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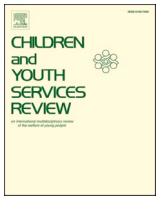

Fostering emotional and mental health in residential youth care facilities: A systematic review of programs targeted to care workers

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ABSTRACT

Children and youth placed in residential youth care (RYC) exhibit complex emotional needs and significant mental health problems. Better outcomes in RYC have been associated with emotional availability from care workers. Nevertheless, many care workers struggle either with their own mental health and/or with adequately providing support for the mental health problems of youth under their care. Thus, staff training is recommended by international guidelines. The present study performed a systematic review of research on training programs aiming the fostering of emotional and mental health in RYC, following PRISMA guidelines. A systematic search was conducted in nine digital databases and other sources (websites, relevant journals, reference lists of included articles and relevant reviews), for publications from 1980 to 2021. Empirical studies published in peer-review journals, dissertations, and reports were included when assessing the effectiveness of RYC staff training on fostering emotional and mental health in staff and/or youth. The methodological quality of included studies was assessed using the Mixed Methods Appraisal Tool (Hong et al., 2018b). Subsequently, a narrative synthesis was conducted. After multi-stage screening, 18 eligible articles were selected for analysis. One study was excluded considering the quality assessment. Seventeen trainings and their outcomes were analyzed, suggesting mixed evidence of effectiveness on care workers, youth, and relationships. Most programs aimed to reduce youth problematic behaviors, and only a few specifically addressed care workers' mental health. Findings also suggest that effectiveness was not properly tested in most studies. Future research resorting to rigorous methodologies should be conducted to provide evidence-based interventions for RYC.

1. Introduction

Residential youth care (RYC) is an umbrella term which integrates a variety of child and youth care services (Lee & Barth, 2011). In this systematic review, RYC refers to 24/7 group care facilities, where children and youth live under child protection care.

Previous literature has pointed out that children and youth living in RYC present significantly higher mental health difficulties, comparing to those placed in other care settings (Duppong-Hurley et al., 2017; Evans et al., 2017; Leloux-Opmeer et al., 2016; Li et al., 2017). Thus, RYC should not be limited to providing basic care. Instead, it should involve specialized interventions paired with a therapeutic environment (James et al., 2017; Whittaker et al., 2015). The therapeutic potential of RYC lies in the care workers' ability to establish secure relationships with youth and to respond in a sensitive and adequate manner to their emotional needs (Sellers et al., 2020; Whittaker et al., 2015), so that care workers can foster adaptive relational models and help youth to develop adaptive emotion regulation strategies (Huefner & Ainsworth, 2021).

1.1. Caregiving challenges and training needs

Residential care placement commonly occurs after a history of abuse or neglect. These previous pervasive experiences frequently trigger complex emotional needs which are challenging to work with (Eenshuistra et al., 2019; Steels & Simpson, 2017; Wilke et al., 2020). On the one hand, care workers must look after youth's emotional needs arising from traumatic experiences. On the other hand, they need to handle youths non-compliance (e.g., fail to follow the rules, impulsivity), frequently leading to defiant or aggressive behaviors (Bürgin et al., 2020; Eenshuistra et al., 2019; Molnar et al., 2017; Seti, 2008). In

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addition, care workers are poorly paid and not always well-trained, they have heavy workloads, limited autonomy, lack of support from colleagues and/or from the leadership, being also a devalued workgroup in comparison with other helping professionals (Eenshuistra et al., 2019; Hermon & Chahla, 2019; Seti, 2008).

Research reveals that care workers are particularly vulnerable to emotional and mental health problems. For example, they present high levels of stress (Hermon & Chahla, 2019; Wilke et al., 2020), burnout (Seti, 2008), secondary traumatic stress (Molnar et al., 2017), and depression (Raskin et al., 2015), potentially leading to a high turnover (Colton & Roberts, 2007). Such conditions can, directly or indirectly, impact the quality of caregiving (Bürgin et al., 2020). As a matter of fact, better outcomes in RYC are associated with caring care workers who are able to establish sensitive and consistent caregiver–child relationships and to promote a positive relational environment (Esaki et al., 2013; Hermenau et al., 2017). When care workers become less emotionally available, it is less likely they can attune with youth's needs, impairing their role as a suitable attachment figure (Esaki et al., 2013). Moreover, better outcomes in RYC are also linked with the degree of professional training and support care workers get, and well as with the use of evidence-based practices and interventions (De Swart et al., 2012). Consequently, organizations must guarantee more support and specialized training to their staff (Colton & Roberts, 2007; Pinheiro et al., 2022). Even if building caring relationships is a core feature of care workers performance (Everson-Hock et al., 2011), training should not be limited to professional competence. Instead, care workers' own mental health needs should also be addressed to avoid poor and inconsistent care practices (Steels & Simpson, 2017).

1.2. Overview of previous systematic reviews

Previous research has systematically reviewed training programs for professionals within different child welfare settings, aiming to clarify what works, and how it works (cf., Overview Table on supplementarials). Former reviews have either included a heterogeneous range of professionals from different welfare responses (Bailey et al., 2019; Perry et al., 2020; Purtle, 2020), or covered programs for specific welfare responses, such as adoption, foster, or kinship care (Everson-Hock et al., 2011; Fergeus et al., 2017; Kerr & Cossar, 2014; Kinsey & Schlosser, 2012), but excluded care workers from RYC. Since different settings were included, confounding factors associated with fluctuating levels of youth's permanency and different kinds of care might have offered limited conclusions (Morison, 2018). Also, given the specificities in youths' intervention needs within each welfare response (Duppong-Hurley et al., 2017; Leloux-Opmeer et al., 2016; Whittaker et al., 2015), training designs and delivery format in different settings may not adequately attend the distinctive needs of RYC.

Three previous systematic reviews were found, focusing on studies conducted within RYC settings (Eenshuistra et al., 2019; Hermenau et al., 2017; Morison, 2018). The review conducted by Hermenau and colleagues (2017) investigated the effects of structural interventions combined with caregiver training. Interventions identified on this review were mostly delivered to babies and young children's homes. Its effects were assessed for child development and living conditions (Hermenau et al., 2017). The other two reviews investigated the effects of caregivers' training on caregivers' skills (Eenshuistra et al., 2019; Morison, 2018). Morison (2018) also included child outcomes (e.g., behavior). Regarding care workers outcomes, knowledge acquisition (e.g., about attachment or trauma) or general skills (e.g., interpersonal behavior, parenting and communication) were addressed. These outcomes intended exclusively the increase of professional competence and the management of children's behaviors (e.g., coping with crisis) (Eenshuistra et al., 2019; Morison, 2018). Youth outcomes were mostly focused on behavioral (Morison, 2018) or developmental outcomes (Hermenau et al., 2017). Trainings included in these systematic reviews did not target the specific needs regarding the emotional and mental health of care workers. Also, youth' intervention needs regarding their own mental and emotional health, as proposed by the therapeutic residential care approach, were not covered (Whittaker et al., 2015). Previous systematic reviews also presented some methodological limitations. They were restricted to high income countries, to quantitative outcomes (Morison, 2018), and to articles written in English (Hermenau et al., 2017). Such eligibility criteria may potentially exclude existing relevant research about this topic. Also, one review did not conduct a quality assessment of the included studies (Eenshuistra et al., 2019).

Although training appears to have a substantial impact on staff knowledge, beliefs, and skills, attendance alone does not necessarily translate into behavioral change (Kirkpatrick & Kirkpatrick, 2005). Particularly, the role played by emotional and/or mental health variables continues to be underinvestigated (Bunting et al., 2019; Morison, 2018; Perry et al., 2020).

1.3. The current systematic review

The emerging consensus concerning RYC suggests that intervention in this setting should look beyond individual treatment (James et al., 2017). It must be complemented with therapeutic environments, using evidence-based interventions and including care workers as therapeutic agents (De Swart et al., 2012; Sellers et al., 2020; Whittaker et al., 2015). Therefore, staff should be trained and supported, since professional training is associated with better outcomes in RYC (De Swart et al., 2012). Although previous systematic reviews concerning training for welfare professionals do exist (Eenshuistra et al., 2019; Hermenau et al., 2017; Kinsey & Schlosser, 2012; Morison, 2018; Perry et al., 2020; Purtle, 2020) some research gaps still persist. First, former systematic reviews included studies mainly focused in increasing staff knowledge and developing staff attitudes/skills. Second, they do not address the impact of staff training over mental health outcomes. Third, youth in RYC tend to present more mental health needs than youth living in other settings (Duppong-Hurley et al., 2017; Leloux-Opmeer et al., 2016; Li et al., 2017). Their complex needs make the care process in RYC more challenging for care workers. Moreover, mental health of care workers might be compromised due to work emotional demands, what could deteriorate the quality of care displayed to children and youth (Bürgin et al., 2020). Considering that mental health concerns are responsible for distress or impairment in important areas of functioning, as well as for high turnover (WHO, 2022), it is still an open question which training programs do help care workers fostering emotional and mental health in RYC, either for themselves and/or for the youth under their care.

The current study proposes to systematically review training/interventions for care workers, and assess its effectiveness regarding mental health in youth and/or care workers. The following research questions will be addressed: 1) What training/intervention programs exist, targeting staff working in RYC, in order to promote emotional or mental health either in care workers or youth? 2) Which study designs are used to test its effectiveness? 3) Do these trainings effectively improve emotional and mental health outcomes on care workers and/or youth? 4) How successful have been those trainings in improving the environment and relationships?

2. Methods

This systematic review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page et al., 2021). The research protocol was registered in advance on the International Prospective Register of Systematic Reviews (PROSPERO; registration number CRD42021254783), available from https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42021254783.

2.1. Eligibility criteria

Studies were included (see Table 1) if they focused on evaluating the impact of training conducted with care workers. Throughout this review, training is defined as any intervention targetting staff with the purpose of improving emotional and mental health in RYC (either measured for staff or for youth). Studies were excluded when comprising other components (e.g. therapy for youth) (Bunting et al., 2019; James, 2011). This criterion relies on the fact that multi-targeted interventions prevent the understanding about the specific contributions of staff training by itself.

Care workers are defined as all professionals who provide direct day-to-day care and support to youth within RYC. Studies targeting care workers from other welfare settings, such as foster parents or case management, were excluded, considering their different roles and responsibilities (Glisson et al., 2006).

Regarding the setting, the concept of RYC often aggregates: 1) different services targeting diverse populations (e.g., welfare, justice, mental health), 2) diverse duration of stay, and 3) different levels of restrictiveness (e.g., from open to secure settings; James, 2011; Lee & Barth, 2011). In this study, RYC refers predominantly to the child protective services. Residential treatment was also included considering youth may be referred both by child welfare and mental health agencies. Besides, residential treatment also provides residential full-time supervision and treatment to youth who have experienced early traumatic experiences (Rivard et al., 2003). Studies conducted in baby homes were excluded, considering the intervention specificities with such population.

Table 1
Eligibility criteria.

Category	Inclusion criterion	Exclusion criterion
Training setting	Residential youth care settings, including residential treatment	Foster care, kinship care, adoption, baby homes, juvenile justice, medical setting, residential care for people with disabilities
Training participants	Professionals working in RYC settings	Children or adolescents, parents, teachers.
Intervention	Training/program/ intervention targeting staff working in RYC in order to promote emotional or mental health either in care workers or youth.	- Interventions targeting youth, parents, families. - Interventions aiming to foster other outcomes
Outcomes	- Outcomes reflecting mental health, emotion regulation, well-being or quality of life collected with care workers and/or youth living in RYC (from 6 to 25 years old, living full time in residential care facilities). - Secondary outcomes: Youth and/or care workers' perception of the institutional climate, quality of relationships, or quality of care.	- Knowledge, parenting and social skills (e.g., communication, problems solving), satisfaction with training. - Outcomes collected regarding babies, toddlers, and preschoolers.
Design and research methods	Empirical studies, using quantitative measurement for at least two assessment points (e.g., pre and post intervention), qualitative or mixed methods assessment.	Non-experimental
Cultural and linguistic range	Studies available in English, Portuguese, Spanish, or French. No restrictions regarding country.	Other languages were excluded due to the cost and time involved in translation.
Time frame	Research carried out from 1980 until mid-2021, considering emotions has gained interest in the organizations since 1980 (Yurtsever & Rivera, 2010).	Before 1980
Publication type	Original research published in peer-reviewed journals or grey literature (e.g., reports, dissertations).	Reviews, *meta*-analyses, books, discussion articles, unpublished studies, communications, case studies, and ongoing studies.

2.2. Data sources and search strategy

A comprehensive literature search was performed by LS, on 22 and 23 of June 2021, for studies published between 1980 and 2021, in the following digital databases: PsycINFO (via OVID), PsycARTICLES (via OVID), PsycArticles & Mental Health (via OVID), Proquest, Web of Science, SocIndex with full text, Medline (via EBSCO), ERIC (via EBSCO), and Scielo (via EBSCO). The combination of search terms used is presented on Table 2. The search strategy was used for all databases with slight adaptations to fit distinct web interfaces, paired with limits to the search strategy applied to peer-review, date and language.

To find other potentially relevant studies, supplementary searches were undertaken between 15th and 29th of July 2021 also by LS. Manual verification of the reference lists of included articles and relevant systematic reviews was carried out, as well as searches in websites of relevant social care organizations (e.g., Better Care Network, National Child Traumatic Stress Network), and in a relevant journal in the field (i.e., Residential Treatment for Children & Youth).

2.3. Study selection

Study selection was conducted using Rayyan (Ouzzani et al., 2016). After removing the duplicates, studies were screened based on title and abstracts against the inclusion criteria by two independent researchers (LS and RM). When eligibility could not be determined based on the title and abstract, the article was included for full-text inspection. Full-texts of potentially relevant or unclear articles were retrieved and independently screened by LS and RM. Disagreements were solved through discussions between the two researchers until consensus was achieved. There was no need to involve a third researcher to reach consensus. When the full text was not available, the corresponding author was contacted. A study was excluded when no answer was obtained. After reading the full text, 18 studies were included since they have met the inclusion criteria. Inter-rater agreement was computed with Cohen's Kappa coefficient, considering $k < 0.00$ as poor, $k < 0.20$ as slight, $k < 0.40$ as fair, $k < 0.60$ as moderate, $k < 0.80$ as substantial and $k > 0.81$ as almost perfect agreement (Landis & Koch, 1977).

Table 2
Search terms.

Area	Search terms
Context	residential care OR residential youth care OR institutional care OR child care institution OR orphanage OR residential child care OR child welfare OR group homes OR institution* OR residential treatment
AND Intervention	Intervention OR program* OR training OR evidence-based practices OR support OR empower*OR effective*
AND Population	caregivers OR staff OR child care staff OR care worker* OR care providers OR caretakers OR carer* OR child care professionals OR professional caregivers OR child care practitioners OR residential care workers
AND Target population	adolescent* OR child OR children OR youth* OR young people OR teen* OR young*
AND Outcomes	well-being OR wellbeing OR mental health OR emotional health OR emotion regulation OR affect regulation OR emotional climate OR organizational climate OR social climate OR social environment OR burnout OR stress OR compassion fatigue OR depression

2.4. Data extraction

Data extraction were conducted by LS and RM. A data extraction form was created based on Cochrane's Data collection form for intervention reviews. The template for intervention description and replication (TIDieR; Hoffmann et al., 2014) was also used. Data was collected regarding the following topics: 1) Source (title, author/s, year of publication, country, publication type); 2) Method (aim, setting, participant demographics, sample size, ethics, study design, comparison); 3) Intervention (aim, components, theoretical framework, manualized, provider, modes of delivery, duration, number of sessions); 4) Outcome measures (outcomes and measures, assessment time points); 5) Key findings. When relevant information was missing, the corresponding author was contacted.

2.5. Quality assessment

Quality assessment was performed independently by LS and RM, using the Mixed Methods Appraisal Tool version 2018 (MMAT; Hong et al., 2018b). MMAT is a reliable tool assessing the methodological quality of quantitative, qualitative, and mixed-methods (Hong et al., 2018a). It includes two screening questions (i.e., "Are there clear research questions? and "Do the collected data allow to address the research question?). Studies considered to respond positively to these questions were further assessed with five items related with specific methodological features of study design. Since MMAT does not suggest computing a total score (Hong et al., 2018a), the same rating system from previous research (Martins et al., 2019) was used in order to categorize the quality of each study: strong quality if $>$ 60% of the criteria on the checklist were met; moderate quality if 40% to 60% of criteria were met; and poor quality if $<$ 40% of the criteria on the checklist were met. Inter-rater reliability was assessed using Cohen's Kappa statistic, and disagreements were solved through the same strategy described before. When relevant information was lacking, the corresponding authors were contacted.

2.6. Analyses

A descriptive synthesis of the included studies was conducted in accordance with the Centre for Reviews and Dissemination framework (CRD, 2009). Such analysis will focus on the training/program, study characteristics and outcomes in care workers, youths and environment/relationships. Meta-analysis was unfeasible due to the articles' heterogeneity about training, outcomes, measures, and analytic approach (CRD, 2009).

3. Results

3.1. Search results

A summary of the search results is presented in a flow diagram regarding the systematic search and study selection process (Fig. 1) in accordance with PRISMA 2020.

The digital database, hand search on references, websites, and relevant journal yielded a total of 4784 records, with 4750 records obtained from digital data bases and 34 from other sources. After removing duplicates (N = 1596), titles and abstracts of 3154 studies were screened for eligibility. This first screening step reached almost perfect inter-rater agreement (k = 0.89), with 3090 records being excluded. Throughout the second screening (full texts assessment), 61 full texts from the digital database and 33 from other sources were examined for eligibility, with 18 studies being included in the review. The second screening achieved moderate inter-rater agreement (k = 0.74), with a total of 76 studies being excluded. Reasons for excluding studies included: the setting being other than RYC (e.g., foster care, juvenile justice; N = 24), wrong population (e.g., participants were parents, case managers; N = 16), wrong intervention (e.g., interventions targeted to youth; N = 6), wrong outcome (e.g., knowledge; N = 13) or being a background article (e.g., only describing the training with no results; N = 17).

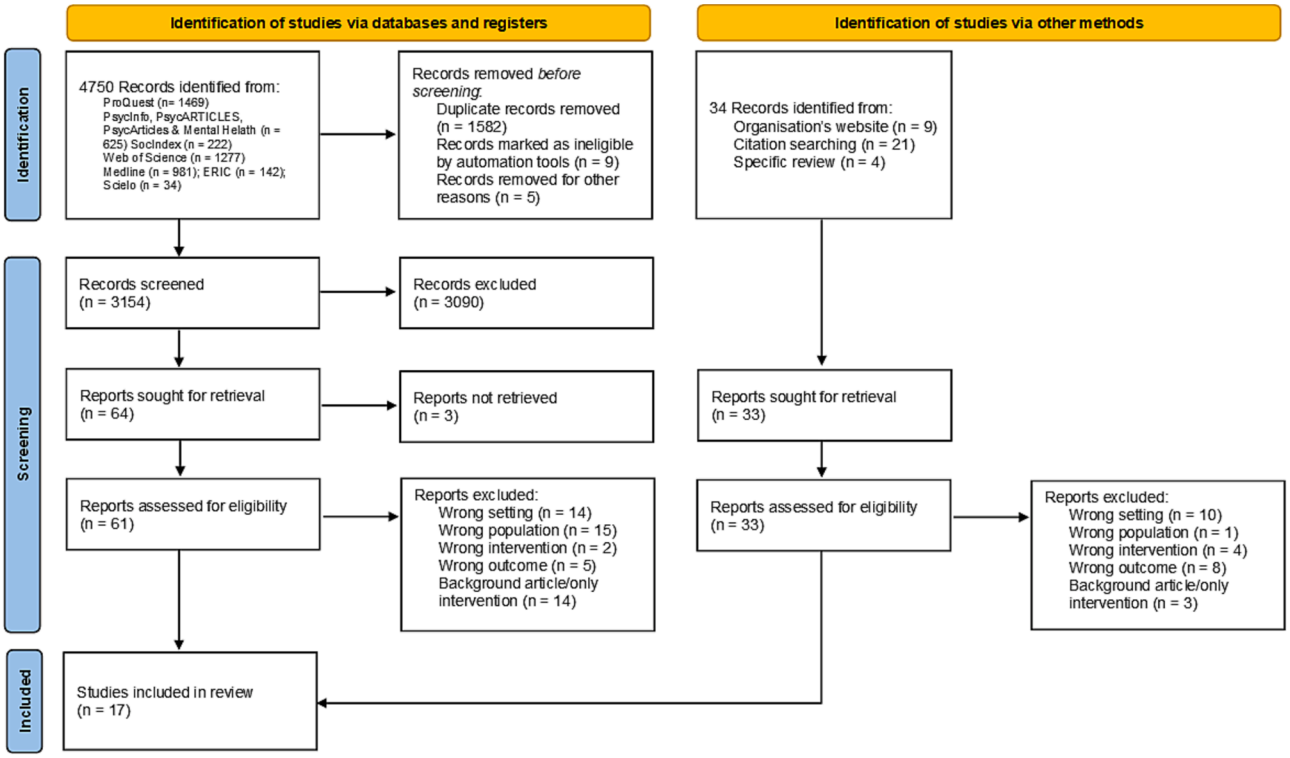

Fig. 1. Flow diagram of the systematic search and study selection process.

3.2. Quality assessment

One study (Domon-Archambault et al., 2020) did not adequately respond to the screening questions. Authors were contacted to obtain more information, but no answer was obtained; for this reason, this study was excluded. The remaining 17 studies were assessed according to their design (cf., Tables 3, 4, and 5).

Only one study was assessed for qualitative study design (van Gink et al., 2018; Table 3). It met all the quality criteria, showing a strong quality rating and a perfect inter-rater agreement (k = 1).

None of the seven quantitative studies (i.e., nonrandomized controlled trials) fulfilled all the quality criteria (Table 4). Three studies were rated as moderate (42.86%), two as strong (28.57%) and two as poor quality (28.57%). Most studies used appropriate, validated, and reliable measures (85.71%), reporting complete outcome data (57.14%). Yet, the majority of the studies did not account for confounders in the analyses (57.14%). Besides, only two studies had a representative sample (28.57%), and only three assessed treatment integrity (42.86%). Inter-rater agreement was rated as perfect (k = 1). None of the nine mixed methods studies fulfilled the criteria for the three components (quantitative, qualitative and mixed methods items) (Table 5). Six studies were rated as having moderate quality (66.67%), two were rated as poor (22.22%), and one as strong (11.11%). Among these studies, the qualitative component was the strongest, with three studies fully meeting the quality criteria (Donald, 2015; Turner, 2017; Vallejos et al., 2016). The quantitative component was the one with the poorest rating, with no study successfully meeting all quality criteria items. Concerning mixed-methods specific criteria, only three studies clearly reported a rationale for integrating both qualitative and quantitative methods (Berridge et al., 2016; Donald, 2015; Hidalgo et al., 2016). Most studies (66.67%) integrated the different components to answer the research question and adequately interpreted the integrated outputs (55.56%). However, only 44.44% effectively addressed the divergences and inconsistencies between quantitative and qualitative components. Inter-rater agreement for the assessment of mixed-methods studies was substantial (k = 0.80).

3.3. Training/intervention programs

Seventeen training/interventions were found, from which two studies implemented a Trauma-informed care (TIC) approach (Barnett et al., 2018; Schmid et al., 2020) (cf. Table 6). Because different aims, procedures and contents were involved, these two were considered as different interventions. The training/interventions aims varied across studies. Some studies assessed intervention outcomes on youths, others on care workers, and others on both. Studies focusing on youth outcomes aimed to offer care workers numerous skills: 1) knowledge to better understand and address youth's needs (Cameron & Das, 2019; Donald, 2015; Griffing et al., 2021; Hidalgo et al., 2016; Nunno et al., 2003; Schmid et al., 2020); 2) to promote de-escalation techniques (Barnett et al., 2018; Hurley et al., 2006; Nunno et al., 2003); 3) to reduce mental health problems (Hermenau et al., 2015; Osteen et al. 2018; Silva & Gaspar, 2014). Moreover, other studies focused on providing staff support (Barnett et al., 2018; Griffing et al., 2021) and improving staff self-regulation and well-being (Hidalgo et al., 2016; Schmid et al., 2020; Turner, 2017; Vallejos et al., 2016). Some studies also intended to enhance the social dynamics (Hidalgo et al., 2016; Izzo et al., 2016; van Gink et al., 2018; Wahl, 2011), and to improve the quality of care (Hermenau et al., 2015).

Only six studies clearly specified the theoretical frameworks on which the training was based. The most common theories were social-cognitive (Berridge et al., 2016; Silva & Gaspar, 2014; Turner, 2017) and attachment (Barnett et al., 2018; Cameron & Das, 2019, Silva & Gaspar, 2014). Regardless of not mentioning a particular theoretical framework, most studies included trauma-informed principles (Barnett et al., 2018; Cameron & Das, 2019; Griffing et al., 2021; Hidalgo et al., 2016; Izzo et al., 2016; Schmid et al., 2020). Behavioral techniques (Berridge et al., 2016; Hurley et al., 2006; Nunno et al., 2003; Silva & Gaspar, 2014; van Gink et al., 2018), mindfulness or meditation exercises (Griffing et al., 2021; Schmid et al., 2020; Turner, 2017; Vallejos et al., 2016), positive psychology (Wahl, 2011), and playful approach (Donald, 2015; Hidalgo et al., 2016) were also among the components of the included studies.

From available data, trainings varied between three (Osteen et al. 2018) to 20 sessions (Vallejos et al., 2016), with duration ranging between three days (Osteen et al. 2018) and one year (Cameron & Das, 2019). Group format seemed to be the most frequent delivery mode (Berridge et al., 2016; Cameron & Das, 2019; Griffing et al., 2021; Nunno et al., 2003; Osteen et al. 2018; Silva & Gaspar, 2014; van Gink et al., 2018; Wahl, 2011). Only five studies ensured treatment fidelity through checklists, video-tape recordings, and/or supervision (Donald, 2015; Griffing et al., 2021; Hurley et al., 2006; Izzo et al., 2016; Silva & Gaspar, 2014). Only seven studies reported using a program handbook (Donald, 2015; Griffing et al., 2021; Hermenau et al., 2015; Izzo et al., 2016; Nunno et al., 2003; Silva & Gaspar, 2014; Turner, 2017).

Table 3
Quality assessment of included qualitative studies.

Methodological quality criteria for qualitative studies	Authors, year
	van Gink et al., 2018
1.1. Is the qualitative approach appropriate to answer the research question?	Y
1.2. Are the qualitative data collection methods adequate to address the research question?	Y
1.3. Are the findings adequately derived from the data?	Y
1.4. Is the interpretation of results sufficiently substantiated by data?	Y
1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	Y
Rating	Strong (100%)

Note. Y = Yes; N = No; CT = Can't tell.

3.4. Studies design and characteristics

Studies were conducted between 2003 and 2021. While most studies were published on peer-reviewed journals (n = 14), three were dissertations (Donald, 2015; Turner, 2017; Wahl, 201), and one was a research report (Berridge et al., 2016) (cf. Table 7).

Most studies were conducted in the United States of America (n = 10). The remaining ones were undertaken in United Kingdom (n = 3), the Netherlands (n = 1), Portugal (n = 1), Switzerland (n = 1), and Tanzania (n = 1). All the included studies were conducted in countries with high-income economies (World Bank, 2022), with the exception of one study conducted in a lower-middle income country (Hermenau et al., 2015).

Regarding the research design, one study presented qualitative methods, seven studies were quantitative, and nine included mixed-methods. Most studies employed a pre and posttest design and only seven studies conducted follow-up assessments, ranging from six weeks (Donald, 2015) to 36 months (Schmid et al., 2020). The remaining studies employed a multiple baseline interrupted time series (Izzo et al., 2016), and a single-case experimental design with multiple baseline (Donald, 2015). No study performed a randomized controlled trial, and the majority of studies (76.47%) did not include a control group. From the four controlled studies, three used no treatment as comparison (Berridge et al., 2016; Schmid et al., 2020; Silva & Gaspar, 2014), and one included a waitlist control group (Izzo et al., 2016). Among these controlled studies, two did not perform between-group comparisons (Berridge et al., 2016; Silva & Gaspar, 2014).

The number of participants from each study ranged from three to 221 staff members, and from three to 8829 youths (aged between six and 18 years old). Apart from one study (Wahl, 2011), all samples were mostly

Table 4
Quality assessment of included quantitative nonrandomized studies.

Methodological quality criteria for quantitative studies	Authors, year						
	Cameron & Das, 2019	Hurley et al., 2006	Izzo et al., 2016	Osteen et al., 2018	Schmid et al., 2020	Silva & Gaspar 2014	Wahl, 2011
3.1. Are the participants representative of the target population?	N	CT	Y	N	Y	CT	N
3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	N	Y	Y	Y	Y	Y	Y
3.3. Are there complete outcome data?	Y	Y	CT	CT	Y	Y	CT
3.4. Are the confounders accounted for in the design and analysis?	N	N	Y	Y	Y	N	N
3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	CT	N	Y	Y	CT	Y	CT
Rating	Poor (20%)	Mod (40%)	Strong (80%)	Mod (60%)	Strong (80%)	Mod (60%)	Poor (20%)

Note. Y = Yes; N = No; CT = Can't tell.

composed by female workers. Many studies included not only direct care staff, but also other professionals (e.g., administrators, supervisors, psychologists, social workers, or administrative staff).

Regarding data collection, most studies included reports only from staff, and only four studies reported data from both staff and youth (Berridge et al., 2016; Donald, 2015; Hermenau et al., 2015; Vallejos et al., 2016).

Concerning staff, outcomes related with emotional or mental health were: stress (Schmid et al., 2020; Turner, 2017), burnout (Donald, 2015; Turner, 2017), vicarious trauma (Hidalgo et al., 2016), depression (Silva & Gaspar, 2014), general mental health (Vallejos et al., 2016), well-being (Vallejos et al., 2016), heart rate variability (Turner, 2017), turnover (Barnett et al., 2018), and job satisfaction (Barnett et al., 2018; Hidalgo et al., 2016). Other outcomes, such as the staff sense of safety (Barnett et al., 2018), empathy (Donald, 2015; Silva & Gaspar, 2014), confidence (Berridge et al., 2016; Nunno et al., 2003), self-efficacy (Osteen et al. 2018), and sense of competence (Silva & Gaspar, 2014) were also included in view of the impact over mental health and well-being. Across studies, around 20 different self-report measures were used to collect data from staff, several of which had not been validated (Barnett et al., 2018; Berridge et al., 2016; Griffing et al., 2021; Nunno et al., 2003). Physiological measures, such as hair cortisol (Schmid et al., 2020) and heart rate variability (Turner, 2017), were also used.

In what concerns youths' outcomes, most of the studies focused exclusively on the frequency of critical incidents, assessed by administrative data (e.g., aggressive behaviors, runways; Barnett et al., 2018; Hidalgo et al., 2016; Hurley et al., 2006; Izzo et al., 2016; Nunno et al., 2003; Schmid et al., 2020; Wahl, 2011), or youths' behavior (Berridge et al., 2016; Donald, 2015; Hermenau et al., 2015). Only three studies comprised other type of mental health outcomes, such as well-being (Cameron & Das, 2019; Vallejos et al., 2016), and internalizing problems (Hermenau et al., 2015). Only three studies collected data through validated self-report questionnaires (Berridge et al., 2016; Hermenau et al., 2015; Vallejos et al., 2016), and two used hetero-report questionnaires filled out by staff about youth (Cameron & Das, 2019; Donald, 2015).

Eight studies also reported outcomes related with the quality of relationships (Berridge et al., 2016; Cameron & Das, 2019; Donald, 2015; Griffing et al., 2021; Hermenau et al., 2015; Hidalgo et al., 2016; Vallejos et al., 2016; van Gink et al., 2018). Changes in relationships were assessed mostly resorting to data collected in interviews. Eight studies included individual interviews to complement quantitative data, having been conducted only with staff (Donald, 2015; Hidalgo et al., 2016; Nunno et al., 2003; Turner, 2017), or with both staff and youth separately (Berridge et al., 2016; Hermenau et al., 2015; Vallejos et al., 2016). Qualitative data was also gathered with questionnaires with open-ended questions (Barnett et al., 2018; Griffing et al., 2021).

Due to the small sample size, some studies have been unable to perform comparisons based on statistical testing (Berridge et al., 2016; Donald, 2015; Turner, 2017). Some mixed-methods studies were not clear about the approach used in the qualitative analysis (Barnett et al., 2018; Berridge et al., 2016; Griffing et al., 2021; Hermenau et al., 2015; Nunno et al., 2003). The only study included in this review using exclusively qualitative methods (van Gink et al., 2018) did not clearly report data analysis procedures. Finally, some studies did not properly describe data analysis procedures (Berridge et al., 2016; Griffing et al., 2021; Nunno et al., 2003; Vallejos et al., 2016).

3.5. *Effects of training/interventions on care workers*

The included studies displayed mixed results. When assessing well-being and mental health, Vallejos and colleagues (2016) found that, although after participating in Kundalini Yoga staff reported feeling more relaxed, questionnaires did not show any significant effect. Schmid and colleagues (2020) showed that physiological stress levels significantly decreased at follow-up in participants of a Trauma-informed care (TIC) training, when compared with controls. Participation in the Healing Rhythms Biofeedback Program (Turner, 2017) also showed a trend to decrease stress and burnout, paired with congruent heart rate variability. Qualitative data within the same study supported quantitative data, with participants reporting benefits related with the program, such as increased mindfulness and awareness, as well as reduced stress and burnout. Yet, this study had a small sample size and was based only on descriptive statistics. Still regarding burnout, participants in the Child Teacher Relationship Training (CTRT) did not show improvements (Donald, 2015). In Hidalgo and colleagues (2016) study, after 12-month of the PATHS program, care workers reported statistically significant decreases in trust, intimacy, self-esteem and control, which were assumed to be related with vicarious trauma. The same study also reported a better perception of staff regarding the service capacity to address mental health issues. PATHS showed a significant improvement in staff job satisfaction. TIC did not produce changes in job satisfaction, feelings of safety, and staff turnover (Barnett et al., 2018).

Both the CTRT (Donald, 2015) and the Incredible Years Basic Parent Program (Silva & Gaspar, 2014) seemed to be helpful in increasing care workers empathy. However, the first study relied on a reduced sample and the second one showed mixed results, with changes occurring both in the intervention and control groups. The same was observed concerning decreasing depressive symptoms (Silva & Gaspar, 2014).

Improvements in confidence (Berridge et al., 2016; Nunno et al., 2003) and self-efficacy (Osteen et al. 2018) were also reported. The Youth Depression and Suicide: Let's Talk (YDS) was associated with improvements in performing a gatekeeper role from pretest to posttest assessments and change was maintained over time; there was also a modest increase in the use of gatekeeper behaviors after training (Osteen et al. 2018).

Also concerning changes in behavior, the EQ2 seemed to help staff members in increasing self-awareness and better understanding their

Table 5
Quality assessment of included mixed-methods studies.

Methodological quality criteria		Authors, year								
		Barnett et al., 2018	Berridge et al., 2016	Donald, 2015	Griffing et al., 2021	Hermenau et al., 2015	Hidalgo et al., 2016	Nunno et al., 2003	Turner, 2017	Vallejos et al., 2016
Mixed-methods component	5.1 Is there an adequate rationale for using a mixed methods design to address the research question?	N	Y	Y	N	N	Y	N	N	N
	5.2. Are the different components of the study effectively integrated to answer the research question?	N	Y	Y	Y	N	Y	Y	N	Y
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	N	Y	Y	Y	N	Y	N	N	Y
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	N	N	Y	N	N	Y	N	Y	Y
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	N	N	N	N	N	N	N	N	N
Qualitative component	1.1. Is the qualitative approach appropriate to answer the research question?	Y	Y	Y	Y	Y	Y	Y	Y	Y
	1.2. Are the qualitative data collection methods adequate to address the research question?	Y	Y	Y	CT	Y	Y	Y	Y	Y
	1.3. Are the findings adequately derived from the data?	CT	CT	Y	CT	Y	CT	CT	Y	Y
	1.4. Is the interpretation of results sufficiently substantiated by data?	Y	Y	Y	Y	N	Y	Y	Y	Y
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	Y	CT	Y	CT	Y	Y	CT	Y	Y
Quantitative component	3.1. Are the participants representative of the target population?	CT	N	N	Y	N	CT	N	N	Y
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	N	N	Y	N	Y	Y	CT	Y	Y
	3.3. Are there complete outcome data?	N	CT	Y	Y	N	N	N	Y	N
	3.4. Are the confounders accounted for in the design and analysis?	N	N	N	N	N	N	N	N	N
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	CT	CT	CT	Y	Y	CT	N	CT	CT
Rating		Poor (26.67%)	Mod (40%)	Strong (73.33%)	Mod (46.67%)	Mod (40%)	Mod (60%)	Poor (26.67%)	Mod (53.33%)	Mod (66.67%)

Note. Y = Yes; N = No; CT = Can't tell; Mod = Moderate.

own emotional responses and those of youth. This awareness seemed to influence the way care workers responded to youths' challenging behaviors (Griffing et al., 2021). Likewise, the Non-violent Resistance (NVR; van Gink et al., 2018) also seemed to be helpful to prevent or stop a situation from escalating. Participants in NVR reported reflecting more critically on their own way of working, perceiving the program as helpful to created time to think, and also reported an increase of relaxed feelings (van Gink et al., 2018).

3.6. Effects of training/interventions on youth

Studies reporting staff training effects on youths also showed mixed

Table 6
Synthesis of the Staff Training/Interventions.

Training name (Author, year)	Aim of the training	Training components/content/ methods	Theoretical framework	Provider	Modes of delivery	Sessions and training length	Manualization
Trauma-informed Care (TIC) (Barnett et al., 2018)	TIC aimed to engage senior leadership; use data to inform practices; provide extensive staff support, promote de-escalation techniques to replace seclusion and restraints; and support careful debriefing processes.	TIC included the assessment of youths' psychological needs, leadership buy-in, train the trainer model, reflective practice groups, staff incentives, and evaluation. Training topics: 1) Creating a trauma-informed agency; 2) Relationships and trauma; 3) Attachment and trauma; 4) Practical intervention strategies; 5) Worker resiliency and secondary traumatic stress; 6) Reflective practice; 7) Creating a trauma-informed organization.	- The Six Core Strategies - Risking Connection	Internal trauma specialist (train the trainer model)	Non-specified	7 Sessions (2 h each) + 6 Reflective practice supervision groups (1 h each)	Non-specified
Residential and Social Learning Theory (RESuLT) (Berridge et al., 2016)	RESuLT aims to promote whole-team interventions to support youth in their development and to assist in promoting positive behavior.	Training methods included: use of folders; hand-outs; video clips; discussion; role play; and applying learning to work in the home during the intervening week.	- Social learning theory - Relational skill building - Neuroscience	Non-specified	Training provided to all staff	10 Sessions, during 12 weeks	Non-specified
Model of professional childcare (Cameron & Das, 2019)	Group consultation protocol designed to provide knowledge about youth complex needs in order to provide professional support.	1) Helping children to self-manage their own maladaptive behaviors; 2) Meeting children's parenting needs and enhancing self-belief and inter-personal skills; 3) Understanding and supporting children who are experiencing developmental trauma to achieve reintegrative adaptive emotional adaptation; 4) Identifying and building on the children's strengths.	- Parental Acceptance–Rejection Theory (PARTheory) - Attachment - Pillars of Parenting	Educational psychologist consultant	Group format	6 Sessions (half day each), which took place fortnightly for the first 3 months, and then monthly, during 1 year + Regular supervision and support	Non-specified
Child Teacher Relationship Training (CTRT) (Donald, 2015)	CTRT aims to train care workers to be therapeutic agents	Care workers are trained in basic child-centered play therapy skills, including: 1) returning responsibility and facilitating decision making; 2) tracking, reflecting content, reflecting feelings, esteem-building and encouragement; 3) therapeutic setting. Training occurred through a format of didactic instruction, demonstration play sessions, required at-home laboratory play sessions, and supervision in a supportive atmosphere.	- Child parent relationship therapy	The researcher, who is a registered play therapist, licensed professional counselor, and national certified counselor	Individual format	Phase I: 10 Sessions + weekly sessions with a child of focus (30 min) for 7 weeks + 3 weeks of supervision (30–45 min each) Phase II: Coaching (30 min), during 6 weeks	Yes
Empowering Direct Care Staff to Build Trauma-	EQ2 is a psychoeducational training aimed to increase	EQ2 incorporates: 1) trauma-informed knowledge; 2)	- Trauma-informed approach as outlined by Substance Abuse and	One of the study authors in three sites. The fourth	Group sessions delivered on-site	6 Sessions (60 to 90 min each) during 6 weeks	Two handbooks, one for the

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Table 6 (*continued*)

Training name (Author, year)	Aim of the training	Training components/content/methods	Theoretical framework	Provider	Modes of delivery	Sessions and training length	Manualization
Responsive Communities for Youth (EQ2) (Griffing et al., 2021)	staffs' self-awareness and regulation, and to create ongoing staff support to buffer against secondary traumatic stress. The intervention focuses on helping staff to understand the impact of trauma on youths' behavior and improving staffs' ability to effectively respond to trauma-related responses.	mindfulness-based practices (e.g., attention training, focused-breathing exercises, and guided visualizations reinforcing session content); and 3) practices from restorative justice. Didactic material includes: 1) information on the impact of trauma on development; 2) the responsibilities of emotion coaches; 3) how staffs' early life experiences influence caregiving beliefs and attitudes; and 4) interpersonal factors that contribute to reparative relationships.	Mental Health Services Administration	site designated an internal psychologist, who received ongoing training from the project team.			facilitator and other for the participant
Hermenau et al., 2015 (without name)	To improve care quality and to prevent maltreatment in institutional care.	Training components: 1) Child development; 2) Caregiver–child relationships; 3) Effective caregiving strategies; 4) Maltreatment prevention; 5) Supporting burdened children; 6) Child-centered institutional care; 7) Team work and supervision.	- Parenting guidelines of the American Academy of Pediatrics - The Fairstart Global training concept	A Tanzanian and a German psychologists Three trained Tanzanian interpreters to facilitate communication	Training provided on a school	12 Sessions (8 h each), during 2 weeks	Yes
PATHS to Resilience (PATHS) (Hidalgo et al., 2016)	PATHS is designed to foster collaborative relationships, to learn skills to decrease job burnout and improve staff well-being, as well as addressing the clinical needs of traumatized youth.	PATHS' core elements: 1) The *Life is Good Playmaker* training aims to promote trusting connections and collaboration among participants by means of playful activities. Such activities are based on four domains: i) safety and empowerment; ii) social connection; iii) active engagement; and iv) joy. 2) Training in Trauma Systems Therapy (TST) focusing on building collaborative relationships and reducing triggers in the environment that can lead to youths' dysregulation. 3) Implementation planning in order to identify and deal with barriers underlying the program. It also includes the selection of an implementation team, setting up technical support and online supervision schedule.	- Play-based training - Trauma-informed - Trauma Systems Therapy	A clinician within each home.	Non-specified	2.5 training days + 6–9 months of weekly online technical support and supervision, + 2 full-day refresher trainings.	Non-specified
Managing Youth in Short Term Care (MYSTC)	MYSTC aimed to train emergency shelter staff in	The main component was the daily, ongoing teaching of	Non-specified	Consultants from Girls and Boys Town (GBT)	Training provided on-site	40-hour during one week + Technical	Non-specified

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Table 6 (*continued*)

Training name (Author, year)	Aim of the training	Training components/content/ methods	Theoretical framework	Provider	Modes of delivery	Sessions and training length	Manualization
(Hurley et al., 2006)	effective methods for dealing with youth who have behavioral and emotional problems	social skills through a therapeutic teaching method. It intends to provide staff with strategies to effectively de-escalate intense situations and prompt youth to use a self-control strategy (e.g., focused breathing). It is also sought proficiency in areas such as observation and assessment skills, cognitive and social development, and behavioral crisis management. Staff members also participated in four skill practice sessions, where they role-played the desired skill and receive feedback.		National Resource and Training Center		assistance from GBT consultants and supervisors	
Children and Residential Experiences (CARE) (Izzo et al., 2016)	CARE is a principle-based program designed to enhance the social dynamics in group care settings through staff development and reflective practice	Six underlying topics: 1) relationship-based; 2) trauma-informed; 3) developmentally focused; 4) family-involved; 5) competence-centered; 6) ecologically oriented. This process calls for changes in theoretical perspective, organizational norms, and role expectations. Technical assistance (TA) activities involve observation and feedback, training and coaching for front-line supervisors, developing routines for reflective practice, and addressing organizational barriers to creating a more therapeutic milieu.	- Ecological approach	Two CARE Consultants (graduated in Social Work or related fields, with several years of leadership and supervisory experience in group care settings) provided quarterly onsite TA	- Leadership training in CARE principles - Agency-based trainers are prepared to deliver the 5-day training to remaining staff.	5-day train the trainer	Yes
Therapeutic Crisis Intervention (TCI) (Nunno et al., 2003)	TCI aims to increase staff skills, knowledge, and confidence to respond the children's difficult feelings and behaviors when they are in crisis.	TCI curriculum teaches strategies to interpret children's aggressive behaviors as an expression of needs. It also motivates to choose skills and behaviors that reduces the potential for counter-aggression. TCI teach staff how to cope their own level of arousal to aggression, to use active listening skills, the Life Space Interview, and behavior management techniques to de-escalate the children's anger and frustration, helping them to gain self-control.	- Crisis management, prevention and de-escalation theory	Train the trainer model	Training provided to all staff	5 Sessions to train the supervisors trainers (7 h each); subsequently supervisors who received the previous training provide TCI for all staff in a 4-day program + technical assistance	Yes

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Table 6 (*continued*)

Training name (Author, year)	Aim of the training	Training components/content/ methods	Theoretical framework	Provider	Modes of delivery	Sessions and training length	Manualization
Youth Depression and Suicide: Let's Talk (YDS) (Osteen et al. 2018)	YDS aim to decrease suicide ideation and behavior.	Sessions were divided into three sections: 1) addressing myths about suicide and learning warning signs and risk/protective factors; 2) learning and practicing skills to identify and assess suicide risk; 3) identifying the protocol and resources for intervening with suicidal youth. Learning techniques used, included didactic information sharing, interactive role-plays, group activities, case-based scenarios, and printed materials and resources.	- Adapted from "Youth Depression and Suicide: Let's Talk" (YDS) gatekeeper training, developed by the Massachusetts Society for the Prevention of Cruelty to Children in collaboration with the Massachusetts Department of Children and Families	Four trainers	Group format	3 Sessions (3–4 h), during 3 days	Non-specified
Trauma-informed care (TIC) (Schmid et al., 2020)	TIC is a milieu-therapeutic approach that aims to promote self-efficacy and self-care of staff by guiding them to a better understanding of their own and their clients' stress symptoms and countertransference.	TIC training includes: 1) knowledge of neurobiological and behavioral sequelae of trauma; 2) awareness of trauma triggers; 3) intervening in a trauma-sensitive way; 4) attention to self-care in response to working with traumatized clients. In between trainings, the implementation process also includes supervision of challenging interactions between clients and staff, psychoeducational sessions and resilience hours in a one-to-one situation, including training in emotion regulation, mindfulness, mentalization and social problem-solving skills.	- Grounded in an understanding of and responsiveness to the impact of trauma.	Non-specified	Non-specified	- Six 3-day trainings for management and counsellors (organizational development, supervision skills, and burnout prevention). - Eight 2.5-day trainings for staff.	Non-specified
Incredible Years Basic Parent Program (IY) (Silva & Da Fonseca Gaspar, 2014)	IY intends strengthen 'parenting' skills, aiming to prevent, reduce and/or treat conduct problems among children aged 3–8 years while increasing their social competence.	The training involved facilitator led group discussion, videotape modelling and rehearsal of intervention strategies. The first sessions emphasize the importance of play and special time activities. It moves on to cover coaching children in academics, persistence, emotion regulation, and social skills. Sessions follow on effective praise and the use of rewards and incentives focusing on behavior that adults wish to establish. The	- Cognitive social learning - Modelling - Self-efficacy - Attachment - Child development	Two facilitators, who were trained and had previous experience with the program delivery. Facilitators received regular supervision by an IY certified leader and peer-coach.	Group format with up to 12–15 caregivers from the same residential care home	13 Weeks (2 h each)	Two handbooks, one for the facilitator and other for the participant

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Table 6 (*continued*)

Training name (Author, year)	Aim of the training	Training components/content/methods	Theoretical framework	Provider	Modes of delivery	Sessions and training length	Manualization
		second half of the program focuses on strategies to reduce unwanted behavior including limit-setting, giving clear instructions and following through, ignoring, redirecting and distracting, timeout, and consequences for problem behavior.					
Healing Rhythms biofeedback program (Turner, 2017)	It is a consumer marketed, self-administered biofeedback program that intends to improve autonomic self-regulation.	In the first session, the researcher trained the participant to use the Healing Rhythms program. Between sessions 2 and 15 biofeedback is self-administered using the Healing Rhythms training software. It comes with a 15-step guided training manual and teaches mind/body wellness through guided meditations, visualizations, breath work, mindfulness, relaxation exercises, soothing sounds, and biofeedback technology. Three biofeedback sensors connect to the participant's fingertips to record blood volume pulse and offer two types of simultaneous feedback to reward improvements in heart rate variability.	- Social-cognitive theory	Self-administered	Self-administered at place of employment in a quiet room free from distraction.	15 Sessions over 5 weeks (3 times a week)	Yes
Kundalini yoga (Vallejos et al., 2016)	To facilitate a calmed and relaxed state of mind and body.	Each session was structured to include warming up, one or two periods of meditation or rest combined with physical movements ranging from warm ups to a peak session of dancing, running, shaking and squats, combined with some static postures, cooling down, 10 min of relaxation, and ending with 3–5 min of meditation.	- Secular version of Kundalini yoga, which is a dynamic type of yoga with a special focus on breath and movement that works on the glands and nervous system	Non-specified	Non-specified	20 Sessions (44–60 min each), during 20 weeks	Non-specified
Non-violent Resistance (NVR) (van Gink et al., 2018)	NVR focuses on improving the relation between staff and children.	The NVR training consisted of a non-violent resistance attitude and communication. It includes delayed responses in order to decrease the chance of escalation, reducing the number of rules and improving non-verbal and verbal communication skills. NVR tools are: 1) Reparation Act (giving the child a chance	- Method "Non-violent Resistance: A new approach to violent and self-destructive children"	Non-specified	Group format	2-Days training + 6–9 months supervision	Non-specified

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Table 6 (*continued*)

Training name (Author, year)	Aim of the training	Training components/content/ methods	Theoretical framework	Provider	Modes of delivery	Sessions and training length	Manualization
		to repair the damage that has been done); 2) Three baskets technique can help a team to decide on their priorities and to be clear about which unacceptable behavior they will deal with; 3) Announcement, a formal letter that informs a child about the staff's intentions, their will to resist particular behavior and, for example, the team plan to ask help from parents; 4) Sit-in, staff members and enter a child's room for fifteen minutes and ask the child to come up with a solution, whereupon staff members will wait silently for the child's answer.					
Positive psychology training for staff (Wahl, 2011)	The training intends to decrease the number of runaway incidents in group homes. It also seeks to help staff build relationships with clients and offer youths an opportunity to break the cycle of violence, abuse, neglect, poverty, or substance abuse.	Session contents: Session 1: Introduction to positive psychology and Happiness; Session 2: Engagement; Session 3: Positive Psychology and meaning; Session 4: Positive Psychology and life satisfaction. Topics were administered by lectures, group exercises, handouts, questions, research article reviews, and verbal observation.	- Positive psychology	Researcher	Group format, delivered in-service	4 Sessions (2 h each), over 4 weeks	Non-specified

evidence. Most studies focused on critical incidents, reporting a decrease from pre to post intervention (Hurley et al., 2006; Izzo et al., 2016; Nunno et al., 2003; Wahl, 2011), and/or at follow-up (Barnett et al., 2018; Hidalgo et al., 2016; Schmid et al., 2020). However, findings regarding the type of incidents varied within and across studies. For example, Hurley and colleagues (2006) reported a significant decrease in inappropriate behavior, but runaways significantly increased. Nunno and colleagues (2003) found a significant reduction in aggressive incidents and physical restraint only in one unit out of three, while the other two units showed a slight increase. Izzo and colleagues (2016) study showed a significant decrease on youths' aggression towards staff, property destruction, and runaway, but the effects on aggression towards peers and self-harm were inconsistent. In Barnett and colleagues (2018) study, critical incidents were already decreasing prior to the initiation of the project. Thus, the results could not be ascribed unequivocally to intervention.

Only six studies focused on mental health or well-being of youths as an effect of staff training. Three of those studies reported inconsistent findings between qualitative and quantitative results (Berridge et al., 2016; Donald, 2015; Vallejos et al., 2016). Based on staff interviews, the PATHS program (Hidalgo et al., 2016) seemed to have improved communication, as well as the staff's ability to reduce youth's emotional dysregulation. In Hermenau and colleagues (2015) study, qualitative findings indicated a positive change in children's behavior as a result of caregivers' modified behavior. This finding was supported by the significant decrease in youths' self-reported depressive symptoms, internalizing and externalizing problems, and aggressive behavior. Nevertheless, the reported decreases from baseline to pre-assessment limits the attribution of effects to the training. Finally, the child-care model (Cameron & Das, 2019) produced significant improvements in personal and adaptive emotional development, but resilience and well-being were significant only in some children's homes.

3.7. Effects of training/intervention on relationships

Since included studies did not comprise organizational measures, only relational outcomes will be summarized. Eight studies reported improvements in caregiver–child's relationships (Berridge et al., 2016; Cameron & Das, 2019; Donald, 2015; Hermenau et al., 2015; Hidalgo et al., 2016; Vallejos et al., 2016) and among care workers (Berridge et al., 2016; Griffing et al., 2021; van Gink et al., 2018). While participants qualitatively reported interpersonal benefits (e.g., feeling more open and positive) (Vallejos et al., 2016), proximity (Donald, 2015), and positive interactions with staff and a calmer home (Berridge et al., 2016), such improvements were not supported by quantitative data. In Cameron and Das (2019) study, a boost in relational outcomes was significant only in a few children's homes.

4. Discussion

This study aims to systematically identify and assess the effectiveness of trainings delivered to care workers from RYC, with the purpose of promoting emotional and mental health, either in care workers or in youth. This review tried to overcome limitations form previous reviews by reducing publication bias. It followed PRISMA guidelines (2020) in order to reduce subjectivity, to increase consistency across review stages, and to provide methodological transparency.

The current review relies on 17 studies. Many studies had poor reporting, with relevant information being absent or unclear. For these reasons, it is difficult to draw clear conclusions about the effectiveness of the included trainings. Even so, a narrative synthesis of the trainings and their outcomes was conducted.

4.1. Trainings aiming to improve care workers emotional and mental health

It is well established that mental health is an important precursor of the quality of provided care (Esaki et al., 2013; Steels & Simpson, 2017). However, the current review demonstrates that care workers in RYC are an underserved population since training continues to disregard their mental health needs. Among the analyzed 17 trainings/interventions, only five aimed to improve care workers' mental health, well-being or emotion regulation (Griffing et al., 2021; Hidalgo et al., 2016; Schmid et al., 2020; Turner, 2017; Vallejos et al., 2016). Yet, the few available programs showed limited findings and generalizability due to methodological concerns (CRD, 2009; Kazdin, 2003). For instance, mix-methods studies showed contradictory findings (Vallejos et al., 2016), or used instruments with limited validity (Griffing et al., 2021; Hidalgo et al., 2016). Positive outcomes were found for stress (Schmid et al., 2020; Turner, 2017) and burnout (Turner, 2017). However, the study conducted by Turner (2017) did not perform inferential statistics due to the limited sample size. The Schmid and colleagues' (2020) controlled study showed promising results, demonstrating that, at 36-month follow-up, staff in the intervention group presented lower stress levels, and experienced less physical aggression from youth, than staff in the control group.

The five aforementioned programs had some common features. Most of them included a meditative component and trauma-informed principles. Mindfulness-based interventions have become popular in the past few decades for the promotion of mental health. Goldberg and colleagues (2022) carried out a systematic review of 44 *meta*-analysis that explored randomized controlled trials testing mindfulness-based interventions, and findings showed a transdiagnostic relevance of mindfulness-based interventions (e.g., anxiety, depression) with effects persisting at follow-up. Hence, the established efficacy of mindfulness-based interventions suggests its dissemination and implementation targeting care workers within RYC may be appropriate.

Programs targeting care workers emotional and mental health, including a trauma-informed approach, seem to impact not only care workers mental health outcomes, but youths' behavior as well (Hidalgo et al., 2016; Schmid et al., 2020). When staff understands the impact of trauma, they tend to better cope with youths' challenging behaviors (Griffing et al., 2021), and the staff ability to reduce youth's emotional dysregulation seems to improve (Hidalgo et al., 2016). This is in line with findings from research in other child welfare settings (Fergeus et al., 2017; Zhang et al., 2021).

Other training programs, not specifically designed to attend the care workers emotional and mental health needs, did not reveal significant improvements in staff mental health (Donald, 2015; Silva & Gaspar, 2014). This finding might suggest that specific interventions are needed, and simply improving skills, such as empathy or relational skills, is not enough to increase staff mental health.

4.2. Effects of staff trainings on youth outcomes

Most of the included studies in this review aimed to develop care workers relational and professional skills, in order to improve youth outcomes. Despite the methodological limitations of the included studies, it seems that changes in care workers attitudes are linked with some positive outcomes in youth. For example, the development of some skills (e.g., communication, relationships) led to fewer sanctions and decreases in the number of critical incidents, and to improvements in youth behaviors (Barnett et al., 2018; Berridge et al., 2016; Hermenau et al., 2015; Hidalgo et al., 2016; Nunno et al., 2003). Since some studies were exclusively focused on youth outcomes (Cameron & Das, 2019; Hurley et al., 2006; Izzo et al., 2016; Wahl, 2011), and most of them did not include a control group, it was not possible to understand if improvements in youth undoubtedly rely on changes in care workers after intervention enrollment. Nonetheless, in some studies, youths'

Table 7
Characteristics of the included studies.

Author, year, country	Setting and target group	Sample characteristics	Study design	Comparison	Outcomes and Measures	Key findings
Barnett et al., 2018 USA	1 Residential treatment facility with accompanying day school	178 Staff (residential counselor, program manager, paraprofessional, teacher, administrator) 60% female	Uncontrolled study: pre- post-and 12 months follow-up; Mixed-methods	No comparison	Outcomes: - Staff sense of felt safety - Trauma-informed skills - Job satisfaction - Staff turnover - Critical incidents. Measures: - Administrative data - Felt Safety Survey - Trauma-Informed Skills Survey - Survey with open ended questions	Bivariate correlations showed positive associations between the number of trainings and supervision attended, with Trauma Skills, but not with Felt Safety or Job Satisfaction. - Critical incidents decreased 22% over the implementation and sustainment phases; - No effect on staff turnover.
Berridge et al., 2016 UK	10 Children's Homes IG = 6 CG = 4	82 Staff 17 Young people IG = 10 CG: = 7	Controlled study: pre- post-test; without random assignment; Mixed-methods	No intervention	Outcomes: - Confidence - Skills - Knowledge - Youths' behavior Measures: - Staff at Work questionnaires - Strengths and Difficulties Questionnaire - Individual interviews (42 Staff and 10 youth from IG at post-test)	Staff outcomes: - No statistically significant improvements were found between IG and CG - After the training IG improved in Motivation, Communication (with co-workers) and Quality of Work. - Qualitative data revealed: 1) staff used inputs from training on daily-basis; 2) staff reported better understanding and coping strategies to manage children's behaviors. Youth outcomes: - No statistically differences on youth after training. - Qualitative data revealed: 1) staff reporting that youth were calmer. 2) fewer conformations and sanctions; 3) youth reported more positive interactions with staff and Home being calmer.
Cameron & Das, 2019 UK	11 Children's homes	? Staff 53 Young people	Uncontrolled study: Pre- post-test; Quantitative	No comparison	Outcomes: - Personal and interpersonal development - Well-being and Self-identity - Self-efficacy and Self-management - Social Interaction and Responsibility Measures: - Progress and development checklist	- Significant improvements on young peoplés responses to support from their careers, in general, in behavioral and affective measures and across all the three phases of model implementation.
Donald, 2015 USA	1 Residential treatment facility for youth aged 5–14 years old	3 Front-line staff 66% Female 3 Children, aged 6–10 years old	Multiple baseline across participants single-case experimental design, with 6 week follow-up. Mixed methods	No comparison	Outcomes: - Perceptions of children's behaviors - Relationship with the child of focus - Ability to demonstrate empathy in play sessions - Ability to generalize child-centered play therapy skills to a classroom/group environment -Symptoms of burnout Measures: - Child-Teacher Relationship Building	- Changes on children's behaviors were not consistently supported across quantitative and qualitative data. - Qualitative approach identify self-reporting of feeling closer to their child of focus, though this was not consistently supported quantitatively. - Quantitative and qualitative data support participants' capacity to integrate CTRT skills into practice and an increase of empathy within play sessions. - Symptoms of burnout did not

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Author, year, country	Setting and target group	Sample characteristics	Study design	Comparison	Outcomes and Measures	Key findings
					Skills-Center Time Observation Form - Student Teacher Relationship Scale - Teacher Report Form - ASEBA - Maslach Burnout Inventory - Preventative Resources Inventory - Play sessions rated using the Measurement of Empathy in Adult-Child Interaction - Individual semi-structured interviews with staff (pre-post)	improve, but participants described job improvements related to the training.
Griffing et al., 2021 USA	4 Agencies (a short-term crisis stabilization program, a program for adolescent mothers, and a residential treatment, a community-based program for youths with court or gang-involvement)	35 Staff (Direct care, supervisors, administrators) 77.4% female	Uncontrolled study: Pre- post-test; Mixed-methods	No comparison	Outcomes: - Skills - Attitudes - Knowledge Measure: EQ2 survey, including quantitative and open-ended items	Over 90% of participants agreed or strongly agreed with training: - helped them to better understand how a youth's trauma history affected their behavior; - gave them skills to better respond to youth; - improved their ability to resolve conflict with other staff; - helped them to become more effective in their professional role; - applied these skills to other areas of their life. Qualitative data indicated: - learning/sharing with colleagues (participants reported benefitting from receiving psychoeducation and emotional support); - developing a greater understanding of youth and trauma (changing one's perspective on youth behavior); - increasing self-awareness; - utilizing skills and course material; - changing response patterns to challenging behaviors.
Hermenau et al., 2015 Tanzania	? Orphanages, for youth aged 0–15 years old	29 Care workers 90% female 28 Children, aged 7–12 years old	Uncontrolled study: pre- post-and 3-month follow-up; Mixed-methods	No comparison	Outcomes: - Caregiver–child relationships - Children's behavior and mental health Measures: - Children's Depression Inventory - Strengths and Difficulties Questionnaire - Reactive-Proactive Questionnaire - Interviews with staff and children	- Caregivers reported a better relationship to the children and a positive change in the behavior of the children as a result of their own modified behavior. - Children showed significant decrease in depressive symptoms, aggressive behavior and internalizing and externalizing problems after staff training.
Hidalgo et al., 2016 USA	4 Shelters for unaccompanied migrant youth (<18 years)	280 Staff (front-line, clinical and administrative) filled out the follow-up, but only 160 participated on the training	Uncontrolled study: Pre-test, 6 and 12-month follow-up; Mixed-methods	No comparison	Outcomes: - Quality of relationships among staff - Vicarious trauma as measured by changes in beliefs about safety, trust, intimacy, self-	- Analysis conducted at a setting level indicated that at the 12-month assessment, staff reported statistically significant decreases in distress on self-safety, other safety, other trust, other esteem, self-intimacy, other

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Author, year, country	Setting and target group	Sample characteristics	Study design	Comparison	Outcomes and Measures	Key findings
					esteem and control - Job satisfaction - Job performance - Frequency of restraints, medication use, and critical behavioral incidents - Staff's beliefs regarding the residential facility's capacity to address mental health issues Measures: - Trauma Attachment Belief Scale (TABS) - Mental Health Capacity Instrument - Andrews and Withey Job Satisfaction Questionnaire - Administrative data - Semi-structured interviews (at 12-month follow-up)	intimacy, self-control and the TABS total score; - Changes in staff beliefs about mental health capacity of the residential facilities. - Statistically significant improvement in job satisfaction - Decrease in number of restraints and reductions in the use of psychotropic medications, mental health interventions, aggression, and behaviorally-related critical incidents. - Qualitative analysis revealed that training improved staff stress and communication among staff, and staff's ability to reduce youth's emotional dysregulation.
Hurley et al., 2006 USA	Short-term emergency shelter for youth, aged 6–18 years old	221 Direct-care staff 8,829 Youth, aged 6–18	Uncontrolled study: Pre- post-test; Quantitative	No comparison	Outcomes: - Behavioral incidents Measures: - Administrative data	– 30% Decrease of serious youth incidents; - Significant decrease in responding to behavior, inappropriate behavior, and other incidents from pre to post. - Runaway significantly increased over time.
Izzo et al., 2016 USA	11 Group care agencies for youth, aged 7–18 years old	Non-specified	Multiple baseline interrupted time series	6 Agencies in waiting list also received the training (Cohort 2)	Outcomes: - Behavioral incidents Measures: - Administrative data	- Significant decrease in aggression toward staff, property destruction, and runaways; - Cohort 2 trends did not differ from cohort 1 for aggression toward staff, property destruction, and runaway, but they did differ for aggression toward peers and self-harm.
Nunno et al., 2003 USA	4 Residential units for youth, aged 5–18 years old	120 Staff (management, clinical, supervisory, direct care) 52% female	Uncontrolled study: Pre- post-test; Mixed Methods	No comparison	Outcomes: - Critical incidents - Knowledge - Confidence - Skills levels Measures: - Confidence scales - Critical incident reports - Interviews with care workers and supervisors	- Statistically significant increase in confidence levels in four major areas - Decrease in overall critical incidents
Osteen et al. 2018 USA	1 Agency	43 Staff (clinical, residential, administrative) 71% female	Uncontrolled study: pre- post, 3 and 6-month follow-up; Quantitative	No comparison	Outcomes: - Knowledge - Attitudes - Self-efficacy - Skills/practice behaviors Measures: - Suicide Prevention, Exposure, and Awareness Knowledge Survey - Attitudes to Suicide Prevention Scale - The Perceived Preparedness for Gatekeeper Role measures	- Large effect sizes for increasing self-efficacy and moderate effect for efficacy to perform gatekeeper role, that maintained the over time; - A modest increase in use of gatekeeper behaviors following training, that were not maintained over time; - No change in attitudes and reluctance for engagement in assessment skills.

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Author, year, country	Setting and target group	Sample characteristics	Study design	Comparison	Outcomes and Measures	Key findings
					- Efficacy to Perform Gatekeeper Role scale - Gatekeeper Behaviors with Suicidal Clients	
Schmid et al., 2020 Switzerland	14 Residential youth welfare institutions for children and youth, aged between 7 and 25 years	47 Staff (mostly social education workers) 66% female IG = 18 CG = 29	Controlled study; pre-test, 12, 24 and 36-month follow-up (with cluster as unit of allocation); Quantitative	No intervention	Outcomes: - Psychological stress - Physical aggression towards caregivers Measures: - Hair cortisol concentration (HCC) - A survey about physical aggression by youth towards staff	- At 36-month follow-up, IG showed significantly lower HCC, and significantly less physical aggression than the CG.
Silva & Gaspar, 2014 Portugal	4 Short-term residential care facilities IG = 2 CG = 2	47 Staff IG = 27 CG = 20	Controlled study; pre-post, and 6-month follow-up (without random assignment)	No intervention	Outcomes: - Empathy - Sense of competence - Depression - Child rearing practices Measures: - Adult-Adolescent Parenting Inventory - Parenting Sense of Competence - Beck Depression Inventory	- Improvement of empathic attitudes in one of the intervention groups and improved perceptions of the children's role in the other.
Turner, 2017 USA	1 Agency (group homes and residential treatment)	6 Care workers 66.67% female	Uncontrolled study: Pre- post-test; Mixed Methods	No comparison	Outcomes: - Heart rate variability - Perceived stress - Burnout Measures - Nexus- 10 biofeedback instrument and Bio-Trace software - The Perceived Stress Scale - Maslach Burnout Inventory - Semi-structured interviews	- Heart rate variability and sense of personal accomplishment increased over the study period, while perceived stress and burnout decreased. - Qualitative data indicated that participants have benefited from the program, including a calming effect, increased mindfulness, slowing down, increased awareness, reduced stress, and ease of burnout.
Vallejos et al., 2016 UK	3 Children's homes	29 Staff 72% female 9 Youth, aged 13–17 years old	Uncontrolled study: Pre- post-test; Mixed Methods	No comparison	Outcomes: - Social inclusion - Mental health - Well-being Measures: - Warwick-Edinburgh Mental Health Well-being Scale - Social inclusion - General Health Questionnaire - Semi-structured interviews (at post-test with 9 staff and 3 youth)	- No statistically significant effects on well-being and mental health among children and staff. - Qualitative data suggested that participants experienced both individual (e.g., feeling more relaxed) and social benefits (e.g., feeling more open and positive). Some staff noticed positive changes on children, describing them as quieter and calmer after the yoga sessions.
van Gink et al., 2018 Netherlands	3 Residential facilities	13 Staff (psychiatrists, psychologists, counselors, group workers) 84.62% female	Qualitative study	No comparison	Outcomes: - Benefits of the method - Beliefs on how the method achieves its effect - Factors that help or prevent the method from being executed in daily practice Measure: - Interviews	- Results showed that participants reflect on their own way of working more critically, considering their role in escalation processes. Most staff mentioned the focus on being a team, working together to create a better climate and cope with aggression as the most useful aspect of the training. Staff also reported the training helped them to feel more relaxed and to prevent or stop

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Author, year, country	Setting and target group	Sample characteristics	Study design	Comparison	Outcomes and Measures	Key findings
						a situation from escalating or getting out of control.
Wahl, 2011 USA	5 Group homes for youth, aged 12–18 years old	27 Behavioral health technicians 67% male	Uncontrolled study: Pre- post-test; Qualitative	No comparison	Outcomes: - Runaway - Aggressive behaviors Measure: - Administrative data	- Runaways and aggressive behavior rates decreased significantly (30% and 60% respectively) after the training.

Note. IG = Intervention Group; CG = Control group; ? = information absents from original paper or non-specified.

outcomes not only seemed to have improved during training implementation, but also at follow-up assessment (Barnett et al., 2018; Hermenau et al., 2015; Hidalgo et al., 2016). Indirect interventions, such as teacher or parents-mediated interventions, have a solid tradition in psychology. Literature shows emotional and behavioral benefits from such interventions (Aldabbagh et al., 2022; Buchanan-Pascall et al., 2018). Even if the specific mechanisms/components are not yet totally clarified, and further research is needed, intervention with care workers seems to be important to foster behavioral change in children and youth in RYC.

It is noteworthy to mention that most programs aimed to reduce critical incidents or externalizing problems. Only four studies aimed to improve youth's well-being or to reduce their internalizing problems (Cameron & Das, 2019; Hermenau et al., 2015; Osteen et al. 2018; Vallejos et al., 2016). This is a matter of concern, considering that internalizing problems and suicide ideation are silent but prevalent problems among youth in RYC (Evans et al., 2017; Jozefiak et al., 2016). The great focus on training in behavior management techniques may be linked with the need to manage and reduce dysfunctional behaviors and critical incidents, which frequently disturbs RYC climate and routines (Hodgdon et al., 2013). Because many youths in RYC also exhibit comorbid internalizing problems (Jozefiak et al., 2016), behavioral techniques alone may not be as effective as intended and might trigger previous traumatic experiences, increasing dysregulation (Hodgdon et al., 2013). Also, previous research regarding mediated-interventions failed to show a cross-impact effect on internalizing problems when interventions were designed to address youth externalizing problems (Buchanan-Pascall et al., 2018).

4.3. Effects of staff trainings on relationships

Few studies analyzed outcomes related with the quality of relationships. Available findings suggest improvements in caregiver–child relationships (Berridge et al., 2016; Cameron & Das, 2019; Donald, 2015; Hermenau et al., 2015; Hidalgo et al., 2016; Vallejos et al., 2016) and between team workers (Berridge et al., 2016; Griffing et al., 2021; van Gink et al., 2018). However, some mixed-methods studies reported inconsistencies, as qualitative findings were not in agreement with the quantitative ones (Berridge et al., 2016; Donald, 2015; Vallejos et al., 2016). Ultimately, the quality of residential care services relies on the care workers ability to establish positive relationships with youth (Moore et al., 2018). Former research suggests that the quality of relationships depends not only on professionals' skills and characteristics, but is also influenced by organizational factors (e.g., climate, culture, routines) (Moore et al., 2018; Pinheiro et al., 2022). Nevertheless, organizational outcomes were not reported in any of the included studies. The scarce attention to this kind of outcomes has also been reported in former reviews (Hermenau et al., 2017; Perry et al., 2020). Overall, most trainings included in the current review did not show the tendency to effectively address these needs.

4.4. Limitations from included studies

As in former systematic reviews (Bailey et al., 2019; Eenshuistra et al., 2019; Everson-Hock et al., 2011; Hermenau et al., 2017; Morison, 2018), most of the included studies presented poor reporting and methodological flaws, which might result in a greater risk for bias and limit the generalizability of findings (CRD, 2009; Kazdin, 2003).

First, most programs were not manualized and only a few studies included appropriated procedures to ensure treatment integrity. Thus, it is unclear if the trainings were implemented as intended, compromising findings and limiting replication. Second, only four studies achieved strong methodological quality assessment (Donald, 2015; Izzo et al., 2016; Schmid et al., 2020; van Gink et al., 2018). However, one is a single-case experimental study conducted with only three participants from one RYC facility (Donald, 2015) and other is a qualitative study (van Gink et al., 2018), both having limited generalizability. Considering that study quality moderates the result of mediated interventions, this is a matter of concern (Buchanan-Pascall et al., 2018). Third, none of the 17 included studies followed a randomized controlled trial design, considered the golden standard to test intervention effectiveness (Hariton & Locascio, 2018). Therefore, associated biases (e.g., selective enrolment of participants; unclear report of attrition rate underlying systematic loss of participants over the course of the training) can have distorted the outcomes (CRD, 2009). Fourth, most of the included studies had no control group, limiting their internal validity, since observed effects may have not been necessarily determined by intervention. Among the four studies that included a control group, two did not compare intervention and control groups (Berridge et al., 2016; Silva & Gaspar, 2014). Fifth, most studies did not have a representative sample, which may cause selection bias and a lack of generalizability. The reduced sample size may limit both the statistical procedures and the power to detect intervention effects (Zhang et al., 2021). Sixth, although some studies had given incentives, in general, adherence was limited and drop-out was high. Seventh, and regarding outcome assessment, although most studies conducted mix-method research, making an effort to integrate quantitative and qualitative data, some studies included outcome measures with inadequate reliability or validity, and others were not clear regarding the approach used in the qualitative analysis. In addition, some studies did not provide any information regarding youth, being unclear if the staff training translated into any kind of improvements in youth. Furthermore, since most studies did not present follow-up assessments, the maintenance of changes over time was unclear. This may contribute to reinforce the criticism around RYC outcomes. Finally, few studies accounted for possible confounders and reported power analysis calculations in statistical analyses.

4.5. Limitations of the current systematic review

Although conclusions can be drawn from the findings of the current review, some caution is required concerning its interpretation. The main limitation of the present review was the general weak outcome on the quality assessment of the included studies. In addition, the use of inconsistent terminology regarding the definition of RYC across studies

and countries may have increased the risk of bias in the search and study selection processes. Also, the inclusion of organization wide programs might have created some bias. Even when such programs include training as a main component, it is difficult to isolate the training effects from those arising from other parts of intervention (e.g., supervision). Finally, the heterogeneity of trainings, study designs, and outcome variables precluded the performance of a meta-analysis. Thus, the estimates of the effect of trainings were not analyzed.

4.6. Implications for research

The consistent methodological limitations described across studies (Bailey et al., 2019; Everson-Hock et al., 2011; Morison, 2018) illustrate the obstacles involved in performing experimental research within this field. Recognized roadblocks were linked to the different functioning across residential care homes, agencies, and consequent heterogeneity of records (Nunno et al., 2003), rotativity either of staff (due to turnover) and youth (who have histories of numerous placements), leading to large drop-out rates in data collection among longitudinal studies (Schmid et al., 2020). Therefore, researchers have to adapt their work to the reality of RYC facilities, conducting feasibility studies to test their designs and interventions. More robust methodologies and designs are also needed, including collecting control groups with random assignment and conducting follow-up assessments, as much as possible or feasible (Bailey et al., 2016; Eenshuistra et al., 2019; Perry et al., 2020).

The combination of effects from staff training on organizational (i.e., climate, culture, quality of care) and youth outcomes (i.e., including externalizing and internalizing problems, school achievement) should be addressed in future research. Resorting to different types of variables (e.g., physiological measures; administrative records) and multi-informants, could also be important to demonstrate the effectiveness of training in RYC (Purtle, 2020).

Contrary to a previous review (Perry et al., 2020), only few training programs included in the current review incorporated mindfulness or empathic skills. Since such skills seem able to help individuals to be aware of their own and others' affective experiences (Singer & Lamm, 2009), future research should include these skills in the trainings in order to improve emotion regulation and care practices.

4.7. Implications for practice and care policies

Recognizing the vulnerability and poor outcomes of youth in RYC throughout development (Kahsay et al., 2020) is a first step to establish a bridge between research and organizations. Training/interventions clearly based on robust empirical evidence should be provided to care workers. To create a therapeutic environment, such interventions must be received by all staff, independently of their role within the RYC facility (Bailey et al., 2016). Programs should train care works to appropriately respond to both externalizing and internalizing problems among youth. In addition, particular attention should be given to the mental health of care workers, providing trainings focused on their own emotion regulation difficulties. Finally, it seems also important to create effective ways of transferring knowledge and integrate mental health routines on RYC. Budget and resources constraints could impair the implementation of some of these measures (Whittaker et al., 2015). However, public policies should invest on the welfare quality, in order to prevent and mitigate the impact of trauma on youth.

4.8. Conclusions

The current review extends the existing literature by providing a systematic synthesis of existing trainings offered to care workers, aiming to foster emotional and mental health in RYC. Findings point to the scarcity of programs aimed to specifically improve the mental health of care workers. Most available training programs aim to promote care workers' professional and interpersonal skills rather than their psychological well-being. Such programs seem to be able to reduce to some degree the critical incidents and youths' behavior problems that cause major disturbances in the day-to-day residential care homes management. Still, emotional difficulties expressed by youth in RYC remain unattended. Findings also suggest that most studies were not adequately designed. Future research should resort to more rigorous methodologies to provide evidence-based programs targeting emotional competencies of care workers, aiming to foster therapeutic environments for vulnerable children and youth placed in RYC.

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CRediT authorship contribution statement

Laura Santos: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft, Writing – review & editing, Funding acquisition. **Rita Ramos Miguel:** Conceptualization, Methodology, Formal analysis, Writing – review & editing. **Maria do Rosário Pinheiro:** Writing – review & editing. **Daniel Rijo:** Conceptualization, Writing – review & editing.

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.

Data availability

No data was used for the research described in the article.

Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.childyouth.2023.106839.

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