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Vulnerable Yet Forgotten? A Systematic Review Identifying the Lack of Evidence for Effective Suicide Interventions for Young People in Contact With Child Protection Systems

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Children and young people in out-of-home care are at a higher risk of suicide than young people not involved with child protection systems. Despite this, there is a lack of evidence of effective suicide prevention interventions for this vulnerable population. We reviewed the types of suicide prevention interventions that have been used and evaluated with children and young people and staff and carers in out-of-home care/child protection systems. We conducted a systematic review of existing literature using PRISMA guidelines. Only five studies met the inclusion criteria. Two evaluated youth-focused interventions: emotional intelligence therapy; and multidimensional treatment foster care, while three evaluated adult-focused "gatekeeper training." Youth-focused interventions led to reductions in suicidal thoughts (suicidal ideation), and adult-focused interventions led to increased knowledge, skills, and behaviors such as referring youth to supports. Only one study, one of the youth-focused ones, evaluated the impact of the intervention in terms of suicide attempts but found no reduction. Large numbers of children enter into care with a high risk of suicide. With the considerable overlap between the trauma characteristics and mental health needs of young people in out-of-home care and suicide risk factors in the general population of young people, we recommend developing (and evaluating) new or adapted existing suicide prevention interventions designed specifically for the out-of-home care context.

Public Policy Relevance Statement
Children and young people in out-of-home care are at a substantially higher risk of suicide than their "living at home" peers. This systematic review identifies, firstly, how there is a lack of evaluated interventions to reduce suicidal thoughts and deaths in this population. Additionally, this review identifies that interventions that focus on trauma and emotions—are most likely to be successful in reducing suicide due to the considerable conceptual overlap between suicide risk and the trauma profile of children in out-of-home care.

Suicide Is a Universal Issue

Suicidal behavior among children and young people (up to age 18) is a significant public health issue (Bilsen, 2018; Carballo et al., 2020; Rukundo et al., 2018). Studies investigating global mortality patterns have found that suicide is among the top five leading causes of death for young people (Bilsen, 2018; Blum & Nelson-Mmari, 2004; Borowsky et al., 1999; Patton et al., 2009; Wasserman et al., 2005; Zhao & Zhang, 2014). Although the prevalence of suicide

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Table 1
Evidence-Based or Promising Interventions to Prevent Suicide in Young People in the General Population

Evidence-based	Promising
• Multisystemic therapy and family therapies such as attachment-based family therapy • Therapeutic assessment • Brief intervention contact • Postintervention and counseling • Screening, psychoeducation, and skills training • Gatekeeper training	• Dialectical behavior therapy • Cognitive-behavioral therapy • Interpersonal therapy • Developmental group therapy

Note. Source: Conley Wright et al. (2020).

attempts among young people peaks during adolescence, the prevalence of death by suicide increases steadily into young adulthood (Carballo et al., 2020). For example, in Australia, suicide has been reported as the leading cause of death among young people for the past decade (Australian Bureau of Statistics [ABS], 2020; Bartik et al., 2020). The number of deaths by suicide and standardized death rates for suicide among young people increased across all Australian states and territories. Similar concerning increases have been noted in the United Kingdom (U.K.), United States (U.S.), and Canada (Bould et al., 2019; Padmanathan et al., 2020).

The leading theory is that those who engage in suicidal behaviors have high levels of emotional dysregulation (Eaddy et al., 2019; Law et al., 2015; Neacsiu et al., 2018; Wolff et al., 2019). Suicide prevention interventions with the most promising evidence base include emotion regulation-based interventions and cognitive-based interventions. Dialectical behavior therapy, as an example, decreases trauma-based symptoms and suicidality in adolescents (Geddes et al., 2013). Promising and evidence-based interventions—summarized from Conley Wright et al. (2020)—are listed in Table 1.

Risk Factors for Suicidal Behavior in Children and Young People in the General Population

Psychosocial factors contribute most to the suicidal risk profile in children and young people (Bridge et al., 2006; Carballo et al., 2020). The most significant risk factors include: (a) *psychological disorders*—depression, anxiety, substance use, comorbid psychiatric disorders, history of self-harming; (b) *stressful life events*—family functioning problems and peer issues, bullying, all forms of abuse, in particular sexual abuse and suicide or attempted suicide of a family member or peer; and (c) *personality traits*—neuroticism, impulsivity, self-esteem and resilience (Bilsen, 2018; Brådvik, 2018; Bridge et al., 2006; Bye, 2008; Carballo et al., 2020; Centre for Suicide Prevention, 2020; Mars, Burrows, et al., 2014; Mars, Heron, et al., 2014; McKee & Shkolnikov, 2001; Nemtsov, 2003; Tishler et al., 2007). Suicide prevention interventions often aim to reduce mental ill-health and other psychosocial risk factors like these, in order to reduce the likelihood of engaging in suicide-related thoughts or behaviors.

The clearest risk factors for suicidal behavior among children and young people are major psychiatric problems, depression, substance abuse disorder (Brådvik, 2018; Carballo et al., 2020; Goldston et al., 2009), and sexual abuse in childhood (Bahk et al., 2017). Physical and emotional abuse have shown to indirectly predict suicidal ideation via links with anxiety, while neglect has also shown to indirectly predict suicide through poor perceived social support (Bahk et al., 2017). However, other studies (Bensley et al., 1999; Kaplan et al., 1999; Locke & Newcomb, 2005; Thompson et al., 2012) found that child abuse and neglect are also direct predictors of suicidal ideation. Concepts such as hopelessness—negative beliefs and expectancies relating to the self and the future (Stotland, 1969)—and emotion control, or emotional dysregulation—a lack of control over strong negative emotions and/or no acceptance of one's own emotional experiences (Gratz & Roemer, 2004)—are also illustrated in the literature as having a relationship with suicidal ideation (Britton et al., 2008; Miranda et al., 2013). The evidence highlights the complexity of suicide among young people and suggests a cumulative interaction of these contributing factors (Carballo et al., 2020). This is sometimes referred to as "cumulative harm" (see Bromfield et al., 2007).

Given the strong evidence associating child maltreatment and suicidal risk, it is important to look at the context of children in contact with child protection systems, the risk of suicidal behavior in these children/young people, and the efficacy of any interventions to address suicidality.

Child Protection and Out-of-Home Care Systems

Out-of-home care (OOHC) refers to the protective and care systems that result in placement of children and young people in foster care, kinship care, or residential care when they are unable to be safely cared for at home by their parent(s). Terminology can differ across countries on these populations; research also refers to "looked after children" (in the United Kingdom) or "children in alternative care" (in North America).

Jones et al. (2015) estimated that in 2013, there were 62,428 children in OOHC in Canada. In 2018 in the U.S., 437,283 children were estimated to be in foster care, of which 32% were in kinship care (Child Welfare Information Gateway, 2020). In the same year across the U.K., there were approximately 97,729 "looked after children" not living with their parents (The Fostering Network, 2016). The most recent data for Australia, 2018–2019 is that around 170,000 children aged 0–17 received child protection services from the six states and two territories in Australia (Australian Institute of Health and Welfare [AIHW], 2020). This covers three "types" of contact or care: investigations (which may or may not then lead to substantiation of harm or risk of harm from child abuse or neglect), care and protection orders, and OOHC placement. OOHC placement is mostly family-like placements (kinship or foster care). More than half of investigations by statutory child protection services in Australia do not lead to a care and protection order or placement in OOHC. Around 44,900 children were living in OOHC in June 2019, of which one-third were Indigenous Australians (Aboriginal and/or Torres Strait Islanders). Only 6.4% of children live in residential care, a placement mostly used for those with complex needs (AIHW, 2020).

Children and young people in contact with statutory care systems have a range of characteristics and complex issues relating to their care experience. In Australia, for example, as outlined in recent reports (e.g., AIHW, 2020; Higgins, 2011; Higgins & Katz, 2008) children typically enter care early in life. Care is not a brief experience either: More than one-third of children residing in OOHC have been removed from their families for more than 5 years. Characteristics of children and families associated with

greater risk of contact with child protection systems include parental substance misuse and poorly treated mental health issues, and family violence. Aboriginal and Torres Strait Islander children are significantly overrepresented in child protection systems in Australia. Intergenerational vulnerability is also important, with parental OOHC in childhood a risk factor for removal of their own children. Children in OOHC are typically subject to multiple placements, placement breakdowns, and instability of placements—including reunification with family and subsequent removal

The work of statutory child protection systems has been significantly increasing, with rates per 1,000 children/young people in the population rising steadily over the past two decades (AIHW, 2020; Higgins, 2011; Higgins & Katz, 2008). In some Australian jurisdictions, it is now recognized that up to one in five children will have a safety/well-being concern notified to their statutory child protection service. Similar increase have been seen in many other countries (see Higgins et al., 2019). However, to be placed on care and protection order and/or be placed in OOHC, children must have been harmed or at risk of significant harm relating to one of the grounds for intervention. Harm—and the legislative grounds for intervention—is defined in different ways between and within countries but covers what is considered child maltreatment: all forms of abuse, including physical, emotional, and sexual abuse, neglect, and domestic and family violence (Child Family Community Australia [CFCA], 2019).

Children who have been maltreated (including those known to child protection services and placed in OOHC) are at great risk of experiencing behavioral and mental health issues because of the maltreatment. Many children who are maltreated are exposed to numerous forms of child abuse and neglect; children with multitype maltreatment are associated with even greater risk of negative psychosocial outcomes (Price-Robertson et al., 2013). The typical behavioral profile of children exposed to significant child abuse and/or neglect covers a range of diagnosable mental health and behavioral concerns, including delinquency, drug and alcohol use, high-risk sexual behaviors (Australian Institute of Family Studies [AIFS] et al., 2015).

Due to the typical behavioral profile of children exposed to significant child abuse and neglect placed into OOHC, trauma-informed care models are typically implemented to reduce mental health and trauma-based problems in most child protection systems (AIFS et al., 2015). However, Bailey et al. (2019) found the current evidence base for the effectiveness of trauma-informed care models to be low. Care models were often deployed without an overarching framework, and that it is difficult to effectively evaluate outcomes as a result of this. As highlighted by Wall et al., (2016), there is a dearth of trauma-specific interventions that have been rigorously evaluated, and those that have been were focused on populations identified as experiencing a sole traumatic event, as opposed to populations identified with complex trauma (where children experiencing maltreatment typically are exposed to multitype maltreatment; see Price-Robertson et al., 2013).

Children and young people in OOHC typically experience complex trauma, brought on by not just a single incident, but rather chronic exposure to abuse and neglect (van der Kolk, 2000). Due to their trauma histories, the typical profile of children and young people in OOHC includes a range of behavioral and emotional challenges, such as depression, anxiety, poor self-esteem, attachment difficulties, challenging behaviors (see: AIFS et al., 2015).

Suicidal Behavior in the Out-of-Home Care Population

For at least 2 decades, studies across a variety of countries including Australia, New Zealand, the U.K., Canada, the U.S., and Finland, have shown that children and young people placed into OOHC are at a high risk of suicidal behavior (Beautrais, 2000; Dube et al., 2001; Evans et al., 2017; Kalland et al., 2001; Katz et al., 2011) and report higher than average suicide attempts across the lifespan (Afifi et al., 2015). In their systematic review and meta-analysis, Evans et al. (2017) suggested that children and young people residing in care have a higher rate of exposure to established risk factors for suicidal behavior and are more than three times as likely to attempt suicide compared to noncare populations (Evans et al., 2017). This is especially concerning for these countries—Australia, U.K., and the U.S.—where the majority of children receiving care and protection services are under 10 years of age when they first enter the OOHC system. In Australia, the median age of children receiving child protection services is 8 years of age. In the U.S., the median age of children in foster care and entering foster care is 7.7 and 6.3 years of age respectively (Children's Bureau, 2020). In the United Kingdom children aged 7–11 spend the longest about of time in looked after care, with a median age of 6 years (Neil et al., 2019). The consequence is that they are likely to spend a significant proportion of their childhoods growing up in an OOHC, where their safety and well-being need to be supported and managed.

Children and young people coming into care are also more likely to be from already disadvantaged families/communities. For example, in Australia, Aboriginal and Torres Strait Islander children receive child protection services at a rate of 163.8 per 1,000 Aboriginal and/or Torres Strait Islander children, eight times the rate for non-Indigenous children (19.7 per 1,000 non-Indigenous children; Australian Institute of Health and Welfare [AIHW], 2019).

In Australia, multiple reviews across state and territory jurisdictions into child deaths by suicide revealed that children with prior child protection or OOHC involvement were at an increased risk of suicide and were up to four times more likely to die by suicide than children with no child welfare involvement (NSW Child Death Review Team, 2016; Consultative Council on Obstetric and Paediatric Mortality and Morbidity, 2017; Queensland Family and Child Commission, 2017). Soole et al. (2014) demonstrated that Indigenous children were significantly more likely to be living away from the family home prior to their death by suicide when compared to non-Indigenous children.

As outlined previously (Trew et al., 2020), psychiatric and depressive disorders associated with suicidal behavior in young people closely match the trauma needs and mental health outcomes of young people in care. Substance misuse is another common characteristic in OOHC, and a known risk factor for suicide-related behaviors. School and academic performance failure, poor peer-relationships, and low self-esteem are risk factors for suicide, and also common features of children ad young people in care. Finally, experiences of child abuse and neglect or other childhood adversity are commonly identified as a risk factor for suicide, and of course is the key feature of the OOHC population (Trew et al., 2020).

Aim and Research Questions

The aim of this systematic review is to investigate the efficacy of suicide prevention interventions in children and young people in out-of-home care—including where change in suicidal thoughts, attempts, and deaths by suicide in young people in OOHC are measured as the outcome, or where knowledge, skill or other relevant outcomes are measured in guardians and professionals working with young people in care. There were three research questions guiding this review:

1. What are the foci (processes and outcomes) of suicide prevention interventions used in OOHC populations?
2. Which suicide prevention interventions have been found effective at reducing suicidal thoughts, behaviors, and deaths by suicide in young people in residential, foster, or kinship care?
3. Which suicide prevention interventions have been found effective at supporting professionals and carers working with and supporting young care receivers to reduce or prevent suicidal thoughts and behaviors?

Method

Search Strategy

We searched seven electronic databases in June 2020 for peer-reviewed literature related to suicide interventions in out-of-home care populations. The databases included were: MEDLINE, Scopus, PsycINFO, the Social Sciences Index, Web of Science (Core Collection) and Proquest—Sociology Database and the Cochrane Library. After initial searching, we decided not to apply date restrictions to include as much literature as possible. Table 2 outlines the subject heading (index) searches/MesH terms and keywords included. Other search methods included screening abstracts from other sources, such as meta-analyses and systematic reviews, dissertations and theses, and grey literature, and contacting experts in the field.

Inclusion and Exclusion Criteria

After removing duplicates, we screened the identified literature using the Rayyan Intelligent Systematic Review web platform Ouzzani et al. (2016). We included articles only if they:

1. evaluated an intervention to reduce suicide;
2. focused on one or more OOHC population group/setting—including residential, foster, or kinship care; and
3. measured suicidal thoughts, attempts, or deaths by suicide of young people in OOHC, or professionals' or carers' knowledge, skill, attitude, or other related outcomes as part of the outcome measures of the intervention.

Articles were excluded if the target population was not either (a) children/young people involved with residential, foster, or kinship out-of-home arrangements, or (b) the guardians, carers, or residential care staff who work with this population. For example, many studies use terms such as "Residential Treatment Centre" and other such terms, which relate to both shorter- or longer-term arrangements for children and adolescents identified as exhibiting mental health concerns who are not part of the child protection system; these articles were excluded. Articles were also excluded if the evaluation of the intervention did not include one of the outcome measures specified in the inclusion criteria.

Article Selection

Figure 1 shows an overview of the search and screening process based on PRISMA guidelines. We initially identified 852 articles—313 of these were duplicates. After duplicates were removed, a total of 539 articles remained. The first two authors double-blind screened all 539 articles with inclusion conflicts being referred to the third author. After article conflicts were resolved, there remained a total of 24 studies to be fully screened and have data extracted. We randomly allocated 12 studies each to Authors 1 and 2, and extracted data, excluding studies during this process that did not fit the inclusion criteria. Of the 24 studies, only five studies met the inclusion criteria.

Analysis and Quality Assessment

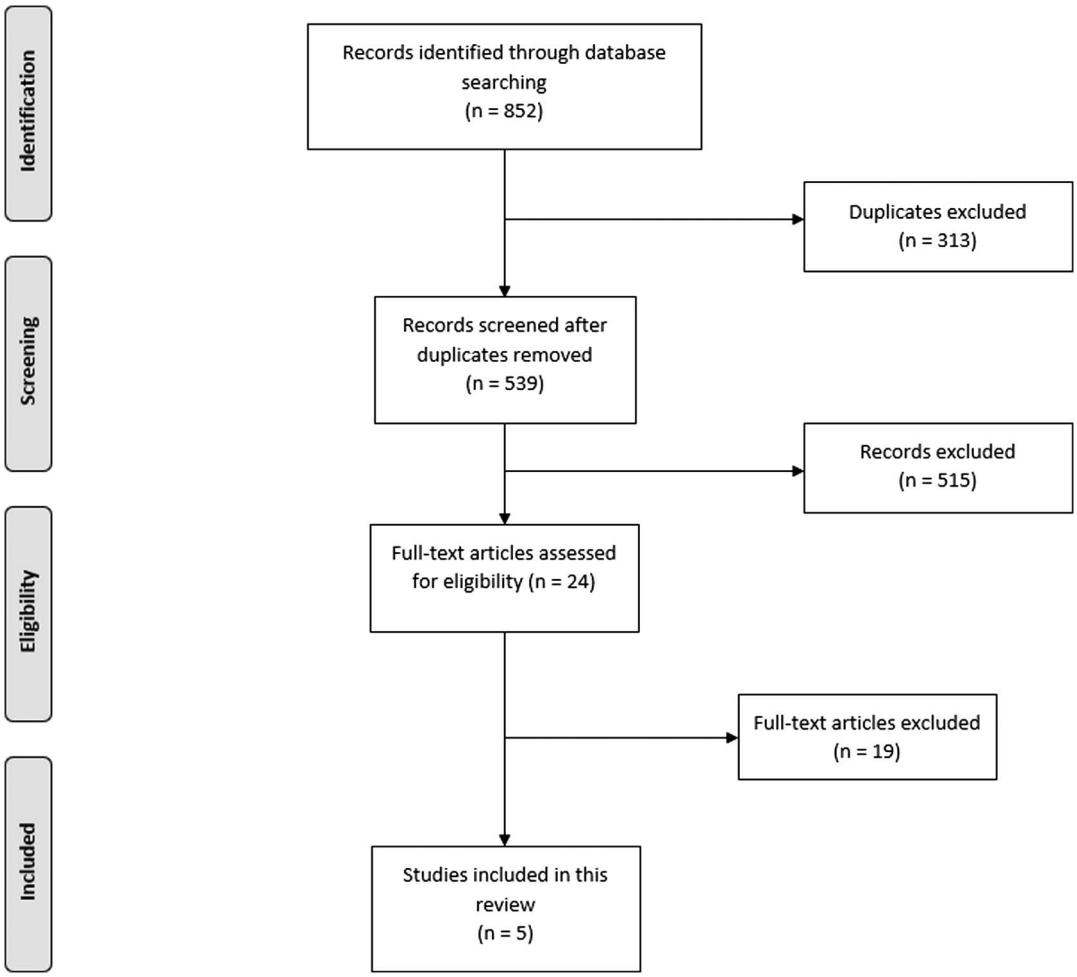
We conducted independent quality assessments of the five studies using quality assessment criteria developed by Kmet et al. (2004) for evaluating primary research papers from a variety of disciplines. Fourteen statements are rated using the terms "yes," "partial," "no," and "N/A." In analyzing the studies, the statements consider: the methodology, the measurement outcomes, the intervention evaluated, and the findings of the study. For quantitative studies, these include whether the study design was appropriate; sufficient description of participant (and comparison group); and whether analyses were appropriate and controlled for confounds. For qualitative studies, these include clear description of data collection methods and analysis; connection to a theoretical framework; and whether conclusions were supported by the results. A total score is obtained by adding considering responses as follows; "yes" = 2 points, "partial" = 1 point, "no" = 0 points and N/A changes the total number of statements the total score is then divided by for a final score between 0 and 1. While Kmet et al. (2004) discuss conservative (75%) and liberal (55%) cut off for inclusion, considering the low number of studies included in our review we used these figures as assessments of quality considering above 75% as high quality and

Table 2
Search Terms Used

Search terms (title and abstract)			
Out-of-home care	Suicide	Children	Intervention
"out-of-home care" OR OOHC OR "looked after" OR LAC OR "looked after care" OR "alternate care" OR "kinship care" OR "foster care" OR "residential care" OR "group home*" OR "child welfare"	Suicid*	Child* OR adolescen* OR teen* OR youth OR "young adult*" OR "young people" OR "young person"	interven* OR prevent* OR therap* OR reduc* OR "behavio?r modification" OR treat* OR program*

Note. OOHC = Out-of-home care; LAC = looked after children.

Figure 1
The Search and Screening Process



between 55% and 74% as moderate quality. We used a data extraction spreadsheet based on the Cochrane Public Health Group Data Extraction and Assessment Template. Considering the extracted data and the quality assessment scoring, an assessment was presented on the effectiveness of the suicide interventions evaluated in the studies.

Findings

Overview of the Five Studies That Met Criteria Inclusion

We identified only five studies that examined the effectiveness of interventions in reducing suicidal thoughts and behaviors among children involved in an OOHC system. Two of the studies included outcome measures focused on young care receivers' suicidal thoughts and behaviors. Bonet et al. (2020) evaluated an intervention within the Spanish welfare system using a quasi-experimental, randomized control trial. Kerr et al. (2014) conducted their study in the northwest of the United States using an experimental, randomized control trial design. The other three studies evaluated "Gatekeeper" interventions (i.e., training aimed at providing professionals who work with at-risk youth with the skills and knowledge to identify suicidal thoughts and behaviors and to intervene and prevent suicide, including providing referrals to specialist supports and services). These three studies (Kahsay et al., 2020; Keller et al., 2009; Osteen et al., 2018) all used pre/posttest design evaluations with 6-month follow up to investigate the efficacy of their respective programs to increase the knowledge, skills, and attitudes of staff that support suicide prevention.

In Table 3, we provide an overview of the samples involved in each of the reviewed studies, indicating age, gender, and population characteristics/requirements to be included in each respective study.

Quality Assessment

We conducted individual quality assessments—assessing the quality and appropriateness of the methodology and reporting—on all studies. The first two authors conducted the quality assessments. We independently rated each of the in-scope articles scoring

Table 3
Participant Characteristics of Reviewed Studies

Authors	Country	Population	Age	Sex	Characteristics
Bonet et al. (2020)	Spain	Youth in care	12–17 years old $M = 13.74$ $SD = 1.66$	All females ($N = 166$)	Excluded if they had severe pathologies (including psychotic spectrum disorders), an intellectual disability, or were unable to read and write in Spanish
Kerr et al. (2014)	United States of America	Youth in care	13–17 years old	14 males, five females	Showed chronic delinquent behavior. Must have had at least one criminal referral in the last 12 months, be placed in (mandated) OOHC within 12 months after referral and were not pregnant at the time of recruitment
Kahsay et al. (2020)	Not reported	Professionals in welfare (plus two foster parents)	21–64 years old $M = 36.78$ $SD = 10.03$	80.6% female	Individuals who registered to attend a state-wide day-long suicide prevention conference
Keller et al. (2009)	United States of America	Professionals in welfare, education, health, university faculty and students, parents (including foster parents) and adults working with the LGBTIQ+ community	$M = 40.3$ years old $SD = 12.2$	83.8% female	Unclear, but likely to be individuals working as Tennesse state department workers in the professions mentioned
Osteen et al. (2018)	United States of America	Professionals in welfare	21–71 years old $M = 29.9$ years old $SD = 10.6$	71% female	Youth services staff working for a single Florida-based youth service agency

Note. OOHC = Out-of-home care.

each article on a scale of 0 (*never*), 1 (*partial*), and 2 (*yes*) across 14 potential methodological and reporting attributes identified by Kmet et al. (2004). These attributes related to the description of the research question and method used, reporting of any random allocation and blinding (if appropriate to the study design), and the description of results and conclusions.

To generate the rating score, we added the total score obtained across relevant items and then divided it by the total possible score (which may have not been all 14 criteria as some are not applicable to certain study designs) with a total possible score between 0 (*low quality*) and 1 (*high*). Table 4 shows the results of the quality analysis for each of the included studies. These ratings suggest a high quality for the Kerr et al. (2014), Keller et al. (2009) and Osteen et al. (2018) studies and a moderate quality for the Bonet et al. (2020) and Kahsay et al. (2020) studies. The Kerr et al. study benefitted from rigorous blinding of researchers in a methodologically sound randomized control trial with a control group.

Type of Interventions

Youth-Focused Interventions. Bonet et al. (2020) evaluated an intervention that was a shortened version of Emotional Intelligence Therapy (EIT; Lizeretti, 2012 as cited in Bonet et al., 2020). EIT focuses on the relationship between emotion (and its regulation) and an individual's needs. The focus of therapy is to provide emotional management skills, allowing a person to identify and satisfy their emotional needs across four distinct phases. Each phase aims to develop skills involved in emotional intelligence: (a) emotional perception, (b) use of emotions to facilitate thinking, (c) emotional understanding, and (d) emotional regulation. Each of the four phases promotes both intra- and interpersonal skills based on fear, sadness, anger, and joy (Bonet et al., 2020).

Bonet et al. adapted the existing intervention by removing "inter-session activities" and "recap sessions" (see Bonet et al., 2020 for a session-by-session breakdown). Their adapted version involved 16 weekly sessions of 90 min duration. The therapy was facilitated by therapists (with a cotherapist) to seven groups of 7–11 participants within the residential centers.

Kerr et al. (2014) evaluated a family-based intervention called Multidimensional Treatment Foster Care (MTFC). It is based on social learning theory aimed at reducing delinquent behavior. Trained, certificated foster carers implement a behavioral reinforcement model (i.e., positive behaviors are positively reinforced, so they occur more, while problem and maladaptive behaviors are not reinforced, in an effort to reduce them). Kerr et al. (2014) describe the activities and tasks involved in the intervention:

> Interventions were individualized but always included: daily telephone contact with foster parents; weekly group supervision and support meetings for foster parents; an in-home, daily point-and-level program for girls; individual therapy for each girl; family therapy for the aftercare placement family focusing on parent management strategies; close monitoring of school attendance, performance, and homework completion; case management to coordinate the interventions in the foster family, peer, and school settings; and 24-hr on-call staff support for foster and biological parents. (p. 5)

The intervention also included after-treatment placement with parents or caregivers trained in effective parent management. MTFC does not specifically target depression or suicide risk, but rather seeks to reduce problem behaviors and justice system involvement, many of which can be linked to increased depression and suicide thoughts and attempts. MTFC teaches and reinforces communication skills and emotion regulation to improve an individuals' anger and irritability. It also seeks to improve social support through reinforcement opportunities in family and school contexts, and

Table 4
Quality Assessment Score for Each Study

Study	Score (0 = low; 1 = high quality)
Bonet et al. (2020)	.57
Kahsay et al. (2020)	.63
Keller et al. (2009)	.86
Kerr et al. (2014)	.80
Osteen et al. (2018)	.77

through interactions with prosocial adults and peers—thereby contributing to a sense of belonging.

Professional-Focused Interventions

Kahsay et al. (2020) evaluated safeTALK Training, developed by LivingWorks Education Inc. Developed in response to The National Strategy for Suicide Prevention, advocating for a public health approach toward suicide, the program is designed to teach participants to identify warning signs/risk for suicide, supportively respond, and link the individual to professional assistance.

Keller et al. (2009) evaluated the program "Question, Persuade, Refer," the first U.S. statewide gatekeeper training offered to individuals including child welfare staff across the U.S. The program was part of the Tennessee Lives Count (TLC) project, which was developed through a collaborative model at the state level and delivers the gatekeeper training program.

Osteen et al. (2018) evaluated the "Youth and Depression" training program, in a single U.S.-based organization where staff were working with youth interacting with the child welfare system. The intervention was an adapted version of the "Youth Depression and Suicide: Let's Talk" (YDS) gatekeeper training. The YDS training was developed by the Massachusetts Society for the Prevention of Cruelty to Children (Massachusetts Society for the Preventionof Cruelty to Children, 2010) in collaboration with the Massachusetts Department of Children and Families (Osteen et al., 2018).

Outcome Measures

The two youth-focused studies (Bonet et al., 2020; Kerr et al., 2014) both used direct outcome measures of suicidal thoughts and behavior as well as additional concepts in line with the goals of the specific intervention each was evaluating. It is important to note that the Kerr et al. study was a longitudinal study that evaluated suicidal ideation and suicide attempts up to 12 years after baseline data were collected, in many cases going well into young adulthood, after participants had left residential facilities. The Bonet et al. study measured suicide behavior only at baseline and 16 weeks posttreatment.

The Gatekeeper training studies (Kahsay et al., 2020; Keller et al., 2009; Osteen et al., 2018) all measured knowledge, self-efficacy, skills, and attitudes of staff (predominantly residential OOHC workers). Across the studies, the outcome variable referred to as "attitudes" varied considerably in how it was conceptualized and measured. Osteen et al. (2018) measured attitudes toward suicide prevention. Keller et al. (2009) measured attitudes toward the inevitability of suicide. Kahsay et al. (2020) measured attitudes toward engaging in suicide prevention activities with youth. Although it is possible to identify whether each respective study "improved attitudes" it will be important to identify the different attitudes that the interventions have shown to improve. None of the studies used any direct outcome measure related to suicidal thoughts or behavior in the young people they worked with.

Suicide Measures in the Youth-Focused Studies

The two youth-focused studies each measured suicidal behavior differently. Bonet et al. (2020) measured suicidal orientation (understood as a continuous progression toward suicide passing through several stages) using the Spanish version of the Inventory of Suicide Orientation (ISO-30; King & Kowalchuk, 1994; adapted to Spanish by Casullo & Liporace, 2006 as cited in Bonet et al., 2020). The inventory considers suicide orientation to occur along a spectrum, whereby participants are classified as having a low, moderate, or high suicide orientation. Six critical items are used to identify suicidal ideation (one of five subscales within the measure), where scores of two or greater (on a scale from 0–3) on three or more of the items represents a high risk—this is regardless of the overall score on the full inventory. Although the measure used is psychometrically valid, measures risk using continuous scores, and provides scores on multiple subscales (hopelessness, self-esteem, social isolation, inability to control emotions, and suicidal ideation), an omission in the measurement of suicide in their study is the lack of any data related to suicide attempts. Such data would have further supported any claims that the intervention had positively influenced the participants. The omission of this outcome measure may be a result of the timeframe of the design, whereby a longitudinal design over many years may have better tracked deaths by and attempts of suicide.

Kerr et al. (2014) measured suicidal ideation using a single item "During the past week, how much were you bothered by thoughts of ending your life?" Participants answered either not at all, a little bit or very much. This was recoded into a dichotomous variable of the absence (*not at all*) or presence (*a little bit or very much*) of suicidal ideation. Suicide attempts were measured across the life of the study using the Columbia Suicide Severity Rating Scale (Posner et al., 2008). This scale uses standardized probes to identify whether attempts are classified by the criteria set out by Posner et al. (2008) of an actual attempt, an interrupted attempt, an aborted attempt, or a nonsuicidal self-injury. Although this additional measure—and the timeframe over which the data were collected—is a strength of the study design, the single dichotomized question relating to suicidal ideation is unlikely to provide data that is as robust as the validated, continuous measure used by Bonet et al. (2020).

Were They Effective?

The two youth-focused studies showed that their interventions were effective in reducing suicide factors—suicidal ideation (Kerr et al., 2014) and suicidal orientation (Bonet et al., 2020), respectively—in a relevant OOHC population (residential or foster care). Neither study reported a reduction in suicide attempts, either because there was no effect of the intervention on attempts or it was not measured as part of the evaluation.

Kerr et al. (2014) found a medium effect of their treatment in reducing suicidal ideation (equivalent to an 8%–12% reduction in

likelihood relative to controls) as well as a medium effect size in the decline of depressive symptoms. They did not however find any reduction in suicide attempts from baseline across all time points. Kerr et al. (2014) claimed that their study design did not allow for a deep understanding of why the intervention led to a reduction in both depression and suicide risk. They hypothesized that "MTFC may impact girls' depressive symptoms and suicide risk by reducing delinquency and preventing a cascade of negative life consequences" (p. 11).

Bonet et al. (2020) found a reduction in hopelessness, suicidal ideation and a "total score" of suicide orientation. They also reported that hopelessness had a positive mediating role between coping skills and suicide. Participants' abilities to control emotions—particularly through significant increases in clarity—was also a noted risk factor that improved as a result of EIT. Bonet et al. (2020) did not measure suicide attempts as part of their evaluation of EIT and therefore no assessment can be made as to the effectiveness of EIT to reduce or prevent suicide attempts.

Professional-Focused Studies and Their Effectiveness

All three professional-focused studies (Kahsay et al., 2020; Keller et al., 2009; Osteen et al., 2018) demonstrated the training programs had a positive impact on aspects of participant's knowledge, skills, attitudes, and self-efficacy toward suicide prevention. Keller et al. (2009) reported immediate effects on staff's perceived knowledge of suicide prevention, self-efficacy, and attitudes about the inevitability of suicide. Out of all individuals that participated in their study (child welfare staff, foster parents, juvenile justice workers, teachers, health professionals, foster parents, adults working with LGBTIQ+ youth, and university faculty and students), child welfare staff and juvenile justice staff reported greater knowledge retention over 6 months, which the authors attributed to those workers' more frequent contact with suicidal youth and thus more opportunities to use the skills and knowledge from the training (Keller et al., 2009). However, at the 6-month follow-up, participants' knowledge, self-efficacy, and attitudes toward suicide inevitability all dropped back closer to preintervention levels.

Kahsay et al. (2020) found increases in participants' knowledge, preparedness, and self-efficacy to work with at-risk youth as well as a decrease in reluctance to intervene. Practice patterns at the 6-month postintervention interval revealed that there was also an increase in referrals to support services by participants. However, this may be explained in part by the fact that those who completed the 6-month follow-up survey also had significantly higher baseline (preintervention) referral rates. The significant increase despite this may indicate a positive reinforcing effect of receiving training that aims to increase referral skills and knowledge adding to their already higher likelihood of referring young people for support and treatment. The results are particularly important, in that they suggest that all participants can benefit; it is not only those with low baseline referral behaviors whose referrals can increase.

Osteen et al. (2018) reported a large increase in suicide myths and facts as a result of the training they evaluated. This was coupled with an improvement in perceived knowledge and self-efficacy, which was maintained at 6 months. In measuring attitudes toward suicide prevention and reluctance to engage with suicidal clients, it was found that the participants already had favorable attitudes and engagement and these did not significantly increase over time as a result of training. The Youth and Depression training however did not show an improvement in the behavioral outcomes measured in the study.

An important consideration relating to the efficacy of Gatekeeper training to prevent suicidal thoughts and behaviors is the fact that these studies—at least those identified through our review—do not include any outcome measure directly related to suicidal thoughts or behavior in young people. Like in other prevention intervention areas, such as child sexual abuse, there is a lack of research linking increased knowledge and skills in professionals to a decrease in suicidal thoughts and behaviors.

Discussion

Effective Suicide Prevention Interventions in OOHC Settings

The purpose of our review was to identify suicide prevention interventions that have been used and evaluated in OOHC situations. We found only five studies that reported on this. The two youth-focused interventions—where suicidal outcomes were measured in young care receivers—led to reductions in suicidal ideation (thoughts) in their respective cohorts. One of the studies (Kerr et al., 2014) also measured the effect of their intervention on suicide attempts but found no significant decrease. There was notably one recorded death by suicide within the participants of the Kerr et al. (2014) study, however, neither study measured deaths by suicide and compared these with any existing or preintervention data.

The other three studies included in our review (Kahsay et al., 2020; Keller et al., 2009; Osteen et al., 2018) evaluated the efficacy of Gatekeeper training programs, aimed at increasing the knowledge, skills, attitudes, self-efficacy, and behavior of professionals who work in OOHC settings. All showed that interventions they studied were effective at increasing (or decreasing where relevant) their selected measures of knowledge, skills, attitudes, or self-efficacy of staff. Due to the variety of gatekeeper interventions deployed, and differences in their approach to conceptualizing and measuring outcomes across the three studies, it is difficult to draw any nuanced conclusions regarding which—if any—training is more successful. These studies do show that staff and carers of young people in OOHC can increase their knowledge, skills, attitudes, and behaviors related to suicide prevention through targeted training.

Kerr et al. (2014) and Bonet et al. (2020) sampled participants from an OOHC population—commonly referred to as residential care—where children and young people are put in group homes together with staff who take on the role of carer. However, it is important to note that the participants in the Kerr et al. (2014) study were placed in these homes as a result of being involved in criminal behavior and the study referred to them as a juvenile justice population (as opposed to an OOHC population). While most children and young people enter care due to abuse or neglect by parents (Government of South Australia, n.d.; Neil et al., 2019; Pew Commission on Children in Foster Care, 2011), the participants of that study (Kerr et al., 2014) were in OOHC as a result of their own delinquent behavior. This is an important consideration given the overlap between suicide risk factors and the mental health and

trauma-based profiles of children and young people both in OOHC and juvenile justice populations, but also further points to the lack of research on suicide in typical OOHC settings and populations.

One of the interventions (Bonet et al., 2020) shown to be effective in reducing suicidal thoughts in OOHC appears to be consistent with a trauma-informed approach. Due to the conceptual overlap between suicide risk factors and the trauma-related mental health concerns of young people in OOHC, it follows that interventions to address trauma-related outcomes (including suicide prevention interventions) for the general population are also likely to reduce the risk of suicide in OOHC. Such interventions should have a strong focus on emotional regulation and other psychosocial factors related to trauma and mental health disorders, in efforts to maximize a reduction in risk for suicide in children and young people in OOHC. Exploring the applicability and efficacy of broader suicide prevention strategies and trauma-reduction interventions would appear to be a promising future direction.

The other three studies included in our review (Kahsay et al., 2020; Keller et al., 2009; Osteen et al., 2018) evaluated Gatekeeper training programs and found these to be effective at improving knowledge, skills, attitudes, and behaviors such as referring young people to supports. However, these studies did not include any outcome measure directly related to suicidal behavior. Although these types of interventions are important in up-skilling staff and carers, future research investigating the efficacy of such interventions should also directly measure suicidal thoughts, behaviors, and deaths in children and young people in settings where staff have been trained in order to better evaluate their ability to achieve the desired goal. Although increases in knowledge and skills, demonstrated in these adult worker-focused interventions are effective, an important consideration is that training may not necessarily equate to a reduction in suicidal thoughts and behaviors in young people.

Appropriateness of General Population Suicide Prevention Interventions for OOHC Settings

Given the lack of evidence relating specifically to suicide interventions tailored or developed for children and young people in OOHC settings, identifying and evaluating suicide prevention interventions shown to be effective in the general population should be considered. Because of the substantial overlap between risk factors for suicide and the trauma characteristics and mental health outcomes of children and young people in OOHC (Trew et al., 2020), it makes sense to identify, adapt, and implement suicide interventions that have been evaluated and demonstrated to be effective among the general population.

There is, however, a limited number of interventions identified that have produced significant outcomes to reduce suicidality even in children and adolescents among the general population, as well as limited rigorous, methodical, and systematic validation of approaches that address this issue (Asarnow & Miranda, 2014; Conley Wright et al., 2020). Although growing in number, few studies have investigated suicide interventions for children and young people using appropriate methodologies such as randomized controlled trials, which are the recognized and accepted standard for evidence-based approaches to the evaluation of intervention effectiveness (Hariton & Locascio, 2018).

Current evidence suggests that suicide prevention interventions for children and young people in the general population with the most promising evidence base include emotional regulation-based interventions and cognitive-based interventions, with treatments including cognitive-behavioral therapy (CBT) and dialectical behavior therapy (DBT). CBT, for example, has been shown to reduce the suicide attempts of adolescents identified as having high suicidality (defined as attempted suicide in the last 3 months), over a period of 2 years (Esposito-Smythers et al., 2011). As treatments, CBT and DBT are both also supported as possible effective suicide interventions by reducing depression—a risk factor for suicidal behavior—in adolescents receiving treatment (Weisz et al., 2006). Given that approximately 50% of children in OOHC in Australia have been reported as having clinical depression (Osborn & Delfabbro, 2006), these types of interventions could reduce both the risk of suicide and other mental health concerns in this population.

Additional interventions with the most promising evidence base for the general population include therapeutic assessment and brief contact interventions such as postdischarge contacts, emergency or crisis contact cards (Milner et al., 2015). However, the majority of studies reporting on brief contact interventions as a suicide prevention strategy fail to clearly articulate and measure in a clinical trial the mechanisms that underpin them (Milner et al., 2016).

Multisystemic Therapy (MST) is another therapy that demonstrates a promising evidence base for suicide intervention and prevention (Conley Wright et al., 2020). It is an intensive home/community-based intervention. Initially, it was developed and implemented with adolescents in the criminal justice system. MST aims to establish protective factors within the adolescent's family, or other systems, such as school or community or neighborhood (Asarnow & Miranda, 2014). MST treatment has been shown to be more effective than psychiatric hospitalization treatment for suicide attempts in youths (Henggeler et al., 2003). MST was more effective—albeit in the short term (with about a 1-year efficacy)—and reduced poor mental health outcomes and youth placements out of their homes (Henggeler et al., 2003).

Depression is a significant risk factor for death by suicide (Huey et al., 2005; Shaffer et al., 2001). However, in their study of MST, Henggeler et al. (2003) found poorer outcomes for the subgroup of youths with depression. Their results suggest strategies in addition to MST need to be implemented. Again, the large proportion of children in OOHC in Australia with clinical depression (as reported by Osborn & Delfabbro, 2006) suggests that MST—in addition to other forms of on-ongoing treatment, such as CBT or DBT—could be effective suicide prevention and intervention strategy for this population.

Recently, family therapy such as attachment-based therapy has demonstrated significant results for the general population, with one study reporting a significant decrease in suicidal behaviors among adolescents (Diamond et al., 2019). The authors of the study suggested that foster parents, not just biological parents, could be involved in the assessment and treatment of adolescents (Diamond et al., 2019). This is particularly encouraging, as attachment-based therapies have also recently been suggested as treatment to improve the emotional, mental, and physical health concerns of children in foster care (Gardenhire et al., 2019).

As well as providing interventions directly to children and young people in OOHC, working with carers and staff to increase their knowledge and skills to identify risks, and increase their confidence or readiness to take action to intervene and support a young people at

risk—such as in the gatekeeper training or psychoeducation and skills training—may also be warranted. Although there is no evidence that these directly reduce suicidal thoughts, behaviors, or deaths in young people in OOHC (although this could be investigated by measuring suicidal thoughts and behaviors of young people in settings where staff have been trained), such training may be helpful if it was found to be a mediating factor in reducing suicidal thoughts, behaviors, or deaths in young people. Such skills training has been found to be an effective approach to suicide prevention in the area of health care. Beautrais et al. (2007) demonstrated that training primary health practitioners to better recognize and treat depression led to a decrease in suicide rates among children and young people.

As identified earlier, psychosocial factors contribute most to the suicidal risk profile in children and young people (Bilsen, 2018; Brådvik, 2018; Bridge et al., 2006; Bye, 2008; Carballo et al., 2020; Centre for Suicide Prevention, 2020; Mars, Burrows, et al., 2014; Mars, Heron, et al., 2014; McKee & Shkolnikov, 2001; Nemtsov, 2003; Tishler et al., 2007), and the evidence highlights the complexity of suicide among young people suggesting a cumulative interaction of these contributing factors (Carballo et al., 2020). Given this, working to address the unmet needs of, and striving to meet the needs for mental health and emotional and social care in children and adolescents, is one suggested approach to reduce suicidal behaviors among the general population. As minimal attempts have been made to apply suicide interventions into welfare services for children and young people, such as in Residential Care settings (Bright et al., 2010), few models exist, and those that do have been established as having methodological bias and internal validity concerns, impacting the validity of the studies (James et al., 2013).

Conclusion

Considering that globally only two studies have evaluated the efficacy of interventions to reduce suicidal behaviors in young people in OOHC, and only three studies have evaluated the efficacy of gatekeeper training to support staff in preventing suicide, we suggest the adoption of high-quality evaluations as part of any interventions developed and/or used to reduce suicidal behavior in young people interacting with child protection and OOHC systems.

There is very limited evidence currently available about effective interventions to address the risk of suicide-related behaviors for children and young people involved in the child protection system, including placement in OOHC. Although each of the two studies we reviewed that measured suicide-related outcomes have their strengths and weaknesses in how they measured this, we suggest that combining the strengths and applying these to future research has promise. In addition to the lack of research that either measures suicide outcomes in young people in the OOHC system or outcomes related to gatekeeper training for professionals and carers working with young people, there appears to be no research that investigates the suicide prevention needs of young people in care by asking them what they would like or need, or their perspectives on participating in prevention strategies and interventions. Adopting such an approach is consistent with children's rights to be involved in decision-making that affects their lives and also provides an opportunity, in line with the growing movement in social research, that understands the importance of eliciting the viewpoints of children and young people themselves (see: https://safeguardingchildren.acu.edu.au/about-us/child-rights/).

We know that child maltreatment and other forms of childhood trauma are significant risk factors for suicide. However, developing effective suicide prevention and interventions for not only children and young people in the OOHC population, but also those in the general population across the globe, has been, and continues to be, difficult to achieve. So, it is critical to address the known risk factors for suicide through interventions that are known to be effective, such as trauma-based interventions, and other interventions yet to be evaluated.

Keywords: suicide, intervention, suicidal ideation, out-of-home care, mental health

References

Afifi, T. O., MacMillan, H. L., Taillieu, T., Cheung, K., Turner, S., Tonmyr, L., & Hovdestad, W. (2015). Relationship between child abuse exposure and reported contact with child protection organizations: Results from the Canadian Community Health Survey. *Child Abuse & Neglect*, *46*, 198–206. https://doi.org/10.1016/j.chiabu.2015.05.001

Asarnow, J. R., & Miranda, J. (2014). Improving care for depression and suicide risk in adolescents: Innovative strategies for bringing treatments to community settings. *Annual Review of Clinical Psychology*, *10*, 275–303. https://doi.org/10.1146/annurev-clinpsy-032813-153742

Australian Bureau of Statistics. (2020). *3303.0–Causes of death, Australia*. https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/latest-release#key-statistics

Australian Institute of Family Studies, Chapin Hall Center for Children University of Chicago, & New South Wales Department of Family and Community Services. (Eds.) (2015), *Pathways of care longitudinal study: Outcomes of children and young people in out-of-home care in new south wales: Wave 1 baseline statistical report*. NSW Department of Family and Community Services.

Australian Institute of Health and Welfare. (2019). *Child protection Australia: 2017–18* (Child welfare series no. 70. Cat. no. CWS 65).

Australian Institute of Health and Welfare. (2020). *Child protection Australia 2018–19* (Child welfare series no. 72. Cat. no. CWS 74). www.aihw.gov.au/reports/child-protection/child-protection-australia-2018-19

Bahk, Y. C., Jang, S. K., Choi, K. H., & Lee, S. H. (2017). The relationship between childhood trauma and suicidal ideation: Role of maltreatment and potential mediators. *Psychiatry Investigation*, *14*(1), 37–43. https://doi.org/10.4306/pi.2017.14.1.37

Bailey, C., Klas, A., Cox, R., Bergmeier, H., Avery, J., & Skouteris, H. (2019). Systematic review of organisation-wide, trauma-informed care models in out-of-home care (OoHC) settings. *Health & Social Care in the Community*, *27*(3), e10–e22. https://doi.org/10.1111/hsc.12621

Bartik, W. J., Maple, M., & McKay, K. (2020). Youth suicide bereavement and the continuum of risk. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, *41*(6), 483–489. https://doi.org/10.1027/0227-5910/a000653

Beautrais, A., Fergusson, D., Coggan, C., Collings, C., Doughty, C., Ellis, P., Hatcher, S., Horwood, J., Merry, S., Mulder, R., Poulton, R., & Surgenor, L. (2007). Effective strategies for suicide prevention in New Zealand: A review of the evidence. *The New Zealand Medical Journal*, *120*(1251), Article U2459.

Beautrais, A. L. (2000). Risk factors for suicide and attempted suicide among young people. *Australian and New Zealand Journal of Psychiatry*, *34*(3), 420–436. https://doi.org/10.1080/j.1440-1614.2000.00691.x

Bensley, L. S., Van Eenwyk, J., Spieker, S. J., & Schoder, J. (1999). Self-reported abuse history and adolescent problem behaviors. I. Antisocial and suicidal behaviors. *Journal of Adolescent Health*, *24*(3), 163–172. https://doi.org/10.1016/S1054-139X(98)00111-6

Bilsen, J. (2018). Suicide and youth: Risk factors. *Frontiers in Psychiatry*, *9*, Article 540. https://doi.org/10.3389/fpsyt.2018.00540

Blum, R. W., & Nelson-Mmari, K. (2004). The health of young people in a global context. *Journal of Adolescent Health*, *35*(5), 402–418. https://doi.org/10.1016/S1054-139X(03)00537-8

Bonet, C., Palma, C., & Santos, G. G. (2020). Effectiveness of emotional intelligence therapy on suicide risk among adolescents in residential care. *International Journal of Psychology & Psychological Therapy*, *20*(1), 61–74.

Borowsky, I. W., Resnick, M. D., Ireland, M., & Blum, R. W. (1999). Suicide attempts among American Indian and Alaska Native youth: Risk and protective factors. *Archives of Pediatrics & Adolescent Medicine*, *153*(6), 573–580. https://doi.org/10.1001/archpedi.153.6.573

Bould, H., Mars, B., Moran, P., Biddle, L., & Gunnell, D. (2019). Rising suicide rates among adolescents in England and Wales. *The Lancet*, *394*(10193), 116–117. https://doi.org/10.1016/S0140-6736(19)31102-X

Brådvik, L. (2018). Suicide risk and mental disorders. *International Journal of Environmental Research and Public Health*, *15*(9), Article 2028. https://doi.org/10.3390/ijerph15092028

Bridge, J. A., Goldstein, T. R., & Brent, D. A. (2006). Adolescent suicide and suicidal behavior. *Journal of Child Psychology and Psychiatry*, *47*(3–4), 372–394. https://doi.org/10.1111/j.1469-7610.2006.01615.x

Bright, C. L., Raghavan, R., Kliethermes, M. D., Juedemann, D., & Dunn, J. (2010). Collaborative implementation of a sequenced trauma-focused intervention for youth in residential care. *Residential Treatment for Children & Youth*, *27*(2), 69–79. https://doi.org/10.1080/08865711003712485

Britton, P. C., Duberstein, P. R., Conner, K. R., Heisel, M. J., Hirsch, J. K., & Conwell, Y. (2008). Reasons for living, hopelessness, and suicide ideation among depressed adults 50 years or older. *The American Journal of Geriatric Psychiatry*, *16*(9), 736–741. https://doi.org/10.1097/JGP.0b013e31817b609a

Bromfield, L. M., Gillingham, P., & Higgins, D. J. (2007). Cumulative harm and chronic child maltreatment. *Developing Practice: The Child, Youth and Family Work Journal*, (19), 34–42. https://api.semanticscholar.org/CorpusID:142520862

Bye, E. K. (2008). Alcohol and homicide in Eastern Europe: A time series analysis of six countries. *Homicide Studies*, *12*(1), 7–27. https://doi.org/10.1177/1088767907310851

Carballo, J. J., Llorente, C., Kehrmann, L., Flamarique, I., Zuddas, A., Purper-Ouakil, D., Hoekstra, P. J., Coghill, D., Schulze, U. M. E., Dittmann, R. W., Buitelaar, J. K., Castro-Fornieles, J., Lievesley, K., Santosh, P., Arango, C., & STOP Consortium. (2020). Psychosocial risk factors for suicidality in children and adolescents. *European Child & Adolescent Psychiatry*, *29*(6), 759–776.

Centre for Suicide Prevention. (2020). *Children and Suicide. Canadian Mental Health Association*. https://www.suicideinfo.ca/wp-content/uploads/2013/02/csp-toolkit-childrensuicide-2020-06-screen-aw01.pdf

Child Family Community Australia. (2019). *Australian legal definitions: When is a child in need of protection?Child Family Community Australia (CFCA) resource sheet—December 2019*. Australian Institute of Family Studies. https://aifs.gov.au/cfca/publications/australian-legal-definitions-when-child-need-protection

Children's Bureau. (2020) *The AFCARS Report (Preliminary FY 2019 Estimates as of June 23, 2020 – No.27)*. U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families. https://www.acf.hhs.gov/cb

Child Welfare Information Gateway. (2020). *Foster care statistics 2018*. U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau. https://www.childwelfare.gov/topics/systemwide/statistics/foster-care/

Conley Wright, A., Metcalfe, L., Wilkinson, H., & Luu, B. (2020). *Young people affected by mental illness: Self-harm, suicide risk or attempt* [Commissioned research for Stronger Communities Investment Unit]. Ch 2 in priority vulnerable populations. Research Centre for Children and Families, University of Sydney.

Consultative Council on Obstetric and Paediatric Mortality and Morbidity. (2017). *Victoria's Mothers, Babies and Children. Safer Care Vitoria*. https://bettersafercare.vic.gov.au/about-us/about-scv/councils/ccopmm/reports

Diamond, G. S., Kobak, R. R., Krauthamer Ewing, E. S., Levy, S. A., Herres, J. L., Russon, J. M., & Gallop, R. J. (2019). A randomized controlled trial: Attachment-based family and nondirective supportive treatments for youth who are suicidal. *Journal of the American Academy of Child & Adolescent Psychiatry*, *58*(7), 721–731. https://doi.org/10.1016/j.jaac.2018.10.006

Dube, S. R., Anda, R. F., Felitti, V. J., Chapman, D. P., Williamson, D. F., & Giles, W. H. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: Findings from the Adverse Childhood Experiences Study. *JAMA*, *286*(24), 3089–3096. https://doi.org/10.1001/jama.286.24.3089

Eaddy, M., Zullo, L., Horton, S. E., Hughes, J. L., Kennard, B., Diederich, A., Emslie, J. G., Schuster, L., & Stewart, S. M. (2019). A theory-driven investigation of the association between emotion dysregulation and suicide risk in a clinical adolescent sample. *Suicide and Life-Threatening Behavior*, *49*(4), 928–940. https://doi.org/10.1111/sltb.12472

Esposito-Smythers, C., Spirito, A., Kahler, C. W., Hunt, J., & Monti, P. (2011). Treatment of co-occurring substance abuse and suicidality among adolescents: A randomized trial. *Journal of Consulting and Clinical Psychology*, *79*(6), 728–739. https://doi.org/10.1037/a0026074

Evans, R., White, J., Turley, R., Slater, T., Morgan, H., Strange, H., & Scourfield, J. (2017). Comparison of suicidal ideation, suicide attempt and suicide in children and young people in care and non-care populations: Systematic review and meta-analysis of prevalence. *Children and Youth Services Review*, *82*, 122–129. https://doi.org/10.1016/j.childyouth.2017.09.020

Gardenhire, J., Schleiden, C., & Brown, C. C. (2019). Attachment as a tool in the treatment of children within foster care. *Contemporary Family Therapy*, *41*(2), 191–200. https://doi.org/10.1007/s10591-018-09487-1

Geddes, K., Dziurawiec, S., & Lee, C. W. (2013). Dialectical behaviour therapy for the treatment of emotion dysregulation and trauma symptoms in self-injurious and suicidal adolescent females: A pilot programme within a community-based child and adolescent mental health service. *Psychiatry Journal*, *2013*, Article 145219. https://doi.org/10.1155/2013/145219

Goldston, D. B., Daniel, S. S., Erkanli, A., Reboussin, B. A., Mayfield, A., Frazier, P. H., & Treadway, S. L. (2009). Psychiatric diagnoses as contemporaneous risk factors for suicide attempts among adolescents and young adults: Developmental changes. *Journal of Consulting and Clinical Psychology*, *77*(2), 281–290. https://doi.org/10.1037/a0014732

Government of South Australia. (n.d.) *How children and young people come into care*. https://www.childprotection.sa.gov.au/children-care/how-children-and-young-people-come-into-care

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and Dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, *26*(1), 41–54. https://doi.org/10.1023/B:JOBA.0000007455.08539.94

Hariton, E., & Locascio, J. J. (2018). Randomised controlled trials–The gold standard for effectiveness research. *BJOG*, *125*(13), Article 1716. https://doi.org/10.1111/1471-0528.15199

Henggeler, S. W., Rowland, M. D., Halliday-Boykins, C., Sheidow, A. J., Ward, D. M., Randall, J., Pickrel, G. S., Cunningham, B. P., & Edwards, J. (2003). One-Year follow-up of multisystemic therapy as an alternative to the hospitalization of youths in psychiatric crisis. *Journal of the American Academy of Child & Adolescent Psychiatry*, *42*(5), 543–551. https://doi.org/10.1097/01.CHI.0000046834.09750.5F

Higgins, D., Lonne, B., Herrenkohl, T. I., & Scott, D. (2019). The successes and limitations of contemporary approaches to child protection.

In B. Lonne, D. Scott, D. Higgins, & T. Herrenkohl (Eds.), *Re-visioning public health approaches for protecting children (Ch. 1). Child maltreatment 9: Contemporary issues in research and policy series* (pp. 3–17). Springer. https://doi.org/10.1007/978-3-030-05858-6_1

Higgins, D. J. (2011). Protecting children: Evolving systems. *Family Matters*, (89), 5–10. https://aifs.gov.au/publications/family-matters/issue-89

Higgins, D. J., & Katz, I. (2008). Enhancing service systems for protecting children: Promoting child wellbeing and child protection reform in Australia. *Family Matters*, (80), 43–50. https://aifs.gov.au/publications/family-matters/issue-80/enhancing-service-systems-protecting-children

Huey, S. J., Jr., Henggeler, S. W., Rowland, M. D., Halliday-Boykins, C. A., Cunningham, P. B., & Pickrel, S. G. (2005). Predictors of treatment response for suicidal youth referred for emergency psychiatric hospitalization. *Journal of Clinical Child and Adolescent Psychology*, *34*(3), 582–589. https://doi.org/10.1207/s15374424jccp3403_13

James, S., Alemi, Q., & Zepeda, V. (2013). Effectiveness and implementation of evidence-based practices in residential care settings. *Children and Youth Services Review*, *35*, 642–656. https://doi.org/10.1016/j.childyouth.2013.01.007

Jones, A., Sinha, V., & Trocmé, N. (2015). *Children and youth in out-of-home care in the Canadian provinces* (CWRP Information Sheet #167E). Centre for Research on Children and Families, McGill University.

Kahsay, E., Magness, C. S., Persky, S., Smith, P. K., & Foster, C. E. (2020). Suicide prevention training in the child welfare workforce: Knowledge, attitudes, and practice patterns prior to and following safetalk training. *Child Welfare*, *98*(1), 95–114.

Kalland, M., Pensola, T. H., Meriläinen, J., & Sinkkonen, J. (2001). Mortality in children registered in the Finnish child welfare registry: Population based study. *BMJ*, *323*(7306), 207–208. https://doi.org/10.1136/bmj.323.7306.207

Kaplan, S. J., Pelcovitz, D., Salzinger, S., Mandel, F., Weiner, M., & Labruna, V. (1999). Adolescent physical abuse and risk for suicidal behaviors. *Journal of Interpersonal Violence*, *14*(9), 976–988. https://doi.org/10.1177/088626099014009005

Katz, L. Y., Au, W., Singal, D., Brownell, M., Roos, N., Martens, P. J., Chateau, D., Enns, M. E., Kozyrskyj, A. L., & Sareen, J. (2011). Suicide and suicide attempts in children and adolescents in the child welfare system. *Canadian Medical Association Journal*, *183*(17), 1977–1981. https://doi.org/10.1503/cmaj.110749

Keller, D. P., Schut, L. J. A., Puddy, R. W., Williams, L., Stephens, R. L., McKeon, R., & Lubell, K. (2009). Tennessee lives count: Statewide gatekeeper training for youth suicide prevention. *Professional Psychology: Research and Practice*, *40*(2), 126–133. https://doi.org/10.1037/a0014889

Kerr, D. C., DeGarmo, D. S., Leve, L. D., & Chamberlain, P. (2014). Juvenile justice girls' depressive symptoms and suicidal ideation 9 years after Multidimensional Treatment Foster Care. *Journal of Consulting and Clinical Psychology*, *82*(4), 684–693. https://doi.org/10.1037/a0036521

King, J. D., & Kowalchuk, B. (1994). *Manual for the Inventory of Suicide Orientation-30*. National Computer Systems.

Kmet, L. M., Cook, L. S., & Lee, R. C. (2004). *Standard quality assessment criteria for evaluating primary research papers from a variety of fields*. https://era.library.ualberta.ca/items/48b9b989-c221-4df6-9e35-af782082280e

Law, K., Khazem, L., & Anestis, M. (2015). The role of emotion dysregulation in suicide as considered through the ideation to action framework. *Current Opinion in Psychology*, *3*, 30–35. https://doi.org/10.1016/j.copsyc.2015.01.014

Locke, T. F., & Newcomb, M. D. (2005). Psychosocial predictors and correlates of suicidality in teenage Latino males. *Hispanic Journal of Behavioral Sciences*, *27*(3), 319–336. https://doi.org/10.1177/0739986305276745

Mars, B., Burrows, S., Hjelmeland, H., & Gunnell, D. (2014). Suicidal behaviour across the African continent: A review of the literature. *BMC Public Health*, *14*(1), Article 606. https://doi.org/10.1186/1471-2458-14-606

Mars, B., Heron, J., Crane, C., Hawton, K., Kidger, J., Lewis, G., Macleod, J., Tilling, K., & Gunnell, D. (2014). Differences in risk factors for self-harm with and without suicidal intent: Findings from the ALSPAC cohort. *Journal of Affective Disorders*, *168*, 407–414. https://doi.org/10.1016/j.jad.2014.07.009

Massachusetts Society for the Prevention of Cruelty to Children. (2010). *Let's talk gatekeeper training*. http://www.sprc.org/bpr/section-III/lets-talk-gatekeeper-training

McKee, M., & Shkolnikov, V. (2001). Understanding the toll of premature death among men in eastern Europe. *BMJ*, *323*(7320), 1051–1055. https://doi.org/10.1136/bmj.323.7320.1051

Milner, A., Spittal, M. J., Kapur, N., Witt, K., Pirkis, J., & Carter, G. (2016). Mechanisms of brief contact interventions in clinical populations: A systematic review. *BMC Psychiatry*, *16*, Article 194. https://doi.org/10.1186/s12888-016-0896-4

Milner, A. J., Carter, G., Pirkis, J., Robinson, J., & Spittal, M. J. (2015). Letters, green cards, telephone calls and postcards: Systematic and meta-analytic review of brief contact interventions for reducing self-harm, suicide attempts and suicide. *The British Journal of Psychiatry*, *206*(3), 184–190. https://doi.org/10.1192/bjp.bp.114.147819

Miranda, R., Tsypes, A., Gallagher, M., & Rajappa, K. (2013). Rumination and hopelessness as mediators of the relation between perceived emotion dysregulation and suicidal ideation. *Cognitive Therapy and Research*, *37*(4), 786–795. https://doi.org/10.1007/s10608-013-9524-5

Neacsiu, A. D., Fang, C. M., Rodriguez, M., & Rosenthal, M. Z. (2018). Suicidal behavior and problems with emotion regulation. *Suicide and Life-Threatening Behavior*, *48*(1), 52–74. https://doi.org/10.1111/sltb.12335

Neil, E., Gitsels, L., & Thoburn, J. (2019). Children in care: Where do children entering care at different ages end up? An analysis of local authority administrative data. *Children and Youth Services Review*, *106*, Article 104472. https://doi.org/10.1016/j.childyouth.2019.104472

Nemtsov, A. (2003). Suicides and alcohol consumption in Russia, 1965-1999. *Drug and Alcohol Dependence*, *71*(2), 161–168. https://doi.org/10.1016/s0376-8716(03)00094-2

NSW Child Death Review Team. (2016). *Child death review report (November 2016)*. Child Death Review Team. https://www.ombo.nsw.gov.au/__data/assets/pdf_file/0009/39474/CDRT_review_report_2015_final.pdf

Osborn, A., & Delfabbro, P. H. (2006). *A national psychosocial analysis of children and young people with significant emotional and behavioural problems in Australian out-of-home care*. University of Adelaide.

Osteen, P. J., Lacasse, J. R., Woods, M. N., Greene, R., Frey, J. J., & Forsman, R. L. (2018). Training youth services staff to identify, assess, and intervene when working with youth at high risk for suicide. *Children and Youth Services Review*, *86*, 308–315. https://doi.org/10.1016/j.childyouth.2018.02.008

Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan—a web and mobile app for systematic reviews. *Systematic Reviews*, *5*, Article 210, https://doi.org/10.1186/s13643-016-0384-4

Padmanathan, P., Bould, H., Winstone, L., Moran, P., & Gunnell, D. (2020). Social media use, economic recession and income inequality in relation to trends in youth suicide in high-income countries: A time trends analysis. *Journal of Affective Disorders*, *275*, 58–65. https://doi.org/10.1016/j.jad.2020.05.057

Patton, G. C., Coffey, C., Sawyer, S. M., Viner, R. M., Haller, D. M., Bose, K., Vos, T., Ferguson, J., & Mathers, C. D. (2009). Global patterns of mortality in young people: A systematic analysis of population health data. *The Lancet*, *374*(9693), 881–892. https://doi.org/10.1016/S0140-6736(09)60741-8

Pew Commission on Children in Foster Care. (2011). *Fostering the future: Safety, permanence and well-being for children in foster care*. https://www.cibhs.org/sites//main/files/file-attachments/pewcommissiononfc.pdf?1448470181

Posner, K., Brent, D., Lucas, C., Gould, M., Stanley, B., Brown, G., … Mann, J. (2008). *Columbia-suicide severity rating scale (C-SSRS)*. Columbia University Medical Center.

Price-Robertson, R., Rush, P., Wall, L., & Higgins, D. (2013). *Rarely an isolated incident: Acknowledging the interrelatedness of child maltreatment, victimization and trauma* (CFCA Paper no. 15). Australian Institute of Family Studies. https://aifs.gov.au/cfca/publications/rarely-isolated-incident-acknowledging-interrelatedn

Queensland Family and Child Commission. (2017). *Annual Report: Deaths of children and young people, Queensland, 2017–18 (2018)*. Queensland Government. https://www.qfcc.qld.gov.au/sites/default/files/QFCC_Child_Death_Annual_Report_2017-18.PDF

Rukundo, G. Z., Kemigisha, E., Ocan, M., Adriko, W., & Akena, D. H. (2018). A systematic review of the risk factors for suicidal ideation, suicidal attempt and completed suicide among children and adolescents in sub-Saharan Africa between 1986 and 2018: Protocol for a systematic review of observational studies. *Systematic Reviews*, *7*(1), Article 230. https://doi.org/10.1186/s13643-018-0901-8

Shaffer, D., Pfeffer, C., & The Work Group on Quality Issues. (2001). Summary of the practice parameters for the assessment and treatment of children and adolescents with suicidal behavior. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*(7), 24S–51S. https://doi.org/10.1097/00004583-200107001-00003

Soole, R., Kõlves, K., & De Leo, D. (2014). Suicides in Aboriginal and Torres Strait Islander children: analysis of Queensland Suicide Register. *Australian and New Zealand Journal of Public Health*, *38*(6), 574–578.

Stotland, E. (1969). *The psychology of hope*. Jossey-Bass.

The Fostering Network. (2016). *Fostering Statistics*. https://www.thefosteringnetwork.org.uk//advice-information/all-about-fostering/fostering-statistics

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

Tishler, C. L., Reiss, N. S., & Rhodes, A. R. (2007). Suicidal behavior in children younger than twelve: A diagnostic challenge for emergency department personnel. *Academic Emergency Medicine*, *14*(9), 810–818. https://doi.org/10.1197/j.aem.2007.05.014

Trew, S., Russell, D. H., & Higgins, D. (2020). *Effective interventions to reduce suicidal thoughts and behaviours among children in contact with child protection and out-of-home care systems—a rapid evidence review*. Institute of Child Protection Studies, Australian Catholic University.

van der Kolk, B. (2000). Posttraumatic stress disorder and the nature of trauma. *Dialogues in Clinical Neuroscience*, *2*(1), 7–22. https://doi.org/10.31887/DCNS.2000.2.1/bvdkolk

Wall, L., Higgins, D., & Hunter, C. (2016). *Trauma-informed care in child/family welfare services* (CFCA Paper No. 37). Melbourne: Child Family Community Australia information exchange, Australian Institute of Family Studies. https://aifs.gov.au/cfca/publications/trauma-informed-care-child-family-welfare-services

Wasserman, D., Cheng, Q., & Jiang, G. X. (2005). Global suicide rates among young people aged 15-19. *World Psychiatry*, *4*(2), 114–120.

Weisz, J. R., Jensen-Doss, A., & Hawley, K. M. (2006). Evidence-based youth psychotherapies versus usual clinical care: A meta-analysis of direct comparisons. *American Psychologist*, *61*(7), 671–689. https://doi.org/10.1037/0003-066X.61.7.671

Wolff, J. C., Thompson, E., Thomas, S. A., Nesi, J., Bettis, A. H., Ransford, B., Scopelliti, K., Frazier, E. A., & Liu, R. T. (2019). Emotion dysregulation and non-suicidal self-injury: A systematic review and meta-analysis. *European Psychiatry*, *59*, 25–36. https://doi.org/10.1016/j.eurpsy.2019.03.004

Zhao, S., & Zhang, J. (2014). Suicide risks among adolescents and young adults in rural China. *International Journal of Environmental Research and Public Health*, *12*(1), 131–145. https://doi.org/10.3390/ijerph120100131