Mapping review of interventions to reduce the use of restrictive practices in children and young people's institutional settings: The CONTRAST study

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Abstract
Restrictive practices are often used harmfully with children in institutional settings. Interventions to reduce their use do not appear to have been mapped systematically. Using environmental scanning, we conducted a broad-scope mapping review of English language academic databases, websites and social media, using systematic methods. Included records (N = 121) were mostly from the United States and contained details of 82 different interventions. Children’s participation was limited. Reporting quality was inconsistent, which undermined claims of effectiveness. Overall, despite a multitude of interventions, evidence is limited. Leaders should consider the evidence, including children’s perspectives, before introducing poorly understood interventions into children’s settings.

Keywords
children’s perspectives, institutional settings, interventions, restrictive practices, review

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INTRODUCTION: RESTRICTIVE PRACTICES IN CHILDREN’S INSTITUTIONAL SETTINGS

The use of restrictive practices (RP) with children (i.e. children and young people) is a global concern associated with harm and violating human rights (Nowak, 2019; Nunno et al., 2022; United Kingdom Parliament, 2020). The United Nations (UN) Convention on the Rights of the Child states that depriving a child of liberty is acceptable only as a last resort, for the shortest appropriate time, as appropriate to their well-being, and proportionate to the circumstances (Nowak, 2019). The use of RP is permitted in many children’s institutional settings (Children’s Commissioner, 2018; Cunneen et al., 2017; Department for Education and Department of Health and Social Care, 2019; Goz et al., 2019; Nowak, 2019; United Nations Committee on the Rights of Persons with Disabilities, 2017; Wanglar, 2021). Restraint may involve manual or mechanical restraint (including pain-inducing techniques) and, in health settings, the use of forced medication (Kaltiala-Heino et al., 2007; Lüdtke et al., 2018; Taylor, 2020). Children may be subjected to body searches and providing urine samples for drug testing (Department for Education and Department of Health and Social Care, 2019). Seclusion may involve locking children up, isolation, segregation (including time-out, Equality and Human Rights Commission, 2019); and/or limiting or preventing communication, information and visits (Children’s Commissioner, 2018).

‘Common reasons for institutionalisation include orphaning, abandonment due to poverty, abuse in families of origin, disability and mental illness’(14 388); the child’s ‘delinquent’ behaviours (Shen et al., 2020); rescuing children from ‘bad families’ (Nishimoto et al., 2020) and ‘evil ways’ (Shield, 2006) and breaking cycles of poverty (Nishimoto et al., 2020; Wanglar, 2021). Hence, residential care of children is protection, care, treatment or punishment.

Settings include children’s homes, residential schools, young offender institutions, secure training centres, secure children’s homes, immigration detention centres and child and adolescent mental health inpatient units (Frith, 2017). Children in these disparate institutional settings are likely to have previously experienced trauma, abuse and loss (Baglivio et al., 2015; Ford et al., 2007; Frith, 2017; Goldson, 2015; Goldson & Briggs, 2021; Jacobson et al., 2010; Jensen et al., 2015; McDougall & Nolan, 2016; Schilling et al., 2007). Some children can present serious risks of harm to themselves and/or others (Lüdtke et al., 2018). Often owing to histories of adversity, neglect and even abuse and violation, others might exhibit related behavioural and/or psychological difficulties (McLaughlin et al., 2020; Mock & Arai, 2011; Torjesen, 2019). This presents challenges, the management of which frequently involves the use of RP. In certain situations, restrictive measures can serve to protect a child from potentially life-threatening behaviours to themselves or others (Blikshavn et al., 2020; Department for Education and Department of Health and Social Care, 2019); but there is broad consensus that it could often be less harmful and more appropriate to use non-physical interventions (Department for Education and Department of Health and Social Care, 2019; Equality and Human Rights Commission, 2019; Lyons, 2015; Miguel, 2016; Nunno et al., 2022; Prince & Gothberg, 2019; van Loan et al., 2015; Wisdom et al., 2015; World Health Organization, 2019).

Children experiencing RP are vulnerable to harm and violations of their human rights (Nowak, 2019). The UN recognises that:

Restraint is more likely to amount to inhuman and degrading treatment when it is used on people in groups who are at particular risk of harm or abuse, such as detainees, children and disabled people. (Equality and Human Rights Commission, 2019).

Therefore, this issue requires urgent attention.
Prevalence

Despite its worldwide significance (World Health Organization, 2019), much of the research is generated in the Global North; furthermore, approaches to definitions, data monitoring, calculating and recording vary (UNICEF, 2020). Therefore, the prevalence of RP in children’s institutions is difficult to quantify (Desmond et al., 2020). An estimated minimum of 2.7 million children reside in institutions worldwide (Petrowski et al., 2017), though the true figure is probably much higher (Desmond et al., 2020; UNICEF, 2020).

A reported 75,150 children are currently in the English care system, of whom 10% are in residential care (Parry et al., 2021). In March 2020, 1,340 children aged 10–18 years were living in secure institutions in England (mental healthcare, youth custody and secure children’s homes; Children’s Commissioner, 2022). During 2019–2020, the use of force on UK child prisoners increased by 19%, totalling 7,500 incidents (Goldson & Briggs, 2021; Ministry of Justice and Youth Justice Board, 2021).

Children are potentially five times more likely than adults to be subject to RP (Wisdom et al., 2015). Forty-five children died in restraint-related circumstances in inpatient psychiatric facilities in the United States (US) between 1993 and 2003 (LeBel et al., 2010; Nunno et al., 2006). In 2011, a major review reported that at least a quarter of children in psychiatric settings had been secluded and/or restrained at least once (De Hert et al., 2011). Data from 2013 suggested an estimated 50% or more of children in the UK learning disability services had experienced RP (Health and Social Care Information Centre, 2013). More recently, the use of RP in an Australian youth mental health unit was recorded in 17.6% of admissions over a 6-month period (Goz et al., 2019). There is some evidence that girls are more likely to be restrained than boys, and to be restrained face-down (Agenda: Alliance for Women and Girls at Risk, 2017).

RP carries high risks of physical and psychological harm, and death. Evidence regarding psychological impact is limited (Fish & Culshaw, 2005; Steckley & Kendrick, 2008), but extrapolation from research with adult populations suggests that RP may be profoundly detrimental to therapeutic relationships between care staff and children (MIND, 2013) and particularly counter-therapeutic for children with an abuse history (Goldson, 2002), while also harming staff well-being (Parry et al., 2021).

Strategies to address RP reduction

There is at the very least, a ‘delicate balance’ between restraint for the purposes of care, and causing preventable harm (Preisz & Preisz, 2019):1165. Previous research has explored strategies to reduce RP with adults in mental health (e.g. Bowers et al., 2015; National Association of State Mental Health Program Directors, 2006; Riley & Benson, 2018) and learning disabilities settings (Bowers et al., 2015; Deveau & McDonnell, 2009; Luiselli et al., 2004; Putkonen et al., 2013). There is limited empirical data, primarily based on case studies of single facility initiatives (Delaney, 2006; LeBel et al., 2010), that interventions effectively reduce RP use specifically with children in mental health services (Azeem et al., 2011; De Hert et al., 2011; LeBel et al., 2010; LeBel & Goldstein, 2005; Schreiner et al., 2004). Some of these interventions have been the subject of systematic reviews (e.g. Bowers et al., 2015), but the range of interventions implemented in practice does not appear to have been examined previously. Therefore, as a first step in understanding how restrictive practices may be reduced and/or applied without causing harm, this study aimed to identify and systematically
map all available interventions seeking to reduce RP in children’s institutional settings. It asked: What is known about interventions to reduce RP in children’s institutional settings?

METHODS

The study design was a mapping review that used systematic methods (Bradbury-Jones et al., 2019; Carter et al., 2019; Clapton et al., 2009; Cooper, 2016; National Collaborating Centre for Mental Health, 2015; Perryman, 2016; Pham et al., 2014) and followed PRISMA reporting guidelines (Page et al., 2021). The protocol was registered online (National Institute for Health and Care Research, 2020).

Search strategy

It was known that there were numerous small-scale, standalone initiatives available for implementation in services, in addition to the small number of well-known interventions published in academic journals. Therefore, the search applied ‘environmental scanning’ (Parker et al., 2018), and included academic sources (ASSIA, BNI, CINAHL, CD and AS, CJA, Education Abstracts, EMBASE, ERIC, MEDLINE, PsycINFO, Scopus), grey literature and social media aimed at a global coverage. The method involved systematically searching, retrieving and reviewing all reports irrespective of effectiveness evidence, with a focus on ascertaining the range and characteristics of interventions.

An ‘intervention’ was any documented approach to reduce the use of RP, for example a RP training manual and a RP reduction programme described in an academic study would both be classed as interventions. Searches were developed for the following concepts: child or child behaviours; restraint practices or named programmes and a variety of institutional, healthcare and educational settings. Further detail of the search strategy is published separately (King et al., 2022).

The search was limited to English language reports dating from 1989 (Children Act, Stat, 1989). Searches were peer-reviewed and conducted June–August 2019, updated January 2020.

Additional information about interventions was obtained via email requests to authors and organisations. The full search strategy is accessible via: https://doi.org/10.5518/1077.

Eligibility

Table 1 summarises the inclusion criteria. No restrictions regarding study design or quality were imposed. Ineligible interventions solely involved policy change or aimed to reduce the use of one type of RP by replacing it with another (Bradbury-Jones et al., 2019; Carter et al., 2019; Clapton et al., 2009; Graham et al., 2008; Hong et al., 2018; Pace et al., 2012; Perryman, 2016; Pham et al., 2014).

Data management and review

Records were managed within reference management software Endnote version X9 (Clarivate Analytics, 2018). Two reviewers (KB and KC) jointly screened titles/abstracts and full texts before
independently assessing them against the inclusion criteria and then discussing and resolving any disagreements.

**Quality appraisal**

The purpose of quality appraisal was to understand the scope of the literature and not to exclude records. The Mixed Methods Appraisal Tool (MMAT; Pace et al., 2012) was used to categorise records and inform quality appraisal. The MMAT is suitable for appraising studies with diverse designs in complex systematic literature reviews, and has good validity (Pluye et al., 2012). Comprehensiveness and consistency of reporting quality were appraised with reference to the WIDER tool reporting recommendations (Albrecht et al., 2013; see Table 3).

**Data extraction and analysis**

Available data were extracted regarding intervention, study participants, setting, outcome measures, costs, fidelity, acceptability and recommendations. Evaluations were identified by ascertaining whether a research question was described and whether the data required to answer the question had been collected (Hong et al., 2018); then allocated to one of the five MMAT study design categories: qualitative (QL); quantitative description (QTD); non-randomised (NR); randomised controlled trial (RCT); mixed methods (MM). Records that could not be classified by study design (i.e. were largely descriptive) were categorised as ‘mapping records’. Available information about all interventions was subject to detailed analysis including intervention content, theoretical basis, population, outcomes and conclusions.

| TABLE 1 | Inclusion criteria |
|---------|--------------------|
| **Include** | **Exclude** |
| Population | Staff working in state and privately operated children's institutional settings (including children's homes, residential schools, boarding schools, young offender institutions, secure training centres, immigration detention centres, and inpatient child and adolescent mental health, child and adolescent hospitals (non-mental health) and learning disability services) | Interventions to reduce staff use of RP with adults only (over 18 years) |
| Date | Dated between: 1989 and Jan 2020 | Pre 1989 |
| Interventions | Intervention: Documented interventions aimed at reducing staff use of restrictive practices with children in institutional settings | Pharmacological only intervention Non-English language interventions |
| Outcomes | Outcomes: Reduction of RP | Alternative intervention outcomes |
| Language | English | Other languages |
RESULTS

One hundred and twenty-one records (45 mapping records and 76 evaluations) were included in the review (see Figure 1; Table 2).

Included records were diverse in format and reporting quality. The 45 mapping records described interventions without evaluating them. The 76 evaluation records comprised the following study designs: 41 NR; 23 QTD; 5 QL; 5 MM; 2 with insufficient detail of study design; 0 RCT. Evaluation design description was often unclear, though evaluation design could sometimes be inferred from other study details. Where reported, terminology was inconsistent.

All pre-2007 records \((n = 23)\) were from the US. The geographical spread of publications increased from the mid-late 2000s. Seventy-nine records were from peer-reviewed sources. The remainder were from professional magazines, internal reports, training resources and blogs.

Figure 2 summarises the pattern of publication over time. A sharp increase from the mid-2000s coincides with a US-wide policy response to newspaper reports highlighting deaths related to the use of restraint in facilities across the US (Huckshorn, 2010; Weiss, 1998).

Intervention evaluation strategies

Typical evaluation designs compared pre-post counts or rates of RP within a single setting, for example (Huckshorn, 2010). Eight non-randomised controlled trials reported some statistically significant RP reductions (Boel-Studt, 2017; Borckardt et al., 2011; Ercole-Fricke et al., 2016; Ford & Hawke, 2012; Magnowski & Cleveland, 2020; Marrow et al., 2012; Miller et al., 2006; West et al., 2017).

All evaluations reported success, directly (e.g. reducing frequency, intensity or duration of seclusion and/or restraint) or indirectly (e.g. improvements to the social milieu).
| Study | Author(s) | Title (abbreviated) | Intervention name | N | Standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size | Outcomes | Sig detail |
|-------|-----------|---------------------|-------------------|---|----------------------|------------------------------|----------------------------|-------------|----------|------------|
| 1     | Andrassy (2016) | Feelings Thermometer: An Early Intervention Scale | N/A | 0 | 0 | N/A | 0 | 0 | 0 | 0 |
| 1     | Azeem et al. (2015) | Restraint Reduction at a Pediatric Psychiatric Hospital | 6 Core Strategies | NR | 0 | 0 | 0 | 120 | 52 beds |
| 2     | Azeem et al. (2011) | Effectiveness of six core strategies | 6 Core Strategies | NR | 0 | 0 | 0 | 33 | 458 admissions |
| 1     | Barnett et al. (2002) | Improving the Management of Acute Aggression | Guide to improve management of client acute aggressive behaviour | NR | 0 | 0 | 0 | 0 | 0 |
| 2     | Bobier et al. (2015) | Use and Usefulness of a Sensory Modulation Room | Unnamed (sensory modulation room) | QTD | 1 | Reduction in seclusion and partial restraints (\(p < .05\)) | 1 | 1 |
| 2     | Boel-Studt (2017) | Study of Trauma-Informed Psychiatric Residential Treatment for Children and Adolescents | Trauma-Informed Psychiatric Residential Care | NR | 1 | Reduced time in seclusion (\(p = .000\); not restraint) | 1 | 1 |
| 2     | Bonnell et al. (2014) | The effects of a changing culture on a child and adolescent psychiatric inpatient unit | Collaborative Problem Solving (CPS) | NR | 1 | Reduced constant observation (\(p < .002\)) | 24 | 124 patients: 85 pre-; 39 post-intervention | (Continues) |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|--------------|------------|-------------------|-----------------------|------------------------------|---------------------------|-------------|
| 2   | Borckardt et al. (2011) | Systematic Investigation of Initiatives to Reduce Seclusion and Restraint in a State Psychiatric Hospital | Engagement model | NR | 1 | Reduced S/R ($p = .006$) | 1 | 1 | Quality of Care (QOC) measure | 36 | 340 staff 446 patients |
| 1   | Brown et al. (2013) | Trauma Systems Therapy in Residential Settings: Trauma Systems Therapy (TST) | QTD | 0 | n/a | 2 | 2 | Child and Adolescent Functional Assessment Scale (CAFAS); Child Ecology Check in (CECI) | 84 | 0 |
| 1   | Budlong (2004) | Lessons Learned and Organizational Changes Implemented | Unnamed | 0 | 0 | n/a | 0 | 0 |
| 1   | Caldwell et al. (2014) | Successful seclusion and restraint prevention effort | Six Core Strategies | MM | 0 | n/a | 0 | 0 |
| 1   | Caldwell and LeBel (2010) | Reducing restraint and seclusion: how to implement whole system change | Six Core Strategies | 0 | 0 | n/a | 0 | 0 |
| 2   | Campbell (2004) | STAR Project Outcomes | STAR | QTD | 0 | n/a | 0 | 26 | not reported |
| 1   | Canady (2018) | Model-of-care effort reduces need for restraint, seclusion at BH facility | Comfort versus control | NR | 0 | n/a | 0 | 0 |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|---------------|------------|-------------------|-------------------------|---------------------------|---------------------------|-------------|
| 1   | Care Council for Wales (2016) | Positive Approaches- Reducing Restrictive Practices in Social Care (Version 1) | Positive Behaviour Support, Active Support and Restorative Approaches | 0      | 0             | n/a        | 0                 | 0                       |                           |                          | 0           |
| 1   | Carter et al. (2008) | Beyond a Crisis Management Program | PMAB Prevention and Management of Aggressive Behavior | QD     | 0             | n/a        | 0                 |                         |                           |                          | 0           |
| 1   | Colton and Xiong (2010) | Reducing Seclusion and Restraint – Organizational Questionnaire | unnamed | 0      | 0             | n/a        | 0                 |                         |                           |                          | 0           |
| 1   | Colton (2004) | Checklist for Assessing Your Organization's Readiness for Reducing Seclusion and Restraint | Checklist for Assessing Your Organization's Readiness for Reducing Seclusion and Restraint | QL     | 0             | n/a        | 0                 |                         |                           |                          | 0           |
| 1   | Cooper (2008) | Use of restraint reduced by therapeutic intervention. (cover story) | Therapeutic Crisis Intervention (TCI) | 0      | 0             | n/a        | 0                 |                         |                           |                          | 0           |
| 2   | Craig and Sanders (2018) | Evaluation of a Program Model for Minimizing Restraint and Seclusion | TIA Trauma Informed Approach; Comfort vs Control | QTD    | 0             | n/a        | 0                 |                         | 156                       | Organisational data 2003-2016 | 6           |
| 2   | Craig (2015) | Evaluation of a Program Model for minimizing restraint and seclusion | Minimisation of restraint and seclusion model (Grafton 2010) | NR     | 0             | n/a        | 0                 |                         | 108                       | Organisational data 2003-2016 | 6           |

(Continues)
| Cat | Author(s)                          | Title (abbreviated)                                                                 | Intervention name                                                                 | Design | Sig outcomes? | Sig detail | Outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|---------------|------------|------------------|-------------------------|------------------------------|--------------------------|-------------|
| 1   | Crisis Prevention Institute (CPI) | Six Core Strategies for the Reduction of Restraint and Seclusion                    | Nonviolent Crisis Intervention®, Six Core Strategies                               | 0      | 0             | n/a        | 0                | 0                       |                             | 0            | 0           |
| 2   | Crosland et al. (2008)            | Using Staff Training to Decrease the Use of Restrictive Procedures at Two Facilities for Foster Care Children | Behavior Analysis Services Program                                                | NR     | 0             | n/a        | 1                | NR                      | 4                           | 44 staff            | 0           |
|     |                                   |                                                                                    |                                                                                   |        |               |            |                  |                          |                             |                          |             |
| 2   | Dean et al. (2007)                | Behavioral Management Leads to Reduction in Aggression in a Child and Adolescent Psychiatric Inpatient Unit | Unnamed QTD                                                                       | 1      | Reduced aggressive episodes (p < .05), injuries (p < .05), use of restraint (p < .001), seclusion duration (p < .001) | 0          |                  |                          | 12                          | 151 patients        |             |
|     |                                   |                                                                                    |                                                                                   |        |               |            |                  |                          |                             |                          |             |
| 2   | Deveau and Leitch (2014)          | The impact of restraint reduction meetings                                         | Restraint reduction meeting (RRM)                                                | NR     | 1             | Reduced overall mean RP (p = .04) | 0          |                  |                          | 9                           | 93 staff trained, 35 children in dataset |             |
| 1   | Donovan et al. (2003)             | Seclusion and Restraint Reform: An Initiative                                       | Riverview program, based on ABCD (Brendtro and Ryan and associates)               | NR     | 1             | reduction in seclusion and restraint (p < .001) | 0          |                  |                          | 24                          | 0            |             |
| 2   | Eblin (2019)                       | Reducing seclusion and restraints on the inpatient child and adolescent behavioral health unit | unnamed QTD                                                                       | 0      | n/a           |            | 0                | 0                       |                             | not reported           |             |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|------------|---------------------|-------------------|--------|---------------|------------|-------------------|-------------------------|---------------------------|-----------------------------|-------------|
| 2   | Elwyn et al. (2017) | Importance of Leadership and Employee Engagement in Trauma-Informed Organizational Change | Sanctuary Model | QL | 0 | n/a | 0 | | | 48 | 17 staff |
| 2   | Ercole (2014) | Effects of a collaborative problem solving approach on an inpatient adolescent psychiatric unit | Collaborative problem-solving (CPS) | NR | 1 | Reduced length of stay; self inflicted injury (both $p < .001$) | 0 | | | 24 | N staff not reported. T1 population of patients 224; T2 population of patients 312 |
| 2   | Ercole-Fricke et al. (2016) | Effects of a Collaborative Problem-Solving Approach on an Inpatient Adolescent Psychiatric Unit | Collaborative problem-solving (CPS) | NR | 1 | Reduced self-inflicted injury ($p = .001$) and security incidents ($p = .001$) | 0 | | | 24 | 564 patients |
| 2   | Farina (2006) | Toward reducing the utilization of seclusion and restraint | Unnamed | NR | 1 | Reduced frequency & duration of restraint and seclusion ($p < .001$) | 0 | | | 30 | 260 patients |
| 2   | Finnie (2014) | The collaborative problem-solving approach with traumatized children | n/a. CPS recently introduced but impact not measured in this study | MM | 1 | Some sig positive associations between length of stay and being taken to locked seclusion, range $p = .02-.87$ | 0 | | | 9 | 197 admissions, 167 children |

(Continues)
| Cat | Author(s)          | Title (abbreviated)                                                                 | Intervention name                                                                 | Design         | Sig outcomes? | Sig detail          | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|--------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------|---------------|---------------------|--------------------|------------------------|-------------------------------|--------------------------|-------------|
| 1   | Ford (2013)        | TARGET Adolescent Individual Manual Facilitator Guide Twelve-Session             | TARGET (FREEDOM Steps)                                                          | 0              | 0             | n/a                 | 0                  | 0                      |                               | 0                        |             |
|     |                    |                                                                                 |                                                                                 |                |               |                     |                    |                        |                               |                          |             |
| 2   | Ford and Hawke (2012) | Trauma affect regulation psychoeducation group and milieu intervention outcomes in juvenile detention facilities | Trauma Affect Regulation: Guide for Education and Therapy (TARGET)                | NR             | 1             | Reduced disciplinary incidents and seclusion ($p < .001$) | 0                  | 0                      |                               | 27                       | 394 consecutive admissions (197 in intervention group plus 197 in comparison group) |             |
| 2   | Forrest et al. (2018) | Building Communities of Care                                                    | Building Communities of Care (BCC)                                              | QTD            | 0             | n/a                 | 0                  | 60                     |                               | not reported              |             |
| 2   | Fowler (2006)      | Aromatherapy, used as an integrative tool for crisis management                 | Aromatherapy for crisis management’                                              | QTD            | 1             | acceptability established ($p < .005$); effect on R/S non sig | 0                  | 43                     |                               | 5                        | 43 adolescents           |             |
| 2   | Fralick (2007)     | A Restraint Utilization Project                                                 | Rapid Cycle Model for QL Improvement                                            | 0              | 0             | n/a                 | 0                  | 48                     |                               | 13 staff                 |             |
| 1   | Girelli (2004)     | Lessons Learned in the Reduction of Restraint and Seclusion                    | Unnamed                                                                         | 0              | 0             | n/a                 | 0                  | 0                      |                               | 0                        |             |
| 2   | Glew (2012)        | Reducing the use of seclusion and restraint in segregated special education school settings | CPS (Collaborative Problem Solving)                                            | QTD            | 1             | Reduced aggression and restraint on one of three sites ($p < .05$) | 2                  | 2                      | ADR; BASC-2;               | 24                       | 89           |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|---------------|------------|-------------------|------------------------|-----------------------------|-----------------------------|-------------|
| 1   | Goren et al. (1996) | Reducing violence in a child psychiatric hospital | Unnamed | 0 | 0 | n/a | 0 |                       |                        |                            |                           | 0           |
| 2   | Greene (2006) | Innovations: child & adolescent psychiatry: use of collaborative problem solving to reduce seclusion and restraint | Collaborative problem-solving (CPS) | NR | 1 | Detail not provided | 0 |                       |                        |                            |                           | 100 admissions |
| 1   | Guilfoile (2004) | The Devereux Glenholme School | Devereux Glenholme internal quality improvement process | QTD | 0 | n/a | 0 |                       |                        |                            |                           | 72 staff trained, techniques used with 5 children |
| 2   | Hallman et al. (2014) | Improving the culture of safety on a high-acuity inpatient child/adolescent psychiatric unit | Mindfulness-based Stress Reduction training program | NR | 1 | Improvements in staff stress and mindfulness | 2 | 2 | TMS (Lau, 2006); PSS (Cohen et al., 1983) | 13 staff |
| 2   | Hambrick et al. (2018) | Restraint and Critical Incident Reduction Following Introduction of the Neurosequential Model of Therapeutics (NMT) | The Neurosequential Model of Therapeutics (NMT) | NR | 1 | Reduced critical incidents and restraints | 0 |                       |                        |                            | 2744 clients across 10 sites |
| 2   | Health sciences centre Winnipeg (2015) | WCB Workplace Innovation Project | Six Core Strategies | NR | 0 | n/a | 0 |                       |                        |                            | 24 | 99 incidents and 15844 minutes of seclusion during implementation year |

(Continues)
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|---------------|------------|-------------------|-------------------------|-----------------------------|-----------------------------|-------------|
| 2   | Hellerstein et al. (2007) | Decreasing the use of restraint and seclusion among psychiatric inpatients | Unnamed | NR | 0 | n/a | 0 | | | 87 | not reported |
| 1   | Department for Education and Department of Health and Social Care (2019) | Reducing the Need for Restraint and Restrictive Intervention: Children and young people | 'a positive and proactive approach to behaviour' p14 | 0 | 0 | n/a | 0 | | | | |
| 1   | HM Inspectorate of Prisons (2015) | Behaviour management and restraint of children in custody | Minimising and Managing Physical Restraint (MMPR) | MM | 0 | n/a | 0 | | | 9 | 43 staff and 78 child interviewees; 11 staff discussion groups |
| 2   | Hodgdon et al. (2013) | Development and Implementation of Trauma-Informed Programming in Youth Residential Treatment Centers Using the ARC Framework | ARC (Attachment, Regulation and Competency) Framework | MM | 1 | Reductions in some CBCL and PTSD domains ($p$ range = .04-.2) | 2 | 2 | CBCL (Child Behaviour Checklist) and UCLA PTSD Reaction Index (PTSD-RI; Steinberg et al., 2013) | 126 females |
| 1   | Holden et al. (2020) | Therapeutic Crisis Intervention Edition 7 Activity Guide | Therapeutic Crisis Intervention (TCI) | 0 | 0 | n/a | 0 | | | | |
| 1   | Holden et al. (2020) | Therapeutic Crisis Intervention Reference Guide, 7th Edition | Therapeutic Crisis Intervention (TCI) | 0 | 0 | n/a | 0 | | | | |
| 1   | Holden et al. (2020) | Therapeutic Crisis Intervention Student Workbook, Seventh Edition | Therapeutic Crisis Intervention (TCI) | 0 | 0 | n/a | 0 | | | | |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|---------------|------------|-------------------|------------------------|-----------------------------|-----------------------------|-------------|
| 2   | Holstead et al. (2010) | Restraint reduction in children’s residential facilities: | Unnamed | QTD | 0 | n/a | 0 | 0 | | | all employees |
| 2   | Huckshorn (2010) | Preventing Violence, Trauma, and the Use of Seclusion and Restraint in Mental Health Settings: | Six Core Strategies | 0 (overview across sites) | 0 | n/a | 0 | | | 108 | 0 |
| 2   | Jani et al. (2011) | Milieu therapy training to reduce the frequency of restraints in residential treatment centers | Milieu therapy training and collaborative problem solving (CFS) | QTD | 1 | Reduced restraints ($p < .05$) | 0 | | | 48 | N not reported, all staff |
| 2   | Jones and Timbers (2003) | Minimizing the Need for Physical Restraint and Seclusion in Residential Youth Care Through Skill-Based Treatment Programming | Teaching-Family Model | NR | 1 | Reduced restraint, seclusion and significant incidents in one of two sites ($p < .01$) | 0 | | | 31 | staff sample, N not reported |
| 2   | Jonikas et al. (2004) | A program to reduce use of physical restraint in psychiatric inpatient facilities | Unnamed | QTD | 1 | Reduced restraints in adolescent unit ($p < .01$) | 0 | | | 29 | staff N not reported. Data from 227 adolescents. |
| 2   | Kalogjera et al. (1989) | Impact of therapeutic management on use of seclusion and restraint | Unnamed | NR | 1 | sig reduction $p < .05$ | 0 | | | 24 | staff numbers not reported. |
| 2   | Kaltiala-Heino et al. (2007) | Aggression management in an adolescent forensic unit | Unnamed | NR | 0 | Reduced restraint, p range .001-NS across variables. | 0 | | | 26 | 31 patients |

(Continues)
| Cat | Author(s)         | Title (abbreviated)                                                                 | Intervention name                                      | Design | Sig outcomes? | Sig detail                                                                 | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------|--------|---------------|----------------------------------------------------------------------------|-------------------|--------------------------|-------------------------------|-----------------------------|-------------|
| 2   | Kilgore (2018)   | Effectiveness of collaborative problem solving model in reducing seclusion and restraint in a | Collaborative Problem Solving (CPS)                   | NR     | 1             | Reduced S/R duration; increased frequency (each p < .01)                   | 0                 |                          |                               | 36                          | N staff receiving training not reported. Data collected from patient records patients N = 61 (18 pre + 43 post) p 25 |
| 2   | LeBel and Goldstein (2005) | The economic cost of using restraint and the value added by restraint reduction or elimination | Unnamed                                               | QTD    | 0             | n/a                                                                       | 1                 | 1                        | Global Assessment of Functioning tool | 60                          | pre: 81 patients, no other patient or staff N reported. |
| 2   | LeBel et al. (2004) | Child and adolescent inpatient restraint reduction: a state initiative | Unnamed                                               | NR     | 0             | n/a                                                                       | 0                 |                          |                               | 36                          | episodes per 1000 patient days (no sample N) |
| 1   | Leitch (2008)    | Together Trust 6th June 2008                                                        | Unnamed                                               | 0      | 0             | n/a                                                                       | 0                 |                          |                               | 0                           |             |
| 1   | Leitch (2008)    | Training Plan 6th June 2008                                                         | Unnamed                                               | 0      | 0             | n/a                                                                       | 0                 |                          |                               | 0                           |             |
| 1   | Leitch (2009)    | The impact of restraint reduction meetings                                           | Unnamed                                               | QTD    | 0             | n/a                                                                       | 0                 |                          |                               | 10 services                  |             |
| 1   | Leitch (2009)    | Hands Off: The impact of restraint reduction meetings                                | Hands Off                                             | QTD    | 0             | n/a                                                                       | 0                 |                          |                               | 10 services                  |             |
| 1   | Leitch undated   | Training                                                                             | Unnamed                                               | 0      | 0             | n/a                                                                       | 0                 |                          |                               | 0                           |             |
| 2   | Leitch (2009)    | The impact of restraint reduction meetings on the use of Restrictive Physical Interventions (RPI) in residential services for children and young people | RPI (Restrictive Physical Interventions)              | QTD    | 1             | Reduced RP (p = .04)                                                     | 0                 |                          |                               | 8                           | unit of analysis = service. 10 services (49 beds in total) |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|---------------|------------|-------------------|--------------------------|----------------------------|-----------------------------|-------------|
| 1   | Lietzke (2014) | Restraint Reduction and CPI Training | Nonviolent Crisis Intervention | 0      | 0             | n/a        | 0                 | 0                        |                            |                            | 0           |
| 2   | Magnowski and Cleveland (2020) | The Impact of Milieu Nurse-Patient Shift Assignments on Monthly Restraint Rates on an Inpatient Child and Adolescent Psychiatric Unit | Milieu Nurse | QTD | 1            | Reduced restraint \(p = .002\) | 16                  | 758 patients (372 control + 386 intervention) |                            |                            |             |
| 2   | Magnowski and Cleveland (2020) | The Impact of Milieu Nurse-Client Shift Assignments on Monthly Restraint Rates | Unnamed | QL | 1            | Reduced restraint \(p = .004\) | 16                  | clinical records of N = 758 patients |                            |                            |             |
| 1   | Magnowski undated | Restraint Implications | Unnamed | 0      | 0             | n/a        | 0                 | 17 + patients            |                            |                            |             |

(Continues)
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|---------------|------------|-------------------|-------------------------|----------------------------|-----------------------------|-------------|
| 2   | Marrow et al. (2012) | The Value of Implementing TARGET within a Trauma-Informed Juvenile Justice Setting | Incorporated TARGET (Trauma Affect Regulation: Guide for Education and Therapy) plus other elements (p 259). "a multifaceted trauma-focused intervention" | QTD | 1 | Reduced R/S and threats to staff (\(p < .05-.001\)) | 7 | 7 | Mood and Feelings Questionnaire (MFQ) (Angold & Costello, 1988) | 3 | 74 youths |
|     |           |                     |                   |        |               |            |                   |                         | The Trauma Events Screening Inventory (Ford & Rogers, 1997) |                           |             |
|     |           |                     |                   |        |               |            |                   |                         | Self-Report for Childhood Anxiety Related Disorders (SCARED; Birmaher et al., 1997) |                           |             |
|     |           |                     |                   |        |               |            |                   |                         | The UCLA PTSD Reaction Index (RI; Steinberg et al., 2013) |                           |             |
|     |           |                     |                   |        |               |            |                   |                         | The Ohio Scales (OS; Ogles et al., 2001) |                           |             |
|     |           |                     |                   |        |               |            |                   |                         | The Generalized Expectancies for Negative Mood Regulation (NMR; Catanzaro & Mearns, 1990) |                           |             |
|     |           |                     |                   |        |               |            |                   |                         | Massachusetts Youth Screening Instrument (MAYSI-2) (Grisso et al., 2001) |                           |             |
| Cat | Author(s)         | Title (abbreviated)                                                                 | Intervention name                                                                 | Design | Sig outcomes? | Sig detail                                    | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size                  |
|-----|------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|---------------|-----------------------------------------------|-------------------|--------------------------|------------------------------|-------------------------------|-------------------------------|
| 2   | Martin et al.    | Reduction of restraint and seclusion through collaborative problem solving: a five-year prospective inpatient study | Collaborative Problem Solving (CPS)                                               | QTD    | 1             | Reduced R/S ($p < .001$–.006)                 | 0                 |                          |                              | 59                            | 72 staff; 998 admissions      |
|     | McGlinn          | The effect of federal regulations on the physical restraint of children and adolescents | described (in title) as ‘The effect of federal regulations on the physical restraint of children and adolescents in residential treatment’ | MM     | 1             | Reduced restraints ($p < .001$); Increased proportion of people with intellectual disability being restrained ($p < .05$) | 1                 | 1                        | Devereux Scales of Mental Disorder Manual (Naglieri et al., 2010) | 36                            | 279 patients                  |
|     | Miguel           | The Dynamics and Ramifications of Severe Challenging Behaviors                      | “Functional Communications Training” and “Systema Breathing”                        | QL     | 0             | n/a                                           | 0                 |                          |                              | incident data for 3 students  | (Continues)                   |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|------------|---------------------|-------------------|--------|---------------|------------|-------------------|-------------------------|----------------------------|-----------------------------|-------------|
| 2   | Miller et al. (2006) | Reduction of Physical Restraints in Residential Treatment Facilities | Unnamed | NR | 1 | Reduced restraint \((p < .0001)\) | 2 | 2 | Child and Adolescent Functional Assessment Scale (CAFAS; Hodges et al., 1998) and Global Assessment of Functioning (GAF; American Psychiatric Association, 2000) | 33 | records of 403 cyp |
| 2   | Murphy and Siv (2011) | A one year study of mode deactivation therapy: | Mode Deactivation Therapy (MDT) | NR | 0 | \(p > .05\) | 3 | 3 | Child Behavior Checklist (CBCL; Achenbach, 1991), Beck Depression Inventory (BDI) (Beck and Beck, 1972; Beck et al., 1961), Reynolds' Suicidal Ideation Questionnaire (SIQ) (Reynolds, 1988) | 12 | 20= 10 TAU+ 10 MDT adolescent males |
| 1   | NASMHPD (2006) | Six Core Strategies for Reducing Seclusion and Restraint Use | Six Core Strategies | 0 | 0 | n/a | 0 | 0 |  |  | 0 |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|--------------|------------|-------------------|------------------------|--------------------------|-----------------------------|-------------|
| 2   | Nunno et al. (2003) | Evaluating and monitoring the impact of a crisis intervention system | Therapeutic Crisis Intervention (TCI) | NR | 1 | Improved staff confidence in most domains ($p$ range .01-.05) | 0 | 17 | 62 direct care staff |
| 2   | Nunno et al. (2015) | Benefits of Embedding Research into Practice: An Agency-University Collaboration | CARE model (Children and Residential Experiences) | MM | 1 | Reduced R/P in residential school, increased in day school. ($p$ < .01-.05) | 0 | 144 | restraint data from 3 groups |
| 2   | O’Brien (2004) | Best Practices in Behavior Support: Preventing and Reducing the Use of Restraint and Seclusion | interventions including GBT Psychoeducational Treatment Model | QTID | 1 | no $p$ value reported | 0 | 46 | 0 |
| 2   | Paccione-Dyszlewski et al. (2012) | A crisis management quality improvement initiative in a children’s psychiatric hospital | QBS, Inc. SafetyCare Behavioral Safety Management program | NR | 1 | Reduced patient injury ($p$ < .001) | 0 | 44 | 0 |
| 2   | Padhi et al. (2019) | Eliminating seclusion and reducing restraint: Hope on an acute adolescent psychiatric ward | Unnamed | NR | 0 | Not reported | 0 | 23 | 0 |
| 1   | Partnership Projects (2020) | Neuro de-escalation | Neuro De-escalation | 0 | 0 | 0 | 0 | 0 | (Continues) |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|---------------|------------|-------------------|-------------------------|---------------------------|---------------------------|-------------|
| 2   | Plant (2020) | Courageous Patience Part II: Lessons Learned | The ABCD program (Autonomy, Belonging, Competence, and Doing for Others) including TACE staff training: (Therapeutic Assessment, Communication, and Education. | QTD   | 0             | n/a         | 5                 |                          |                           | 60           | 0           |
|     | Pollastri et al. (2016) | Minimizing seclusion and restraint in youth residential and day treatment - Collaborative Problem Solving | Collaborative problem-solving (CPS) | MM     | 1             | Reduced restraint, seclusion and 'transports' (moving individual from one room to another; p .0001–.05) | 1                 | 1                 | CAFAS- clinical outcomes | 48           | 0           |
|     | Ponge and Harris (2006) | Reduction of seclusion and restraint in a children's psychiatric center | Unnamed | NR      | 0             | Not reported | 0                 |                          |                           | 12           | 0           |
| 1   | PRICE Training (2020) | Price training | Unnamed | 0       | 1             | Y           | 0                 |                          |                           | 0            | 0           |
| 1   | Rettmann (2019) | [Case Study] Changes in Attitudes, Changes in Outcomes | Nonviolent Crisis Intervention | 0       | 0             | n/a         | 0                 |                          |                           | 1.26 staff    |             |
| 1   | Reynolds, Grados, et al. (2019) | Implementation of M-PBIS in acute psychiatric care | M-PBIS modified version of Positive Behavioral Supports | QTD    | 1             | 3           | 0                 |                          |                           | 0            | 0           |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|------------------|--------|---------------|------------|------------------|------------------------|---------------------------|-----------------------------|-------------|
| 2   | Reynolds et al. (2016) | Use of Modified Positive Behavioral Interventions and Supports in a Psychiatric Inpatient Unit for High-Risk Youths | M-PBIS | NR | 1 | Reduced R/S ($p < .01$) | 0 | 0 | Reversal of standardised measures | 53 | 1485 |
| 2   | Reynolds, Praglowski, et al. (2019) | Implementation of Modified Positive Behavioral Interventions and Supports in a youth psychiatric partial hospital program | M-PBIS | QL | 1 | Reduced S/R ($p = .001$) and PRN ($p = .008$) | 0 | 0 | 442 admissions | 27 | |
| 1   | Rowan (2010) | Schools operating safely: Schools Operating Safely | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2   | Russell et al. (2009) | A comparison between users and non-users of Devereaux’s Safe and Positive Approaches | SPA (Devereaux’s Safe and Positive Approach) | NR | 1 | $p < .001$ reduction in patient injury, staff injury and use of restraint associated with using SPA and over time | 0 | 0 | 6361 | 72 | |
| 2   | Ryan et al. (2007) | Reducing Seclusion Timeout and Restraint Procedures with At-Risk Youth | Crisis Prevention Institute’s (CPI) Nonviolent Crisis Intervention Training | NR | 0 | n/a | 0 | 0 | 42 students | 24 | |
| 2   | Ryan et al. (2008) | Reducing the Use of Seclusion and Restraint in a Day School Program | Therapeutic Intervention | NR | 0 | n/a | 0 | 0 | 42 students | 36 | |

(Continues)
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|--------------|------------|-------------------|--------------------------|---------------------------|----------------------------|-------------|
| 2   | Sanders (2009) | The effects of an action plan, staff training, management support and monitoring on restraint use and costs of work-related injuries | Grafton programme | NR | 0 | n | 0 | 0 | | 48 | 250 employees |
| 2   | Schreiner et al. (2004) | Decreasing the use of mechanical restraints and locked seclusion | Unnamed | NR | 0 | n/a | 0 | 0 | | 9 | 23 beds |
| 2   | Seckman et al. (2017) | Evaluation of the use of a sensory room on an adolescent inpatient unit | Unnamed | NR | 0 | n/a | 1 | 1 | Combined Assessment of Psychiatric Environments (CAPE) | 12 | 65 sessions |
| 2   | Shadili et al. (2012) | Violence in an adolescent psychiatric inpatient unit | Unnamed | NR | 0 | n/a | 0 | 0 | | 12 | 125 adolescents |
| 2   | Singh et al. (1999) | Reconsidering the use of seclusion and restraints in inpatient child and adult psychiatry | Unnamed | NR | 0 | n/a | 0 | 0 | | 30 | 0 |
| 1   | Smallridge and Williamson (2011) | Report on implementing the independent review of restraint in juvenile secure settings | CRT (Conflict Resolution Training) | QL | 0 | n/a | 0 | 0 | | 0 |
| 1   | Studio III Training Systems and Psychological Services (2021) | Low Arousal Training LASER (low arousal supports educational resilience) | 0 | 0 | n/a | 0 | 0 | 0 | | 0 |
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|---------------|------------|------------------|-----------------------|--------------------------|-----------------------------|-------------|
| 2   | Thomann (2010) | Factors in restraint reduction in residential treatment facilities for adolescents | Unnamed | QD | 1 | Differences in restraint use between programs ($p = .01–.05$) | 0 | 3 | 56 patients; 28 staff surveys |
| 2   | Thompson et al. (2008) | Organizational Intervention to Reduce Physical Interventions | Components of a Harm-Free Environment | QD | 1 | Reduced restraint, physical assault, physical aggression, property damage ($p < .05$) | 0 | 65 | 561 male youth |
| 2   | Ubana et al. (2015) | Continued implementation of an advanced practice nurse-led multidisciplinary programme | Unnamed | NR | 0 | n/a | 0 | 24 | 0 |
| 1   | U.S. Department of Education (2012) | Restraint and seclusion: Resource document | Unnamed | NR | 0 | n/a | 0 | 0 | 0 |
| 2   | Valenkamp et al. (2011) | Development and evaluation of the individual proactive aggression management method for residential child psychiatry and child care | Pro-ACT (Pro-active monitoring of Aggression in Children Tool) | NR | 0 | n/a | 0 | 0 | 0 |

(Continues)
| Cat | Author(s) | Title (abbreviated) | Intervention name | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|-----------|---------------------|-------------------|--------|---------------|------------|-------------------|--------------------------|---------------------------|-----------------------------|-------------|
| 2   | van Loan et al. (2015) | Reducing Use of Physical Restraint: A Pilot Study Investigating a Relationship-Based Crisis Prevention Curriculum | Shifting Gears | NR | 0 | n/a | 0 | 0 | 0 | 12 | 0 |
| 2   | Verret et al. (2019) | The impact of a schoolwide de-escalation intervention plan on the use of seclusion and restraint in a special education school | Unnamed | QTD | 1 | Reduced frequency and duration of S/R (p < .05) | 0 | 0 | 0 | 72 students |
| 1   | Visalli and McNasser (2000) | Reducing seclusion and restraint: organizational challenge | Behavior mapping, the Anger Management Assessment and the Triangle of Choices | 0 | 0 | n/a | 0 | 0 | 0 | |
| 1   | Welsh Government (2019) | Guidance on reducing restrictive practices | PBS | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2   | West et al. (2017) | An evaluation of the use and efficacy of a sensory room within an adolescent psychiatric inpatient unit | Unnamed | QTD | 1 | (i) Sig positive association between distress reduction and history of aggression (p < .001); no sig difference in seclusion rates (p = .49) | 2 | 2 | (i) Children’s Global Assessment Scale (CGAS; Shaffer et al., 1983) (ii) Stepping Stones Sensory Room Questionnaire (SSSRQ), a study specific measure | 16 | 112 = 2 × matched samples of 56 patients |
| Cat | Author(s) | Title (abbreviated) | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|------------|---------------------|--------|---------------|------------|-----------------|------------------------|--------------------------|-----------------------------|-------------|
| 2   | Williams and Grossett (2011) | Reduction of restraint of people with intellectual disabilities: an organizational behavior management (OBM) approach | NR     | 0             | n/a        | 0               | 0                     | Organizational behavior management (OBM) | NR            | 925 patients |
| 2   | Wisdom et al. (2015) | The New York State Office of Mental Health Positive Alternatives to Restraint and Seclusion (PARS) Project | Six Core Strategies | NR | 1 | Decrease in incidents on the three sites, range .001–.019, p .053 | 0 | Six Core Strategies | NR | 60 patients |
| 2   | Witte (2007) | Using Training in Verbal Skills to Reduce the Use of Seclusion and Restraint | CPI's Enhancing Verbal Skills: Applications of Life Space Crisis Intervention | QTD | 0 | n/a | 0 | CPI's Enhancing Verbal Skills: Applications of Life Space Crisis Intervention | QTD | 36 0 |
| 2   | Witte (2008) | Reducing the use of seclusion and restraint. A Michigan provider reduced its use of seclusion and restraint by 93% in one year on its child and adolescent unit | Six Steps to Success | QL | 0 | n/a | 0 | Six Steps to Success | QL | 12 0 |
| 1   | World Health Organisation (2019) | Strategies to end seclusion and restraint | Unnamed | 0 | 0 | n/a | 0 | Unnamed | Unnamed | 0 |
| 1   | Youth Justice Board (2009) | Developing a restraint minimisation strategy: Guidance | Unnamed | 0 | 0 | n/a | 0 | Unnamed | Unnamed | 0 |
| Cat | Author(s)                                                                 | Title (abbreviated)                                                                 | Intervention name                                                                 | Design | Sig outcomes? | Sig detail | N outcome measures | N standardised measures | Name of standardised measure | Evaluation period (N months) | Sample size |
|-----|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------|---------------|------------|-------------------|--------------------------|-----------------------------|--------------------------|-------------|
| 1   | Ministry of Justice, National Offender Management Service, and Youth Justice Board for England and Wales (2012) | Minimising and Managing Physical Restraint                                           | Minimising and Managing Physical Restraint (MMPR)                                | 0      | 0             | 0          | 0                 | 0                        |                             | 0            |
Consistency and comprehensiveness of reporting

Reporting was poorly aligned with WIDER recommendations (Albrecht et al., 2013; See Table 3). Consistency and comprehensiveness were generally weak across all WIDER categories, and especially within the mapping records. Sampling strategies varied and included counts or rates of occurrences of RP (e.g. Azeem et al., 2011) and whole or part populations of children and/or staff (e.g. Nunno et al., 2003; Russell et al., 2009).

Where provided, definitions of RP varied, for example seclusion only; restraint only (including mechanical methods); seclusion together with restraint. Type or intensity of physical hold was rarely detailed.

Demographic reporting about children in the setting was sporadic, typically describing age and/or gender and/or ethnicity. It was sometimes possible to extrapolate further information from the setting description; for instance Williams and Grossett (2011) describe a facility for individuals with intellectual disability. Restraints seem to be performed more frequently on children aged 5–11 than on their older peers (Ryan et al., 2007; Villani et al., 2012).

Little demographic information about staff samples was reported. One study described how some staff ‘selected out’ rather than engaging with a new culture (Elwyn et al., 2017). Shadili et al. (2012) speculated that the success of a restraint-reduction intervention may have been helped by the fact that most of the staff were female, and staff gender was acknowledged elsewhere as potentially relevant to intervention outcomes, for example (Glew, 2012; Singh

FIGURE 2 Pattern of publications over time [Colour figure can be viewed at wileyonlinelibrary.com]
et al., 1999), but generally, staff groups were treated as homogenous for interpretation of study results.

Consent to participate was rarely mentioned and appeared to be mandatory in many evaluations, typically where staff training (Verret et al., 2019) or broad systemic change (Wisdom et al., 2015) were introduced.

Training interventions delivered directly to staff were commonly evaluated via data routinely collected when children were subject to RP (for instance see: Huckshorn, 2010; Kalogjera et al., 1989). Most evaluations did not report on delivery mode, intervention dose (e.g. duration or intensity of training), modifications or fidelity. See Table 3.

Interventions

The total number of distinct interventions identified within the 121 included studies was 82. Most (74/82) were applied once only, reflecting a common practice whereby individual settings developed tailored RP reduction initiatives. Table 4 lists those interventions that were applied more than once.

Settings and locations

Most records (87/121) reported US-based studies. A further 21 were Europe-based (UK n = 18; Finland n = 1; Netherlands n = 1; France n = 1), and the remainder in Canada (n = 4), Australasia (Australia n = 3; New Zealand n = 1), Singapore (n = 1) or in more than one country (n = 1). Three records did not report geographical location. Regardless of study origin, all reported interventions had been delivered in the US, with some additionally delivered elsewhere.

As seen in Table 4, the number of times an intervention was reported could differ from the number of times it was used and/or evaluated; for example 6Cs were delivered on 12 separate occasions and evaluated five times.

Just under half of the records (60/121) related to mental health settings. Other service settings were health and social care (n = 23 records); criminal justice (n = 11); education (n = 10) or multi-functional services, for example healthcare and education (Shield, 2006).

Intervention focus

Children’s participation was identified in 6 out of 82 interventions and was typically low-level, for example community meeting attendance (Azeem et al., 2011; National Association of State Mental Health Program Directors, 2006; Padhi et al., 2019); limited influence over treatment (Miller et al., 2006; Wisdom et al., 2015); or contribution to a consumer satisfaction survey (Azeem et al., 2011; Winnipeg, 2015).

All interventions included staff training, though it was not necessarily made explicit how this would affect RP use. Training included: goal setting with staff (Azeem et al., 2011) and/or children (Holstead et al., 2010); RP data review (Campbell, 2004; HM Inspectorate of Prisons, 2015; Rettmann, 2019); introduction to a new resource, for example a sensory modulation room (Carter et al., 2008; Seckman et al., 2017); guideline or policy change (e.g. Care Council For Wales, 2016; HM Inspectorate of Prisons, 2015; Leitch, 2009).
| Reporting detail | Deliverer | Recipient | Setting | Delivery mode (e.g. online or face-to-face training) | Dose: Duration | Dose: Intensity | Modification | Fidelity | Theoretical basis for the intervention | Service user involvement in intervention development | Access to manuals/protocols |
|------------------|-----------|-----------|---------|-----------------------------------------------|----------------|----------------|-------------|---------|-----------------------------------|-----------------------------------------------|------------------------|
| Evaluation records $n = 76$ | | | | | | | | | | | | |
| Reported $(n)$ | 42 | 72 | 76 | 22 | 22 | 15 | 3 | 12 | 43 | 9 | 10 |
| Not reported $(n)$ | 34 | 4 | 0 | 54 | 54 | 60 | 64 | 64 | 33 | 66 | 66 |
| Not applicable $(n)$ | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 0 | 0 | 0 |
| Descriptive records $n = 45$ | | | | | | | | | | | | |
| Reported $(n)$ | 8 | 11 | 15 | 4 | 0 | 2 | 2 | 2 | 1 | 1 | 4 |
| Not reported $(n)$ | 7 | 4 | 0 | 11 | 15 | 13 | 13 | 13 | 14 | 14 | 11 |
| Not applicable $(n)$ | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |

aData extracted for evaluations only.
| Intervention Name                                      | Number of times delivered | Where delivered | Evaluation records (n) | Mapping records (n) | All records (n) |
|-------------------------------------------------------|---------------------------|----------------|------------------------|-------------------|----------------|
| 6Cs (Six Core Strategies)                              | 12                        | USA            | 5                      | 7                 | 12             |
| CPS (Collaborative Problem Solving)                    | 7                         | USA            | 9                      | 0                 | 9              |
| Comfort versus Control                                 | 2                         | USA            | 2                      | 0                 | 2              |
| TCI (Therapeutic Crisis Intervention)                  | 3                         | UK, USA        | 1                      | 4                 | 5              |
| The Grafton programme                                 | 2                         | USA            | 2                      | 0                 | 2              |
| M-PBIS (modified version of Positive Behavioral Supports) | 3                         | UK, USA        | 2                      | 2                 | 4              |
| TARGET (Trauma Affect Regulation: Guide for Education and Therapy) | 2                         | USA            | 2                      | 1                 | 3              |
| SPA (Devereux's Safe and Positive Approach)            | 2                         | USA            | 1                      | 1                 | 2              |
| Total                                                 | 32                        |                | 24                     | 15                | 39             |
Training length varied from 1 to 35 hours. Details regarding: length; intensity; content; training provider; mode of delivery; numbers, profile and post-training assessment of staff were often not provided.

Some interventions targeted RP reduction directly, via trauma-informed approaches, (e.g. Elwyn et al., 2017; Hodgdon et al., 2013); verbal de-escalation (e.g. Miller et al., 2006); problem solving (e.g. Kilgore, 2018); risk assessment (e.g. Williams & Grossett, 2011) and crisis planning (e.g. Eblin, 2019). Management-oriented interventions included changes in customer services (Fowler, 2006) and post-incident de-briefing (LeBel & Goldstein, 2005; Winnipeg, 2015).

A small number of interventions were delivered to both children and staff, most often via a therapeutic approach, for example (Azeem et al., 2011; Ford & Hawke, 2012; Fowler, 2006). Other examples addressed physical (Borckardt et al., 2011) or social (Ford & Hawke, 2012) environments; leadership (Azeem et al., 2011); staffing (Magnowski & Cleveland, 2020) and family/peer involvement (Fralick, 2007).

Compared with simple interventions, for example data review (Kaltiala-Heino et al., 2007; Thomann, 2010) or introduction of a risk assessment tool (Colton, 2004; Valenkamp et al., 2011), multi-strand interventions were common. They often aimed to change social milieu (e.g. Azeem et al., 2015; Girelli, 2004; Nunno et al., 2015; Thompson et al., 2008) or sat within a large programme of organisational change (e.g. Eblin, 2019; National Association of State Mental Health Program Directors, 2006; Verret et al., 2019). Several records (e.g. Girelli, 2004) argued that complex problems require multi-dimensional solutions.

An example of a multi-strand intervention is ‘Six Core Strategies (6Cs)’ (National Association of State Mental Health Program Directors, 2006). Here, the strands form a systems approach comprising:

(1) Leadership towards organisational change; (2) Use of data to inform practice; (3) Workforce development; (4) Use of S/R [seclusion and restraint] prevention tools; (5) Consumer roles in inpatient settings and (6) Debriefing (National Association of State Mental Health Program Directors, 2006).

Outcomes evaluation

In total, 228 measures were used across all interventions (mean 3; range 0–9). Twenty-two were standardised measures (Table 5), and they were found in 14 evaluations. Non-standardised measures, identified by the absence of supporting references, were generally study-specific, reporting simple counts and various rates and proportion calculations, for example the average number of incidents per child over a given period.

Reported outcomes were in four broad categories: use of RP; staff development and activity; resource implications and child progression and satisfaction. The most common outcome measures were as follows: number of restraints ($n = 63$ records); duration of restraints ($n = 9$); number of seclusions ($n = 36$); duration of seclusions ($n = 7$); injuries ($n = 8$); incidents ($n = 11$) and number of restrictive interventions ($n = 8$ records).

Most evaluations reported only pre/post descriptive data without statistical or control group comparison. All reported favourable outcomes. A small number reported mixed results, for example across settings (Winnipeg, 2015) or time points (Nunno et al., 2015). Many studies did not report timeframes or time points. Typically, the targeted RP reduced over time post-intervention,
though improvement could be uneven (e.g. Campbell, 2004; Deveau & McDonnell, 2009). There was no reporting of unhelpful interventions.

Multi-strand interventions or those involving gradual change could confound attempts to clarify cause and effect (Martin et al., 2008; Pollastri et al., 2016; Reynolds et al., 2016); for example McGlinn (2006) observed:

...psychiatrists at the study facility changed the manner in which they medicated clients between the two study periods.
The number of staff involved in an incident was not reported at all, nor was psychological harm. Four records reported the number of injuries to staff, and eight reported total injuries to staff and children combined, but no record reported both, suggesting, significantly, a lack of focus on injuries, especially to children.

Assumed change process and design principles

There was limited discussion of underpinning theory. Many quality improvement interventions used ‘Plan, Do, Study, Act’ (PSDA), a mechanism that repeats and adjusts interventions to achieve the desired effect. Some interventions cited programme-level theories informing intervention procedures, for example sensory modulation or trauma-informed care. The most frequently cited theory relating to staff behaviour was social learning theory, used to improve staff individual and team self-efficacy.

Costs reported

Twelve evaluations reported financial costs. Financial analysis was diverse in terms of cost unit, study/intervention period and accounting period (e.g. financial year, calendar year, part year).

DISCUSSION

This appears to be the first review using systematic methods to map RP reduction interventions for children’s institutional settings. Environmental scanning (Graham et al., 2008) was novel in the context, identifying resources that might otherwise have been overlooked.

The review highlighted a lack of evidence to clarify which interventions are effective in reducing RP. Evidently, many service providers develop their own interventions or adapt or applying existing ones without reporting useful levels of detail about intervention or study procedures. How children’s beliefs, circumstances, expectations, experiences, identities, resources or values may interact with RP reduction interventions remain unclear.

The dearth of children’s perspectives highlights empirical (Toros, 2021), epistemological (Spencer et al., 2020) and theoretical (Stirling, 2020) challenges around representing children’s voice (Alikhanizadeh et al., 2021) and right to participate (United Nations, 1989; World Health Organization, 2019). Incident reporting quality can be problematic (World Health Organization, 2019).

It remains unclear why staff training received particular attention. While the health sector literature demonstrates widespread enthusiasm for using staff training to improve service user outcomes (Ameh et al., 2019; Hatfield et al., 2020), evidence of effectiveness is inconsistent (Bosco et al., 2019; Hassiotis et al., 2018; Knotter et al., 2018). It may be useful to consider alternatives, such as attention to staffing levels (Baker & Pryjmachuk, 2016), team reflexivity (Lines et al., 2021) or organisational change theory (Hussain et al., 2018).

Problematic reporting supports Purtle (2020) in suggesting an underdeveloped evidence-base around trauma-informed interventions in children’s settings. Relationships between aims, intervention and results were often unclear, perhaps untested. For example where RP reductions
followed a staff education intervention, simple chronological associations could be conflated with cause and effect, with little consideration of fidelity or confounders.

Interventions are not necessarily designed to produce evidence (Girelli, 2004; Wilson et al., 2015). For complex issues, practitioners may prefer multi-strand interventions (The Australian Psychological Society Ltd, 2011). Setting-specific interventions may not contribute to the broader body of evidence, though better reporting of multi-strand interventions could clarify whether these are especially beneficial (Duncan et al., 2020).

Incident numbers were frequently used as effectiveness evidence. However, there was little reporting of factors such as number of children involved or injuries sustained. Broad, collapsed data of this type may not easily portray practice realities, limiting its potential to inform decision-making.

Comparisons across the dataset were complicated by diverse study outcomes. Although the most common measures were RP incidents, the numbers were calculated differently, for example counts or rates. Potentially, a brief, low-intensity restriction could count the same as a lengthy, damaging, complex and high-intensity incident. This reflects results from a comparable review of RP reduction interventions in adult mental health settings (Baker et al., 2021).

The limited evidence may reflect values affecting progress in this field of research (Lineham, 2018). A disenfranchised and silenced population (children in institutions) can scarcely influence the allocation of research monies (Archard & Skivenes, 2009; Care Council For Wales, 2016; Lansdown, 2011); whereas the increase in records from the 2000s coincides with media reports (Busch & Shore, 2000; Weiss, 1998) that stimulated US-wide support for RP reduction (National Association of State Mental Health Program Directors, 2006).

Most studies reported some positive outcomes around reducing RP and none reported unhelpful interventions. However, no RCTs were identified and only around a third of records reported quantitative data. Contributory factors may include marginalisation of studies that do not demonstrate large effect sizes (e.g. exploratory or preventive research; Mavridis & Salanti, 2014); suppression of unwanted outcomes because of funding issues (Morrow, 2022) and potentially, inherent difficulties in developing ethical RCTs in this context.

**Strengths and limitations**

No previous reviews have systematically mapped evaluated and unevaluated interventions to reduce RP in children’s institutional settings. The study findings are transferable to any institutions that have children in their care; however because non-English language records were ineligible, results were skewed towards the Global North—specifically, most evidence was from the US.

Environmental scanning enabled the inclusion of wide-ranging interventions in diverse formats. The absence of quality inclusion criteria contrasted fundamentally with conventional systematic reviews (Agency for Healthcare Research and Quality, 2020; Fajardo et al., 2019; Parker et al., 2018). This restricted options for producing systematised results, but arguably generated a more realistic picture of practice.

Children in institutions may lack voice, power and opportunities to protect themselves from RP (Kiraly & Humphreys, 2013). The omission of children’s perspectives reflects poor respect for children’s rights and opinions (United Nations, 1989). Staff diversity was also overlooked. More attention to study design and reporting could help understand differential implications of
interventions in relation to children and staff abilities, beliefs, background, gender, geography, identity, race, religion and values.

**CONCLUSIONS AND RECOMMENDATIONS**

RP reduction in children’s institutional settings should be a priority for practice, policy and research. Key recommendations concern the linked issues of intervention development, evaluation and reporting. Without clarity about current RP use, interventions evaluation will remain unsuitable for informing evidence-based practice guidance. Above all, the near absence of children’s voices seems to be a critical failing in this field.

The interventions identified in this review seem numerous and wide-ranging. The focus on training for staff is without clear justification. The limited geographical scope of most interventions indicates a need for insights beyond the Global North. A better understanding of demographic trends, institution type and governance could inform the adaptation of interventions to reduce RP for diverse groups.

Most interventions are multi-strand and evaluation design tends to be bespoke for the setting. Resultant difficulties in comparing results across studies suggest an urgent need to streamline intervention reporting. Accessible guidelines for a core outcome set that is feasible for researchers and practitioners to use in real-world settings, would be a valuable step towards improving practice.

Policy makers, commissioners and practitioners could avoid further investment in interventions whose outcomes are not known. Intervention reporting frequently lacks detail, consistency and comprehensiveness, combined with an over-simplification of cause and effect. Robust evaluation methodologies appropriate for multi-strand interventions, combined with adherence to reporting conventions, could help develop an evidence base to support policy and practice.

Despite numerous enquiries and recommendations, concern about the use of RP in children’s institutional settings is ongoing. The impact of RP on children and staff’s psychological and physical welfare, and the potential for harm, and even death, should not be underestimated. Children worldwide will continue to face malpractice and their care will remain sub-optimal without a sustained focus on RP reduction.

A better understanding of interventions may lead to discernible improvements in service delivery. It will inform decision-making about staff training, which in turn could influence everyday professional practices, promoting therapeutic relationships and staff well-being. Most importantly, vulnerable children in institutional settings could be protected from trauma, injury and deaths, thus benefiting wider society.

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**CONFLICT OF INTEREST**

None of the authors have a conflict of interest to declare.
DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in University of Leeds Open Access data repository at [https://doi.org/10.5518/1077]. #10;Additional queries to corresponding author Professor John Baker j.baker@leeds.ac.uk

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REFERENCES

Achenbach, T. M. (1991). *Child Behavior Checklist, Assessment*. University of Vermont Department of Psychiatry.

Agency for Healthcare Research and Quality. (2020). *Environmental scan of patient safety education and training programs*. Retrieved from [https://www.ahrq.gov/research/findings/final-reports/environmental-scan-programs/index.html](https://www.ahrq.gov/research/findings/final-reports/environmental-scan-programs/index.html)

Agenda: Alliance for Women and Girls at Risk. (2017). *Agenda briefing on the use of restraint against women and girls*. Alliance for Women and Girls at Risk.

Albrecht, L., Archibald, M., Arseneau, D., & Scott, S. D. (2013). Development of a checklist to assess the quality of reporting of knowledge translation interventions using the workgroup for intervention development and evaluation research (WIDER) recommendations. *Implementation Science, 8*(1), 52.

Alikhanizadeh, M., Hartley, C., Kendal, S., Neill, L., & Trainor, G. (2021). Often, when I am using my voice... it does not go well: Perspectives on the service user experience. In R. Ellis, S. Kendal, & S. J. Taylor (Eds.), *Voices in the history of madness: Personal and professional perspectives on mental health and illness* (pp. 383–401). Springer International Publishing.

Ameh, C. A., Mdegela, M., White, S., & van den Broek, N. (2019). The effectiveness of training in emergency obstetric care: A systematic literature review. *Health Policy and Planning, 34*(4), 257–270.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). American Psychiatric Association.

Andrassy, B. M. (2016). Feelings thermometer: An early intervention scale for seclusion/restraint reduction among children and adolescents in residential psychiatric care. *Journal of Child & Adolescent Psychiatric Nursing, 29*(3), 145–147. [https://doi.org/10.1111/jcap.12151](https://doi.org/10.1111/jcap.12151)

Angold, A., & Costello, E. (1988). Scales to assess child and adolescent depression: Checklists, screens, and nets. *Am Acad. Child Adolesc. Psychiatry, 27*, 726–737.

Archard, D., & Skivenes, M. (2009). Hearing the child. *Child & Family Social Work, 14*(4), 391–399.

Azeem, M. W., Aujla, A., Rammertth, M., Binsfeld, G., & Jones, R. B. (2011). 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 & Adolescent Psychiatric Nursing (reprinted 2017: Special Issue: Inpatient Child Psychiatric Nursing), 30*(4), 170–174. [https://doi.org/10.1111/jcap.12190](https://doi.org/10.1111/jcap.12190)

Azeem, M. W., Reddy, B., Wudarsky, M., Carabetta, L., Gregory, F., & Sarofin, M. (2015). Restraint reduction at a pediatric psychiatric hospital: A ten-year journey. *Journal of Child and Adolescent Psychiatric Nursing, 28*(4), 180–184.
Baglivio, M. T., Wolff, K. T., Piquero, A. R., & Epps, N. (2015). The relationship between adverse childhood experiences (ACE) and juvenile offending trajectories in a juvenile offender sample. *Journal of Criminal Justice, 43*(3), 229–241.

Baker, J., Berzins, K., Canvin, K., Benson, I., Kellar, I., Wright, J., Lopez, R. R., Duxbury, J., Kendall, T., & Stewart, D. (2021). Non-pharmacological interventions to reduce restrictive practices in adult mental health inpatient settings: The COMPARE systematic mapping review. *Health Services and Delivery Research, 9*(5), 1–184.

Baker, J., & Pryjmachuk, S. (2016). Mental health nursing academics UK. Will safe staffing in mental health nursing become a reality? *Journal of Psychiatric and Mental Health Nursing, 23*(2), 75–76.

Barnett, S. R., dosReis, S., Riddle, M. A., Committee, M. Y. P. I., & Maryland Youth Practice Improvement Committee for Mental Health (2002). Improving the management of acute aggression in state residential and inpatient psychiatric facilities for youths. *Journal of the American Academy of Child & Adolescent Psychiatry, 41*(8), 897–905.

Beck, A. T., & Beck, R. W. (1972). Screening depressed patients in family practice: A rapid technique. *Postgraduate Medicine, 52*, 81–85.

Beck, A. T., Ward, C., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*, 53–63.

Birmaher, B., Khetarpal, S., Brent, D., Cully, M., Balach, L., Kaufman, J., & Neer, S. M. (1997). The screen for child anxiety related emotional disorders (SCARED): Scale construction and psychometric characteristics. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*(4), 545–553. https://doi.org/10.1097/00004583-199704000-00018

Blikshavn, T., Halvorsen, I., & Rø, Ø. (2020). Physical restraint during inpatient treatment of adolescent anorexia nervosa: Frequency, clinical correlates, and associations with outcome at five-year follow-up. *Journal of Eating Disorders, 8*(1), 20.

Bobier, C., Boon, T., Downward, M., Loomes, B., Mountford, H., & Swadi, H. (2015). Pilot investigation of the use and usefulness of a sensory modulation room in a child and adolescent psychiatric inpatient unit. *Occupational Therapy in Mental Health, 31*(4), 385. https://doi.org/10.1080/0164212X.2015.1076367

Boel-Studt, S. M. (2017). A quasi-experimental study of trauma-informed psychiatric residential treatment for children and adolescents. *Research on Social Work Practice, 27*(3), 273–282.

Bonnell, W., Alatishe, Y. A., & Hofner, A. (2014). The effects of a changing culture on a child and adolescent psychiatric inpatient unit. *Journal of the Canadian Academy of Child & Adolescent Psychiatry, 23*(1), 65–69.

Borckardt, J. J., Madan, A., Grubaugh, A. L., Danielson, C. K., Pelic, C. G., Hardesty, S. J., Hanson, R., Herbert, J., Cooney, H., Benson, A., & Frueh, B. C. (2011). Systematic investigation of initiatives to reduce seclusion and restraint in a state psychiatric hospital. *Psychiatric Services, 62*(5), 477–483.

Bosco, A., Paulauskaite, L., Hall, I., Crabtree, J., Soni, S., Biswas, A., Cooper, V., Poppe, M., King, M., Strydom, A., Crawford, M. J., & Hassiotis, A. (2019). Process evaluation of a randomised controlled trial of PBS-based staff training for challenging behaviour in adults with intellectual disability. *PLoS ONE, 14*(8), e0221507.

Bowers, L., James, K., Quirk, A., Simpson, A., Stewart, D., & Hodson, J. (2015). Reducing conflict and containment rates on acute psychiatric wards: The safewards cluster randomised controlled trial. *International Journal of Nursing Studies, 52*(9), 1412–1422.

Bradbury-Jones, C., Breckenridge, J. P., Clark, M. T., Herber, O. R., Jones, C., & Taylor, J. (2019). Advancing the science of literature reviewing in social research: The focused mapping review and synthesis. *International Journal of Social Research Methodology, 22*(5), 451–462.

Brown, A. D., McCauley, K., Navalta, C. P., & Saxe, G. N. (2013). Trauma systems therapy in residential settings: Improving emotion regulation and the social environment of traumatized children and youth in congregate care. *Journal of Family Violence, 28*, 693–703. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3782637/pdf/10896_2013_Article_9542.pdf

Budlong, M. J. (2004). Lessons learned and organizational changes implemented as a result of the SAMHSA restraint and seclusion grant. *Residential Group Care Quarterly, 5*(2), 1011.

Busch, A., & Shore, M. (2000). Seclusion and restraint: A review of recent literature. *Harvard Review of Psychiatry, 8*(5), 261–270.
Caldwell, B., Albert, C., Azeem, M. W., Beck, S., Cocoros, D., Cocoros, T., Montes, R., & Reddy, B. (2014). Successful seclusion and restraint prevention efforts in child and adolescent programs. *Journal of Psychosocial Nursing and Mental Health Services, 52*(11), 30–38.

Caldwell, B., & LeBel, J. (2010). Reducing restraint and seclusion: How to implement organizational change. *Children’s Voice, 19*(2), 10–14. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=105196033&site=ehost-live

Campbell, N. (2004). STAR project outcomes. *Residential Group Care Quarterly, 5*(2), 3–5.

Canady, V. A. (2018). Model-of-care effort reduces need for restraint, seclusion at BH facility. *Mental Health Weekly, 28*(34), 1–3. https://doi.org/10.1002/mhw.31580

Care Council For Wales. (2016). *Positive approaches: Reducing restrictive practices in social care* (p. 78). Care Council for Wales.

Carter, E. W., Lane, K. L., Crnobori, M., Bruhn, A. L., & Oakes, W. P. (2019). Self-determination interventions for students with and at risk for emotional and behavioral disorders: Mapping the knowledge base. *Behavioral Disorders, 36*(2), 100–116.

Carter, J., Jones, J., & Stevens, K. (2008). Beyond a crisis management program: How we reduced our restraints by half in one year. In M. Nunno, D. Day, & L. Bullard (Eds.), *For our own safety: Examining the safety of high-risk interventions for children and Young people* (pp. 183–200). Child Welfare League of America.

Castle, D., & Alderton, D. (2003). Management of acute arousal in psychosis. In D. J. Castle, D. L. Copolov, & T. Wykes (Eds.), *Pharmacological and psychosocial treatment in schizophrenia*. Martin Dunitz.

Catanzaro, S., & Mearns, J. (1990). Measuring generalized expectancies for negative mood regulation: Initial scale development and implications. *Journal of Personality Assessment, 54*(3), 546–563. https://doi.org/10.1207/s15327752j pa540 3&4_11

Children Act, Stat. (1989). UK Public General Acts/1989/Chapter 41.

Children’s Commissioner. (2018). *A report on the use of segregation in youth custody in England*. Office of the Children’s Commissioner for England.

Children’s Commissioner. (2022). *Who are they? Where are they? 2020*. The children’s commissioner’s office 2022. Retrieved from https://www.childrenscommissioner.gov.uk/report/who-are-they-where-are-they-2020/

Clapton, J., Rutter, D., & Sharif, N. (2009). SCIE research resource 03: SCIE systematic mapping guidance. SCIE.

Clarivate Analytics. (2018). *EndNote X9: Clarivate*. Retrieved from https://clarivate.com/innovation-exchange/solution/endnote/

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385–396.

Colton, D. (2004). *Checklist for Assessing Your Organization’s Readiness for Reducing Seclusion and Restraint*. Commonwealth Center for Children and Adolescents.

Colton, D., & Xiong, H. (2010). Reducing seclusion and restraint: Questionnaire for organizational assessment. *Journal of Psychiatric Practice, 16*, 358–362. https://doi.org/10.1097/01.pra.0000388632.74899.86

Cooper, S. (2008). Use of restraint reduced by therapeutic intervention. (cover story). *Children & Young People* now, 2–2. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=fgh&AN=31832801&site=ehost-live

Cooper, I. D. (2016). What is a “mapping study”? *Journal of the Medical Library Association, 104*(1), 76–78.

Craig, J. (2015). Evaluation of a program model for minimizing restraint and seclusion. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 77*(3-B(E)), 120.

Craig, J., & Sanders, K. (2018). Evaluation of a program model for minimizing restraint and seclusion. *Advances in Neurodevelopmental Disorders, 2*, 344–352. https://doi.org/10.1007/s41252-018-0076-2

Crosland, K. A., Cigales, M., Dunlap, G., Neff, B., Clark, H. B., Giddings, T., & Blanco, A. (2008). Using staff training to decrease the use of restrictive procedures at two facilities for foster care children. *Research on Social Work Practice, 18*(5), 401–409.

Cunneen, C., Goldson, B., & Russell, S. (2017). Human rights and youth justice reform in England and Wales: A systemic analysis. *Criminology & Criminal Justice, 18*(4), 405–430.

Dean, A. J., Duke, S. G., George, M., & Scott, J. (2007). Behavioral management leads to reduction in aggression in a child and adolescent psychiatric inpatient unit. *Journal of the American Academy of Child & Adolescent Psychiatry, 46*(6), 711–720. https://doi.org/10.1097/chi.0b013e3180465a1a
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.

Delaney, K. R. (2006). Evidence base for practice: Reduction of restraint and seclusion use during child and adolescent psychiatric inpatient treatment. *Worldviews on Evidence-Based Nursing*, 3(1), 19–30.

Department for Education and Department of Health and Social Care. (2019). Reducing the need for restraint and restrictive intervention: Children and young people with learning disabilities, autistic spectrum conditions and mental health difficulties in health and social care services and special education settings. Department for Education and Department of Health and Social Care.

Desmond, C., Watt, K., Saha, A., Huang, J., & Lu, C. (2020). Prevalence and number of children living in institutional care: Global, regional, and country estimates. *The Lancet Child & Adolescent Health*, 4(5), 370–377.

Deveau, R., & Leitch, S. (2014). The impact of restraint reduction meetings on the use of restrictive physical interventions in English residential services for children and young people. *Child: Care, Health and Development*, 41(4), 587–592. https://doi.org/10.1111/cch.12193

Deveau, R., & McDonnell, A. (2009). As the last resort: Reducing the use of restrictive physical interventions using organisational approaches. *British Journal of Learning Disabilities*, 37(3), 172–177.

Donovan, A., Siegel, L., Zera, G., Plant, R., & Martin, A. (2003). Child & adolescent psychiatry: Seclusion and restraint reform: An initiative by a child and adolescent psychiatric hospital. *Psychiatric Services*, 54(7), 958–959.

Duncan, E., O’Cathain, A., Rousseau, N., Croot, L., Sworn, K., Turner, K. M., Yardley, L., & Hoddinott, P. (2020). Guidance for reporting intervention development studies in health research (GUIDED): An evidence-based consensus study. *BMJ Open*, 10(4), e033516.

Eblin, A. (2019). Reducing seclusion and restraints on the inpatient child and adolescent behavioral health unit: A quality improvement study. *Journal of Child and Adolescent Psychiatric Nursing*, 32, 122–128.

Elwyn, L., Esaki, N., & Smith, C. (2017). Importance of leadership and employee engagement in trauma-informed organizational change at a Girls’ juvenile justice facility. *Human Service Organizations: Management, Leadership & Governance*, 41, 106–118.

Equality and Human Rights Commission. (2019). *Human rights framework for restraint: Principles for the lawful use of physical, chemical, mechanical and coercive restrictive interventions*. Equality and Human Rights Commission.

Ercole, E. (2014). *Effects of a collaborative problem solving approach on an inpatient adolescent psychiatric unit* (3716792 PhD). TUI University. Retrieved from https://go.openathens.net/redirector/leeds.ac.uk?url=/docview/1699285706?accountid=14664 https://leeds.primo.exlibrisgroup.com/openurl/44LEE_INST/44LEE_INST:VUI?genre=dissertations+%26+theses&atitle=&author=Ercole%E2%80%99C+Eugenia&volume=&issue=&spage=&date=2014-01-01&rft.btitle=&rft.jtitle=&issn=&isbn=9781321960785&sid=ProQuest+Dissertations+%26+Theses+A%26I database.

Ercole-Fricke, E., Fritz, P., Hill, L. E., & Schnelders, J. (2016). Effects of a collaborative problem-solving approach on an inpatient adolescent psychiatric unit. *Journal of Child and Adolescent Psychiatric Nursing*, 29(3), 127–134.

Fajardo, M. A., Weir, K. R., Bonner, C., Gnjidic, D., & Jansen, J. (2019). Availability and readability of patient education materials for deprescribing: An environmental scan. *British Journal of Clinical Pharmacology*, 85(7), 1396–1406.

Farina, M. V. (2006). Toward reducing the utilization of seclusion and restraint: Exploring a paradigm shift and its success (3228021 Ph.D.). University of Louisville, Ann Arbor. Retrieved from https://go.openathens.net/redirector/leeds.ac.uk?url=/docview/305319478?accountid=14664https://leeds.primo.exlibrisgroup.com/openurl/44LEE_INST/44LEE_INST:VUI?genre=dissertations+%26+theses&atitle=&author=Farina%E2%80%99C+Michelle+Vincent&volume=&issue=&spage=&date=2006-01-01&rft.btitle=&rft.jtitle=&issn=&isbn=9780542821462&sid=ProQuest+Dissertations+%26+Theses+A%26I database

Finnie, H. M. (2014). The collaborative problem-solving approach with traumatized children: Its effectiveness in the reduction of locked seclusion in an inpatient psychiatric setting. Dissertation Abstracts International: Section B: The Sciences and Engineering, 74(8-B(E)), No Pagination Specified.

Fish, R., & Culshaw, E. (2005). The last resort? Staff and client perspectives on physical intervention. *Journal of Intellectual Disabilities*, 9(2), 93–107.
Ford, J. (2013). TARGET adolescent individual manual facilitator guide twelve-session: Copyright © by the University of Connecticut. All Rights Reserved.
Ford, J., & Hawke, J. (2012). Trauma affect regulation psychoeducation group and milieu intervention outcomes in juvenile detention facilities. *Journal of Aggression, Maltreatment and Trauma*, 21(4), 365–384.
Ford, J. D., & Rogers, K. (1997). Empirically-based assessment of trauma and PTSD with children and adolescents. In *Paper presented at the Annual convention of the International Society for Traumatic Stress Studies, November 1997, Montreal, Quebec, Canada*.
Ford, T., Vostanis, P., Meltzer, H., & Goodman, R. (2007). Psychiatric disorder among British children looked after by local authorities: Comparison with children living in private households. *The British Journal of Psychiatry*, 190(4), 319–325.
Forrest, S., Gervais, R., Lord, K. A., Sposato, A., Martin, L., Beserra, K., & Spinazzola, J. (2018). Building communities of care: A comprehensive model for trauma-informed youth capacity building and behavior management in residential services. *Residential Treatment for Children & Youth*, 35(4), 265–285. https://doi.org/10.1080/0886571X.2018.1497930
Fowler, N. A. (2006). Aromatherapy, used as an integrative tool for crisis management by adolescents in a residential treatment center. *Journal of Child and Adolescent Psychiatric Nursing*, 19(2), 69–76.
Fralick, S. L. (2007). A restraint utilization project. *Nursing Administration Quarterly*, 31(3), 219–225.
Frith, E. (2017). *Inpatient provision for children and young people with mental health problems*. Education Policy Institute.
Girelli, S. (2004). Lessons learned in the reduction of restraint and seclusion: A three-year (plus) retrospective. *Residential Group Care Quarterly*, 5(2), 8–9.
Glew, B.-A. (2012). Reducing the use of seclusion and restraint in segregated special education school settings through implementation of the collaborative problem solving model. Duquesne University.
Goldson, B. (2002). *Vulnerable inside: Children in secure and penal settings*. Children’s Society.
Goldson, B. (2015). The circular motions of penal politics and the pervasive irrationalities of child imprisonment. In B. Goldson & J. Muncie (Eds.), *Youth crime and justice* (2nd ed.). Sage.
Goldson, B., & Briggs, D. (2021). *Making youth justice: Local penal cultures and differential outcomes – Lessons and prospects for policy and practice*. The Howard League for Penal Reform.
Goren, S., Abraham, I., & Doyle, N. (1996). Reducing violence in a child psychiatric hospital through planned organizational change. *Journal of Child & Adolescent Psychiatric Nursing*, 9(2), 27–28.
Goz, K., Rudran, V., Blackburn, J., Schäfer, M. R., & O’Donoghue, B. (2019). Prevalence and predictors of restrictive interventions in a youth-specific mental health inpatient unit. *Early Intervention in Psychiatry*, 13(5), 1105–1110.
Graham, P., Evitts, T., & Thomas-MacLean, R. (2008). Environmental scans: How useful are they for primary care research? *Canadian Family Physician*, 54(7), 1022–1023.
Greene, R. W., Ablon, J. S., Hassuk, B., Regan, K. M., & Martin, A. (2006). Innovations: Child & Adolescent Psychiatry: Use of collaborative problem solving to reduce seclusion and restraint in child and adolescent inpatient units (Erratum Psychiatric Services, 2007, 58(8)). *Psychiatric Services*, 57(5), 610–612.
Grisso, K., Rudhran, V., Blackburn, J., Schäfer, M. R., & O’Donoghue, B. (2019). Prevalence and predictors of restrictive interventions in a youth-specific mental health inpatient unit. *Early Intervention in Psychiatry*, 13(5), 1105–1110.
Graham, P., Evitts, T., & Thomas-MacLean, R. (2008). Environmental scans: How useful are they for primary care research? *Canadian Family Physician*, 54(7), 1022–1023.
Greene, R. W., Ablon, J. S., Hassuk, B., Regan, K. M., & Martin, A. (2006). Innovations: Child & Adolescent Psychiatry: Use of collaborative problem solving to reduce seclusion and restraint in child and adolescent inpatient units (Erratum Psychiatric Services, 2007, 58(8)). *Psychiatric Services*, 57(5), 610–612.
Grisso, K., Rudhran, V., Blackburn, J., Schäfer, M. R., & O’Donoghue, B. (2019). Prevalence and predictors of restrictive interventions in a youth-specific mental health inpatient unit. *Early Intervention in Psychiatry*, 13(5), 1105–1110.
Graham, P., Evitts, T., & Thomas-MacLean, R. (2008). Environmental scans: How useful are they for primary care research? *Canadian Family Physician*, 54(7), 1022–1023.
Greene, R. W., Ablon, J. S., Hassuk, B., Regan, K. M., & Martin, A. (2006). Innovations: Child & Adolescent Psychiatry: Use of collaborative problem solving to reduce seclusion and restraint in child and adolescent inpatient units (Erratum Psychiatric Services, 2007, 58(8)). *Psychiatric Services*, 57(5), 610–612.
Grisso, K., Rudhran, V., Blackburn, J., Schäfer, M. R., & O’Donoghue, B. (2019). Prevalence and predictors of restrictive interventions in a youth-specific mental health inpatient unit. *Early Intervention in Psychiatry*, 13(5), 1105–1110.
Graham, P., Evitts, T., & Thomas-MacLean, R. (2008). Environmental scans: How useful are they for primary care research? *Canadian Family Physician*, 54(7), 1022–1023.
Greene, R. W., Ablon, J. S., Hassuk, B., Regan, K. M., & Martin, A. (2006). Innovations: Child & Adolescent Psychiatry: Use of collaborative problem solving to reduce seclusion and restraint in child and adolescent inpatient units (Erratum Psychiatric Services, 2007, 58(8)). *Psychiatric Services*, 57(5), 610–612.
Grisso, K., Rudhran, V., Blackburn, J., Schäfer, M. R., & O’Donoghue, B. (2019). Prevalence and predictors of restrictive interventions in a youth-specific mental health inpatient unit. *Early Intervention in Psychiatry*, 13(5), 1105–1110.
Hatfield, T. G., Withers, T. M., & Greaves, C. J. (2020). Systematic review of the effect of training interventions on the skills of health professionals in promoting health behaviour, with meta-analysis of subsequent effects on patient health behaviours. *BMC Health Services Research*, 20(1), 593.

Health and Social Care Information Centre. (2013). *Learning disability census report – England, 30th of September 2013*. NHS Digital.

Hellerstein, D. J., Staub, A. B., & Lequesne, E. (2007). Decreasing the use of restraint and seclusion among psychiatric inpatients. *Journal of Psychiatric Practice*, 13(5), 308–317.

HM Inspectorate of Prisons. (2015). *Behaviour management and restraint of children in custody: A review of the early implementation of MMPR by HM Inspectorate of Prisons*. HM Inspectorate of Prisons; 2015 Nov 2015. Report No.: ISBN: 978-1-84099-724-8.

Hodgdon, H. B., Kinniburgh, K., Gabowitz, D., Blaustein, M. E., & Spinazzola, J. (2013). Development and implementation of trauma-informed programming in youth residential treatment centers using the ARC framework. *Journal of Family Violence*, 28(7), 679–692.

Hodges, K., Wong, M. M., & Latessa, M. (1998). Use of the child and adolescent functional assessment scale (CAFAS) as an outcome measure in clinical settings. *The Journal of Behavioral Health Services & Research*, 25(3), 325–336. [https://doi.org/10.1007/BF02287471](https://doi.org/10.1007/BF02287471)

Holden, M. J., Turnbull, A. J., Holden, J. C., Heresniak, R., Ruberti, M., & Saville, E. (2020). *Therapeutic crisis intervention student workbook*. The Residential Child Care Project, Bronfenbrenner Center for Translational Research, College of Human Ecology, Cornell University.

Holstead, J., Lamond, D., Dalton, J., Horne, A., & Crick, R. (2010). Restraint reduction in children’s residential facilities: Implementation at Damar services. *Residential Treatment for Children & Youth*, 27(1), 1–13.

Hong, Q. N., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M. P., Griffiths, F., Nicolau, B., O’Cathain, A., Rousseau, M. C., Vedel, I., & Pluye, P. (2018). The mixed methods appraisal tool (MMAT) version 2018 for information professionals and researchers. *Education for Information*, 34, 285–291.

Huckshorn, K. A. (2010). *Preventing violence, trauma, and the use of seclusion and restraints in mental health settings: Preventing conflict, violence and the use of seclusion/restraint*. IACC meetings 2010; 08 Nov; Interagency Autism Coordinating Committee (IACC) Workshop 2010.

Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2018). Kurt Lewin’s change model: A critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation & Knowledge*, 3(3), 123–127.

Jacobson, J., Bhardwa, B., Gyateng, T., Hunter, G., & Hough, M. (2010). *Punishing disadvantage: A profile of children in custody*. The Prison Reform Trust.

Jani, S., Knight, S., & Jani, S. (2011). The implementation of milieu therapy training to reduce the frequency of restraints in residential treatment centers. *Adolescent Psychiatry*, 1(3), 251–254. [https://doi.org/10.2174/221067741101030251](https://doi.org/10.2174/221067741101030251)

Jensen, T. K., Fjermestad, K. W., Granly, L., & Wilhelmsen, N. H. (2015). Stressful life experiences and mental health problems among unaccompanied asylum-seeking children. *Clinical Child Psychology and Psychiatry*, 20(1), 106–116.

Jones, R. J., & Timbers, G. D. (2003). Minimizing the need for physical restraint and seclusion in residential youth care through skill-based treatment programming. *Families in Society*, 84(1), 21–29.

Jonikas, J. A., Cook, J. A., Rosen, C., Laris, A., & Kim, J. B. (2004). A program to reduce use of physical restraint in psychiatric inpatient facilities. *Psychiatric Services*, 55(7), 818–820.

Kalogjera, I. J., Bedi, A., Watson, W. N., & Meyer, A. D. (1989). Impact of therapeutic management on use of seclusion and restraint with disruptive adolescent inpatients. *Hospital & Community Psychiatry*, 40(3), 280–285.

Kaltiala-Heino, R., Berg, J., Selander, M., Työläjärvi, M., & Kahila, K. (2007). Aggression management in an adolescent forensic unit. *The International Journal of Forensic Mental Health*, 6(2), 185–196.

Kilgore, A. (2018). *Effectiveness of collaborative problem solving model in reducing seclusion and restraint in a child psychiatric unit* (10789834 Psy.D.). University of Colorado at Denver. Retrieved from. [https://go.openathens.net/redirector/leeds.ac.uk?url=/docview/2081933018?accountid=14664&ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF8&rfr_id=info%3Asid%3Apublication+v1%3A%3A%3A%3A%3A%3Ahttps%3A%2F%2Fwww.openathens.net%2Fredirector%2Fleeds.ac.uk%3Furl%3Dhttps%253A%252F%252Fleeds. primo.exlibrisgroup.com%2Fopenu rl%3Fdocview%3D44LEE_INST%2F44LEE_INST%3AVU1%3Fgenre%3Ddissertations%2B%26%2B%26aCOmtid%2314664](https://go.openathens.net/redirector/leeds.ac.uk?url=/docview/2081933018?accountid=14664&ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF8&rfr_id=info%3Asid%3Apublication+v1%3A%3A%3A%3A%3A%3Ahttps%3A%2F%2Fwww.openathens.net%2Fredirector%2Fleeds.ac.uk%3Furl%3Dhttps%253A%252F%252Fleeds.primo.exlibrisgroup.com%2Fopenu rl%3Fdocview%3D44LEE_INST%2F44LEE_INST%3AVU1%3Fgenre%3Ddissertations%2B%26%2B%26aCOmtid%2314664)
s&atitle=&author=Kilgore%2C+Abby&volume=&issue=&spage=&date=2018-01-01&rft.btitle=&rft.jtitle=&issn=&isbn=9780438207165&sid=ProQuest+Dissertations+%26+Theses+A%26I_ProQuestDissertations&ThesesA&Idatabase

King, N. V., Wright, J. M., Irving, D. C., & Baker, J. (2022). Search strategies and methods to identify interventions for reducing the use of restrictive practices in children and young people's institutional settings. University of Leeds.

Kiraly, M., & Humphreys, C. (2013). Perspectives From Young People about Family Contact in Kinship Care: "Don't Push Us—Listen More". *Australian Social Work, 66*(3), 314–327.

Knotter, M. H., Spruit, A., De Swart, J. J. W., Wissink, I. B., Moonen, X. M. H., & Stams, G. J. M. (2018). Training direct care staff working with persons with intellectual disabilities and challenging behaviour: A meta-analytic review study. *Aggression and Violent Behavior, 40*, 60–72.

Lansdown, G. (2011). *Every child's right to be heard: A resource guide on the UN Committee on the rights of the child: General comment no. 12*. Save the Children and UNICEF.

Lau, M. A., Bishop, S. R., Segal, Z. V., Buis, T., Anderson, N. D., Carlson, L., & Devins, G. (2006). The Toronto mindfulness scale: Development and validation. *Journal of Clinical Psychology, 62*(12), 1445–1467. https://doi.org/10.1002/jclp.20326

LeBel, J., & Goldstein, R. (2005). The economic cost of using restraint and the value added by restraint reduction or elimination. *Psychiatric Services, 56*(9), 1109–1114.

LeBel, J., Huckshorn, K. A., & Caldwell, B. (2010). Restraint use in residential programs: Why are best practices ignored? *Child Welfare, 89*(2), 169–187.

LeBel, J., Stromberg, N., Duckworth, K., Kerzner, J., Goldstein, R., Weeks, M., Harper, G., LaFlair, L., & Sudders, M. (2004). Child and adolescent inpatient restraint reduction: A state initiative to promote strength-based care. *Journal of the American Academy of Child & Adolescent Psychiatry, 43*(1), 37–45.

Leitch, S. (2008). Together trust 6th June 2008 [slides]. Supplied by author.

Leitch, S. (2009). *The impact of restraint reduction meetings on the use of restrictive physical interventions (RPI) in residential services for children and young people* (dissertation). University of Kent.

Lietzke, A. (2014). *Restraint reduction and CPI training*. Retrieved from https://www.crisispvention.com/en-CA/Blog/Restraint-Reduction-and-CPI-Training

Lineham, A. (2018). Double blinded: The uncontrolled bias. *Perspectives in Public Health, 138*(4), 198–199.

Lines, R. L. J., Pietsch, S., Crane, M., Ntoumanis, N., Temby, P., Graham, S., & Gucciardi, D. F. (2021). The effectiveness of team reflexivity interventions: A systematic review and meta-analysis of randomized controlled trials. *Sport, Exercise, and Performance Psychology, 10*(3), 438–473. https://doi.org/10.1037/spy0000251

Lüdtke, J., In-Albon, T., Schmeck, K., Plener, P. L., Fegert, J. M., & Schmid, M. (2018). Nonsuicidal self-injury in adolescents placed in youth welfare and juvenile justice group homes: Associations with mental disorders and suicidality. *Journal of Abnormal Child Psychology, 46*(2), 343–354.

Luiselli, J. K., Treml, T., Kane, A., & Young, N. (2004). Physical restraint intervention: Case report evaluation of an implementation-reduction strategy and long term outcome. *Mental Health Aspects of Developmental Disabilities, 7*(3), 91–96.

Lyons, D. (2015). Restraint and seclusion of students with disabilities: A child rights perspective from Victoria, Australia. *The International Journal of Children's Rights, 23*(1), 189–239.

Magnowski, S., & Cleveland, S. (2020). 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. https://doi.org/10.1177/1078390319834358

Marrow, M. T., Knudsen, K. J., Olaason, E., & Bucher, S. E. (2012). The value of implementing TARGET within a trauma-informed juvenile justice setting. *Journal of Child & Adolescent Trauma, 5*(3), 257–270.

Martin, A., Krieg, H., Esposito, F., Stubbe, D., & Cardona, L. (2008). Reduction of restraint and seclusion through collaborative problem solving: A five-year prospective inpatient study. *Psychiatric Services, 59*(12), 1406–1412.

Mavridis, D., & Salanti, G. (2014). Exploring and accounting for publication bias in mental health: A brief overview of methods. *Evidence-based Mental Health, 17*(1), 11–15.

McDougall, T., & Nolan, T. (2016). Chapter 13: Managing behaviours that challenge nurses in CAMHS inpatient settings. In T. McDougall (Ed.), *Children and young people's mental health: Essentials for nurses and other*
professionals (pp. 198–201). Retrieved from https://www.taylorfrancis.com/books/edit/10.4324/9781315690223/children-youngpeople-mental-health-tim-mcdougall

McGlinn, C. J. (2006). The effect of federal regulations on the physical restraint of children and adolescents in residential treatment with an analysis of client, staff, and environmental variables. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 67(1-B), 525.

McLaughlin, K. A., Colich, N. L., Rodman, A. M., & Weissman, D. G. (2020). Mechanisms linking childhood trauma exposure and psychopathology: A transdiagnostic model of risk and resilience. *BMC Medicine, 18*(1), 96.

Miguel, E. S. (2016). *The dynamics and ramifications of severe challenging behaviors: Daring to reduce challenging behavior in schools without physical restraint and seclusion* [ed. D. J.] Fielding Graduate University.

Miller, J. A., Hunt, D. P., & Georges, M. A. (2006). Reduction of physical restraints in residential treatment facilities. *Journal of Disability Policy Studies*, 16(4), 202–208.

MIND. (2013). *Mental health crisis care: Physical restraint in crisis: A report on physical restraint in hospital settings in England*. MIND.

Ministry of Justice, National Offender Management Service, and Youth Justice Board for England and Wales. (2012). *Minimising and managing physical restraint: Safeguarding Processes, Governance Arrangements, and Roles and Responsibilities*. UK Government. Retrieved from https://www.gov.uk/government/publications/minimising-and-managing-physical-restraint

Ministry of Justice and Youth Justice Board. (2021). *Youth justice statistics 2019/20, England and Wales*. Ministry of Justice.

Mock, S. E., & Arai, S. M. (2011). Childhood trauma and chronic illness in adulthood: Mental health and socioeconomic status as explanatory factors and buffers. *Frontiers in Psychology*, 1, 246.

Morrow, R. L. (2022). *Nonpublication and publication bias in clinical trials in Canada: A qualitative interview study (PhD)*. University of British Columbia. Retrieved from https://open.library.ubc.ca/collections/24/items/1.0406633

Murphy, C. J., & Siv, A. M. (2011). A one year study of mode deactivation therapy: Adolescent residential patients with conduct and personality disorders. *International Journal of Behavioral Consultation and Therapy, 7*(1), 32–39.

Naglieri, J. A., Goldstein, S., & LeBuffe, P. (2010). Resilience and impairment: An exploratory study of resilience factors and situational impairment. *Journal of Psychoeducational Assessment, 28*(4), 349–356. https://doi.org/10.1177/0734282910366845

National Association of State Mental Health Program Directors. (2006). *Six core strategies for reducing seclusion and restraint use*. National Association of State Mental Health Program Directors (NASMHPD). p. 23.

National Collaborating Centre for Mental Health. (2015). *Violence and aggression: Short-term management in mental health, health and community settings* (Updated ed.). British Psychological Society.

National Institute for Health and Care Research. (2020). *National Institute for Health and Care Research Funding and Awards 2020*. Retrieved from https://fundingawards.nihr.ac.uk/award/NIHR127281

Nishimoto, K., Ogawa, M., Zhang, Q., Yamada, H., & Yang, J. (2020). Breaking cycles of poverty through child care institutions in Japan: According to a survey and interviews to university students who were fostered in child care institutions. *International Journal of Educational Research, 99*, 101522.

Nowak, M. (2019). *The United Nations global study on children deprived of liberty- online version*. United Nations.

Nunno, M. A., Holden, M. J., & Leidy, B. (2003). Evaluating and monitoring the impact of a crisis intervention system on a residential child care facility. *Children and Youth Services Review, 25*(4), 295–315.

Nunno, M. A., Holden, M. J., & Tollar, A. (2006). Learning from tragedy: A survey of child and adolescent restraint fatalities. *Child Abuse & Neglect, 30*(12), 1333–1342.

Nunno, M. A., McCabe, L. A., Izzo, C. V., Smith, E. G., Sellers, D. E., & Holden, M. J. (2022). A 26-year study of restraint fatalities among children and adolescents in the United States: A failure of organizational structures and processes. *Child Youth Care Forum, 51*, 661–680. https://doi.org/10.1007/s10566-021-09646-w

O’Brien, C. (2004). Best practices in behavior support: Preventing and reducing the use of restraint and seclusion. *Residential Group Care Quarterly, 5*(2), 14–16.

Ogles, B. M., Melendez, G., Davis, D. C., & Lunnen, K. M. (2001). The Ohio scales: Practical outcome assessment. *Journal of Child and Family Studies, 10*(2), 199–212. https://doi.org/10.1023/A:1016651508801
Nunno, M. A., Smith, E. G., Martin, W. R., & Butcher, S. (2015). Benefits of embedding research into practice: An agency-university collaboration. *Child Welfare, 94*(3), 113–133.

Paccione-Dyszlewski, M. R., Conelea, C. A., Heisler, W. C., Vilardi, J. C., & Sachs, H. T. 3rd (2012). A crisis management quality improvement initiative in a children’s psychiatric hospital: Design, implementation, and outcome. *Journal of Psychiatric Practice, 18*(4), 304–311. https://doi.org/10.1097/01.pra.0000416022.76085.9e

Pace, R., Pluye, P., Bartlett, G., Macaulay, A. C., Salsberg, J., Jagosh, J., & Seller, R. (2012). Testing the reliability and efficiency of the pilot mixed methods appraisal tool (MMAT) for systematic mixed studies review. *International Journal of Nursing Studies, 49*(1), 47–53.

Padhi, A., Norcott, J., Yoo, E., & Vakili, A. (2019). Eliminating seclusion and reducing restraint: Hope on an acute adolescent psychiatric ward. *Australian & New Zealand Journal of Psychiatry, 53*(Suppl 1), 119–120.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ, 372*, n71.

Parker, R., Boulos, L. M., Visintini, S., Ritchie, K., & Hayden, J. (2018). Environmental scan and evaluation of best practices for online systematic review resources. *Journal of the Medical Library Association, 106*(2), 208–218.

Parry, S., Williams, T., & Oldfield, J. (2021). Reflections from the forgotten frontline: ‘The reality for children and staff in residential care’ during COVID-19. *Health & Social Care in the Community, 30*, 212–224.

Partnership Projects. (2020). *Neuro de-escalation*. Retrieved 12 May 2022 from https://www.partnershipprojects-uk.com/project/neuro-de-escalation/

Perryman, C. L. (2016). Mapping studies. *Journal of the Medical Library Association, 104*(1), 79–82.

Petrowski, N., Cappa, C., & Gross, P. (2017). Estimating the number of children in formal alternative care: Challenges and results. *Child Abuse & Neglect, 70*, 388–398.

Pham, M. T., Rajić, A., Greig, J. D., Sargeant, J. M., Papadopoulos, A., & McEwen, S. A. (2014). A scoping review of scoping reviews: Advancing the approach and enhancing the consistency. *Research Synthesis Methods, 5*(4), 371–385.

Plant, R. (2004). Courageous patience part II: Lessons learned from a five-year program to reduce/eliminate restraint and seclusion. *Residential Group Care Quarterly, 5*(2), 12–13.

Pluye, P., Gagnon, M., Griffiths, F., & Johnson-Lafleur, J. (2012). A scoring system for appraising mixed methods research, and concomitantly appraising qualitative, quantitative and mixed methods primary studies in mixed studies reviews. *International Journal of Nursing Studies, 46*(4), 529–546.

Pollastri, A. R., Lieberman, R. E., Boldt, S. L., & Ablon, J. (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.

Ponge, L., & Harris, J. (2006). Reduction of seclusion and restraint in a children’s psychiatric center. *Communicating Nursing Research, 39*, 318. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cin20 &AN=106238661&site=ehost-live

Preisz, A., & Preisz, P. (2019). Restraint in paediatrics: A delicate balance. *Journal of Paediatrics and Child Health, 55*(10), 1165–1169.

PRICE Training. (2020). *Price training UK*. Retrieved from www.pricetraining.co.uk

Prince, A. M. T., & Gothberg, J. (2019). Seclusion and restraint of students with disabilities: A 1-year legal review. *Journal of Disability Policy Studies, 30*(2), 118–124.

Purtle, J. (2020). Systematic review of evaluations of trauma-informed organizational interventions that include staff trainings. *Trauma, Violence, & Abuse, 21*(4), 725–740.

Putkonen, A., Kuivalainen, S., Louheranta, O., Repo-Tiihonen, E., Ryyräinen, O.-P., Kautiainen, H., & Tiihonen, J. (2013). Cluster-randomized controlled trial of reducing seclusion and restraint in secured care of men with schizophrenia. *Psychiatric Services, 64*(9), 850–855.

Rettmann, R. (2019). Case study [internet]. CPI. Retrieved from https://www.crisisprevention.com/en-CA/Library/Changes-in-Attitudes-Changes-in-Outcomes

Reynolds, W. M. (1988). *Suicidal ideation questionnaire, professional manual* Odessa, FL. Psychological Assessment Resources.
Reynolds, E. K., Grados, M. A., Praglowski, N., Hankinson, J. C., Deboard-Lucas, R., Goldstein, L., Perry-Parrish, C. K., Specht, M. W., & Ostrander, R. (2016). Use of modified positive behavioral interventions and supports in a psychiatric inpatient unit for high-risk youths. *Psychiatric Services, 67*(5), 570–573.

Reynolds, E. K., Grados, M. A., Praglowski, N., Hankinson, J. C., Parrish, C., & Ostrander, R. (2019). Implementation of modified positive behavioral interventions and supports in a youth psychiatric partial hospital program. *Journal of Patient Safety & Risk Management, 24*(2), 64–70. https://doi.org/10.1177/2516043518811758

Reynolds, E. K., Grados, N., Parrish, C., Ostrander, R., & Grados, M. A. (2019). 5.68 implementation of modified positive behavioral interventions and supports (M-PBIS) in acute psychiatric inpatient care and day hospital settings: Immediate and long-term gains. *Journal of the American Academy of Child and Adolescent Psychiatry, 58*(10 Suppl), S267–S268. https://doi.org/10.1016/j.jaac.2019.08.382

Riley, D., & Benson, I. (2018). No force first: Eliminating restraint in a mental health trust. *Nursing Times, 114*(3), 38–39.

Rowan, C. (2010). *Schools operating safely- ten alternatives to medication, seclusion and restraints*. Retrieved from http://www.zoneinworkshops.com/pdf/Schools%20Operating%20Safety%20(SOS).pdf

Russell, M., Maher, C., Dorrell, M., Pitcher, C., & Henderson, L. (2009). A comparison between users and non-users of Devereux’s safe and positive approaches training curricula in the reduction of injury and restraint. *Residential Treatment for Children & Youth, 26*(3), 209–220.

Ryan, J. B., Peterson, R., Tetraault, G., & Hagen, E. V. (2007). Reducing seclusion timeout and restraint procedures with at-risk youth. *Journal of At-Risk Issues, 13*(1), 7–12.

Ryan, J. B., Peterson, R. L., Tetraault, G., & van der Hagen, E. (2008). Reducing the use of seclusion and restraint in a day school program. In M. Nunno, D. Day, & L. Bullard (Eds.), *For our own safety: Examining the safety of high-risk interventions for children and young people* (pp. 201–216). Child Welfare League of America.

Sanders, K. (2009). The effects of an action plan, staff training, management support and monitoring on restraint use and costs of work-related injuries. *Journal of Applied Research in Intellectual Disabilities, 22*(2), 216–220. Retrieved from http://openurl. ebscohost.com/links/ c/linking.aspx?authtype=athens&genre=article&issn=1360-2322&volume=22&issue=2&spage=216&date=2009 http://www.hlisd.org/AtoZBrowse.aspx?browsetype=library

Seckman, A., Paun, O., Heipp, B., Van Stee, M., Keels-Lowe, V., Beel, F., Spoon, C., Fogg, L., & Delaney, K. R. (2017). Evaluation of the use of a sensory room on an adolescent inpatient unit and its impact on restraint and seclusion prevention. *Journal of Child & Adolescent Psychiatric Nursing, 30*(2), 90–97.

Schilling, E. A., Aseltine, R. H., & Gore, S. (2007). Adverse childhood experiences and mental health in young adults: A longitudinal survey. *BMC Public Health, 7*(1), 30.

Schreiner, G. M., Crafton, C. G., & Sevin, J. A. (2004). Decreasing the use of mechanical restraints and locked seclusion. *Administration and Policy in Mental Health, 31*(6), 449–463.

Shadili, G., Brocco, C., De Vieille, I., Piot, M. A., & Lavergne, P. (2012). Violence in an adolescent psychiatric inpatient unit: A behavioural management plan. *European Neuropsychopharmacology, 2*, S417–S418.

Shaffer, D., Gould, M. S., Brasic, J., Ambrosini, P., Fisher, P., Bird, H., & Aluwahlia, S. (1983). A children’s global assessment scale (CGAS). *Archives of General Psychiatry, 40*, 1228–1231.

Shen, S.-H., Lom, F.-S., Huang, J.-L., Kelsen, B. A., & Liang, S. H.-Y. (2020). Mental health of children and adolescents in foster care residential institutions in northern Taiwan. *Taiwanese Journal of Psychiatry, 34*(1), 15–24.

Shield, P. (2006). Special section: ‘Forty seven, today you are nine’: Systematic abuse in Irish childcare institutions. *Group Analysis, 39*(1), 25–35.

Singh, N. N., Singh, S. D., Davis, C. M., Latham, I. L., & Ayers, J. G. (1999). Reconsidering the use of seclusion and restraints in inpatient child and adult psychiatry. *Journal of Child and Family Studies, 8*(3), 243–253.

Smallridge, P., & Williamson, A. (2011). *Report on implementing the independent review of restraint in juvenile secure settings*. Ministry of Justice.

Spencer, G., Fairbrother, H., & Thompson, J. (2020). Privileges of power: Authenticity, representation and the “problem” of children’s voices in qualitative health research. *International Journal of Qualitative Methods, 19*, 1609406920958597.
Steckley, L., & Kendrick, A. (2008). Young people’s experiences of physical restraint in residential care: Subtlety and complexity in policy and practice. *Child Welfare League of America, 15*, 552–569.

Steinberg, A. M., Brymer, M. J., Kim, S., Briggs, E. C., Ippe, C. G., Ostrowski, S. A., Gully, K. J., & Pynoos, R. S. (2013). Psychometric properties of the UCLA PTSD reaction index: Part I: UCLA PTSD reaction index. *Journal of Traumatic Stress, 26*(1), 1–9. [https://doi.org/10.1002/jts.21780](https://doi.org/10.1002/jts.21780)

Studio III Training Systems and Psychological Services. (2021). *Low arousal training*. Retrieved from [www.studio3.org/low-arousal-training](http://www.studio3.org/low-arousal-training)

Stirling, B. (2020). Childhood, ecological feminism, and the environmental justice frame. *Études canadiennes/Canadian Studies, 88*, 221–238.

Taylor, C. (2020). *A review of the use of pain-inducing techniques in the youth secure estate (Independent Review)*. Ministry of Justice and Her Majesty’s Prison and Probation Service, HM Government.

The Australian Psychological Society Ltd. (2011). *Evidence-based guidelines to reduce the need for restrictive practices in the disability sector*. The Australian Psychological Society Ltd.

Thomann, J. (2010). Factors in restraint reduction in residential treatment facilities for adolescents. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 70*(10-B), 6569.

Thompson, R. W., Huefner, J. C., RDG, V., Davis, J. L., & Daly, D. L. (2008). A case study of an organizational intervention to reduce physical interventions: Creating effective, harm-free environments. In A. Nuncio Michael, M. Day David, & B. Bullard Lloyd (Eds.), *For our own safety: Examining the safety of high-risk interventions for children and Young people* (pp. 143–166). Child Welfare League of America.

Torjesen, I. (2019). Childhood trauma doubles risk of mental health conditions. *BMJ, 364*, l854.

Toros, K. (2021). A systematic review of children’s participation in child protection decision-making: Tokenistic presence or not? *Children & Society, 35*(3), 395–411.

Ubana, R. L., Ng, J. W. L., Tan, C. S. M., Raj, H. P., Ong, E. Y., Ang, L. K., Chua, V. T. R., Tan, S. K., Agpoon, E. A., & Ng, F. W. Z. (2015). Continued implementation of an advanced practice nurse-led multidisciplinary programme to reduce disruptive incidences in young patients with mental health conditions. *Annals of the Academy of Medicine Singapore, 1*, S239.

UNICEF. (2020). *Children in alternative care 2020*. Retrieved from [https://data.unicef.org/topic/child-protection/children-alternative-care/](https://data.unicef.org/topic/child-protection/children-alternative-care/)

United Kingdom Parliament. (2020). *Human Rights Joint Committee 5th Report. Human Rights and the Government’s response to COVID-19: The detention of young people who are autistic and/or have learning disabilities Volume 2. Oral and written evidence: HC 395. TSO.*

United Nations. (1989). *The United Nations convention on the rights of the child*. UNICEF United Kingdom.

United Nations Committee on the Rights of Persons with Disabilities. (2017). *Convention on the rights of persons with disabilities: Concluding observations on the initial report of the United Kingdom of Great Britain and Northern Ireland*. United Nations.

U.S. Department of Education. (2012). *Restraint and seclusion: Resource document*. U.S. Department of Education

Valenkamp, M., Verheij, F., Van De Ende, J., & Verhulst, F. (2011). Development and evaluation of the individual proactive aggression management method for residential child psychiatry and child care. *European Child & Adolescent Psychiatry, 20*, S7–S223.

van Loan, C. L., Gage, N. A., & Cullen, J. P. (2015). Reducing use of physical restraint: A pilot study investigating a relationship-based crisis prevention curriculum. *Residential Treatment for Children & Youth, 32*, 113–133.

Verret, C., Massé, L., Lagacé-Leblanc, J., Delisle, G., & Doyon, J. (2019). The impact of a schoolwide de-escalation intervention plan on the use of seclusion and restraint in a special education school. *Emotional and Behavioural Difficulties, 24*(4), 357–373.

Villani, V. S., Parsons, A. E., Church, R. P., & Beetar, J. T. (2012). A descriptive study of the use of restraint and seclusion in a special education school. *Child & Youth Care Forum, 41*(3), 295–309.

Visalli, H., & McNasser, G. (2000). Reducing seclusion and restraint: Meeting the organizational challenge. *Journal of Nursing Care Quality, 14*(4), 35–44.

Wanglar, E. (2021). Child care institutions in India: Investigating issues and challenges in children’s rehabilitation and social integration. *Children and Youth Services Review, 122*, 105915.

Weiss, E. M. (1998). *Deadly restraint: A Hartford Courant investigative report*. Hartford Courant. pp. 11–15.
Welsh Government. (2019). *Reducing restrictive practices framework: A framework to promote measures and practice that will lead to the reduction of restrictive practices in childcare, education, health and social care settings*. Welsh Government Consultation document. Welsh Government. Retrieved from https://gov.wales/sites/default/files/consultations/2019-10/consultation-document-reducing-restrictive-practices-framework.pdf

West, M., Melvin, G., McNamara, F., & Gordon, M. (2017). An evaluation of the use and efficacy of a sensory room within an adolescent psychiatric inpatient unit. *Australian Occupational Therapy Journal, 64*(3), 253–263.

Williams, D. E., & Grossett, D. L. (2011). Reduction of restraint of people with intellectual disabilities: An organizational behavior management (OBM) approach. *Research in Developmental Disabilities, 32*(6), 2336–2339. https://doi.org/10.1016/j.ridd.2011.07.032

Wilson, C., Rouse, L., Rae, S., Jones, P., & Kar Ray, M. (2015). *Restraint reduction in mental healthcare: A systematic review*. Cambridgeshire and Peterborough NHS Foundation Trust.

Winnipeg, H. S. C. (2015). *Workplace innovation project: Enhancing seclusion and restraint-free mental health services: Promoting employee safety through cultural change, trauma-informed care, and the use of innovative strategies for violence prevention and management*. Health Sciences Centre Winnipeg.

Wisdom, J. P., Wenger, D., Robertson, D., Van Bramer, J., & Sederer, L. I. (2015). The new York State Office of Mental Health positive alternatives to restraint and seclusion (PARS) project. *Psychiatric Services, 66*(8), 851–856.

Witte, L. (2007). *Using training in verbal skills to reduce the use of seclusion and restraint*. Retrieved from https://www.crisisprevention.com/CPI/media/Media/Blogs/using-training-in-verbal-skills-to-reduce-the-use-of-seclusion-and-restraint.pdf

Witte, L. (2008). Reducing the use of seclusion and restraint. *Behavioral Healthcare, 28*(4), 54, 56–57.

World Health Organization. (2019). *Strategies to end seclusion and restraint. WHO quality rights specialized training. Course guide*. WHO.

Youth Justice Board. (2009). *Developing a restraint minimisation strategy: Guidance for secure establishments on the development of restraint minimisation strategies*. Youth Justice Board.

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