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Conflict prevention, de-escalation and restraint in children/youth inpatient and residential facilities: A systematic mapping review

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ABSTRACT

Conflict and aggression are well-known concerns in youth inpatient and residential facilities, frequently affecting both the quality of children/youth (hereafter, youth) care and the well-being of staff. Responses, such as restraint and seclusion (R&S), also pose challenges and can threaten the safety of youth and staff.

Various educational and training programs have been implemented to improve practice and create safer places to live and work for both youth and staff. This article reviews the research on the results of measures taken in response to conflict and aggression in youth facilities. Because very little on this topic was published before 2015, we searched for both systematic reviews and original studies published between January 2015 and November 2020 in a total of 7 databases. Our aims in this article are to 1) describe and review the literature related to the effects of interventions to prevent and manage aggression and violence in inpatient and residential youth facilities, 2) describe and review the literature on the effects of R&S and experiences of youth and staff, related to youth violence, R&S, and 3) identify potential gaps in knowledge about these issues that future research could narrow or close.

The literature search retrieved 4,698 potentially relevant publications. A total of 14 publications—2 reviews and 12 individual case studies—met our inclusion criteria. Most of the 14 studies were conducted in residential-care and hospital/psychiatric facilities; a small number were conducted in juvenile justice facilities.

Our review indicates that interventions that contributed to a reduction in episodes of R&S differed from those that led to a reduction in conflicts and aggression. The review also indicates that both youth and staff have negative experiences of physical restraint. Results also show that further studies are needed of both the effects and experiences of physical restraint and the effectiveness of de-escalation measures in preventing violence and aggression.

1. Introduction

Many children and youth under 22 years of age (hereafter, youth) who receive care and treatment in various youth facilities, such as juvenile justice facilities, inpatient and residential facilities, have pasts disrupted by incidents of neglect and maltreatment (Carr et al., 2020), histories of abandonment and abuse, and experiences of failure (Briggs et al., 2012; Rivard et al., 2004). Exposure to such life events contributes to higher rates of anti-social behavior, aggression and/or delinquent behaviors (Braga et al., 2017; Connor et al., 2004; Norman et al., 2012). Aggression is understood here as any behavioral act that includes verbal, physical or relational violence against others, the destruction of objects and/or self-harm (Lochman et al., 2009). These youth often struggle with physical, mental and/or social challenges (Jozefiak et al., 2016).

Staff engaged in these facilities are responsible for providing care characterized by good quality and safety, and to facilitate positive development in these youth. Understanding acts of aggression and finding ways to prevent them and intervene when they occur are important given that the facilities are generally oriented towards treatment and rehabilitation of youth (O'Donoghue et al., 2020). The capacity to respond purposefully, safely and effectively to potential and escalating aggression is essential for staff. In situations posing risks of

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violence and damage to person or property, restraint and seclusion (R&S) are sometimes deemed necessary for the safety of youth and/or staff. Seclusion is generally defined as the placement of a person in a specifically designed room in order to deescalate and control behaviors, and assure physical safety (De Hert et al., 2011). The use of restraint refers to a physical intervention, either through therapeutic holding by staff or through the use of mechanical restraining tools. Although interventions in critical situations are needed, use of R&S have been criticized and questioned, as these procedures are considered to be coercive, and have the potential to escalate physical conflicts and/or reduce treatment alliance (De Hert et al., 2011). R&S are also associated with harm to youth and staff, significant costs, reduced quality of care, and less engagement of youth and families (LeBel et al., 2010; Pollastri et al., 2016).

High-risk demographics as well as the clinical characteristics that lead to seclusion can provide information to guide interventions and prevent seclusion events (Vidal et al., 2020). Studies show that aggressive behaviors, escalation in aggression, experiences of restraint and involvement in critical incidents are all associated with the characteristics of youth placed in inpatient and residential facilities (Baeza et al., 2013; Dean et al., 2008; dosReis et al., 2010; Green-Hennessy & Hennessy, 2015; Jacob et al., 2013; van Kessel et al., 2012). Some youth, such as those with intellectual disabilities or autism spectrum disorder, are at significantly increased risk for experiencing R&S during psychiatric hospitalization (O'Donoghue et al., 2020). Multiple studies suggest that the use of R&S correlates with organizational factors, including staff-to-youth ratio and program characteristics (Earle & Forquer, 1995; Joy, 1981; Larue et al. 2009; Maier et al., 1987). Studies, mostly conducted in these settings, have found an association between aggression and environmental factors and facility practices (Delaney et al., 2005; dosReis et al., 2010; Earle & Forquer, 1995; Goren et al., 1993; Green-Hennessy & Hennessy, 2015; Gullick et al., 2005; Leidy et al., 2006; Sourander et al., 2002).

Conflicts, aggression and use of R&S can affect both youth and staff negatively (Miller, 1986; Smith, Colletta, & Bender, 2017; Steckley, 2018; Nyttingnes et al., 2018; Ulset and Melheim, 2013; Ulset and Tjelflaat, 2012). According to Miller (1986), a gap exists between youth and staff perceptions of seclusion, and his results show that for the vast majority of children observed, seclusion resulted in increased anxiety, fear, anger, and hostility as well as power struggles between staff and child. Physical restraint can also be a distressing practice for both youth and staff (Lombart et al., 2020); it can be perceived by youth as offensive, leading to a weakening of the relationship between youth and staff and of youth's perception of the institution as a safe place to live (Ulset & Tjelflaat, 2012).

To counteract these negative impacts, youth facilities have devoted considerable resources to improve quality of practice (Bogo et al., 2014; MacRae & Skinner, 2011). A variety of interventions have been implemented to provide staff with the knowledge and skills needed to prevent and reduce aggressive behavior in youth and to limit the use of R&S (Bower et al., 2003). These interventions are often intended to train staff in how to assess risks and to teach them strategies to prevent, de-escalate and manage conflicts and behavioral crises in a secure manner (Smith, 2014; Smith & Spitzmueller, 2016). De-escalation skills training often involves teaching effective communication and active-listening skills, in addition to role-playing, which involves practicing the use of the desired skills. Smith et al. (2017) concludes that client violence (CV) could be reduced if proper use of de-escalation techniques and behavior management techniques.

Key factors to avoid unnecessary use of R&S are according to Ulset and Melheim (2013) communication with and participation by youth. Reviews of strategies aimed at reducing the use of R&S have concluded that strong leadership, coupled with staff training and preventive interventions, yield promising outcomes (LeBel et al., 2010; Scanlan, 2010). Valenkamp et al. (2014) showed that several interventions reduced both the occurrence and duration of R&S.

Although considerable research has been devoted to adult inpatient facilities, significantly less attention has been paid to similar facilities for youth. A systematic review of literature up through 2015 found very few relevant studies (Lillevik et al., 2016). In this article, we carry forward the literature review by Lillevik et al. (2016) to cover the years 2015 through November 2020 with the aim of determining whether research on this issue has increased. Based on the limited studies found up through 2015, we found it relevant to investigate both effects of interventions to prevent and manage aggression and violence and effects and experiences of R&S. Aims were framed and compiled using PICO format as a framework, which includes four concepts: 1) the patient problem or population, 2) the intervention, 3) the comparison, and 4) the outcome(s) (Aslam & Emmanuel, 2010).

The aims of this study were to 1) describe and review the literature related to the effects of interventions to prevent and manage aggression and violence in inpatient and residential youth facilities, 2) describe and review the literature on the effects of R&S and experiences of youth and staff, related to youth violence, R&S, and 3) identify potential gaps in knowledge about these issues that future research could narrow or close. The aims were prepared based on the assumption that the literature still is limited, as well as we considered aim 1 and 2 to be connected.

2. Materials and methods

This study used systematic mapping in accordance with the Template for a Mapping Study Protocol steps, including research directives, data collection and final results (Template for a mapping study protocol 2019).

2.1. Research directives

We used the search strategy implemented in Lillevik et al. (2016) and replicated by us in the present search. In this first phase, a protocol was produced that included the study topic, its justification, study aims, search strategy, selection criteria and data extraction form.

2.2. Data collection

The search was conducted by the first author in September 2019, and then updated in November 2020, to yield reviews and single case studies in the following electronic databases: Medline, PsycINFO, Web of Science, Cochrane Library, Social Care Online and NCJRS. The following search terms were used in the search strings: health facilities, prisons, residential care, inpatient, institutions, clinics, hospitals, shelters, orphanages, group home, center, jails, de-escalation, prevention, physical intervention, violence, workplace violence, aggression, antisocial behavior, conflict, abuse, safe, safety, unsafe, childhood, youth, minors, child, juvenile, adolescent, young adult, childcare, patient, client, intervention, risk management, experiment, interview, systematic review, *meta*-analysis, isolation, restraint, seclusion, coercion, patient isolation. Due to space limitations, a description of the search strategies is not provided here but is available as a supplementum.

Inclusion/exclusion criteria for abstracts and articles were selected following the method used in Lillevik et al. (2016). Abstracts were reviewed and included if the studies met the following inclusion criteria: (a) residents, users, patients and employees in institutions of mental health care, child welfare and/or youth criminal care, (b) articles published in English, Norwegian, Danish or Swedish, (c) randomized and non-randomized, interrupted time series, systematic overviews, qualitative, cross-section and/or controlled pre- and post-studies, (d) interventions using decreasing/de-escalation measures or techniques in order to avoid, reduce or prevent aggression and violence by residents, users or patients against employees or others; all forms of physical action by employees aimed at residents demonstrating aggressive behavior (such as restraint, isolation, placement on the ground, and evasive maneuvers), and deemed unavoidable to ensure safety, (e) Outcomes, such

as extent of physical and psychological trauma to employees/other residents, deviation reports, damage to fixtures/buildings, duration and extent of aggression/violence, or other adverse events.

Exclusion criteria for published studies comprised the following: (a) chemical restraint, (b) mechanical measures (use of straps), (c) general preventive measures, general violence or general aggression prevention, (d) elderly (60 years +) and the demented, (e) patients with severe developmental disorders, (f) sexually motivated violence, (g) adult patients/residents. Criteria (g) was not an exclusion criterion in the Lillevik et al. (2016) study and was added by us.

The search was defined using the search filter for relevant study designs and was applied first to the period January 2015 – September 2019 and then updated in November 2020.

2.3. Quality assessment

All quality assessments were rated by two authors independently of each other. The systematic reviews were quality rated by using AMSTAR quality assessment. Qualitative research and cross-sectional studies were quality rated by using the Norwegian National Knowledge Center's checklist for qualitative and cross-sectional studies (National knowledge center handbook for health services, 2014). Risk of bias in effect studies was assessed using the Effective Practice and Organization of Care (EPOC) risk-of-bias tool (EPOC, 2015).

3. Results

The results are organized into three sections. First, we present a description of the data selection process. Second, we present characteristics of the included studies, organized into the categories of effect studies, qualitative and cross-sectional studies, and systematic reviews. Third, we present the quality assessment results.

3.1. Results of the search

The selection process involved 3 steps. In the first step, all 3687 identified titles were screened in September 2019 by the first author, who excluded duplicates and made a first selection based on titles (see Fig. 1). In this initial screening, titles referring to the following were excluded: drug prevention, research and treatment of somatic diseases (e.g., HIV, cancer, diabetes), general preventive measures, interventions for the elderly and demented, measures for patients with severe developmental disorders, and measures aimed at sexually motivated violence. In the case of unclear titles, the keywords and abstracts were also screened. To test the quality of the first screening, one of the co-authors screened 10% of the total number of identified abstracts; the result was 100% agreement. This step produced 320 abstracts and titles.

In the second step, the 320 abstracts and titles were screened by two authors. Independently of each other, they identified the titles and summaries against the exclusion and inclusion criteria. This step resulted in 60 references. The third step involved assessing these 60 references for eligibility. All were read in full independently by two researchers. In cases of disagreement as to whether or not to include an article, all 4 researchers conferred to arrive at a consensus decision. This step produced 12 articles—2 systematic reviews and 10 single studies—that met the criteria for inclusion in the review. The first author then screened the reference lists of the 12 articles, finding no additional relevant studies. 320 articles passed the first step, 60 the second and finally 12 articles were deemed eligible for inclusion.

The updated search conducted in November 2020 identified 557 titles. These were screened by the first author, who excluded duplicates and made a first selection based on titles, and in the case of an unclear title, by consulting the abstract. During this initial screening, studies including adults and/or outpatient facilities were excluded, as well as articles not written in English, Norwegian, Swedish nor Danish. To ensure the quality of the first screening, one additional author screened

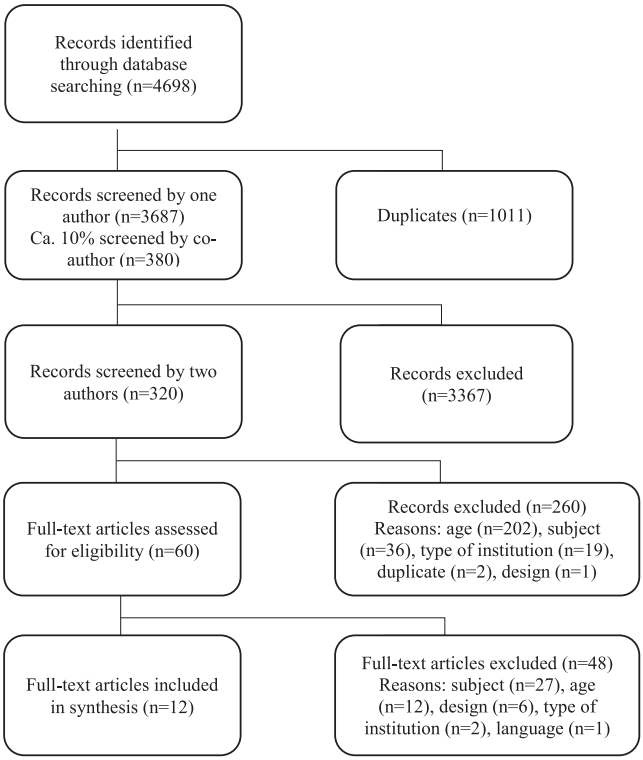

Fig. 1. A flowchart of the systematic mapping review selection procedure, 2015–2019.

10% of the total number of identified abstracts and a 100% agreement was reached. This screening left 7 articles. These were assessed for eligibility and read in full independently by two researchers. None of the articles met the inclusion criteria.

In February 2021 we were made aware of two additional studies (Azeem et al., 2017; Black et al., 2020) that were not captured by our initial search, because neither title, abstract or keywords contained terms like "aggression", "violence", "homicide", "agitat*" or "arous*". However, as both studies were considered eligible for inclusion they were included in the current review, and the total number of studies and reviews became 14.

3.2. Characteristics of the included studies

An overview of the papers included in the study can be found in Tables 1, 2 and 3. Most of the included publications dealt with inpatient hospital care (n = 6) and residential care (n = 5), followed by juvenile justice facilities (n = 2). One review included both inpatient psychiatric care and residential care settings (n = 1) (see Table 2). These facilities are characterized by a structured environment, employing staff who provide 24-hour supervision, treatment and protection to youth during their stay. The age of the youth staying in the facilities ranged from 5 to 22 years. The reason for placement included the youth's health or behavioral problems, criminal activity, or unsafe home environments.

3.2.1. Effect studies

Eight of the articles were effect studies and answer to aim number 1; interventions to prevent and manage aggression and violence in inpatient and residential youth facilities. Of these, 5 were conducted in the United States of America (USA), 1 in England, 1 in New Zealand and 1 in Australia (see Table 1). The aim of the interventions varied across the studies, although most aimed to improve the participants' skills and knowledge, mainly to prevent and manage aggression and conflict, as well as to reduce the use of R&S.

Table 1
Effect studies – design, context, intervention and results.

Study	Design	Participants and context	Intervention	Results
Forbat et al., 2017	Survey/multiple baseline study	Staff/healthcare in paediatric hospital (711 completed at baseline, 313 completed at 6 month follow up). England	A 4-hour training course provided to staff	Learning was retained at 6 months, with staff more able than at baseline to recognize conflict triggers and manage conflict situations.
Forbat & Barclay, 2019	Mixed-methods: Pre/post measures and interviews	Paediatric oncology department. Recordings of frequency and severity of conflicts were completed by the ward staff. Interviews with 10 staff. Australia	A two-stage conflict management framework (CMF) used by staff during daily handovers	Staff found the CMF to be helpful in identifying and managing/de-escalating conflicts between them and patients/families. The number of reported conflicts decreased.
Goldstein et al., 2018	Randomized controlled trial (RCT)	70 female youth (14–20 years) placed at 3 different juvenile justice facilities. 57 completed the study. USA	Juvenile Justice Anger Management (JJAM) treatment for girls	A reduction in anger, reactive physical aggression, and reactive relational aggression.
Izzo et al., 2016	Multiple baseline interrupted time series design	Data from 11 residential childcare agencies. Average number of staff was 13. Average number of youths was 24 per agency. USA	CARE model/program (Children and Residential Experiences)	Led to significant declines in different types of behavioral incidents involving youth aggression and running away.
Lee et al., 2016	Retrospectively examined administrative data, 2003–2012	Data from 3 Washington State Juvenile Justice and Rehabilitation. Administration (JJRA) residential facilities. USA	Implementing psychiatric practice guidelines	Psychiatric medication costs decreased at the facility after implementing the guidelines. Youth aggression did not increase at the same facility.
Magnowski & Cleveland, 2019	Quantitative, retrospective, comparative project. Administrative data, T-test	Inpatient psychiatric unit: 5 beds: 5–12 years, 13 beds: 13–18 years. Inpatient clients admitted to the unit who were physically (71%) or mechanically restrained were included. USA	Milieu nurse-client shift assignment	Use of milieu nurse-client shift assignment is associated with lower monthly restraint rates.
Azeem et al., 2017	Retrospectively examined medical records, July 2004 - March 2007	458 youth in a state psychiatric hospital, 9-bed adolescent girls unit, 9-bed adolescent boys unit and 8-bed unit for children (6–12 years). USA	Six core strategies based on trauma informed care (TIC)	This study shows downward trend in seclusion/restraints among hospitalized youth after implementation of the strategies
Black et al., 2020	Survey pre and post implementation	Child and adolescent inpatient unit, a regional 16 bed unit	Implementation of a collaborative problem-solving approach	The number of restrictive events significantly decreased, including full and partial restraint and seclusion.

Table 2
Systematic reviews – context, intervention and results.

Article	Studies included	Population and context	Interventions	Outcomes, results
Bryson et. al., 2017	13	Children and youth in inpatient psychiatric and residential care settings. Mostly USA	Trauma-informed care (TIC) interventions	Reduced number of episodes of R&S, fewer staff and patient injuries, greater patient and staff satisfaction.
Roy et al., 2021	23	Youth under the age of 21 in residential treatment care. Mostly USA	Interventions aimed at reducing the use of R&S	The majority of the studies evaluating the implementation of programs reported a reduction in the use of R&S

3.2.1.1. Preventing, de-escalating and managing aggression and conflicts. Of the effect studies, one looked at the result of implementation of a four-hour training course on identifying, understanding and managing conflict provided for staff in a paediatric hospital in England (Forbat et al., 2017). The course aimed to enable staff to identify and understand warning signs of conflict and to implement conflict resolution strategies. Findings showed that of the 57% who had experienced conflicts after six months, 91% reported the training to have enabled them to de-escalate the conflict (Forbat et al., 2017). Forbat et al. (2017) concluded that this training has the potential to reduce substantially the human and economic costs of conflicts for healthcare providers, healthcare staff, patients and relatives.

In another study looked at the results of an Australian peadiatric department's implementation of a conflict management framework (CMF), the objective of which was to help staff identify and de-escalate conflicts between staff and patients/families (Forbat & Barclay, 2019). The number of conflicts reported decreased by 64% from baseline to

Table 3
Qualitative and cross-sectional studies – design, context, content and results.

Article	Design	Context	Participants	Content	Results
Bitton & Rajpurkar, 2015	Quantitative/ Questionnaire Comparative	2 residential facilities for children at risk. Israel	50 trained and 50 untrained educational and therapeutic staff	Knowledge and attitudes toward the use of Trauma-informed care (TCI), relationships among style of coping, knowledge and attitudes toward use of TCI	Trained and untrained workers were equally aware of situations requiring physical restraint. Untrained workers supported the use of physical restraint and TCI more than trained workers did.
Smith et al., 2017	Exploratory study, interviews, observations, document review	Residential treatment center. USA	490 h of participant observation, 65 interviews with 51 promise employees	Youth care workers exposure to client violence (CV). Study of workforce issues	Workers reported that CV is common, expected, inevitable and a hard part of their job.
Steckley, 2018	In-depth interviews Qualitative	20 residential childcare establishments. Scotland	Interviews with 37 youths (10–17 years) and 41 practitioners	Experiences of youth and practitioners related to restraint	The majority of youth appear to evince intense emotions during physical restraint. Practitioners reported being affected by the intensity.
Nyttingnes et al., 2018	Cross-sectional study/ Questionnaires/ Quantitative	10 acute and combined (acute and sub-acute) psychiatric wards. Norway	96 inpatients (13–17 years old), staff and clinical records	Adolescents' perceptions or experiences of coercion during inpatient mental health care	34,4% of the total sample reported high experienced coercion (ECS score > 2). 28% of the sample reported a lack of confidence and trust both in parents and staff.

follow-up. Communication regarding conflict identification improved and the number of burnouts decreased. Scores rating compassion and secondary traumatic stress did not change. Forbat and Barclay (2019) concluded that CMF substantially reduces the incidence of conflicts and is an acceptable approach for staff. Both of these effect studies found that staff believed the interventions had been helpful in de-escalating conflicts.

One effect study explored the efficacy of the CARE Program Model, a principle-based program that helps agencies use a set of evidence-informed tenets to guide programming and enrich the relational dynamics (Izzo et al., 2016). The study examined the impact of a setting-level intervention in preventing aggressive or dangerous behavioral incidents among youth living in group-care environments. The three-year implementation of CARE involved intensive training of and consultation with leaders regarding support for and facilitation of daily application of the principles. Results showed that the program led to a significant reduction in 3 different types of behavioral incidents involving youth aggression toward adult staff, property destruction and running away. Aggression toward peers and self-harm also decreased, but less consistently (Izzo et al., 2016). Staff ratings indicating positive organizational social context predicted fewer incidents. These findings support the potential efficacy of the CARE model and illustrate that the intervention may help to disrupt and reduce patterns of coercive caregiving patterns and as well as increase opportunities for healthy social interactions.

A recent study (Magnowski & Cleveland, 2019) aimed to identify the impact of milieu nurse-client assignments on an inpatient psychiatric unit in the USA. The milieu nurse-client shift assignment combined two evidence-based practices, cognitive milieu therapy and nurse presence, to provide an environment of structure, safety, consistency, and empathy. The study concluded that the assignment provided this type of environment and lead to early intervention and use of de-escalation techniques with clients displaying aggressive behaviors. Results also showed that use of the milieu nurse-client shift assignments was associated with lower monthly restraint rates, a reduction not found with individual nurse-client shifts (Magnowski & Cleveland, 2019).

3.2.1.2. Reducing R&S. In the study of Azeem et al. (2017) psychiatric hospital staff received training in six core strategies to be implemented in reducing R&S. These are based on trauma-informed and strength-based care, with the focus on primary prevention principles. These principles included: (1) leadership towards organizational change, (2) use of data to inform practice, (3) workforce development, (4) R&S reduction tools, (5) improve customer‘s role in inpatient units and 6) debriefing techniques. The findings show that R&S reduction can be possibly maintained and safely implemented through the collaborative and concerted effort of staff by utilizing the six core strategies (Azeem et al., 2017).

Another study (Black et al., 2020) which aim was to determine whether implementation of a collaborative problem-solving (CPS) approach would be associated with a decrease in R&S in a child and adolescent inpatient unit, the unit had already begun to implement the six core strategy. Black et al. (2020) considered that they needed additional youth focused tools to help implement Strategy 4. CPS hypothesizes that many episodes of behavioral and emotional dysregulation can be understood as a youth being faced with an expectation that they find difficult to meet based on their lagging skills (Black et al., 2020). The CPS approach facilitates to build lagging skills through the use of a three-step process: (a) the empathy step, (b) adult concern step, (c) the invitation step. The study concluded that a CPS approach significantly decrease use of R&S (Black et al., 2020)

3.2.1.3. Youth aggression, medication and psychiatric practice guidelines. An effect study conducted in juvenile justice facilities sought to assess the impact on medication costs and youth aggression of implementing psychiatric practice guidelines (Lee et al., 2016). Psychiatric practice guidelines involved screening, shared decision making, psychosocial treatments, medication prescribing, and monitoring of side effects. The researchers examined whether implementing these guidelines in 1 facility with an organized psychosocial treatment program reduced medication costs, and whether doing so would affect youth aggression. At this facility the medication cost decreased by 26%. The medication cost decreasing did not affect youth aggression. At the two comparison facilities that did not implement the guidelines, the medication cost increased by 104% and 152% from baseline.

3.2.1.4. Anger management for youth. Goldstein et al. (2018) examined the efficacy of the Juvenile Justice Anger Management (JJAM) treatment program for girls, a group-based anger management and aggression reduction intervention for adolescent in residential juvenile justice placements. The program were designed to meet the needs of adolescent girls in these facilities. Program implementation resulted in a significant reduction in anger, reactive physical aggression and reactive relational aggression among girls in the JJAM treatment program compared with girls receiving regular treatment (Goldstein et al., 2018). Results suggest that anger-management treatment can effectively reduce anger and reactive aggression among girls placed in juvenile justice facilities.

3.2.2. Systematic reviews

The two systematic reviews included intervention studies conducted mostly in the USA, with a few from the United Kingdom (UK) (see Table 2). Both reviews included studies that evaluated the outcomes of interventions aimed at reducing R&S.

3.2.2.1. Reducing R&S. Bryson et al. (2017) concentrated specifically on studies that explored implementation of Trauma-Informed Care intervention (TIC) in psychiatric and residential facilities. TIC is an organizational change strategy which aligns service delivery with treatment principles and interventions designed to reduce rates of retraumatization through responsive and non-coercive staff-client interactions (Bryson et al., 2017). According to Bryson et al. (2017), of the 13 reviewed studies, 9 reported an outcome of reducing or eliminating the use of restraint and/or seclusion. The review indicated that staff need to feel and be supported throughout the implemented change that may involve recertification as ongoing training, coaching, and supervision; in addition to reinforced trainings.

The review by Roy et al. (2019) examined several studies whose aim was to evaluate outcomes of a program implemented to affect rates of R&S use. One objective was to identify the factors related to the use of R&S measures and to examine the interventions aimed at reducing their use (Roy et al., 2019). The authors identified 63 variables influencing the use of R&S and categorized them into four groups: (1) characteristics of the youth, (2) characteristics of the staff, (3) environmental characteristics and (4) programs implementation (Roy et al., 2019). They also found that younger children displayed aggressive behavior more frequently and tended to experience more R&S than did older children. Males were also more likely to be the subjects of R&S than females. The after-school period was associated with more frequents use of R&S (Roy et al., 2019). Elevated stress, paired with a possible lack of situational training, may play a role in staff decisions to use R&S. The majority of the implemented programs led to a reduction in use of R&S (Roy et al., 2019). However, none of the studies reviewed by Roy et al. (2019) explored which specific elements of the intervention program influenced the reduction in use of R&S.

3.2.3. Qualitative and cross-sectional studies

The qualitative and cross-sectional studies were conducted in Israel, Scotland, USA and Norway (see Table 3). These studies refer to aim number 2; effects of R&S and experiences of youth and staff related to youth violence, R&S.

3.2.3.1. Experiences on physical interventions and restraint techniques. Among these studies, the one by Nyttingnes et al. (2018) looked at perceptions and experiences of physical interventions by adolescents. Using a mixed effects model, the study found that patients under formal coercion experienced a worse relationship with their parent(s) and lower psychosocial functioning, which were predictive of reports of experienced a high level of coercion. Results indicate that formal coercion can contribute to a lack of confidence and trust in both parents and staff (Nyttingnes et al., 2018).

Data from another study, conducted by Steckley (2018), strongly indicate that both youth and staff were strongly affected by physical restraints. The study were analyzed through lenses of catharsis and containment theories, and offers evidence of cathartic expression in situations involving restraint (Steckley, 2018). The authors argue that it has explanatory power in making sense of physical restraint and how to minimize its use in residential and other relevant settings.

3.2.3.2. Restraint technique – Staff knowledge and attitudes. Bitton and Rajpurkar (2015) examined attitudes of staff toward the use of the Therapeutic Crisis Intervention System (TCI) technique, a technique in order to proactively restrain violent behaviour. TCI is employed in several residential treatment facilities for youth in Israel. In addition to examining staff attitudes, the study explored the association between staff attitudes, knowledge and strategies for coping with stressful situations. No differences in knowledge about the use of TCI were found between the two groups of participants. The researchers found that the greater the worker's knowledge and support of physical restraint, the greater was the use of TCI. Bitton and Rajpurkar (2015) also showed that despite a physical intervention technique being taught and implemented, staff members tend to be cautious about using it, even when doing so was essential. This may indicate that trained staff will be cautious about using a technique to restrain violent behavior and display greater awareness of the controversy over the efficacy of the technique as well as its possible risks (Bitton & Rajpurkar, 2015).

3.2.3.3. Staff experiences of client violence (CV). The study that explored the exposure to CV of youth care-workers (Smith et al., 2017) found that these workers viewed CV as the hardest part of their job. Although participants reported exposure to CV incidents and stated that they were common and to be expected, they also indicated a belief that proper use of de-escalation and behavior management techniques could reduce the incidence of CV (Smith et al., 2017).

3.3. Quality assessment results

Both systematic reviews (Bryson et al., 2017; Roy et al., 2019) received a "critically low" quality assessment score using the AMSTAR evaluative tool (Shea et al., 2007). The tool is considered to have content validity for measuring the methodological quality of systematic reviews. The research questions and criteria for including/excluding reviews lacked the components of PICO. Additionally, the AMSTAR explanation for the assessment score explicitly stated that the methods employed by the researchers had been established prior to the conduct of their review study and failed to justify any significant deviations from the protocol. Additionally, the authors did not use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that they included in their reviews, and they did not account for RoB in individual studies when interpreting and discussing the results. Furthermore, the authors did not report the funding sources for the studies included in their reviews, and they did not offer a satisfactory explanation for any heterogeneity observed in their reviews. Bryson et al. (2017) neglected to perform both study selection and data extraction in duplicate and provided neither a list of excluded studies nor an explanation for why they were excluded.

Results of Risk of Bias in effect studies are shown in Table 4.

Both qualitative studies (Smith et al., 2017; Steckley, 2018) were rated to be of medium/high quality based on "yes" answers to 8 of these 10 questions—was the research question/aim well described? Was the context of the study clear? Was the study connected to a theoretical framework? Was the design of the study clear and correct? Is the choice of population described, relevant and justified? Is the collection of data described and systematic? Is the data analysis described and systematic? Have attempts been made to substantiate results with other sources of information/methods? Is there agreement between conclusions and results? Is the relation between the researcher's point of view and the design of the study and results discussed? On the last question the studies either scored "no" or provided an unclear answer. One study showed no attempt to substantiate its results with other methods or sources of information (Steckley, 2018). Smith et al., 2017 did not provide a clear answer to "Was the question/aim well described?"

One cross-sectional study was rated as being of high quality (Nyttingnes et al., 2018). To 6 of 7 questions:—Was the population defined? Was the population group representative? Was the response rate sufficiently high? Was the data collection standardized? Were the criteria for measuring outcome objective? Were the methods used for data analysis adequate?—it was possible to answer YES. The flaw was that the study failed to consider differences between the participants who did and did not respond. Using these same questions to judge quality, Bitton and Rajpurkar (2015) scored low /medium quality. That study also failed to consider how respondents and nonrespondents differed. Additionally, the response rate was unclear and the sample was not representative for the population group.

4. Discussion

This study sought to describe and review literature published between 2015 and 2020 related to interventions to prevent aggression and violence in inpatient and residential youth facilities. Another purpose was to achieve an overview of the literature on the effects and experiences of R&S and staff experiences related to youth violence. The third aim was to identify gaps in this area and to indicate where more research is needed. This study used the same method of a study done in 2015; that review identified 6 studies regarding youth (Lillevik et al., 2016). We discovered a growing number of studies conducted in inpatient and residential youth facilities and were able to identify a total of 14 papers. Surprisingly, we found that only one additional article were published between September 2019 and November 2020.

4.1. Effects of interventions and experiences of R&S

The eight effect studies and two reviews included in our study show the existence and implementation of various interventions, among them training courses, strategies, frameworks and guidelines (see Tables 1 and 2). These interventions aimed to improve staff ability to identify, prevent and manage/de-escalate conflict and aggression (Forbat & Barclay, 2019; Forbat, Simons, Sayer, Davies, & Barclay, 2017; Izzo et al., 2016; Magnowski & Cleveland, 2019), and to reduce episodes of restraint and seclusion (Azeem, Aujla, Rammerth, Binsfeld, & Jones, 2017; Black et al., 2020; Bryson et al., 2017; Magnowski & Cleveland, 2019; Roy et al., 2019). One intervention was anger-management treatment directed at female youth (Goldstein et al., 2018). Overall, the studies of the different interventions found several indicators of positive outcomes. These included improvements in staff ability to de-escalate conflicts (Forbat et al., 2017); reduction in number of conflicts reported (Forbat & Barclay, 2019); decline in youth aggression towards staff (Goldstein et al., 2018; Izzo et al., 2016); fewer injuries (Bryson et al., 2017) and lower R&S rates (Azeem et al., 2017; Black et al., 2020; Bryson et al., 2017; Magnowski & Cleveland, 2019; Roy et al., 2019).

Our search revealed that the number of studies done in youth inpatient and residential facilities has increased since the search done by Lillevik et al. (2016). Youth were participants in only one literature

Table 4
Risk of Bias – Effect studies.

Author, year	Forbat et al., 2017	Forbat & Barclay, 2019	Goldstein et al., 2018	Izzo et al., 2016	Lee et al., 2016	Magnowski & Cleveland, 2019	Azeem et al., 2017	Black et al.,2020
Random sequence generation	Not applicable (NA)	NA	Unclear	NA	NA	NA	NA	NA
Allocation concealment	NA	NA	Unclear (no information)	NA	NA	NA	NA	NA
Blinding of participants and personnel	NA (register study)	Low risk (participants) High risk (personnel)	Low risk (participants) High risk (personnel)	Low risk (participants) High risk (personnel)	NA (register study)	Low risk (participants) High risk (personnel)	NA (medical records study)	High risk (personnel)
Blinding of outcome assessment	Unclear (no information)	Unclear (no information)	Low risk	Unclear (no information)	Unclear (no information)	Unclear (no information)	Low risk	Low risk
Incomplete outcome data	High risk	Low risk	Low risk	Low risk	Low risk	Low risk	Unclear (no information)	Unclear (no information)
Selective reporting	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Unclear	Unclear
Other biases	High risk (conflict in interests)	Low risk	Low risk	Low risk	Low risk	Low risk	Unclear	Low risk

review before 2015 (Valenkamp et al., 2014). In 2015, the studies reviewed in Lillevik et al. (2016) centered on youth and staff experiences and perceptions of R&S use (Berg et al., 2011; Goren & Curtis, 1996; Miller, 1986; Ulset & Melheim, 2013; Ulset & Tjelflaat, 2012). Our study, in contrast, found more effect studies evaluating interventions of different types, including education and training programs, than qualitative studies. These effect studies can be seen as indicating a growing research field. However, five of the eight effect studies were conducted in USA, as were the two reviews of intervention studies. Due to the distinctiveness of systems and contexts, it may be difficult to generalize results from the USA to other settings, cultures and countries. The number of papers on this subject remains modest, evidence that this area of research remains underdeveloped, especially outside of the USA.

Our review of the studies of experiences of restraint found negative outcomes and experiences. For example, approximately one-third of the sample of youth in Nyttingnes et al. (2018) reported a lack of confidence and trust in both parents and staff. Another study found that young people react with intensely negative emotions to physical restraint (Steckley, 2018). These results are consistent with the literature search conducted in 2015 (Lillevik et al., 2016), which found that physical restraints may be perceived as offensive by youth and may thus weaken the relationship between youth and staff (Ulset & Tjelflaat, 2012). Additionally, staff members found using physical restraint challenging. Untrained workers supported the use of physical restraint more than did trained workers (Bitton & Rajpurkar, 2015). Trained professionals seem to show extra caution and awareness compared to the untrained when it comes to in using restraint techniques.

4.2. Risk of bias and quality assessment of included studies

Two tools were employed to assess risk of bias of effect studies and the quality of the reviews. Risk-of-bias assessments using the EPOC tool (Higgins et al., 2019) suggest that the effect studies included in this review article were for the most part at low risk of bias; this increases confidence in our findings. Five of the studies report that certain measures, like blinding of personnel, were difficult to carry out in these interventions, because, for example, intervention practitioners are aware of the program they are implementing. EPOC yielded a significant number of determinations that bias risk was “not applicable”. This may indicate that the EPOC tool is not adjusted to these types of studies. All of the effect studies included in our review failed to report, or reported unclear, information on domains crucial to internal validity, such as the use of randomization procedure. This weakens the conclusion of our study. In several of the effect studies, the risk of blinding of outcome assessment was unclear or information was lacking, suggesting that the results of these studies should be interpreted with caution.

Despite the limitations of the reviews based on AMSTAR’s quality assessment checklist (Shea et al., 2007), we include them for different reasons: first, because the findings contribute significantly to the field of inpatient and residential youth facilities, and second, because the literature in the field is limited. Another reason is that the AMSTAR tool might be ill-suited for assessing the design of the 2 included reviews, as several questions present in the tool were not relevant for the review included studies.

4.3. Strengths and limitations of this review

While this review has several strengths, we also wish to acknowledge possible limitations. The first potential limitation derives from the breadth of this review, which involved reviewing studies of considerable heterogeneity with respect to samples, facilities, measures, designs and programs. Thus, we could neither perform a *meta*-analysis nor readily make comparisons among the studies. Effectively summarizing the results to indicate some findings as more important than others also posed challenges. Given the diversity of the research under review, a mapping review seemed to be the best design and one that would allow us to identify gaps in research on this topic.

The second limitation is potential selective reporting bias (Higgins et al., 2019). To minimize the possibility of unintentional, skewed article selection, we searched seven different databases. Nevertheless, we must acknowledge that some important articles could have been missed. Additionally, we decided to exclude grey literature—that is, articles published without a rigorous review process. It is possible that this also led to selection bias. Finally, establishing search criteria always carries the risk of selection bias. To mitigate this risk, we clearly defined both the inclusion and exclusion criteria.

A third possible limitation is that data was inaccurately extracted and/or misclassified. To mitigate this risk, we classified and extracted data as described in “2. Materials and Methods”. Ninety percent of the initial screening was done by the first author, which could have induced bias. Some studies may have been excluded in this screening, when they should not have been. The risk that occurred is small, however, because of the clear exclusion criteria and the double screening of 10%.

The potential limitation posed by language bias was minimized by searching all databases for all manuscripts published in English, Danish, Swedish or Norwegian. To diminish familiarity bias, we included studies from several contexts.

These potential limitations are diminished further by the main

strength of this review, which is its broad focus and inclusion of several different samples and facilities. To ensure coverage of the subject from different perspectives, we included qualitative, quantitative, and mixed-design studies. We also included a co-author outside of the field of youth inpatient and residential care to maximize objectivity in the review process.

4.4. Future directions and implications

We believe this study is sufficiently rigorous, despite some limitations, to enable us to identify some future directions for research. Taken together, data from this review suggest that more research is needed on the practical implications of education and training programs for preventing and minimizing aggression, violence and R&S.

Our results indicate a slow but notable growth in interest in interventions aimed at identifying, preventing and managing aggression and conflict situations. This is shown by the number of papers published since 2015 in comparison to those published before that year. Despite the well-documented history of youth-care violence, this mapping review shows that few studies have explicitly addressed how aggression, violence, R&S are experienced and can be prevented and managed in youth inpatient and residential facilities. More empirical work is needed to determine whether interventions work as intended, and whether they benefit both youth and staff at residential, health and juvenile justice facilities. Most of the studies and reviews included in our study were based on self-reported data, such as surveys, questionnaires, interviews, and reports (Bitton & Rajpurkar, 2015; Black et al., 2020; Bryson et al., 2017; Forbat & Barclay, 2019; Forbat et al., 2017; Izzo et al., 2016; Nyttingnes et al., 2018; Roy et al., 2019; Steckley, 2018). Although these studies suggest that guidelines, frameworks, education and training may increase personal knowledge and change attitudes, we still need studies that reveal how the prevention and management of aggression and R&S are perceived by others who are not among the self-reporting participants. Most of the studies that assessed learning outcomes used knowledge-acquisition questionnaires, self-reporting measures of learning and transfer, or reported participant-satisfaction with the training; all of these can lead to biased results. Additionally, studies that explore interpersonal factors associated with aggression among youth have relied on information reported by staff at some time point prior to the acts of aggression being documented.

To explore the most effective strategies for safely preventing and managing conflicts and aggression, youth inpatient and residential facilities need to be receptive to implementing training programs and participating in research on the effect of those programs. We recommend that studies include a conceptual framework that links competencies and skills to be achieved to training content and method. Additionally, this review found a lack of randomized, controlled studies that investigate the effects of interventions. Only one of the included studies employed a randomized design (Goldstein et al., 2018). We recommend more research using this design, in order to gain more knowledge about causality.

To advance the field and gain knowledge about how to improve the safety and quality of care for youth, as well as the health and safety of staff, research is needed into how staff prevent and manage aggression and conflicts in practice and how that affects youth; such studies might, for example, use observational data. More research on this topic is also needed in other cultures and contexts other than the USA.

5. Conclusion

Our review demonstrates that the number of studies on the effects of interventions in preventing/managing aggression and violence in inpatient and residential youth facilities, and on the effects and experiences of R&S in these facilities, is quite limited. Despite their limitations, the findings of previous research suggest that, overall, reports of conflicts/aggressive incidents and the use of R&S can be reduced by implementing various interventions, such as education and training programs.

The knowledge gained from this review is insufficient for us to offer specific recommendations as to how to increase the quality of care or safety of youth living in these facilities. However, the results indicate that some interventions may contribute to positive consequences, for example, a reduction of reported conflicts and more cautious use of R&S methods. They also indicate that the interventions most likely benefit staff in preventing and managing aggression, conflict and unwanted situations. However, few studies of the studies in our review can be considered methodologically rigorous. Although education and training programs might increase staff knowledge and attitudes, such programs might not affect the number of aggressive behavior incidents. Further, how youth experience these interventions, and if they experience any difference and/or improvement in communication with staff after implementation remains unclear. Moreover, no research has been conducted on the specific elements (e.g., role-play of communication skills) in interventions that brought about desired changes. The studies have not made use of observational data, except one (Smith et al., 2017).

The search for evidence of effective interventions and training approaches continues and would benefit significantly from further research. More thorough empirical studies focused on identifying which training elements are effective are needed to improve the effectiveness of interventions targeting youth in inpatient facilities. More studies of youth experiences of staff conflict management and R&S are also needed, particularly of youth in facilities marked by high rates of aggressive behavior and use of R&S.

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Authorship contribution

Ane Slaatto (AS) managed the literature search and wrote the protocol. AS, John Kjøbli, Anneli V. Mellblom, Gunn Astrid Baugerud (GAB) and Lise Cecilie Kleppe reviewed the papers. AS and GAB undertook the analysis and made the tables. AS wrote the first draft of the manuscript. All authors contributed to and approved the final manuscript.

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.

References

Aslam, S., & Emmanuel, P. (2010). Formulating a researchable question: A critical step for facilitating good clinical research. *Indian Journal of Sexually Transmitted Diseases and AIDS, 31*(1), 47–50. https://doi.org/10.4103/0253-7184.69003

Azeem, M., Aujla, A., Rammerth, M., Binsfeld, G., & Jones, R. B. (2017). Effectiveness of six core strategies based on trauma informed care in reducing seclusions and restraints at a child and adolescent psychiatric hospital. *Journal of Child and Adolescent Psychiatric Nursing, 30*(4), 170–174. https://doi.org/10.1111/jcap.12190.

Baeza, I., Correll, C. U., Saito, E., Amanbekova, D., Ramani, M., Kapoor, S., … Carbon, M. (2013). Frequency, Characteristics and Management of Adolescent Inpatient Aggression. *Journal of Child and Adolescent Psychopharmacology, 23*(4), 271–281. https://doi.org/10.1089/cap.2012.0116

Berg, J., Kaltiala-Heino, R., & Välimäki, M. (2011). Management of aggressive behaviour among adolescents in forensic units: A four-country perspective. *Journal of Psychiatric and Mental Health Nursing, 18*(9), 776–785. https://doi.org/10.1111/j.1365-2850.2011.01726.x

Bitton, M. S., & Rajpurkar, S. (2015). Therapeutic crisis intervention system in residential care for children and youth: Staff knowledge, attitudes, and coping styles. *Children and Youth Services Review, 56*, 1–6. http://www.journals.elsevier.com/children-and-youth-services-review/.

Black, V., Bobier, C., Thomas, B., Prest, F., Ansley, C., Loomes, B., … Mountford, H. (2020). Reducing seclusion and restraint in a child and adolescent inpatient area:

Implementation of a collaborative problem-solving approach. *Australasian Psychiatry, 28*(5), 578–584. https://doi.org/10.1177/1039856220917081
Bogo, M., Shlonsky, A., Lee, B., & Serbinski, S. (2014). Acting Like It Matters: A Scoping Review of Simulation in Child Welfare Training. *Journal of Public Child Welfare, 8*(1), 70–93. https://doi.org/10.1080/15548732.2013.818610
Bower, F. L., McCullough, C. S., & Timmons, M. E. (2003). A Synthesis of What We Know About the Use of Physical Restraints and Seclusion with Patients in Psychiatric and Acute Care Settings: 2003 Update. *Worldviews on Evidence-based Nursing presents the archives of Online Journal of Knowledge Synthesis for Nursing, E10*(1), 1–29. https://doi.org/10.1111/wvn.2003.e10.issue-110.1111/j.1524-475X.2003.00001.x
Braga, T., Gonçalves, L. C., Basto-Pereira, M., & Maia, Â. (2017). Unraveling the link between maltreatment and juvenile antisocial behavior: A meta-analysis of prospective longitudinal studies. *Aggression and Violent Behavior, 33*, 37–50. https://doi.org/10.1016/j.avb.2017.01.006.
Briggs, E. C., Greeson, J. K. P., Layne, C. M., Fairbank, J. A., Knoverek, A. M., & Pynoos, R. S. (2012). Trauma Exposure, Psychosocial Functioning, and Treatment Needs of Youth in Residential Care: Preliminary Findings from the NCTSN Core Data Set. *Journal of Child & Adolescent Trauma, 5*(1), 1–15. https://doi.org/10.1080/19361521.2012.646413
Bryson, S. A., Gauvin, E., Jamieson, A., Rathgeber, M., Faulkner-Gibson, L., Bell, S., … Burke, S. (2017). What are effective strategies for implementing trauma-informed care in youth inpatient psychiatric and residential treatment settings? A realist systematic review. *International journal of mental health systems, 11*(1). https://doi.org/10.1186/s13033-017-0137-3
Carr, A., Duff, H., & Craddock, F. (2020). A Systematic Review of the Outcome of Child Abuse in Long-Term Care. *Trauma, Violence, & Abuse, 21*(4), 660–677. https://doi.org/10.1177/1524838018789154
Connor, D. F., Doerfler, L. A., Toscano, P. F., Volungis, A. M., & Steingard, R. J. (2004). Characteristics of Children and Adolescents Admitted to a Residential Treatment Center. *Journal of child and family studies, 13*(4), 497–510. https://doi.org/10.1023/B:JCFS.0000044730.66750.57
De Hert, M., Dirix, N., Demunter, H., & Correll, C. U. (2011). Prevalence and correlates of seclusion and restraint use in children and adolescents: A systematic review. *European Child & Adolescent Psychiatry, 20*(5), 221–230. https://doi.org/10.1007/s00787-011-0160-x
Dean, A. J., Duke, S. G., Scott, J., Bor, W., George, M., & McDermott, B. M. (2008). Physical Aggression During Admission to a Child and Adolescent Inpatient Unit: Predictors and Impact on Clinical Outcomes. *Australian & New Zealand Journal of Psychiatry, 42*(6), 536–543. https://doi.org/10.1080/00048670802050587
Delaney, K. R., D.N.Sc., R.N., & Louis Fogg. (2005). Patient Characteristics and Setting Variables Related to Use of Restraint on Four Inpatient Psychiatric Units for Youths. Psychiatric Services, 56(2), 186–192. https://doi.org/10.1176/appi.ps.56.2.186.
dosReis, S., McCulloch, J. R., Colantuoni, E., Barnett, S. R., Pruitt, D., Zachik, A., & Riddle, M. A. (2010). Early Identification of Seclusion and Restraint Patterns During Adolescents' Course of Residential Treatment. *Residential Treatment for Children & Youth, 27*(3), 160–174. https://doi.org/10.1080/0886571X.2010.500145
Earle, K. A., & Forquer, S. L. (1995). USE OF SECLUSION WITH CHILDREN AND ADOLESCENTS IN PUBLIC PSYCHIATRIC HOSPITALS. *American Journal of Orthopsychiatry, 65*(2), 238–244. https://doi.org/10.1037/h0079621
EPOC. (2015). Effective Practice and Organization of Care (EPOC). Suggested risk of bias criteria for EPOC reviews. Norwegian Knowledge Center for Health Services.
Forbat, L., & Barclay, S. (2019). Reducing healthcare conflict: Outcomes from using the conflict management framework. *Archives of Disease in Childhood, 104*(4), 328–332. https://dx.doi.org/10.1136/archdischild-2018-315647.
Forbat, L., Simons, J., Sayer, C., Davies, M., & Barclay, S. (2017). Training paediatric healthcare staff in recognising, understanding and managing conflict with patients and families: Findings from a survey on immediate and 6-month impact. *Archives of Disease in Childhood, 102*(3), 250–254. https://dx.doi.org/10.1136/archdischild-2016-310737.
Goldstein, Naomi E. S., Giallella, Christy L., Haney-Caron, Emily, Peterson, Lindsey, Serico, Jennifer, Kemp, Kathleen, … Lochman, John (2018). Juvenile Justice Anger Management (JJAM) Treatment for Girls: Results of a randomized controlled trial. *Psychological Services, 15*(4), 386–397.
Goren, Suzanne, & Curtis, W. John (1996). Staff members' beliefs about seclusion and restraint in child psychiatric hospitals. *Journal of Child and Adolescent Psychiatric Nursing, 9*(4), 7–14. https://doi.org/10.1111/jcap.1996.9.issue-410.1111/j.1744-6171.1996.tb00268.x
Goren, S., Singh, N. N., & Best, A. M. (1993). The aggression-coercion cycle: Use of seclusion and restraint in a child psychiatric hospital. *Journal of Child and Family Studies, 2*(1), 61–73. https://doi.org/10.1007/BF01321301
Green-Hennessy, S., & Hennessy, K. D. (2015). Predictors of Seclusion or Restraint Use Within Residential Treatment Centers for Children and Adolescents. *Psychiatr Q, 86*(4), 545–554. https://doi.org/10.1007/s11126-015-9352-8
Gullick, Karen, McDermott, Brett, Stone, Prue, & Gibbon, Peter (2005). Seclusion of children and adolescents: Psychopathological and family factors. *International Journal of Mental Health Nursing, 14*(1), 37–43. https://doi.org/10.1111/inm.2005.14.issue-110.1111/j.1440-0979.2005.00353.x
Higgins, J., Thomas, J., Chandler, J., Cumpston, M., T., L., Page, M., & Welch, V. (2019). Cochrane Handbook for Systematic Reviews of Intervention 6.1. Cochrane.
Izzo, C. V., Smith, E. G., Holden, M. J., Norton, C. I., Nunno, M. A., & Sellers, D. E. (2016). Intervening at the Setting Level to Prevent Behavioral Incidents in Residential Child Care: Efficacy of the CARE Program Model. *Prevention Science, 17*(5), 554–564. https://doi.org/10.1007/s11121-016-0649-0
Jacob, P., Seshadri, S., Girimaji, S. C., Srinath, S., & Sagar, J. V. (2013). Clinical characteristics of aggression in children and adolescents admitted to a tertiary care centre. *Asian Journal of Psychiatry, 6*(6), 556–559. https://doi.org/10.1016/j.ajp.2013.08.070.
Joy, D. S. (1981). The Maintenance of Order on an Adolescent Inpatient Unit. *Psychiatry, 44*(3), 253–262. https://doi.org/10.1080/00332747.1981.11024111
Jozefiak, T., Kayed, N. S., Rimehaug, T., Wormdal, A. K., Brubakk, A. M., & Wichstrøm, L. (2016). Prevalence and comorbidity of mental disorders among adolescents living in residential youth care. *European Child & Adolescent Psychiatry, 25*(1), 33–47. https://doi.org/10.1007/s00787-015-0700-x
Larue., C., Dumais, A., Ahern, E., Bernheim, E., & Mailhot, M.-P. (2009). Factors influencing decisions on seclusion and restraint. Journal of Psychiatric and Mental Health Nursing, 16(5), 440–446. https://doi.org/10.1111/j.1365-2850.2009.01396.x.
LeBel, J., Huckshorn, K. A., & Caldwell, B. (2010). Restraint use in residential programs: Why are best practices ignored? *Child Welfare, 89*(2), 169–187.
Lee, T. G., Walker, S. C., & Bishop, A. S. (2016). The Impact of Psychiatric Practice Guidelines on Medication Costs and Youth Aggression in a Juvenile Justice Residential Treatment Program. *Psychiatric Services, 67*(2), 214–220. https://doi.org/10.1176/appi.ps.201400544
Leidy, B. D., Haugaard, J. J., Nunno, M. A., & Kwartner, J. K. (2006). Review of Restraint Data in a Residential Treatment Center for Adolescent Females. *Child and Youth Care Forum, 35*(5), 339–352. https://doi.org/10.1007/s10566-006-9021-z
Lillevik, O. G., Strømgren, B., Søvig, K. H., Ulset, A. F., & Borgenvik, J. A. (2016). Kunnskapsgrunnlaget for arbeid med trygghet og sikkerhet i barneverninstitusjoner (The knowledge base for safety and security in child welfare institutions). https://bibliotek.bufdir.no/BUF/101/Kunnskapsgrunnlag_for_arbeid_med_trygghet_og_sikkerhet_i_barnevernsinstitusjoner_201117.pdf.
Lochman, J. E., Barry T., Powell N., & L., Y. (2009). Anger and Aggression. In Nangle D., Hansen D., Erdley C., & N. P. (Eds.), Practitioner's Guide to Empirically Based Measures of Social Skills. ABCT Clinical Assessment Series. Springer. https://doi.org/10.1007/978-1-4419-0609-0_10.
Lombart, B., De Stefano, C., Dupont, D., Nadji, L., & Galinski, M. (2020). Caregivers blinded by the care: A qualitative study of physical restraint in pediatric care. *Nursing Ethics, 27*(1), 230–246. https://doi.org/10.1177/0969733019833128
MacRae, R., & Skinner, K. (2011). Learning for the Twenty-First Century: Maximising Learning Transfer from Learning and Development Activity. *Social Work Education, 30*(8), 981–994. https://doi.org/10.1080/02615479.2010.520118
Maier, G. J., Stava, L. J., Morrow, B. R., Van Rybroek, G. J. a., & Bauman, K. G. (1987). A Model for Understanding and Managing Cycles of Aggression Among Psychiatric Inpatients. Psychiatric Services, 38(5), 520–524. https://doi.org/10.1176/ps.38.5.520.
Magnowski, Stefani Rae, & Cleveland, Sandra (2019). The Impact of Milieu Nurse-Client Shift Assignments on Monthly Restraint Rates on an Inpatient Child/Adolescent Psychiatric Unit. *Journal of the American Psychiatric Nurses Association, 26*(1), 86–91.
Miller, D. E. (1986). The Management of Misbehavior by Seclusion. *Residential Treatment for Children & Youth, 4*(1), 63–73. https://doi.org/10.1300/J007v04n01_09
National knowledge center handbook for health services. (2014). National Knowledge Center for health services.
Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The Long-Term Health Consequences of Child Physical Abuse, Emotional Abuse, and Neglect: A Systematic Review and Meta-Analysis. PLoS medicine, 9(11), e1001349. https://doi.org/10.1371/journal.pmed.1001349.
Nyttingnes, O., Ruud, T., Norvoll, R., Rugkasa, J., & Hanssen-Bauer, K. (2018). A cross-sectional study of experienced coercion in adolescent mental health inpatients. BMC Health Services Research, 18, Article 389. https://doi.org/10.1186/s12913-018-3208-5.
O'Donoghue, E. M., Pogge, D. L., & Harvey, P. D. (2020). The Impact of Intellectual Disability and Autism Spectrum Disorder on Restraint and Seclusion in Pre-Adolescent Psychiatric Inpatients. *Journal of Mental Health Research in Intellectual Disabilities, 13*(2), 86–109. https://doi.org/10.1080/19315864.2020.1750742
Pollastri, A. R., Lieberman, R. E., Boldt, S. L., & Ablon, J. S. (2016). Minimizing Seclusion and Restraint in Youth Residential and Day Treatment Through Site-Wide Implementation of Collaborative Problem Solving. *Residential Treatment for Children & Youth, 33*(3–4), 186–205. https://doi.org/10.1080/0886571X.2016.1188340
Rivard, J. C., McCorkle, D., Duncan, M. E., Pasquale, L. E., Bloom, S. L., & Abramovitz, R. (2004). Implementing a Trauma Recovery Framework for Youths in Residential Treatment. *Child and Adolescent Social Work Journal, 21*(5), 529–550. https://doi.org/10.1023/B:CASW.0000043363.14978.e6
Roy, C., Castonguay, A., Fortin, M., Drolet, C., Franche-Choquette, G., Dumais, A., Lafortune, D., Bernard, P., & Geoffrion, S. (2019). The Use of Restraint and Seclusion in Residential Treatment Care for Youth: A Systematic Review of Related Factors and Interventions. Trauma, violence & abuse, 1524838019843196. https://doi.org/ https://dx.doi.org/10.1177/1524838019843196.
Scanlan, J. N. (2010). Interventions To Reduce the Use of Seclusion and Restraint in Inpatient Psychiatric Settings: What We Know So Far a Review of the Literature. *International Journal of Social Psychiatry, 56*(4), 412–423. https://doi.org/10.1177/0020764009106630
Shea, Beverley J, Grimshaw, Jeremy M, Wells, George A, Boers, Maarten, Andersson, Neil, Hamel, Candyce, … Bouter, Lex M (2007). Development of AMSTAR: A measurement tool to assess the methodological quality of systematic reviews. *BMC Medical Research Methodology, 7*(1). https://doi.org/10.1186/1471-2288-7-10
Smith, Y. (2014). Rethinking Decision Making: An Ethnographic Study of Worker Agency in Crisis Intervention. *Social Service Review, 88*(3), 407–442. https://doi.org/10.1086/677846

Smith, Y., & Spitzmueller, M. C. (2016). Worker Perspectives on Contemporary Milieu Therapy: A Cross-Site Ethnographic Study. *Research on Social Work Practice (RSWP), 40*(2), 105–116. https://doi.org/10.1093/swr/svw003

Smith, Yvonne, Colletta, Lex, & Bender, Anna E. (2017). Client Violence Against Youth Care Workers: Findings of an Exploratory Study of Workforce Issues in Residential Treatment. *Journal of Interpersonal Violence, 36*(5–6), 1983–2007.

Sourander, A., Ellilä, H., Välimäki, M., & Piha, J. (2002). Use of holding, restraints, seclusion and time-out in child and adolescent psychiatric in-patient treatment. *European Child & Adolescent Psychiatry, 11*(4), 162–167. https://doi.org/10.1007/s00787-002-0274-2

Steckley, L. (2018). Catharsis, containment and physical restraint in residential child care. *British Journal of Social Work, 48*(6), 1645–1663. https://doi.org/10.1093/bjsw/bcx131

Template for a mapping study protocol (2019). Retrieved 01.09.19 from https://community.dur.ac.uk/ebse/resources/templates/MappingStudyTemplate.pdf.

Ulset, G., & Melheim, S. (2013). Håndtering av tvang i barnevernsinstitusjoner. Ansattes, lederes og tilsynets perspektiver (Handling coercion in child welfare institutions. The perspectives of employees, managers and supervisors) (25). NTNU Samfunnsforskning/NTNU Regionalt kunnskapssenter for barn og unge - psykisk helse og barnevern). N. S. N. R. k. f. b. o. u.-p. h. o. barnevern. https://www.ntnu.no/documents/10293/0/Håndtering+av+tvang+i+barneverninstitusjoner/9f436c1b-92ef-4989-99c9-da243e704dda.

Ulset, G., & Tjelflaat, T. (2012). Tvang i barneverninstitusjoner : ungdommens perspektiver (Vol. nr. 12[i.e. 20]/2012). NTNU samfunnsforskning, Barnevernets utviklingssenter.

Valenkamp, M., Delaney, K., & Verheij, F. (2014). Reducing Seclusion and Restraint During Child and Adolescent Inpatient Treatment: Still an Underdeveloped Area of Research. *J Journal of Child and Adolescent Psychiatric Nursing, 27*(4), 169–174. https://doi.org/10.1111/jcap.12084

van Kessel, K., Milne, D., Hunt, K., & Reed, P. W. (2012). Understanding inpatient violence in a New Zealand child and adolescent psychiatric setting. *International journal of mental health nursing, 21*(4), 320–329. https://doi.org/10.1111/j.1447-0349.2011.00789.x

Vidal, C., Reynolds, E. K., Praglowski, N., & Grados, M. (2020). Risk Factors for Seclusion in Children and Adolescents Inpatient Psychiatry: The Role of Demographic Characteristics, Clinical Severity, Life Experiences and Diagnoses. *Child Psychiatry & Human Development, 51*(4), 648–655. https://doi.org/10.1007/s10578-020-00963-0