experience in fostering children was not predictive of resilient trajectories for conduct problems</p> <p>*Controlling for baseline behavioural functioning on conduct and emotional problems</p> |
| 4 | Campos et al. (2019) Portugal | Cross-sectional | | <p>N=443 Range: 11-18 M:40.9%, F:51.1% Residential care centres</p> <p>Also include a comparison group N=1442 (group was the validation population for Portuguese ASEBA battery)</p> | <p>-to compare adolescents in RC to a national normative sample regarding emotional and behavioural problems and psychosocial skills (participation in activities, social and family contact and academic performance). -to identify differences associated to gender in adolescents in RC regarding emotional and behavioural problems and psychosocial skills. -to explore the existing relationships between emotional and behavioural problems and psychosocial skills in adolescents in RC.</p> | <p>YSR: engagement in sports, hobbies, household chores, community organisations/clubs, relationships with friends, siblings, parents and other significant adults, social interests, and academic achievement.</p> | <p>YSR: behavioural problems</p> | <p>-sports and hobbies are negatively correlated with oppositional defiant behaviour and total externalising problems. -More involvement in household chores is negatively correlated with oppositional defiant and aggressive behaviour and total externalising problems -The number of close friends is significantly positively correlated to oppositional defiant behaviour, but not the total number of externalising problems -participation in clubs was not significantly correlated to (any) externalising behaviours. -Contact with siblings is negatively and significantly correlated with aggressive behaviour, but not total externalising problems -Interaction with parents is negatively correlated with, oppositional defiant behaviour, aggressive behaviour, and total externalising problems.</p> |

| | | | | | | | | |
|---|---|-----------------|--------------------|--|--|---|---|---|
| | | | | | | | | <p>-Interactions with significant other adults was not significantly correlated to (any) externalising behaviours</p> <p>-Academic achievement is negatively correlated to attention problems and oppositional defiant behaviour.</p> |
| 5 | Cooley, Mihalec-Adkins, & Womack (2020) USA | Cross-sectional | Wave II NSCAW data | <p>N=234</p> <p>Range: 11-17</p> <p>M:107, F:127</p> <p>Foster home: n=131</p> <p>Group care: n=51</p> <p>Kinship care: n=45</p> <p>Other:=7</p> | <p>The overarching purpose of this study was to examine the nature of the relationships between school engagement, relationships with peers and foster caregivers, and problematic internalizing and externalising behaviours—as perceived by both youth and caregivers.</p> | <p>-LSDQ: perceptions of lower peer dissatisfaction</p> <p>-NSCAW measure: youth-caregiver relationship</p> <p>-11 questions from the DFSOSQ: school engagement</p> | <p>CBCL & YSR: externalising behaviours</p> | <p>-Higher school engagement was associated with lower externalising behaviour from both youths' and foster parents' reports.</p> <p>-A more positive relationship with one's foster caregiver was associated with lower reports of externalising behaviours from both youths' and caregivers' reports.</p> <p>-Peer relationships appear to buffer the negative relationship between school engagement and externalising behaviours based on youth report; Higher satisfaction with peer relationships was protective of externalising behaviours in the context where engagement with school was high, but when school engagement was low, high satisfaction with peer relationships contributed to even higher levels of externalising behaviours Peer relationships was not a moderator of school engagement on foster parent-reported externalising behaviours.</p> <p>-Foster youth-parent relationship was not a moderator of school engagement on youth or parent reported externalising behaviours.</p> <p>-peer relationships did not significantly mediate the association between school engagement and youth-reported or parent-reported externalising behaviours</p> <p>-relationships with foster parents mediated associations between school engagement and both self- and caregiver reports of externalising behaviours</p> <p>*Analyses were tested for age, gender, ethnicity, type of maltreatment, type of placement, days in placement, caregiver gender and ethnicity, and only</p> |

| | | | | | | | | |
|---|---|-----------------|--|---|--|--|--------------------------------|--|
| | | | | | | | | gender was significant and was entered as a control variable |
| 6 | Dubois-Comtois et al. (2015) Canada | Cross-sectional | | N=83 Range: 1-7 M:52, F:31 Regular foster care: 26% Kinship care: 10% Foster to later adopt: 64% | -To examine the association between foster mother attachment state of mind and commitment, foster mother-child interactive quality, and behaviour problems among foster children, while considering child a history of maltreatment/placement risk index | -TIMB: Foster caregiver commitment -AAP: Attachment state of mind (secure, dismissive, preoccupied, unresolved) - PCIS: Quality of interaction -type of foster family: regular foster care, foster to adopt or kinship care | CBCL: externalising behaviours | -Quality of interactions with the foster mother were significant predictors of externalising behaviours, i.e., lower externalising behaviours when foster parents showed higher quality interactions (support and interactions were harmonious and pleasant), compared to higher externalising behaviours when foster parents showed lower quality interactions (i.e., were more unbalanced and chaotic) - foster mother attachment state of mind and commitment toward the child did not significantly contribute unique variance. -Type of foster family moderated the association between foster caregiver commitment and foster child behaviour problems, such that greater foster caregiver commitment was associated with lower levels of externalising behaviours for children in kin and non-kin foster families, but not in foster-to-adopt families. *Controlled for placement and maltreatment history and age |
| 7 | Edmond, Auslander, Elze & Bowland (2006) USA | Cross-sectional | | N=99 sexually abused girls Range: 15-18 congregate living setting (group home, residential centre): 64% foster family or foster care home: 36% | The purpose of this study is to examine the differences between those sexually abused adolescent girls in the foster care system identified as having resilient trajectories (<i>n</i> = 49), with the sexually abused adolescent girls in the foster care system who are experiencing clinically significant mental health and behavioural problems (<i>n</i> = 50) | -LOT-R: future orientation (optimism) -CTQ: family support -Education (educational status, plans, school stability) -peer influence (positive rather than negative) -religion | YSR: behavioural problems | girls with resilient trajectories (defined as having a normal YSR cut-off score) were significantly more certain of their educational plans and optimistic about their future and had more positive peer influences. No other protective factors were significantly related to resilient trajectories. *Analyses controlled for other types of abuse |
| 8 | Go, Chu, Barlas, & | Cross-sectional | | N=130 range: 13-19 | The present study seeks to test several hypotheses on applied | CANS: Strengths (having | CANS: anger | Higher educational support, having talents/interest and possessing applied strengths were associated with lower |

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| | Chng (2017) Singapore | | | M:61, F:69 children's homes | strengths, and anger control and conduct problems within the Singapore child welfare system. In particular, it seeks to examine the role of strengths on multiple levels as known in a developmental ecological-systems framework | talents/interest, good family Relationships, having educational Support, having applied strengths-individual's recognition and application of strengths) | control and conduct problems. | levels of conduct problems, but good family relationship strengths were not. Good family relationship and possessing applied strengths were associated with lower levels of anger control problems, but higher educational support and having talents/interest were not. Only applied strengths emerged as a significant main effect in the moderation analyses for both anger control and conduct problems. |
| 9 | Hindt, Leon, & Lurigio (2020) USA | Longitudinal | | N=274 (However, sample of foster care children with an incarcerated father was n=43, 231 children did not have an incarcerated father) Range: 6-13 M:44.5%, F:55.5%, foster care (not further defined) | The present study examined the relation between paternal criminal justice involvement (i.e., biological fathers incarcerated upon children's entry into foster care) and internalizing symptoms and externalising behaviours among children who entered foster care due to maltreatment (i.e., neglect and/or physical, sexual, and/or emotional abuse) or as dependency cases, with special consideration of gender and racial differences. Further, this study investigated whether in-person visiting with fathers served as a protective factor. | Father's in-person visits for both for children with incarcerated parents and non-incarcerated parents | CANS: externalising behaviours (anger control, attention deficit/impulse control, conduct, danger to others, delinquency, oppositional behaviour, sexual aggression | -while paternal incarceration was related to higher rates of externalising behaviours overall, a significant interaction indicated that the association between paternal incarceration and externalising behaviours was attenuated among children who had at least one visit with their fathers (children with fathers who were incarcerated and had at least one in-person visit was 16% lower than that of the remaining sample, indicating that children who had at least 1 visit had less externalising behaviours) *Controlling for time1 internalising and externalising behaviours, age, kin involvement, maltreatment severity and community violence |
| 10 | Horn, Roos, Beauchamp, Flannery & Fisher (2018) | Cross-sectional | | N = 88 foster care children recruited from another RCT (this study was not an RCT) | The researchers sought to characterize the association between polyvictimization and externalising problems in a sample of foster care children aged 3-4 years (N = 84) and examine how | NEPSY: high executive functioning (EF) | CBCL: Externalising problems | Children with average or above average EF scores were buffered against externalising problems, but children with low EF scores were at high risk for externalising problems following poly-victimisation |

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| | USA | | | and 47 newly selected community controls Range: 3-4 M:NR, F:NR, Foster care | EF may mediate or moderate that relationship | | | *Gender and gross annual household income added as covariates as were assessed as significantly correlated in preliminary analyses (age, number of placements and maternal education also assessed but were not significant) |
| 11 | Huffhines, Jackson & Stone (2020) USA | Cross-sectional | | N=283 range:12-19 M:53.9%, F:46.1% Foster homes: 50.9% (of which 19% was in kinship care and 81% in traditional foster care) residential facilities: 49.1% | The purpose of the present study was to examine how maltreatment chronicity and coping style were associated with internalizing, externalising, and psychiatric hospitalizations, and whether coping style moderated the relation between maltreatment chronicity and mental health in a sample of foster adolescents | BISC: Coping style (Direct Action – move towards a problem, rather than Indirect Action- move away from a problem, Prosocial Action – enlist support, rather than Asocial Action – avoid support) | BASC-2: Externalising Problems (self and caregiver reports) | Caregiver report: youth who used more direct coping had lower externalising problems. No other factors were related to externalising problems Adolescent report: Prosocial coping and asocial coping was related to greater externalising symptoms, but greater use of direct coping was associated with adolescent report of lower levels of externalising symptoms. *Covariates: age, gender, race, ethnicity, placement type, number of placement moves, length of time in care |
| 12 | Joseph, O'Connor, Briskman, Maughan & Scott (2013) United Kingdom | Cross sectional | | foster care group N=62 range =10-17 M:53.2%, F:46.8% Comparison group: N=50 Range 10-17 M:52%, F48% Comparison group shared the same age, gender, and ethnicity factors and | the current paper has three aims. First, we examine the degree to which adolescents whose experience of previous maltreatment was so severe as to require removal from the birth home were able to form secure attachments to foster carers. Second, we examine the qualities of prior experience and current experience with foster care- givers that predict attachment representations. Third, we examined the association between attachment to foster parents and a key marker of behavioural adjustment, delinquency, | -CAI: adolescent attachment; secure rather than insecure (dismissing, preoccupied, disorganised) | -SDQ (parent and teacher reports): conduct problems -CAPA: oppositional defiant disorder and conduct disorder | -Adolescents classified from the interview as having a secure attachment were reported by parents to exhibit (fewer (callous/unemotional scale symptoms) and conduct symptoms on the SDQ compare to insecure attachment. Attachment security was not significantly associated with teacher- or self-reported delinquent behaviour. -Attachment security to the mother (foster mother for foster adolescents; biological mother for comparison adolescents) was a significant predictor for conduct symptoms; a secure attachment relationship with the foster mother was associated with fewer symptoms of disruptive behaviour according to parent report. Attachment quality in foster adolescents was associated with fewer disruptive behaviour symptoms |

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| | | | | were from the same boroughs as from which the foster children had originated. | according to parent, teacher, and self-report. | | | *Controlled for adolescent age, gender, and IQ, and two indicators of socio- demographic risk: parent education and single-parent household. |
| 13 | Lee et al., (2018) USA | Cross-sectional (baseline data from a Longitudinal RCT) | | N=305 range:16.6–18.5 M:144, F:161 youth in foster care with disabilities 22.7% residing in kinship placements, 46.7% in non-relative placements, and 30.7% in specialized placement settings. (The study defined these settings as, group homes, treatment foster care, residential care, which still are in line with the included types of OOHC in our definition (not a secure | This study examines the associations of risk factors of trauma exposure, hopelessness, placement type and perceived placement restrictiveness, as well protective factors of social support and self-determination, on internalizing and externalising mental health and quality of life of youth in foster care with disabilities. | -ARQ’s Self-Determination Scale: Higher self determination -MSPSS: social support | YSR: Externalising behaviours (rule breaking/aggresive behaviours) | -Higher self-determination was no longer associated with lower externalising scores when measures of risk factors were introduced to the model. Social support was also not significant in predicting externalising scores when risk factors were included in the final models. *Controlled for sex and race |

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| | | | | setting or profound disability unit) | | | | |
| 14 | Legault, Anawati, & Flynn, (2006) Canada | Cross-sectional | | N=220 range: 14-17 M:110, F:110 foster homes (80%) group homes (12%) or other (8%) | The purpose of this study was thus to build an exploratory predictive model of psychological adjustment for young people in out-of-home care. Psychological adjustment was defined in terms of internalizing and externalising behaviours | -The nurturant parenting scale (NLSCY-Cycle 3): more frequent use of nurturant parenting style techniques -The relationship with the female caregiver scale (NLSCY-Cycle 3): greater relationship (positive rather than negative) with the female caregiver - The Marsh friendship scale: greater number of quality friends -Coping scale (novel measure): coping strategy (approach coping rather than avoidant coping) The general self-esteem scale (NLSCY-Cycle 3): perceived higher level of general self-esteem | NLSCY-Cycle 3: Physical aggression | -Less frequent physically aggressive behaviours were associated with higher-quality relationships with the female caregiver, a greater number of close friendships, higher self-esteem, greater use of approach coping strategies, and less frequent use of avoidant coping strategies. *The tested models first controlled for gender, age, and the number of primary caregivers |
| 15 | Leon & Dickinson (2019) USA | Longitudinal | | N=221(for latent profile analyse), though due to | The present study was designed to explore the types of kin and fictive kin involvement that exist for children when they enter care and | KILE form: (fictive) kin involvement (high rather than low | CANS: Externalising behaviour (oppositional | Neither involvement profile nor strengths were statistically associated with externalising behaviour trajectories as main effects, and none of the two-way interactions or the three-way interaction |

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| | | | | missing data, only n=133 had data for outcome analyses range:6-14 M:53.0%,F:47.0% foster care (not further specified) | the relationship between these family types and behavioural (internalizing and externalising) outcomes. | involvement profiles) CANS: Child level strengths (combined scores of educational strengths, coping and savouring, optimism, talents/interests, spiritual/religious, and involvement in the community) | behaviour, conduct disturbance, attention-deficit/impulse control, anger control, danger to others, sexual aggression, delinquency) | between strengths, involvement profile, or maltreatment were statistically significant. *Placement was included as a covariate |
| 16 | Leonard & Gudino (2016) USA | Longitudinal | Waves 1, 3 & 4 of NSCAW dataset | N= 224 (MH sample) range: NR, M= 12.85 (SD =1.25) M:42.2%, F:57.6 % Foster homes, kin care settings, group homes, residential programs, and other out of home care arrangements %NR | The first aim of this study is to determine if school stability (conceptualized as the total number of school placements) and average level of school engagement across the study emerge as unique independent predictors of academic achievement and mental health outcomes for youth in out-of-home care. The second aim of this study is to determine if school stability and average level of school engagement over the course of the study moderate the effect of home placement stability (also conceptualized as a continuous variable) on the academic achievement and mental health of children in out-of-home care. | Increased School stability Increased school engagement increased placement stability | YSR: behavioural problems | -school instability (a higher number of school placements) was an independent predictor of externalising symptoms, indicating that stability would be associated with less externalising behaviours -average level of school engagement was not associated with externalising behaviours -There was no main effect of home placement stability on externalising behaviours & school-related factors as a total did not moderate the relationship between home placement stability and behavioural problems. *Controlled for home placement stability and baseline internalising and externalising scores |
| 17 | Linares, Li, ShROUT, Brody, Pettit, (2007) USA | Longitudinal | | N=156 (78 sibling pairs) range: 3-14 M: unclear, F: unclear foster care | The goal of this prospective study was to examine sibling relationship quality and the outcomes of children who were kept with their siblings and those who were separated from their siblings, and | -Whether siblings were continuously together, continuously apart or disrupted (siblings were | ECBI: Behaviour and conduct problems | -sibling placement group (continuous together or apart, or disruptive) was not associated with behaviour and conduct problems at follow up. -Sibling positivity predicted lower child behaviour problems at follow-up (about 14 months later), while sibling negativity predicts higher child |

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| | | | | home (kinship care was excluded) | to distinguish those with a stable arrangement from those who were initially placed together and later separated. We hypothesized that siblings placed together would display fewer behaviour problems and depressive symptoms, and experience less loneliness, than those placed apart. We also tested for influences of sibling relationship quality on placement condition and child outcomes. | together and separated) -SRQ: quality of sibling relationship (negativity vs positivity) | | problems at follow-up. For those in the disrupted placement group who initially show a low level of behaviour problems, separation may be detrimental to behavioural adjustment at follow-up. On the other hand, for siblings who have extremely elevated levels of behaviour and conduct problems initially, separation may be beneficial to subsequent behavioural adjustment. *Controlled for sibling age, age spacing, sibling group gender composition and type of maltreatment |
| 18 | McWey, Acock, & Porter (2010) USA | Cross-sectional | NSCAW dataset wave I | N=362 Range: 7-16 M:167, F:195 Foster care | The present study examined the association between contact with biological parents, gender, and severity of maltreatment on the mental health of children in foster care using a large national sample of children in foster care. | Contact with biological mother | -CBCL: externalising problems | Children with no contact with their biological mothers had the highest externalising behaviour problem scores and the scores fell within the clinically significant range. Children who had limited contact had slightly, but not significantly, lower scores on externalising behaviour. However, those children with the highest level of contact had significantly lower scores of externalising behaviours that fell below the clinically significant range. *Controlled for amount of contact and total violence exposure |
| 19 | Mihalec-Adkins & Cooley (2020) USA | Cross sectional | NSCAW II dataset wave 1 | N=235 Range: 11-17 years M:107, F:128 Foster care n=127 Kinship care n=46 Group/residential care n=56, Other n=6 | The purpose of this study was to examine the protective potential of multiple individual-level factors (i.e., school engagement, self-esteem, and social skills) against academically threatening problem behaviours for youth in foster care. Accordingly, our first goal was to examine associations amongst the various youth-level correlates of problem behaviours—namely, school engagement, self-esteem, and social skills. Our second goal | negative self-esteem subscale of the CDI: self esteem SSRS: Social skills DFSOSQ: School engagement | YSR and CBCL: externalising behaviours | -greater school engagement was significantly associated with less foster parent-reported and youth reported externalising behaviour controlling for age and placement type -higher self-esteem mediated the association between school engagement and both youth- and foster parent-reported externalising behaviour -better social skills mediated the association between school engagement and both youth- and foster parent-reported externalising behaviour. *Controlling for age, gender, and placement type |

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| | | | | | was to investigate the protective roles of self-esteem and social skills against behaviour problems for youth with varying levels of school engagement (i.e., self-esteem and social skills as mediators). | | | |
| 20 | Milojevich, Quas, & Adam (2020) USA | Cross sectional | | N=102 Range: 6-17 years old M: 39; F:63 Temporary Residential care | Our primary aims were to investigate whether children's age, their and their sibling's gender, birth order, and contact were related to the quality of maltreated children's relationships with their sibling; and to examine whether relationship quality, directly and in conjunction with contact, was related to children's behavioural functioning in out-of-home placement. | SRI: sibling contact & relationship quality (affection and hostility) | -CAQ: (reactive-proactive aggression) -SDQ: only total behaviour problems was measured, which included internalising problems as well, hence these results not further analysed as not specifically externalising behaviours | -When children had minimal contact with their self-reported closest sibling, greater affection toward that sibling was associated with higher levels of aggression. -When children had always lived with a close sibling aggression was lower in general, but affection was unrelated to aggressive behaviour. *Age was entered as a continuous covariate (also considered age, length of stay, gender, ethnicity and maltreatment type, but were not sig) |
| 21 | Osei & Gorey (2019), Canada | Retrospective cohort (Longitudinal) | OnLac dataset retrospective, 2012/2013 to 2015/2016 (3 yr. period) | N=875 at time 1, Range 10-17 M:577 F:298 N=175 at time 2 Range 13-17 M:136, F:39 | Are positive (protective) and negative (risk) peer influences significantly associated with conduct problems of youths in Ontario group homes? Do group home resources significantly moderate these peer influence-conduct problem relationships? | -NPIS; positive vs negative peer influences -Group home resources (numbers of youth residing in a home) | CPS (Conduct Problems Scale): conduct problems | -Negatively influential peers were associated with substantially elevated risks of conduct problems, while positively influential peers were exceptionally protective. -Positive peer-based protections were greatest in relatively large homes with eight or more residents cross sectionally, but this was not replicated longitudinally -The negative peer influence by group home size interaction was significant at cross-sectional |

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| | | | | Group home care | | | | <p>baseline such that the influences of negative peers were most risky in larger group homes with seven to eight or more residents. This was replicated at longitudinal follow up</p> <p>-smaller homes with fewer residents are relatively protected places, whereas larger homes with more residents were relatively risky places this was tested and supported cross-sectionally and longitudinally</p> <p>*Personal (age, ethnicity, health and mental health status) and contextual (type of home, staff vs carer, duration and number of placements, carer education and experience) factors were entered as covariates</p> |
| 22 | Osei & Gorey (2020), Canada | Retrospective cohort study (longitudinal) | OnLAC dataset 2012/2013 to 2015/2016 (3-year period) | N=173 at time 1, Range 10-14 M:135 F:38 Group home care | Are positive (protective) and negative (risk) peer influences associated with conduct problems among youths in group homes? Does neighbourhood income moderate these peer influence-conduct problem relationships? | NPIS :positive vs negative peer influences Neighbourhood level income (low vs high income) | CPS-conduct problems, worker completed/foster carer | <p>-positive peer influences were protective of conduct problems, regardless of neighbourhood level income</p> <p>-more resourceful, higher income neighbourhoods were relatively protective of conduct problems. Negative peers were riskier (middle and high vs. low) in low-income neighbourhoods than in higher income neighbourhood, attenuating the negative peer influence-youth conduct problem association.</p> <p>*Personal (age, ethnicity, health and mental health status) and contextual (type of home, staff vs carer, duration and number of placements, carer education and experience) factors were entered as covariates</p> |
| 23 | Pears, Kim & Leve (2012), USA | Longitudinal | | N=75 Range: NR M=11.59 years old (SD = 0.46), M:0, F:75 foster care 67% kinship care 33% | We sought to delineate the trajectories of academic competence and peer relations across the transition to middle school for girls in foster care. we hypothesized that caregiver support and feelings of self-competence in school would serve as promotive factors and be linked to increases in academic achievement while predicting de- | -Placement changes -IPPA: Caregiver support -SPPC: Self-competence | SEQ-R: Peer relationships (Aggression from peers & Aggression against peers) | <p>-higher self-competence predicted smaller decreases in aggression from peers over time, not bigger decreases (counter predictive), higher caregiver support was not associated with aggression from peers</p> <p>-Higher levels of caregiver support were associated with lower levels of aggression against peers at time 2, but with higher levels of aggression against peers by time 3, self-competence was not significant</p> |

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| | | | | | creases in aggression from and aggression against peers. | | | -The here was a trend for placement changes to be positively associated with changes in aggression against peers ($p = .05$), but not with aggression from peers. *Control variables entered but NR what these are? |
| 24 | Rayburn, Withers, & McWey (2018) USA | Cross sectional | NSCAW LTFC dataset Wave I | N=175 Range: 11-16 M:86, F:89 foster care | the present study aimed to test the degree to which specific aspects of current foster caregiver-adolescent relationship quality, namely emotional security, involvement, and structure, mediated the association between in-home violence exposure and mental health symptoms | RAPS-s: Foster carer relationship (emotional security, involvement, and structure) | YSR CBCL: Externalising behaviours | -Emotional security, involvement, and structure were negatively correlated with externalising symptoms; Adolescent's perception of feeling emotionally secure in their relationship with their caregiver mediated the relationships between exposure to violence and youth externalising symptoms, indicating that adolescents who reported their relationship with their current foster caregiver as being higher in emotional security demonstrated lower externalising symptoms. -Current foster caregiver involvement mediated the associations between exposure to violence and adolescent externalising outcomes, suggesting that adolescents who perceived their foster parent as less involved were more likely to experience higher externalising symptoms. -Structure mediated the associations between exposure to violence and adolescent externalising outcomes, suggesting that youth who perceived their foster caregiver relationship as highly structured were more likely to exhibit lower externalising symptoms. For structure, the direct effect remained significant, indicating that this was a partial mediator *Controlled for gender, age and race |
| 25 | Segura, Pereda, Guilera, & Hamby (2017) Spain | Cross-sectional | | N=127 Range:12-17 M:62, F:65 residential care facilities | the aim of the present study is to examine whether a range of individual and environmental factors (i.e., self, family, friends, school, neighbour, and residential care workers) may serve as | ARQ: Resilience (self, family, peers, school and community resources) | YSR: externalising symptoms | -school, self and family resources were significantly correlated with less externalising symptoms, but peer and community resources were not. |

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| | | | | | mediators and/or moderators of the association between lifetime victimization and mental health problems (internalizing and externalising symptoms) in a sample of adolescents in care. | | | <p>-Self-resources mediated the relationship between victimization and externalising symptoms, other resources were not significant mediators.</p> <p>-Self, school and peer support moderated the relationship between victimization and externalising symptoms, family and community support were not moderators, suggesting that adolescents with more self-resources, more school support, but less peer support reported fewer externalising symptoms</p> <p>-Poly-victimised youths reported symptoms within the clinical range, regardless of their level of resources.</p> <p>*Controlled for gender, age, and country of birth</p> |
| 26 | Thompson Wojciak, & Cooley. (2016), USA | Cross-sectional | NSCAW dataset used, LTFC wave 1 | N=188 Range 11-16 M:98, F:90 foster home n=84 kinship care n=36 group homes and residential facilities n=31 other OOHC arrangements n=37 | The purpose of this study was to explore the associations between self-esteem, peer relationships, and various delinquent behaviours. More specifically, we wanted to investigate if self-esteem can mediate the association between peer relationships and various problematic behaviours of adolescents in foster care. | CDI (Negative Self-Esteem Scale): Self-esteem LSDQ: Peer relations | CBCL and YSR forms: externalising and delinquency subscales | <p>-better quality peer relationships were associated with less externalising behaviours and less delinquent behaviours for both caregiver and self-report measures.</p> <p>-Self-esteem was not found to mediate the association between peer relationships and externalising behaviours for caregiver-reported measures, but was found to mediate the association between peer relationships and youth-reported externalising behaviours.</p> <p>-Self-esteem was not found to mediate the association between peer relationships and delinquency on caregiver-reported measures, but was found to mediate the association between peer relationship and delinquency on self-report measures</p> <p>*Age, gender, placement type, race, type of abuse, number of placements, length of time in care were entered as control variables</p> |
| 27 | Williams-Butler (2018) USA | Longitudinal | | N=534 Range: 13-18 M:316, F:218 foster care | This study sought to identify the multilevel promotive factors among this population (African American youth in foster care) and | CANS: -relational permanence (no stable relationship, | CANS: Delinquency | <p>-Youth with stable relationships significantly decreased their probability of being involved in delinquency compared to those with very stable relationship, indicating that contrary to expectations</p> |

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| | | | | | <p>assess whether these factors later reduced the likelihood of delinquency. It was hypothesized that youth have promotive factors at the individual, contextual, and system level and that each factor differed in importance by gender.</p> | <p>1 stable relationship, very stable relationships) -a positive change in relational permanence -placement changes -school achievement (Doing well, doing adequately, moderate problems, severe problems) -caregiver financial and social resources (Sufficient, Necessary but stretched, Limited, Severely limited)</p> | | <p>a higher level of relational permanence was related to higher levels of delinquency. -Positive change in relational permanence over time, school achievement, number of placement changes or caregiver resources did not significantly impact on delinquency</p> |
| 28 | Wojciak, Thompson, & Cooley (2017) USA | Cross-sectional | wave 1 data of NSCAW | N=131 Range: 11-16 M:65, F:66 foster care n=88 kinship care n=43 | to investigate the influence that a warm relationship with one's caregiver has on the well-established association between trauma symptoms and youth reports of internalizing and externalising behaviours. | Closeness to caregiver (warmth) | YSR: externalising symptoms | <p>-The youth's perception of their relationship with their caregiver did not significantly mediate the association between trauma and externalising symptoms for youth in foster care. Youth's caregiver type continued to be significant when examining externalising behaviours in the total mediation model</p> <p>-The youth's perception of their relationship with their caregiver did not significantly moderate the association between trauma and externalising symptoms for youth in foster care.</p> <p>*Age, gender, race and type of abuse were entered as covariates</p> |

^aAAR-C2= Assessment and Action Record (Canadian adaptation) (Flynn et al., 2009); AAP=Adult Attachment Projective Picture System (George & West, 2012); ARC= Arc's self-determination scale (Wehmeyer, 2016); ARQ=Adolescent Resilience Questionnaire (Gartland et al, 2006); BISC= Behavioural Inventory of Strategic Control (Little et al., 2001); CAI= Child Attachment Interview (Schmueli-Goetz et al., 2008); CANS= Child and adolescent needs and strengths (Lyons & Anderson, 2001); CDI= Children's Depression Inventory (Kovacs, 1992); (CPS data= Child Protective Services data; CTQ=Childhood Trauma Questionnaire (Bernstein & Fink, 1998); DAS=Developmental Assets Scale (Scales, 1999) ; DFSOSQ=Drug Free Schools Outcome Study Questions (US Department for Education, ND); IPPA= Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987); KILE=Kin Identification and Level of Engagement (Leon & Dickinson 2019); LOT-R= Life Orientation Test-Revised

(Scheier et al., 1994); LSDQ = Loneliness and Social Dissatisfaction Questionnaire (Asher & Wheeler, 1995); MSPSS=Multidimensional Scale of Perceived Social Support (Zimet et al., 1988); NHS= National Household Survey (Canada) (Statistics Canada, 2013); NEPSY=Developmental Neuropsychological Assessment (Korkman et al., 1998); NPIS=Negative Peer Influence Scale (first normed by Flynn et al., 2004); NLSCY-Cycle3= National Longitudinal Survey of Children and Youth (Statistics Canada and Human Resources Development); NSCAW=National Survey of Child and Adolescent Well-Being (Dowd et al., 2004); NR= Not reported; OnLAC=Ontario Looking After Children (Flynn et al., 2004); PCIS= Parent-Child Interaction Scale (Moss et al., 1998); PPS= Parenting Practices Scale (Strayhorn & Weidman, 1988); RAPS-s= Rochester Assessment Package for Schools- Student (Wellborn & Connell, 1998); SPPC= Self-Perception Profile for Children (Harter, 1985); SRI=sibling relationship Inventory (Stocker & McHale, 1992); SRQ= Sibling Relationship Questionnaire (Furman & Buhrmester, 1985); SSRS= Social Skills Rating System (Gresham & Elliot, 1990); TIMB= This is my Baby interview (Bates & Dozier, 1998); TRF=Teacher Report Form (Achenbach & Rescorla, 2001); YSR= Youth Self-Report (Achenbach & Rescorla, 2001).

^BASC-2=Behavioural Assessment System for Children, 2nd Edition (Reynolds & Kamphaus, 2004) ; CAQ=Child aggression questionnaire (Raine et al., 2006); CANS= Child and adolescent needs and strengths (Lyons & Anderson, 2001); CAPA= Child and Adolescent Psychiatric Assessment (Angold & Costello, 2000); CBCL= Child Behaviour Checklist (Achenbach & Rescorla, 2001); CPS (as part of SDQ)= Conduct Problem Scale (Goodman et al., 2000); ECBI=Eyberg Child Behaviour Inventory (Eyberg & Pincus, 1999); NLSCY-Cycle3= National Longitudinal Survey of Children and Youth (Statistics Canada and Human Resources Development); SEQ-R=Revised Social Experience Questionnaire (Paquette & Underwood, 1999); SDQ=Strengths and Difficulties Questionnaire (Goodman et al., 2000); TRF=Teacher Report Form (Achenbach & Rescorla, 2001); YSR= Youth Self-Report (Achenbach & Rescorla, 2001)

*Control variables

† Research aims and findings taken directly from the studies. Note: only those aims and outcomes of relevance to protective factors and externalising behaviours are listed.

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