

Review of International Evidence and Practice on Non-Pain Inducing Techniques and Systems of Restraint

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Summary

In 2011, the Restraint Advisory Board (RAB), which was established to assess Minimising and Managing Physical Restraint (MMPR) for use in secure training centres (STCs) and under-18 young offender institutions (YOIs), recommended that research was commissioned: "...into the feasibility of developing a restraint system which does not incorporate pain induction techniques. The research should include assessing the applicability of restraint systems used in other sectors (within and outwith child care) that do not rely upon or permit pain induction".

A review of existing evidence was commissioned in 2013 following this recommendation. The aims of the study were to:

- identify, review and assess non-pain restraint techniques employed in different institutional settings across different countries (including England and Wales), and their effectiveness
- assess the feasibility of implementing similar restraint techniques from other countries and settings within the under-18 secure estate in England and Wales.

The research comprised a rapid evidence assessment of the relevant international research literature. This was followed by interviews with an international group of 26 practitioners, academics, trainers and managers about the use of non-pain inducing restraint techniques.

The review of the existing research found only five relevant studies, none of which clearly and rigorously demonstrated the effective use of non-pain inducing techniques to control serious or volatile situations involving children and young people. These findings mirrored the conclusions of an earlier systematic review on physical interventions and seclusion in psychiatric settings following National Institute of Clinical Excellence methodology.

The interviews with practitioners found that although non-pain restraint techniques were in use in various settings around the world, it was very difficult to identify approaches based on good-quality research on their impact. It was also apparent that the choice of restraint method employed varied depending on context and circumstance.

As a result, the study concluded it was not possible, on the current evidence available, to identify a particular safe, more effective system of non-pain inducing restraint readily available to specifically manage volatile and serious situations within the youth secure estate in England and Wales. The study highlighted the need for more robust research in this area.

Background

Secure establishments for young people must have in place strategies for managing challenging behaviour. The aim is to minimise the need for restraint,¹ but, where necessary, apply techniques as effectively and safely as possible within the legislative framework, and in the best interest of the young person.

In response to the 2008 Independent Review of Restraint, the Government introduced Minimising and Managing Physical Restraint (MMPR) – a new behaviour management system including a set of new restraint techniques for use in secure training centres (STCs) and under-18 young offender institutions (YOIs). The first establishment went live with MMPR in March 2013. The process of replacing existing systems with MMPR was ongoing, with roll-out intended to be completed in 2016.²

In 2011, the Restraint Advisory Board (RAB), which was established to assess MMPR for use in STCs and under-18 YOIs, recommended that research was commissioned: “...into the feasibility of developing a restraint system which does not incorporate pain induction techniques. The research should include assessing the applicability of restraint systems used in other sectors (within and outwith child care) that do not rely upon or permit pain induction”.

The recommendation was accepted by the Government,³ and the Youth Justice Board (YJB) commissioned a review of the existing evidence in December 2013, which was conducted by Caring Solutions (UK) Ltd and the University of Central Lancashire.^{4, 5}

¹ Restraint refers to the authorised use of measures to manage challenging behaviour. In the youth secure estate, the use of such techniques must adhere to a strict policy and legal framework. The key pieces of legislation and guidance governing the use of restraint in the under-18 secure estate are: The Young Offender Institution Rules 2000 (rule 50) made under the Prison Act 1952, the Secure Training Centre Rules 1998 (rules 37 and 38) also made under the Prison Act 1952, and the Children's Homes Regulations 2001 (amended under the Care Standards Act 2000). For further information see: Ministry of Justice (2012) [Use of Restraint Policy Framework for the Under-18 Secure Estate](#), London: Ministry of Justice.

² Further details of the development and implementation of the new approach are [available online](#).

³ See HM Government (2012) [Government Response to the Restraint Advisory Board](#), London: Ministry of Justice.

⁴ The research aims and many aspects of the methodology were specified by the Youth Justice Board (YJB) in the project tender documents. The project was informed by the advice of experts from a steering group convened by the YJB. The steering group included representatives from the YJB Secure Accommodation Division, the YJB Research Team, the National Offender Management Service's Young People's Team, the Ministry of Justice Youth Policy Unit, the Independent Restraint Advisory Panel (which superseded the Restraint Advisory Board in 2012), independent advisers and the MMPR National Team. The steering group informed the scope and resources of Phase 1 (including search terms and a shortlist of non-pain restraint techniques to be explored), discussed themes from completion of the rapid evidence assessment and how it would shape Phase 2, and discussed the findings from the final report.

⁵ Neither Caring Solutions (UK) Ltd nor the University of Central Lancashire competes with providers of any of the restraint techniques or training in that field. Members of both organisations have interests and experience in this area as advisers to providers, purchasers, or validators of training in these techniques.

Aims

The aims of this research were two-fold:

- to identify, review and assess non-pain⁶ restraint techniques employed in different institutional settings across different countries (including England and Wales), which are used to effectively bring volatile and serious situations under control
- to capture learning on the feasibility of implementing similar restraint techniques from other countries and settings within the under-18 secure estate in England and Wales.

The key term used in this study is 'non-pain inducing restraint technique'. For the purpose of this report, it refers to any technique used to effectively⁷ bring volatile and serious situations under control without relying upon or permitting pain. When considering the use of restraint in different settings (e.g. healthcare, education, and youth justice), it is necessary to understand the expectations that each places on their employees to manage different levels of violence.

⁶ Classification of non-pain inducing methods of restraint was based on intent rather than actuality.

⁷ 'Effective techniques' maximise safety, minimise pain or harm, and safely resolve serious or volatile situations. Strong evidence of effectiveness would require accreditation or formal evaluation (including medical risk assessments) or 'what works?' evidence, and details about the context in which an approach works e.g. systematic reviews or randomised controlled trials.

Approach

Two separate approaches were used:

- literature review
- an initial screening survey followed by an in-depth qualitative interview with a smaller 'expert' group.

Phase 1: Rapid evidence assessment of international evidence on non-pain inducing techniques/systems of restraint

Phase 1 of the project was a rapid evidence assessment in which 30 information sources and databases were subjected to a key terms search to identify relevant evidence (see Appendix 1). Publication titles were scanned and those that did not address the topic or were duplicates were eliminated. This initial stage produced a total of 328 papers.

After three stages of sifting (see Appendix 1),⁸ five papers remained, which covered a range of restraint techniques used in child and adolescent settings. The Critical Appraisal Skills Programme (CASP) and Maryland Scientific Methods Scale (MSMS)⁹ were used to appraise the studies.

Phase 2: Interviews with practitioners

Phase 2 was split into two parts. In Phase 2a, a web-based screening survey¹⁰ was used to identify international academics, practitioners, trainers and

⁸ Stages 1 and 2 included adults; these papers were then filtered to only include children and young people.

⁹ CASP (see <http://www.casp-uk.net/>) is used to assess the applicability, reliability and validity of published research in health and social care settings. The tools, in the form of checklists, were utilised on the grounds of relevance and appropriateness as most studies were health/social care related. There are a series of screening questions and prompts to assess validity, results etc. The number and type of criteria depends on the kind of research paper being evaluated, e.g. systematic reviews have 10 questions. Articles were graded (1 for a yes, 0 for no and ½ for unclear) and were included if the article scored above 50% of the total available score for the methodology used.

MSMS was developed to assess studies of the effectiveness of crime prevention interventions in the USA. In this rapid evidence assessment, the wording was changed to reflect the interventions (methods of restraint or alternatives to non-pain inducing methods of restraint) and their impact, if any, on outcomes (e.g. a change in the number of volatile situations, duration of volatile situations or impact on staff or those being restrained). There are five levels in this scale, which describe how rigorous and robust the methods of gathering and analysing information are, with Level 1 being the least rigorous and Level 5 being the most rigorous (adapted from Sherman et al, 1998, pp4-5).

¹⁰ SurveyMonkey – a secure electronic survey accessed by e-mailed web link – was used for this purpose. This resource allows respondents to complete surveys electronically in a secure but accessible fashion.

managers who might be eligible to take part in an in-depth interview.¹¹ The survey was developed to explore use of non-pain restraint techniques. It used a set of open and closed questions to explore a number of key areas, including location and setting, occupation/job role, training, and knowledge of techniques that do not rely upon pain.

The survey invitation was distributed to a non-random sample of 115 global contacts either identified in the rapid evidence assessment or who were known to the authors as working in this field. These contacts were also asked to circulate the survey to others working in the area (i.e. using snowball sampling). Overall, there were 191 responses. Of these, 106 were classified as international,¹² and 85 were from the UK.

Responses to the survey were used to identify suitable participants to take part in an in-depth interview in Phase 2b of the study. The inclusion criteria for selection were that participants:

1. Had worked with and/or in children's and young person's settings
2. Had knowledge of, used and/or taught non-pain restraint techniques
3. Never or rarely used pain restraint techniques
4. Identified a specific restraint technique/system that did not permit the use of pain
5. Agreed to take part in an interview.

Overall, 24 interviews were undertaken with 26 participants identified as having relevant knowledge and experience. Ten participants were from the UK, nine from the US and seven from other countries.

Interview guides were developed in consultation with the YJB for four different groups: managers, practitioners, academics and trainers. They explored the types of non-pain restraint techniques/systems in use, when and who they were used on (i.e. by age), and the evidence base for such techniques.

Structured interview schedules were used to conduct telephone interviews with 26 participants identified via the screening survey and rapid evidence assessment. Data were analysed by one interviewer using a framework approach in which the key topics discussed during the interview were used as categories to code and extract the data. (We are unable to comment on the socio-cultural differences between participating countries as this was beyond the remit of the report.) All interpretive decisions were shared and refined through consultation with the second interviewer. Furthermore, all transcripts were read by members of the wider research team for verification purposes.

¹¹ Ethical approval was gained from the Science, Technology, Engineering, Medicine and Health sub-committee at the University of Central Lancashire.

¹² International means that participants were based outside the UK and practised outside the UK, based on their self-identification. One individual worked in the UK and worked both in the UK and in several European countries. All but one of the participants worked exclusively within the country in which they resided; the exception lived in the UK but worked in other European countries as well.

Limitations

The following limitations need to be borne in mind when interpreting findings:

- A range of terms were used to cover restraint practices across jurisdictions and, while known terms were used to identify relevant literature for the rapid evidence assessment, it is possible that others were omitted, which might have affected the comprehensiveness of the searches undertaken.
- The generalisability of findings will be limited due to the small, purposive samples employed in the survey and interviews. There may be an over-representation of people working in the field of learning disabilities and a limited representation of practitioners across some jurisdictions. However, the research does provide insights into the types of techniques in use, the factors considered by professionals when applying restraint, and the approach taken to developing and reviewing such techniques.
- The survey sample could be perceived as a 'biased' sample. Some participants were known to the research team as working in this field (either through direct personal knowledge or through their networks). However, this was felt to be unavoidable as it was necessary to seek out people with expertise to be able to respond to questions exploring the use of non-pain restraint techniques. There is also the risk that the research team might have limited attempts to widen the list of people to contact; however all those approached were asked to use their contacts to help generate a wider sample of possible research participants.
- Participants may give socially desirable responses as their identities were known to interviewers and they may have wished to portray their service in the best light.

The absence of a robust randomised controlled trial study is not surprising given the ethical and practical problems associated with any type of evaluation in this area. It has proved problematic to potential researchers. Differences between institutional populations, staff and resident height and weight differentials, safety concerns and the ability to accurately replicate techniques in 'live' situations have proven to be confounding variables.

Findings

Phase 1: Rapid evidence assessment of international evidence on non-pain inducing techniques/systems of restraint

The five studies that remained following the three stages of sifting (presented in Appendix 3) represented the most methodologically rigorous of those assessed using the Critical Appraisal Skills Programme (CASP) approach. However, only one of these was scalable¹³ using the Maryland Scientific Methods Scale (MSMS), achieving a Level 2 on this classification (whereas Level 5 denotes the most robust studies).

The five key studies identified predominantly consisted of analysis of data on specific cohorts of young people in specific settings (e.g. adolescent forensic units, mental health, student day treatment and residential settings). Some of the studies were carried out in more than one country; two of the studies were from the USA, one was from Australia and the remainder were from Europe (the UK, Finland, the Netherlands, and Belgium).

The restraint techniques identified were varied but fell into five broad categories:

- verbal interventions – verbalising the situation, ‘talking the young person down’ and de-escalation, which was preferred by Kaltiala-Heino et al (2007) and Berg et al (2011)
- planning and evaluating activities – planning daily routines to reduce the number of escalating interactions (see Berg et al, 2011)
- physical restraint – ‘duveting’¹⁴ (see Kaltiala-Heino et al, 2007, and Berg et al, 2011); immobilisation on a bed with restraint straps, which Berg et al (2011) described as being used only in Finland; and ‘therapeutic holding’¹⁵ (see Kaltiala-Heino et al, 2007, and Ryan et al, 2007)
- isolation – ‘time-out’ either from a group activity or from the group in a separate room, which may be locked or unlocked and with or without staff in attendance (see Berg et al, 2011)
- medication – forced injections, which both Berg et al (2011) and Crocker et al (2010) described as being rarely used.

One of the findings from these studies is that early intervention with therapeutic holding might decrease the need for more restrictive measures of restraint,

¹³ Only one study ‘Reducing Seclusion Time-out and Restraint Procedures with At-Risk Youth’ measured the impact of the intervention on a pre/post basis.

¹⁴ This is a technique whereby individuals, including young people (12 to 18 years old) are enveloped in blankets or duvets to prevent violent acts and ensure safe transfer of the individual to a seclusion room.

¹⁵ Use of physical holds (e.g. to assist a person to receive medical care) in situations where behaviour may limit medical care or present a safety risk to the individual or others.

although there was an initial increase in the use of restrictive measures (Kaltiala-Heino et al, 2007).

A further eight studies, which scored lower on CASP and were not scalable using MSMS, were identified as relevant to the research questions. These studies, which included adults as well as young people, can be found in Appendix 4. They indicated that the risks of using restraint are unknown in most settings where it is employed (prisons, juvenile detention, psychiatric facilities).

Overall, there was a lack of methodologically robust studies. The rapid evidence assessment did not identify any literature which clearly and rigorously demonstrated the use of effective non-pain inducing techniques to control serious or volatile situations involving children and young people. The results thus mirror the conclusions of a systematic review on physical interventions and seclusion in psychiatric settings following National Institute of Clinical Excellence methodology: “There is little, if any, empirical evidence on the safety and effectiveness of either seclusion or restraint as interventions for the short-term management of disturbed/violent behaviour in psychiatric inpatient settings” (Nelstrop 2006, p.14).

Phase 2: Interviews with practitioners

The main findings from the 24 interviews with 26 practitioners were as follows.

Types of non-pain restraint in use

The majority of participants indicated that only non-pain inducing methods of restraint were used in the settings¹⁶ covered during interview. While individual techniques such as ‘therapeutic holding’, ‘duveting’, and de-escalation were identified in the rapid evidence assessment, those interviewed referred to named techniques/systems that included non-pain approaches (see Appendix 5). Many of these were already known to those working in the youth secure estate in this country.

Participants said that restraint techniques/systems which were classified as non-pain inducing could, on occasions, cause pain (with the exception of the ‘Ukeru’¹⁷ system in the USA). Participants reported that pain could be experienced if:

- enough force was applied
- the procedure was incorrectly or improperly applied
- the individual being restrained was “struggling”
- there was a lack of awareness of existing injuries due to an altered sensory threshold e.g. for a young person with autism.

¹⁶ See Appendix 1 ‘Inclusion criteria’.

¹⁷ The ‘Ukeru’ system uses soft, cushiony materials to protect staff and protective equipment such as gloves, shin guards and baseball umpire shields to protect clients (young people) and staff.

When restraint was used and on whom

As in the youth secure estate in England and Wales, participants reported that use of hands-on, physical restraint was only considered appropriate as a 'last resort' when there was imminent risk of harm and to address the most challenging behaviours. However, participants may have been giving 'socially desirable responses', with participants wishing their working methods to be shown in a positive light. Physical restraint was only considered appropriate in situations such as:

- breaking up a fight
- preventing absconding
- violence towards staff
- aggression within an uncontrolled environment (i.e. outdoors or within the community)
- self-injurious or chaotic behaviours, such as drug abuse
- when one or more individuals were "out of control"
- when the individual had a mental health "diagnosis that makes it difficult for them to de-escalate".

Across settings, age was not considered an appropriate basis for determining the type of restraint. Participants reported that the application of restraint would be determined by a combination of assessed risk, and individual and context based factors (e.g. behaviour; physical disabilities; health and/or mental health issues; and the history of the individual). The height differential between the individual and staff member was also considered to be important by a number of participants in order to keep the individual and staff member safe from injury or harm.

Techniques applied in specific scenarios

During interviews, trainers and practitioners¹⁸ were asked to identify how they would respond/instruct staff to respond to three specific scenarios. The aim was to identify alternative non-pain inducing techniques that might be used to effectively manage the most volatile situations in the youth secure estate.

a) Prolonged restraint in a seated or prone position where the individual has been continually and violently struggling

In some settings, no floor or seated restraint practices were used due to concerns about injury. Some participants who used these techniques referred to prescribed maximum times for these positions, e.g. three minutes for prone, twenty minutes for seated, and attempts to move from a prone to supine, or side position to "get them on their feet as quickly as possible". Participants across all settings suggested various techniques to resolve the scenario, including:

¹⁸ These questions were not asked during interviews with managers or academics, as they would not necessarily have the knowledge of dealing with these specific situations. It was also often not possible for practitioners and trainers to identify a 'specific' technique as the situation never/or rarely occurred in their institution(s), and due to the need for multiple situational and context-related factors to be taken into consideration.

- alternating staff “as sometimes just a change of face can actually be a really positive thing”
- disengagement to “see what happens” and then attempting to re-engage in a “positive way”
- using calming strategies and/or moving the individual to a safe environment or seclusion to remove them from potential stimulus.

b) Where a person is using a weapon to self-harm and has just begun to cut their wrists (drawing blood)

While training in the majority of institutions/settings did not involve disarming techniques, many referred to a need to intervene in this situation. A ‘careful containment’ technique was often described through experienced staff using distraction (e.g. “smash something against a window”), de-escalation and verbal directions to “connect with the individual”. Physical intervention was reported if there was a significant risk of harm (to self or others) and it was deemed safe for staff to do so (with use of protective equipment if available, e.g. neoprene gloves). This was often followed by removal to a “safe” or “quiet” area.

Participants across settings often suggested the intervention would depend on the weapon, the history of the individual and appropriate behaviour planning strategies being in place. For example, an individual known to “really self-mutilate” would be physically restrained, whereas someone where it “doesn’t lead to anything” might be “ignored”. In some circumstances, the immediate response following failed de-escalation, would be to contact police or security staff (i.e. general health, mental health, secure hospital, learning disabilities).

c) Where staff are being physically assaulted

Varied responses were provided to this scenario, from calling in police/security (e.g. within settings/contexts such as youth justice, health and social care, children’s homes, mental health, learning disabilities, secure hospitals) to using self-protection, blocking, distraction or comforting techniques, and advising staff to remove themselves from the environment.

Participants frequently emphasised that they were “not going to restrain somebody just because they assaulted somebody”. However, if the risk was imminent, particularly for those working with individuals with unknown behavioural histories, they referred to “calling for back-up”, “a degree of force” and having a “duty to intervene” through the application of techniques, e.g. basket-holds,¹⁹ mechanical or chemical restraint and seclusion.

Assessments and evidence of effectiveness of non-pain restraint techniques

The interviews suggested that formal accreditation, assessments, and evaluations were lacking for a number of the non-pain techniques/systems identified, and, on the whole, restraint practice was not reported to be based on evidence. Some models had been licensed (e.g. non-violent Crisis Prevention Intervention) or accredited (e.g. through the British Institute of Learning

¹⁹ In a ‘basket-hold’, the individual is restrained by a member of staff standing or sitting behind him or her who then crosses the subject’s own arms in front of him/her and secures them at the wrist or forearm. The risks associated with this technique have been recognised within the secure estate for children and young people in England and Wales.

Disability). Some techniques had been risk assessed in-house and signed off by clinicians (e.g. physiotherapists, occupational therapists, speech and language therapists) to ensure their safety and pain minimisation. The Crisis Prevention Intervention programme had, for example, been developed with a Professor of Trauma using a risk assessment matrix to determine the likelihood of harm and severity of outcome.²⁰

Formal evaluation of staff training was reported to be undertaken by training providers across the various settings. Although it may theoretically be possible, there was no evidence that training curricula had been or could be modified or adapted to meet changing environments/the conditions of the secure estate for under-18s.

Incident monitoring and debriefing were commonplace, and considered important to assess whether restraint techniques were correctly applied, if the individual's well-being had been considered during the restraint, and what alternative techniques might have been used and now should be used in future incidents and training programmes. Restraint reports were reviewed daily, weekly, monthly and/or six monthly by those with assigned responsibility, which reflected a good practice approach. Monitoring would generally involve examining all or some of the following:

- how and when restraint episodes occur (to identify patterns or variations)
- how the restraint technique had been applied
- whether any pain or injury had been reported.

²⁰ An assessment was carried out initially in 2000 by Richard Barnett – a physiotherapist and senior lecturer at the Faculty of Health and Wellbeing at Keele University. Professor Jim Ryan, the first Leonard Cheshire Professor in Conflict Recovery at the Department of Surgery, University College London, between 1995 and 2007 carried out a second assessment during 2010-11. He was also visiting professor in trauma care and honorary consultant in emergency medicine at University College London Hospitals (source: personal communication from Crisis Prevention, providers of the Crisis Prevention Intervention).

Conclusions

The aim of this research study was to explore the feasibility of implementing non-pain inducing restraint systems used in other sectors and countries to youth justice settings in England and Wales.

The research showed that, although non-pain restraint techniques were in use in various settings around the world, it was very difficult to identify approaches based on good quality, quantified impact research. No existing research was identified either through the rapid evidence assessment or interviews which could provide a sound basis for a comparative analysis of non-pain inducing restraint techniques across institutional settings.

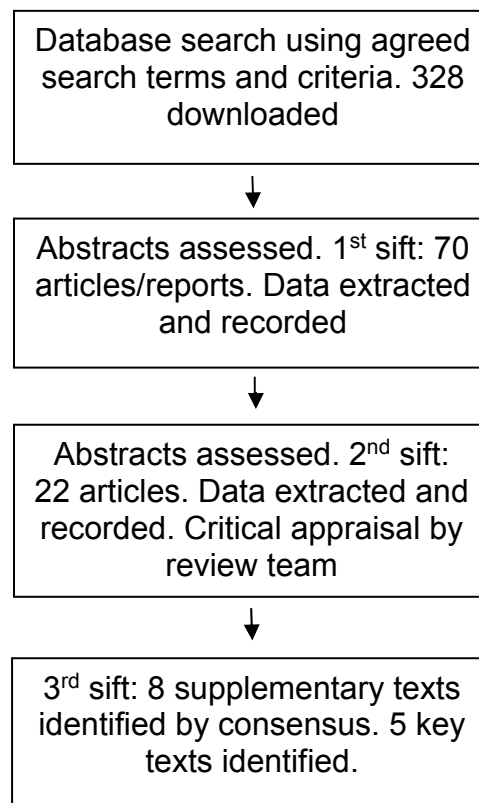
It was also not possible, based on the evidence available, to identify a safe, more effective system of restraint readily available to specifically manage volatile and serious situations within the youth secure estate in England and Wales. A definitive message about which technique would be used in a particular situation or with a particular group (i.e. by age) was difficult to determine, because it was clear that choice of restraint method depended on the context and circumstances. Decisions were reportedly based on a number of complex issues, including behavioural planning and associated assessment of risk, individual characteristics and other factors. De-escalation comprising distraction and verbal communication skills, which is also already in use in the under-18 secure estate, was strongly advocated and reported to have reduced the number of restraint incidents across various settings.

The research outlined in this report highlights a need for more robust research on the safety and effectiveness of non-pain restraint techniques to inform practice in this area. Such research may include, but is not limited to, an examination of the relationship between physical restraint and violence (i.e. does physical restraint decrease violent behaviour?); case/observational studies looking at what works, what does not work and why, including an examination of prevention and behaviour management methods and interventions; the collation of monitoring data across different techniques and settings to compare the number of incidents and injury rates for staff and young people, and negative experiences reported by those restrained, to help inform understanding of the relative merits and risks of different techniques.

Appendix 1: Rapid evidence assessment search terms and processes

This appendix describes the process, search terms, sources of information, criteria for inclusion and exclusion, and search matrix.

Figure 1: Rapid evidence assessment methodology



Search terms

A combination of the following search terms was used:

1. Acute behavioural disturbance
2. Advanced arm hold
3. Aggression management
4. Approved models of restraint
5. Arm wrap
6. Avers* (averse, aversion, aversive)

7. Basket-hold
8. Behaviour (management; control; challenging)
9. Breakaway (restraint; techniques)
10. Care and responsibility
11. Caus* pain (cause, caused, causing)
12. Children
13. Clinical holding
14. Coercion
15. Coercive (control; interventions; measures)
16. Commercial risk restraint
17. Compliance techniques
18. Compression
19. Conflict management training
20. Contact and cover
21. Contain
22. Control* (control, controlled, controlling) (techniques; and restraint (C and R); take down and take up)
23. Crisis intervention
24. Deliberate pain induction
25. De-escalation
26. Detain
27. Direct pressure
28. Double embrace
29. Escape techniques
30. Forc* (force, forced, forcing)
31. Graded holds to chairs
32. Ground assault
33. Guiding hold
34. Handcuffs
35. Harm* (harm, harmed, harmful)
36. Held
37. Hold* (hold, holding) (friendly; full search)
38. Hurt* (hurt, hurting)
39. Injur* (injury, injured, injuries)

40. Inverted wrist hold
41. Isolating the arm
42. Leg (control; lock)
43. Management of violence and aggression (MVA)
44. Managing crisis
45. Managing challenging behaviour
46. Minimising and Managing Physical Restraint (MMPR)
47. Non-compliance management
48. Non harmful
49. No force first
50. Pain* (pain, pained, painful) (compliant techniques; inducing techniques)
51. Physical (control in care; intervention (PI) and techniques; restraint)
52. Positive behaviour management
53. Post incident debrief
54. Prone (restraint; position)
55. Preventing challenging behaviour
56. Rapid initial restraint
57. Rapid tranquilisation
58. Restrain* (restrain, restrained, restraining, restraint) (chairs; holds; policy; manual; mechanical; medical; chemical; episodes of; face down; incidences)
59. Restrict* (restrict, restricted, restriction; restrictive) (intervention; methods of control; practice)
60. Risk (management control; sharing partnership)
61. Safety beds
62. Seclusion
63. Secure hold
64. Sedatives
65. Separation
66. Shackling
67. Shield
68. Short-term management of disturbed/ violent behaviour
69. Single embrace
70. Solitary confinement

71. Stabilising position
72. Stun gun
73. Supervision
74. Supine
75. Suspension
76. Take-downs
77. Techniques (disengagement; distraction; engagement)
78. Touch and physical restraint
79. Therapeutic (containment; holding)
80. Trouble drill
81. T-Wrap (seated)
82. Use of force
83. Violence and aggression training passport
84. With pain
85. Without pain
86. Young people
87. Zero restraint

Boolean operators (AND, NOT, OR) were used with these key words to expand the search. The following criteria were used as filters to ensure currency and relevance of retrieved citations.

Inclusion criteria

The sectors which were covered in the search were chosen to achieve breadth of coverage. They were: youth justice; criminal justice; mental health and healthcare; education; disability services; and residential care.

The settings searched for were: young offender custodial correction or detention facilities; pupil referral units; juvenile and adult court rooms; police custody; inpatient units; mental health units and wards; residential care; adult prisons; high security hospitals; psychiatric units or wards; psychiatric hospitals; disability accommodation detention centres; border controls; immigration removal centres; and aircraft cabin and airport detention centres.

The period of the search was between 2003 and 2014 in order to ensure that the results would be current. The countries/continents covered were based on relevance to settings within England and Wales: USA, Canada, UK, Republic of Ireland, Europe, Australia and New Zealand.

Qualitative studies were included to provide further information about the types of techniques that could be examined empirically, although they cannot be used to demonstrate effectiveness or risks of techniques. Grey literature was sought

as a source of unpublished theses, policies, and up-to-date commentary on relevant topics from pressure groups, charities and experts.

Exclusion criteria

As this study is focused on capturing learning for the young people's secure estate, sectors which exclusively cater for the elderly population were not deemed to be relevant to this study. The titles of the retrieved citations were scanned and those that fell outside the topic eliminated. The thresholds for exclusion of the remaining citations were reviews of studies published before 2003 and accounts or commentary of services or interventions that lacked relevancy to settings and systems within England and Wales.

Sources of information

English language published literature including academic books and unpublished documents (where accessible) were explored. Grey literature (as well as published literature (books and journals)) was searched using 30 databases, as it is important to treat grey literature as a potential source of studies for inclusion. Conference proceedings were searched through Google and Zetoc.

The databases and search engines used were: Academic Search Complete, British Library, Biomed, BMJ Journals, Cambridge Journals, Cinahl, Cochrane Library, Criminal Justice Abstracts, EBSCO journals, ETHOS, Forensic Netbase, Google Scholar, HMIC, Index to theses, Medline, OpenGrey, OVID, Oxford University Press Journals, Proquest, PsychARTICLES, Psych INFO, Sage Journals, Science Direct, Scopus, Social Work Abstracts, Springer LINK, Taylor and Francis, Web of Knowledge, Wiley Online, ZETOC.

The following terms were used as an advanced search-refining option following use of Boolean strings. Truncation, key words and parenthesis were used to narrow the search.

Table 1: Search matrix

	Search terms	Number of full texts retrieved
1	Children or young people in ab ²¹ and physical restraint in ab	70
2	Avers* and restraint in ab	25
3	Restraints and risk in ab	20
4	Manual restraint in ab	19
5	"Management of violence and aggression" in ab	18
6	De-escalation in ab and restraint in ab	16
7	Physical restraint and coerc* in ab	14
8	Breakaway techniques in ab and aggress* in ab	14
9	"Control and restraint" in ab	12

²¹ Abstract has been shortened to 'ab'.

10	Clinical holding in ab and restraint in ab	10
11	Compliance in ab and restraint in ab	10
12	Cause* pain in text and restraint or “physical intervention” in ab	10
13	Handcuffs in ab and restraint in text	9
14	Seclusion in ab and violence in ab	9
15	“Post-incident debriefing” in ab and violence in ab	8
16	Force in ab and restraint in ab	7
17	“Take down” in text and restraint in ab	7
18	“Enforced removal” in text and restraint and immigration in text	6
19	“Escape techniques” in ab and aggress* in ab	4
20	“Rapid tranquillisation” in ab and violence in ab	4
21	“Deliberate pain induction” and restraint in ab	2
22	“Disengagement techniques” in text and restraint in ab	2
23	Guiding hold in text and restraint in ab	2
24	Stun guns in ab and restraint in text	2
25	Shield* in text and “management of aggression” in text	2
26	“Solitary confinement” in text and aggression in ab	2
27	Containment in ab and “disturbed behaviour” in ab	2
28	“Zero restraints” in text	2
29	“Mechanical restraint” in ab and aggression in text	2
30	“Wrist locks” in text and restraint in text	2
31	Care and responsibility in ab and aggress* in ab	1
32	“Direct pressure” in text and restraint in ab	1
33	“Distraction techniques” in text and restraint in ab	1
34	Double embrace in text and restraint in ab	1
35	Shackling in ab and restraint in text	1
36	Safety beds in text and restraint in ab	1
37	Cradle hold in text and restraint in text	1
38	“Figure of four arm hold” in text and restraint in text	1
39	Restraint in text and immigration in text	1
40	Seclusion in ab and aggression in text	1
41	Arm wrap in text and restraint in ab	1
42	“Positive behaviour management” in text and restraint in ab	1
43	“Non-pain” and techniques in text and restraint in ab	0

There were 43 searches using key words, truncation and parenthesis. The search strategy generated 328 citations/reports/commentary.

Sifting stages

1. 328 abstracts were scrutinised for relevance and timeliness (i.e. published after 2002), leaving 73 papers. Information about the methodology, settings, and reported limitations was extracted and recorded in a consistent and structured manner.
2. These 73 papers were then assessed by the review team for relevance based on inclusion and exclusion criteria, leaving 22 papers.²² To be included, studies had to satisfy three minimum quality criteria:
 - a. Using research and evaluation of effectiveness
 - b. Presenting adequate description of techniques/systems
 - c. Presenting adequate reporting of results.

Of the 22 studies, six referred to four different non-pain inducing techniques (Crocker et al, 2010; Berg et al, 2011; Luiselli et al, 2003; Ryan et al, 2007; Paterson et al, 2003; and Williams, 2010). Seven studies were found to focus on effectiveness of techniques (Crocker et al, 2010; Huf et al, 2012; Gaskin et al, 2007; Henderson et al, 2005; Kaltiala-Heino et al, 2007; Stubbs et al, 2008; Barnett et al, 2012). The nine other studies were excluded as they were not specific to non-pain inducing techniques.

3. The 22 remaining papers were reviewed and appraised using two tools: Critical Appraisal Skills Programme checklists (CASP) and the Maryland Scientific Methods Scale (MSMS) to assess the relative effectiveness of each study (see Appendix 3 for further details).

Details of the setting, country, sampling and outcomes were recorded. Information was collated if the study's conclusions were reasonably drawn based on quantitative, statistical or qualitative data. This process produced five key studies, which are summarised in Appendix 2.

²² These are listed in Appendix 2.

Appendix 2: Critical appraisal and scaling methodology

Critical appraisal tools are needed to make sense of the evidence retrieved, to judge relevance, quality of evidence and trustworthiness. Two tools were used to appraise studies: the Critical Appraisal Skills Programme (CASP) and Maryland Scientific Methods Scale (MSMS).

The first set of tools used to appraise studies in the rapid evidence assessment was that developed by the Critical Appraisal Skills Programme.²³ These were used to assess the applicability, reliability and validity of published research in health and social care settings. These are not meant to replace considered thought and judgement when reading a paper, but are for use as a guide. These tools, in the form of checklists, were utilised on the grounds of relevance and appropriateness as most studies were health and social care related. There are a series of screening questions and prompts to assess validity, results and if the results will help for different types of studies.

Systematic reviews have 10 questions:

- Did the review address a clearly focused question?
- Did the authors look for the right type of papers?
- Do you think the important, relevant studies were included?
- Did the review's authors do enough to assess the quality of the included studies?
- If the results of the review have been combined, was it reasonable to do so?
- What are the overall results of the review?
- How precise are the results?
- Can the results be applied to the local population?
- Were all important outcomes considered?
- Are the benefits worth the harms and costs?

Randomised controlled trials have 11 questions:

- Did the trial address a clearly focused issue?
- Was the assignment of patients to treatments randomised?
- Were all of the patients who entered the trial properly accounted for at its conclusion?

²³ See <http://www.casp-uk.net/>.

- Were the groups similar at the start of the trial?
- Aside from the experimental intervention, were the groups treated equally?
- How large was the treatment effect?
- How precise was the estimate of the treatment effect?
- Can the results be applied in your context?
- Are the benefits worth the harms and costs?

Qualitative research has 10 questions:

- Was there a clear statement of the aims of the research?
- Is a qualitative methodology appropriate?
- Was the research design appropriate to address the aims of the research?
- Was the recruitment strategy appropriate to the aims of the research?
- Was the data collected in a way that addressed the research issue?
- Has the relationship between researcher and participants been adequately considered?
- Have ethical issues been taken into consideration?
- Was the data analysis sufficiently rigorous?
- Is there a clear statement of findings?
- How valuable is the research?

Cohort studies have 12 questions²⁴:

- Did the study address a clearly focussed issue?
- Was the cohort recruited in an acceptable way?
- Was the exposure accurately measured to minimise bias?
- Was the outcome accurately measured to minimise bias?
- (a) Have the authors identified all important confounding factors? (b) Have they taken account of the confounding factors in the design and/or analysis?
- (a) Was the follow up of subjects complete enough? (b) Was the follow up of subjects long enough?
- What are the results of this study?
- How precise are the results?
- Do you believe the results?
- Can the results be applied to the local population?

²⁴ <http://www.casp-uk.net/#!casp-tools-checklists/c18f8>

- Do the results of this study fit with other available evidence?
- What are the implications of this study for practice?

CASP tools are: “A widely used tool that has been employed in previous syntheses of qualitative studies to inform decisions about the exclusion of poor-quality papers; it is typical of many checklist-style approaches” (Dixon-Woods, 2007, p.43).

The articles were assessed by two members of the review team. The articles were graded (1 for yes, 0 for no, and ½ for unclear) and included if they scored above 50% of the total available score for the methodology used.

The second tool, MSMS, is an instrument developed to appraise studies of the effectiveness of crime prevention interventions in the USA. In this rapid evidence assessment, the wording has been changed to reflect the interventions (methods of restraint or alternatives to non-pain inducing methods of restraint) and their impact, if any, on outcomes (e.g. a change in the number of volatile situations, duration of volatile situations or impact on staff or those being restrained). Characteristics of groups of people include, for example, the number of people of different ages, gender, setting, and special needs.

There are five levels in this scale. These levels describe how rigorous and robust the methods of gathering and analysing information are, with Level 1 being the least rigorous and Level 5 being the most rigorous (adapted from Shermann et al, 1998, pp.4-5).

Level 1 methods produce research findings which identify if there is a link between an intervention and the outcome at a single point in time (a snapshot in time).

Level 2 methods produce research findings which observe links between the intervention and a change in outcomes at several points in time; or comparison between groups of people being restrained by different methods or alternative approaches but where those groups do not have the same characteristics.

Level 3 methods compare outcomes for two or more groups of people who receive different interventions. All groups of people being restrained or receiving alternatives to restraint share similar characteristics.

Level 4 methods compare outcomes between many groups of people who receive different interventions. The research analysis controls characteristics (other than the use of the intervention). Alternatively, research at level 4 compares the outcome of different interventions between groups of people which show only minor differences in characteristics.

Level 5. People are randomly assigned (see glossary) to groups which receive different interventions. Groups share the same key characteristics.

In addition, ‘not scalable’ (N/S) was used when methods did not meet the specified criteria of any of the levels.

To arrive at the rating, the raters took into account:

- the aim/purpose of the study
- the design and methods
- statistical tests used, if known

- power calculation, if stated
- actual sample size used.

Each study was described under these headings using a pro forma, and a judgement made as to whether the study was rateable or not; and if so, a level was allocated.

Appendix 3: Details of the five key studies

Five of the articles were identified as being key to the research questions and having the most rigour and relevance (although where MSMS scoring was applied the papers were rated as low quality). Four of the five studies were not scalable using MSMS and therefore the two-pronged approach to strengthen scoring only applies to two studies.

Author	Year of publication	Title	Setting	Methodology	Techniques	Findings	CASP Score	MSMS score
Berg, J., et al	2011	Management of aggressive behaviour among young people in forensic units: a four-country perspective.	Adolescent forensic units in four European countries	Qualitative study: personal thematic interviews. A convenience sample of 58 staff was used.	Verbal interventions e.g. de-escalation Daily routine activities Physical restraint such as 'duveting', restraint straps Isolation/ time-out Medication	Staff members preferred using verbal and less restrictive interventions when intervening in escalated situations and perceived the use of coercive measures as the last option. Differences between countries were found in the use of restrictive methods. Limitations: the data may be biased to those staff members who were motivated to express their perceptions on this ethically sensitive topic.	10/10	Not scalable
Crocker, J., et al	2010	Prediction of aggression and restraint in child inpatient units.	Child (5-12 years) mental health in-patients, Australia.	Data analysis: respective review of incident forms over a 12-month period of 41 children aged 5–12	Medication Physical holds Isolation	The use of holds was found to be staff and time intensive. Although physical holding may limit a specific aggressive event, it is not effective in reducing aggression over time. Limitations: single-site, retrospective audit of hospital records with a relatively small sample size.	9/12	Not scalable
Fogt, J., et al	2008	Physical Restraint of Students with Behaviour Disorders in Day Treatment and Residential Settings.	Students with Behaviour Disorders in Day Treatment and Residential Settings, USA	Survey of 72 principals (administrators)	Basket holds, prone restraints, 'primary restraint training', 'small child set or cradle restraint, chemical or psychopharmacological restraints, and	Basket holds and prone restraints were reported to represent the most prevalent types of restraints reportedly used. Limitations: small non-random sample with reliance on self-report data.	8/10	Not scalable

					mechanical restraints'			
Kaltiala-Heino, R., et al	2007	Aggression management in an adolescent forensic unit.	Adolescent forensic unit, Finland.	Literature review and data analysis of incident reports of 31 11-17 year olds over a two-year period	<p>Integrated aggression management programme including:</p> <p>Verbal interventions e.g. de-escalation;</p> <p>Physical restraint, such as therapeutic holding, 'duveting';</p> <p>Emergency medication;</p> <p>Mechanical restraint;</p> <p>Defusing interviews</p>	<p>Analysis of frequency of incidents, use of physical handling/restraint episodes and use of mechanical restraint over four periods of six months reflecting phases in the development of the new adolescent forensic unit.</p> <p>Early intervention with therapeutic holding is likely to decrease the need for more restrictive measures.</p> <p>The decreasing trends in incidences of violence reported indicated that the programme was effective once it had been stabilised.</p> <p>Aggressive behaviour decreased constantly over the study period.</p> <p>Limitations: Single-site and use of small, purposive sample.</p>	10.5/12	Not scalable
Ryan, J., et al	2007	Reducing Seclusion Time-out and Restraint Procedures with At-Risk Youth	Children and adolescents with behaviour problems, USA	Literature review and data analysis of incident reports for 42 students over two years. Survey of 32 teachers.	<p>Physical restraint e.g. restriction of movement of limbs</p> <p>Seclusion/time-out</p> <p>De-escalation techniques.</p>	<p>An exploratory pre-post study conducted over a two-year period.</p> <p>Early intervention with therapeutic holding is likely to decrease the need for more restrictive measures.</p> <p>Limitations: Convenience sample employed for survey of teachers. Single-site study.</p>	5.5/10	2 – measures of outcomes before and after the intervention, with no comparable control conditions.

Appendix 4: Supplementary texts

Eight articles were identified as still relevant to the research questions although they were of low quality. These were used as supplementary to the key text.

Methodology	Study	Population	Setting	Country	CASP Score	MSMS Score	Findings
Systematic review	DeHert, M, et al 2011	Seclusion and restraint use in psychiatrically ill youths (6-21 years old)	Psychiatric settings	USA, Australia and Finland	7.5/10	N/S ²⁵	The literature on risk factors and potential predictors of seclusion and restraint use for children and young people remains sparse, limiting pre-emptive efforts aimed at preventing the use of seclusion and, especially, restraints.
Data analysis: patient characteristics and setting variables related to use of restraint	Delaney, et al 2005	100 children and adolescents (age not specified)	Child and adolescent psychiatric in-patients	USA	5/12	N/S	Restraint use was more frequent if children and adolescents were male, had multiple admissions to the facility during the study period, remained in the hospital longer, had been given a diagnosis of a psychotic disorder, or had a previous psychiatric hospitalisation
Retrospective data analysis of four case studies	Luiselli, et al 2003	Children and young people (10-16 years) with brain injury	Community settings	USA	3/12	N/S	The 'precipitating' event prior to restraint was staff intervening to interrupt and stop a student who was displaying aggression, self-injury, property destruction and similar behaviours. The implication here is that the physical contact between staff and student increased the likelihood that protective holding would be initiated
Mixed methods: literature review and data	Duxbury, et al 2011	Adults	Settings using restraint techniques	UK	8/10	N/S	Certain groups are particularly vulnerable to risks while being restrained. There are also biophysiological mechanisms which staff need to be aware of when restraining an aggressive or

²⁵ Used when methods did not meet the specified criteria of any of the levels.

analysis							violent individual
Narrative review	Nunno, et al 2006	45 child and adolescent fatalities from 1993 to 2003 (aged 6-18 years)	Child and adolescent fatalities related to restraints in residential (institutional) placements.	USA	6/12	N/S	In the 23 cases in this study where information is available, none of the child behaviours or conditions that prompted the restraint would meet the standard of danger to self or others: the commonly accepted criteria for the use of restraint
Literature review and survey	Paterson, et al 2003	Adults	Health and social care settings.	UK	4/12	N/S	The absence of data on restraint use (including data on routine use as well as the frequency of untoward events) makes it extremely difficult to comment on: the relative risks involved in restraint; the comparative risks involved across a wide range of individual procedures; and the relative risks involved in alternative interventions
Literature review	Williams, 2010		Individuals with developmental disabilities. USA.	USA	0	N/S	The degree of risk in the use of restraint is unknown in most of the various types of settings where it is used (jails, juvenile detention, psychiatric facilities) and in the few studies done in facilities for persons with developmental disabilities, restraint has been relatively safe for residents restrained
Narrative review	Lambrenos, et al 2003	NHS Trust	Children's teaching hospital	England	0	N/S	Becoming aware of the detrimental effects of restraint on children has led to an appreciation in some quarters of why patients become fearful

Appendix 5: Overview/examples of non-pain inducing techniques or systems of restraint

Method	Overview of techniques	Country used	Setting
Adopted from UK prison service model	Only referred to two that were considered to be non-pain methods, e.g. 'figure of four hold' and prone restraint used. (Avoidance where possible of techniques that use flexion.)	New Zealand	Learning disabilities General hospital Mental health Secure hospital
Cumberland supine position	Cumberland supine position involves individual lying flat on his/her back, with limbs controlled (not at the joints with no pressure on torso, neck or head).	USA	Health and social care Education Learning disabilities Mental health Secure hospital Children's homes
Management of Actual or Potential Aggression (MAPA)	Outline of some techniques provided. Holding technique (generally in sitting position) that involves two staff members (who are either side of the individual) holding the individual's hands (hands kept straight to prevent twisting and prevent being hit with the elbow) and other hand (staff) placed on top to hold the position. Techniques to move the individual down to the floor and up again. More restrictive seated restraint and escort holds are also used.	Finland	General health Mental health
Mandt System	Example provided of a standing hold with staff person standing behind the individual with one of their arms (e.g. right arm) across the front of their body with staff member holding the arm just above the wrist with their left hand, and the right hand above their elbow. The right hand can also be placed underneath their arm and over the top of their forearm if a more firm hold is required.	USA	Learning disabilities Mental health
National Police Personal Safety Manual	Examples of non-pain methods included a standard hold (police hold/ escort hold) that involves taking hold of the person by the arm at the elbow and at the wrist. Rear escort hold where the arm is taken behind their back with one hand holding the elbow and the other hand holding the back of their hand. Arm is extended behind the back (not involving pressure against the joints).	UK	Police
NHS Protect Syllabus/ Prevention and	Identified that there are distinct levels of physical restraint each of which	UK	Learning disabilities Mental health

Management of Violence and Aggression	contain three levels of restrictiveness. Techniques involve standing, seated and unplanned descent to the floor. For example, in a standing technique, a flat hand is placed to the back of the elbow and a flat hand to back of the shoulder. If resistance experienced, this could then move to a 'suitcase hold', where the back of the hand is held (no wrist flexing) and slight bend on the arm is maintained and the inside arm is brought into a 'bar-over-hold', where the staff member's wrist becomes fixed (similar to 'figure of four arm hold' but back of the hand is used). Wrist flexion (used to be called finger and thumb hold) is most restrictive and only used in extreme occasions due to potential for misapplication.		Secure hospital
Non-violent Crisis Prevention Intervention ²⁶	Some specific techniques were described. Child control position (one-person restraint) which involves control of the individual's arms, which are locked in front of them above the chest (to not restrict breathing). Staff remain behind, and lean the individual's back up against them. Team control position (two+ person restraint), where each staff member gets control of an arm and the individual's shoulders are lowered, below the individual's waist (ninety degree bent over). The arms are immobilised by wrapping the individual's arm against the staff member's hip. Individual is then brought forward until they're on to the balls of their feet. Two-person transport hold, which involves staff members on either side, restricting the arms.	UK New Zealand USA	Youth justice Children's homes Mental health General health Education Health and social care Learning disabilities Secure hospital
Physical Control in Care (PCC)	Outline of some techniques provided, e.g. single embrace technique (one person) used to turn an individual away from the other person. Figure of four arm hold (two+ person – and may involve someone holding the head) and 'double embrace' hold (two person, plus one holding the head).	Northern Ireland	Youth justice
Positive Behaviour Management	Only outline of different methods provided, in terms of a two-person removal, a seated restraint, where staff sit down with the individual and	UK	Learning disabilities

²⁶ Interview with training provider identified how this is a cognitive behavioural problem-solving approach that focuses on the causes of behaviour and teaches the "biomechanicals of movement" which can be reversed to restrict movement within the principles of "position, posture and proximity".

	hold them securely by the arms. Developed by Abertawe Bro Morgannwg Health Board.		
Positive Behaviour Support	<p>Examples included:</p> <p>One or two-person escort that involves the staff member placing flat of their hands on one/both of the individual's shoulders (avoiding joints). Other hand (staff) would gently support the individual's arm(s) to move them away.</p> <p>An upsurge hold, which is a linking arm hold on both sides. Front and rear forearm support (used depending on behaviour, i.e. if in danger of being bitten a rear forearm support).</p> <p>Safety Hands technique involves using the knuckle in the middle finger and circulating the knuckle on the side of somebody's body (e.g. between the ribs).</p> <p>Supine hold also described in this model of restraint where the person is lying flat on the floor and there is a staff member on either side supporting their arms and may involve somebody on the person's legs as well. All techniques identified to avoid pressure on joints.</p>	UK	<p>Learning disabilities</p> <p>Health and social care</p> <p>Secure hospital</p> <p>Education</p> <p>Mental health</p> <p>Children's homes</p>
Positive Behavioural Support/MAYBO	<p>Examples included:</p> <p>Cradle guide where the staff member places their hand in a cup shape, behind the triceps and the other hand forms a roof on top of the elbow. If it needs to be escalated, the arm can be 'snaked around' for a firmer grip.</p> <p>Hook turns are also used where the hand is used to stop/change the individual's movement.</p> <p>More restrictive holds involve a single or a double wrap, which is where the arms are not restrained, rather restraining the whole body (with staff member on each side).</p> <p>Basket-hold where two staff members wrap around both arms to hold them together.</p>	UK	<p>Social care</p> <p>Education</p> <p>Learning disabilities</p> <p>Mental health</p> <p>Secure hospital</p>
Response Crisis Intervention	This was described as a "going with the flow" approach that comprises "verbal directives", "free-range", "non-sexual dynamic movements" that work to "redirect the energy and movements of the body without blocking them". This approach does not involve 'holds' or 'grips' rather it involves open hands to re-direct limbs and movements.	Netherlands	Mental health
Ukeru	'Soft' blocking technique using cushions, pillows, etc.	USA	<p>Learning disabilities</p> <p>Mental health</p>

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