| ID | Authors | Year of pub | Title | Journal | Vol | Issue | Pages | Name & details of intervention | Name & details of comparator | Intervention based on theory (Yes/No/ Unsure) | Country | Study context - maternity care, elderly population, physical | Type of Mistreatment (physical, verbal, physical restraint) | Study design (RCT, non-randomised trial, Before & After etc) | Year when data was collected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **156** | Abraham, J. , Kupfer, R. , Behncke, A. , Berger-Hoger, B. , Icks, A. , Haastert, B. , Meyer, G. , Kopke, S. , Mohler, R. | 2019 | Implementation of a multicomponent intervention to prevent physical restraints in nursing homes (IMPRINT): A pragmatic cluster randomized controlled trial | International Journal of Nursing Studies | 96 | | 27-34 | two versions of a guideline and theory-based multicomponent intervention (1. updatd version of guidelines; 2. concise version of guidelines 3. control usual care) | Optimized usual care | Yes | Germany | nursing homes | Physical | cluster RCT | 2015 |
| **157** | Ahmadi, M. , Bagheri-Saweh, M. I. , Nouri, B.Mohamad amini, O. , Valiee, S. | 2019 | Effect of Interventional Educational Programs on Intensive Care Nurses' Perception, | Critical Care Nursing Quarterly | 42 | 1 | 106-116 | 2 day educational program for nurses about different types of restraint and issues related to its use | Before intervention | no | Iran | ICU | Physical | Before & After | N/A |
| **158** | ,ersen, C. , Kolmos, A. , ,ersen, K. , Sippel, V. , Stenager, E. | 2017 | Applying sensory modulation to mental health inpatient care to | Nordic Journal of Psychiatry | 71 | 7 | 525-528 | Sensory Modulation (de-esculation method to prevent restraint & | usual care | Yes | Denmark | 2 inpatient psychiatric mental health care (intervention); 1 unite as control | Combined | non-randomised control trial | 2014-2015 |
| **159** | Barton, S. A. , Johnson, M. R. , Price, L. V. | Jan | Achieving restraint-free on an inpatient behavioral health unit | Journal of Psychosocial Nursing & Mental Health Services | 47 | 1 | 34-40 | Patient centered restraint-free program: staff training, development of a preventative comfort room for patients, changes in staff attitude | Before intervention | Yes | NR | behavioural health inpatient unit | Combined | Before & After | 2001-2008 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **160** | Beaulieu, C. , Wertheimer , J. C. , Pickett, L. , Spierre, L. , Schnorbus, T. , Healy, W. , Palmer, C. , Jones, A. | 2008 | Behavior management on an acute brain injury unit: evaluating the effectiveness of an interdisciplinary training program | Journal of Head Trauma Rehabilitatio n | 23 | 5 | 304-11 | Nonviolent Crisis Intervention (NCI) program from the Crisis Prevention Institute; 4 day training in philosophy, prevention and safe management of disruptive behavior for instructors who go back to train staff in their facility | Before intervention | no | USA | acute barin injury unit | restraint use medication delivery | Before & After | 2006-2007 |
| **161** | Bell, A. , Gallacher, N. | 2016 | Succeeding in Sustained Reduction in the use of Restraint using the Improvement Model | BMJ Quality Improvement Reports | 5 | 1 | | PDSA: Changes to reporting tool, staff debrief, education program, promote use of seated restraint | Before intervention | Yes | Fife, scotland | acute admission wards | Combined | Before & After | 2012, 2014 |
| **162** | Black, V. , Bobier, C. , Thomas, B. , Prest, F. , Ansley, C. , Loomes, B. , Eggleston, G. , Mountford, H. | May | Reducing seclusion and restraint in a child and adolescent inpatient area: implementation of a collaborative problem-solving approach | Australasian Psychiatry | | | 1E+15 | Collaborative problem solving (CPS) approach: familiarize staff, online staff training, prompt cards and posters, maintenance (training of new staff) | Before intervention | no | NZ | inpatient unit | Combined | Before & After | 2016-2018 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **163** | Blair, E. W. , Woolley, S. , Szarek, B. L. , Mucha, T. F. , Dutka, O. , Schwartz, H. I. , Wisniowski, J. , Goethe, J. W. | 3 | Reduction of Seclusion and Restraint in an Inpatient Psychiatric Setting: A Pilot Study | Psychiatric Quarterly | 88 | 1 | 01-Jul | Intervention program: Broset Ciolence Checklist (BVC), staff education, frequent physician assessment of seclusion/resistant (S/R), formal review of S/R events, environmental enhancements | Before intervention | no | USA | psychiatric service | Combined | Before & After | 2010-2012 |
| **164** | 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. | May | Systematic investigation of initiatives to reduce seclusion and restraint in a state psychiatric hospital | Psychiatric Services | 62 | 5 | 477-83 | Engagement model with 4 components: trauma informed care training, changes in rules and language, patient involvement in treatment planning, and changes to the physical characteristics of the therapeutic environment. (3 month period) | Each unit served as its own control from intervention to intervention (usual care) | Yes | USA | psychiatric hospital | Combined | RCT | 2005-2008 |
| **165** | Bowers, L. , Brennan, G. , Flood, C. , Lipang, M. , Oladapo, P. | 2006 (Apr) | Preliminary outcomes of a trial to reduce conflict and containment on acute psychiatric wards: City Nurses | Journal of Psychiatric & Mental Health Nursing | 13 | 2 | 165-72 | Two 'City Nurses' were employed to work | Before intervention | no | UK | acute psychiatric wards | Combined | Before & After | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **166** | Crosl, , 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 | with two acute wards for 1 year, assisting with the implementation of changes according to | Before intervention | no | USA | foster care facilities | Physical | Before & After | N/A |
| **167** | Dike, C. C. , Lamb-Pagone, J. , Howe, D. , Beavers, P. , Bugella, B. A. , Hillbr , , M. | 2020 | Implementing a program to reduce restraint and seclusion utilization in a public-sector hospital: Clinical innovations, preliminary findings, and lessons learned | Psychological Services | 17 | | 17 | Eleven clinincal innovations based on 6 principles: (1) Leadership (2) Workforce development (3) Use of Restraint/Seclusion Prevention Tools (4) Data Informed Practice (5) Consumer Roles (6) Debriefing | Before intervention | no | USA | Psychiatric | Physical | Before & After | 2009-2012 |
| **168** | Donat, D. C. | 2003 | An analysis of successful efforts to reduce the use of seclusion and restraint at a public psychiatric hospital | Psychiatric Services | 54 | 8 | 1119-23 | Multiple efforts to reduce restraint: change criteria in administrative review of incidents, changes in case review committee composition, development of behavioral consultation team, enhance assessment standards, improve staff-patient ratio | Before intervention | no | USA | Psychiatric | Physical | Before & After | 1997-2002 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **169** | Duxbury, J. , Baker, J. , Downe, S. , Jones, F. , Greenwood, P. et al. | 2019 | Minimising the use of physical restraint in acute mental health services: the outcome of a restraint reduction programme ('REsTRAIN YOURSELF') | International journal of nursing studies | 95 | | 40â€‍48 | REsTRAIN YOURSELF intervention: (UK) modified version of 'Six Core Strategies' (US) multimodal approach to reduce restraint - prevention & trauma informed principles | usual care | Yes | UK | Psychiatric | Physical | Non-random CT | 2015-2016 |
| **170** | Godfrey, J. L. , McGill, A. C. , Jones, N. T. , Oxley, S. L. , Carr, R. M. | 2014 | Anatomy of a transformation: a systematic effort to reduce mechanical restraints at a state psychiatric hospital | Psychiatric Services | 65 | 10 | 1277-80 | 2 strategies: (1) staff training in deescalation techniques (2) policy change for the use of mechanical restraint | Before intervention | no | USA | Psychiatric | Physical | Before & After | 2009-2012 |
| **171** | Goulet, M. H. , Larue, C. , Lemieux, A. J. | 2018 | A pilot study of "post-seclusion and/or restraint review" intervention with patients and staff in a mental health setting | Perspectives in Psychiatric Care | 54 | 2 | 212-220 | Staff training: 2 presentations (15-30 min) followed by 1 month period to implement the process via answering questions daily | Before intervention | Yes | Canada | Psychiatric | Physical | Before & After | 2014 |
| **172** | Holstead, Jenell , Lamond, Diane , Dalton, Jim , Horne, Anita , Crick, Robert | 2010 | Restraint Reduction in Children's Residential Facilities: Implementation at Damar Services | Residential Treatment for Children & Youth | 27 | 1 | Jan-13 | Multicomponent program consisting of employee training and resource management team | Before program | Unsure | USA | Care home | Physical | Before & After | 2004-2008 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **173** | Huizing, A. R. , Hamers, J. P. , Gulpers, M. J. , Berger, M. P. | 2006 | Short-term effects of an educational intervention on physical restraint use: a cluster randomized trial | BMC Geriatrics | 6 | | 17 | An educational programme for nurses designed to promote restraint-free care and individualized care | usual care | no | Netherlands | Care home | Physical | RCT (cluster) | 2003-2004 |
| **174** | Huizing, A. R. , Hamers, J. P. , Gulpers, M. J. , Berger, M. P. | 2009 | A cluster-randomized trial of an educational intervention to reduce the use of physical restraints with psychogeriatric nursing home residents | Journal of the American Geriatrics Society | 57 | 7 | 1139-48 | An educational programme for selected staff to reduce restraint use; Five 2 hour educational sessions over 2 months plus a nurse specialist consultation | usual care | no | Netherlands | Care home | Physical | RCT | n/a |
| **175** | Huizing, A. R. , Hamers, J. P. , Gulpers, M. J. , Berger, M. P. | 2009 | Preventing the use of physical restraints on residents newly admitted to psycho-geriatric nursing home wards: a cluster-randomized trial | International Journal of Nursing Studies | 46 | 4 | 459-69 | An educational programme for selected staff to reduce restraint use inclusive of a nurse specialist consultation | usual care | no | Netherlands | Care home | Physical | RCT | n/a |
| **176** | Johnson, K. , Curry, V. , Steubing, A. , Diana, S. , McCray, A. , McFarren, A. , Domb, A. | 2016 | A non-pharmacologic approach to decrease restraint use | Intensive & Critical Care Nursing | 34 | | 12-Sep | power point review of non-pharmacological interven-tions and alternative devices with hands on demonstrationwith the devices were provided in the TICU on bothday and evening shift | Pre-intervention | no | USA | *Trauma intensive care unit* | Physical | Before & After | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **177** | Koczy, P. , Becker, C. , Rapp, K. , Klie, T. , Beische, D. , Buchele, G. , Kleiner, A. et al | 2011 | Effectiveness of a multifactorial intervention to reduce physical restraints in nursing home residents | Journal of the American Geriatrics Society | 59 | 2 | 333-9 | 6 hour training course about restraint use to provide change agents with tools to minimize restraint use in situations of behavioral symptoms and injuries from falls | usual care | no | Germany | Care home | Physical | RCT | 2004-2006 |
| **178** | Kopke, S. , Muhlhauser, I. , Gerlach, A. , Haut, A. , Haastert, B. , Mohler, R. , Meyer, G. | 2012 | Effect of a guideline-based multicomponent intervention on use of physical restraints in nursing homes: a randomized controlled trial | JAMA | 307 | 20 | 2177-84 | A multidisciplinary approach designed to address attitudes, subjective norms and perceived behavioral control; evidence-based guideline, information programs, endorsement of nursing home leaders, and support materials | Standard information about restraint use and methods to avoid physical restraints delivered in three 12 to 24 page previously developed brochures | Yes | Germany | Care home | Physical | RCT | 2009-2010 |
| **179** | Lin, Y. L. , Liao, C. C. , Yu, W. P. , Chu, T. L. , Ho, L. H. | 2018 | A Multidisciplinary Program Reduces Over 24 Hours of Physical Restraint in Neurological Intensive Care Unit | Journal of Nursing Research | 26 | 4 | 288-296 | multidisciplinary PR reduction program | pre-intervention phasee | Yes | Taiwan | ICU | Physical | Before & After | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **180** | McCue, R. E. , Urcuyo, L. , Lilu, Y. , Tobias, T. , Chambers, M. J. | 2004 | Reducing restraint use in a public psychiatric inpatient service | Journal of Behavioral Health Services & Research | 31 | 2 | 217-24 | 6 interventions primarily involving changing staff behavior: better identification of restraint, stress/anger management group for patients, staff training on crisis intervention, development of a crisis response team, daily review of all restraints and an incentive system for the staff | pre-intervention | | USA | Psychiatric | Physical | Before & After | 1999-2001 |
| **181** | Pellfolk, T. J. , Gustafson, Y. , Bucht, G. , Karlsson, S. | Jan | Effects of a restraint minimization program on staff knowledge, attitudes, and practice: a cluster randomized trial | Journal of the American Geriatrics Society | 58 | 1 | 62-9 | A 6-month education progam for nursing staff; one volunteer attended 2 days of seminars and the remainder watched six 30 minute video lectures with focus groups | usual care | no | Sweden | Care home | Physical | RCT | n/a |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **182** | Putkonen, A. , Kuivalainen, S. , Louheranta, O. , Repo-Tiihonen, E. , Ryynanen, 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 | 850-5 | staff, patients, and doctors were trained for six months in applying six core strategies to prevent seclusion-restraint; six months of supervised intervention followed | Not reported | no | Finland | Psychiatric | Physical | RCT | 2009 |
| **183** | Schreiner, G. M. , Crafton, C. G. , Sevin, J. A. | 2004 | Decreasing the use of mechanical restraints and locked seclusion | Administration & Policy in Mental Health | 31 | 6 | 449-63 | Multicomponent - Staff education and training; treatment interventions and system changes | Assessment phase before intervention | Unsure | USA | Psychiatric | Physical | Before & After | |
| **184** | 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 | Staff training encompassed the theory and principles of sensory, modulation guidelines to conducting a sensory room session, and handson familiarization with equipment. Training also included the steps to conducting a sensory room session and how to identify a patient who might be in need of the intervention. | pre-intervention | Yes | USA | Psychiatric | Physical | Before & After | 2015 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **185** | Singh, N. N. , Lancioni, G. E. , Karazsia, B. | 2016 | Effectiveness of Caregiver Training in Mindfulness- | Frontiers in Psychology | 7 | | 1549 | Mindfulness-Based Positive Behavior Support (MBPBS) for caregivers | Training as usual | | NR (first author is from USA) | Care home | Physical | RCT | |
| **186** | Singh, N. N. , Lancioni, G. E. , Karazsia, B. T. , Myers, R. E. | 2016 | Caregiver Training in Mindfulness-Based Positive Behavior Supports (MBPBS): Effects on Caregivers and Adults with Intellectual and Developmental Disabilities | Frontiers in Psychology | 7 | | 98 | 7-day intensive Mindfulness-Based Positive Behavior Support (MBPBS) training | pre-training | Yes | NR (first author is from USA) | Care home | Physical | Before & After | NR |
| **187** | Singh, N. N. , Lancioni, G. E. , Winton, A. S. W. , Singh, A. N. , Adkins, A. D. , Singh, J. | 2009 | Mindful staff can reduce the use of physical restraints when providing care to individuals with intellectual disabilities | Journal of Applied Research in Intellectual Disabilities | 22 | 2 | 194-202 | 12 week mindfulness training programme | pre-training | Unsure | NR (first author is from USA) | Care home | Physical | Before & After | NR |
| **188** | Sivak, K. | 2012 | Implementation of comfort rooms to reduce seclusion, restraint use, and acting-out behaviors | Journal of Psychosocial Nursing & Mental Health Services | 50 | 2 | 24-34 | Use of comfort rooms | Before implementation | Yes | USA | Psychiatric | Physical | Before & After | 2010-2011 |
| **189** | Smith, N. H. , Timms, J. , Parker, V. G. , Reimels, E. M. , Hamlin, A. | 2003 | The impact of education on the use of physical restraints in the acute care setting | Journal of Continuing Education in Nursing | 34 | 1 | 26-33; quiz 46-7 | Comprehensive educational programme | pre-training | Yes | USA | Acute | Physical | Before & After | 2000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **190** | Testad, I. , Aasl , , A. M. , Aarsl , , D. | 2005 | The effect of staff training on the use of restraint in dementia: a single-blind randomised controlled trial | International Journal of Geriatric Psychiatry | 20 | 6 | 587-90 | intervention consisted of a full day seminar, followed by a one-hour session of guidance per month over six months | usual care | Yes | Norway | Care home | Physical | RCT | |
| **191** | Testad, I. , Mekki, T. E. , Forl , , O. , Oye, C. , Tveit, E. M. , Jacobsen, F. , Kirkevold, O. | 2016 | Modeling and evaluating evidence-based continuing education program in nursing home dementia care (MEDCED)–training of care home staff to reduce use of restraint in care home residents with dementia. A cluster randomized controlled trial | International Journal of Geriatric Psychiatry | 31 | 1 | 24-32 | 7 month training intervention “Trust Before Restraint" | usual care | Yes | Norway | Care home | Physical | RCT | 2011-2013 |
| **192** | Van Loan, Christopher L. , Gage, Nicholas A. , Cullen, Joseph P. | 2015 | Reducing Use of Physical Restraint: A Pilot Study Investigating a Relationship-Based Crisis Prevention Curriculum | Residential Treatment for Children & Youth | 32 | 2 | 113-133 | Relationship based crisis prevention curriculum | pre-training | Yes | USA | *Residential treatment program (camp)* | Physical | Before & After | NR |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **193** | Wisdom, J. P. , Wenger, D. , Robertson, D. , Van Bramer, J. , Sederer, L. I. | 2015 (Aug) | The New York State Office of Mental Health Positive Alternatives to Restraint and Seclusion (PARS) Project | Psychiatric Services | 66 | 8 | 851-6 | Training in, implementation of, and engagement with the Six Core Strategies to Reduce the Use of Seclusion and Restraint | pre-training | Yes | USA | Psychiatric | Physical | Before & After | 2007-2011 |
| **194** | Yeh, S. H. , Hsiao, C. Y. , Ho, T. H. , Chiang, M. C. , Lin, L. W. , Hsu, C. Y. , Lin, S. Y. | Sep | The effects of continuing education in restraint reduction on novice nurses in intensive care units | Journal of Nursing Research | 12 | 3 | 246-56 | Four hour restraint reduction lecture | pre-training | Yes | Taiwan | ICU | Physical | Before & After | NR |

| Sample strategy (random, consecutive etc.) | Sample size | Participant characteristics - staff/professionals (age, profession, ethnicity, etc) | Participant characteristics - patients/service-users (age, ethnicity, etc) | Data analysis methods | Included in Meta-Analysis | Evidence of effect of the intervention - Reduction in restraint | Intervention Point estimate | Interventio n Standard deviation | Intervention 95% CI - lower limit | Interventi on 95% CI - upper limit | Interventi on Nos of participan ts | Comp Point estimate | Comp Standard deviation | Comp 95% CI - lower limit | Comp 95% CI - upper limit | Comp Nos of participants |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Random | 120 clusters | | Age, Gender | Randomised at cluster level; intervention at practitioner level; analysed an individual participant level | Yes | physical restraint prevalence on cluster level (2 interventions) - (Proportion of residents with at least one physical restraint after 12 months) | 1: -2.8<br>2: -3.9 (se comment in column AC for data for analysis - these are change scores not actual data) | | 1: -5.5<br>2: -6.8 | 1: -0.01<br>2: -1.0 | 1: 2984;<br>2: 2550 | -1.2 | | -0.04 | 0.11 | 3307 |
| | 30 nurses | Nurses working in ICU with atleast a bachelor's degree and 1 year of work experience | Non specific reason for hospitalization | | No | Mean score of nurses's (1) perception, (2)knowledge, (3)attitude, (4) practice of physical | (1)51.13; (2)11.20; (3)22.13; (4)26.33 | (1)11.81; (2)1.58; (3)5.51; (4)2.17 | | | | (1)72.43; (2)7.06; (3)28.23; (4)21.20 | (1)11.54; (2)1.85;(3)4.91; (4)4.86 | | | |
| Cluster | 2 Units with 17 beds; 25 staff members | Ooccupational therapists, nurses, social workers and medical staff | Men and women aged 18-64 with various psychiatric illnesses. | Allocated at cluster level; intervention at practitioner | No | Rate of use of physical restraint (nos of events per bed day) | 0.0061 | NR | | | 5371 | 0.0106 | NR | | | 4627 |
| | 26-bed behavioral health inpatientunit within a private, nonprofit 248-bed community hospital | N/A | N/A | | No | Number of patients restrained per fiscal year | 0 [graph provided] | | | | | 4 | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 84 staff; 222 patient cases | Age; gender; profession; experience | Brain injury diagnosis; gender; | | No | Percentage of restraint use | 32 [estimated]In graph | | | | 148 | 36 (estimated from graph) | | | | 74 |
| | 30 bed Acute Admission ward | N/A | N/A | | No | Median acute admissions rate of restraint | 1.97 [graph provided] | | | | | 4.18 | | | | |
| | 16 bed unit; 16 full restraint, 29 partial restraint, 28 locked doors, 6 seclusion (baseline) | N/A | children and adolescents | | No | Restrictive events | [full restraint] 80; [partial restraint] 226 | | | | | [full restraint] 202; [partial restraint] 338 | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 120 bed psychiatric service; 8029 patients compared to baseline n=3884 | N/A | Age; gender; ethnicity | | No | Rate of seclusion events | 213 | | | | 8029 | 358 | | | | 3884 |
| Random | 446 patients; 340 staff | | | allocated at unit level and analysed at unit level | No | Mean seclusion and restraint rate (nos of seclusion or restraint incidents per patient day for each unit and each period) | 0.005 | 0.002 | | | 446 | 0.27 | 0.018 | | | 446 |
| | | | | | Yes | restrained mean per shift | 0.032 | 0.197 | | | 1315 | 0.039 | 0.211 | | | 284 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 44 employees | 18 direct care staff, 1 supervisor; 13 female, 6 male (children's shelter); 9 direct care staff, 7 nurses, 3 therapists, 2 licensed nurse practitioners, 2 teachers, 1 occupational therapist, 1 psychologist; 19 female, 6 male (locked residential treatment facility) | foster children aged 18-18 years; boys and girls section(children's shelter); children aged 13-17, 60% foster children (locked residential treatment facility) | | No | Frequency of mechanically restrictive procedures | refer to graph | | | | | refer to graph | | | | |
| | 615 bed psychiatric hospital | N/A | N/A | | No | Mean annual restraint hours (per 100 patient days) | 570 | | | | | 5300 | | | | |
| | unsure; multiple variables | Direct care clinicians, clinical department heads, hospital director, psychopharmacologist | Adult patients with severe and persistent psychiatric conditions (75% with schizophrenia/schizoaffective disorder); 2 thirds of patients have concurrent diagnosis | | No | Seclusion and restraint hours per month | 314 | | | | | 1344 | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paired Samples | 2 acute care wards from 14 adult mental health wards | | Mixed gender and single sex wards. | allocated and analysed at the cl;uster level | Yes | Restraint rate at adoption phase | 6.62 | 6.7040816 | 5.53 | 7.72 | 7 wards, 144 beds | 7.22 | 7.4540044 | 6.01 | 8.42 | 7 wards, 147 beds |
| | 2910 acute adult unit patients; 334 community transition unit | | psychiatric patients; 18-64 years old | | Yes | mechanical restraint use over 2 sites (daily incidence rate) - 2 sites a: AAU; b: CTU | a: 0.01, b:0 | a: 2.19, b:- | | | a: 1083; b:121 | a: 0.57, b:0.09 | a: 1.04, b: 0.45 | | | a: 577 ; b:95 |
| | 12 staff; 195 patients | 9 nurses, 3 orderlies; mean age= 41; average 16 years of experience in psychiatry | | | No | Prevalence of restraint (% of patients) | 7.5 | | | | | 12.4 | | | | |
| | 88 clients (2004); 125 clients (2008) | | | | No | Restraints per child per year | 3.66 | | | | 125 | 56 | | | | 88 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Random | 5 nursing home wards; 167 residents selected, 145 at endline | Nurses | Psycho-geriatric residents of both genders with dementia; average age 82.3 (control), 82.4 (experimental); 29% male, 71% female (control); | | Yes | Mean restraint intensity post intervention | 1.57 | 1.751 | | | 72 | 1.89 | 1.723 | | | 54 |
| Cluster | 15 nursing home wards; 432 residents selected, 241 at endline | Nursing staff; RN's, care workers, care helpers, care assistants | Psycho-geriatric residents of both genders; average age 83.4 (control), 82.0 (experimental); 20% male, 80% female (control); 22.2% male, 77.8% female (experimental) | | Yes | Restraint intensity | In graph | | | | | | | | | |
| Cluster | 14 nursing home wards; 138 residents selected, 105 at endline | Charge nurses, registered nurses, care workers, care helpers, care assistants, student care workers; average age 37, 80% women | Psycho-geriatric residents; average age 82.5 (control), 80.1 (experimental); 30% male 60% female (control); 35.5% male 64.7% female (experimental) | cluster randomised, intervention for staff, asessed at patient level | No | Restraint intensity post test 3 | 1.02 | 1.39 | | | 53 | 0.78 | 1.25 | | | 37 |
| | 77 nurses | Nurses gender 16% (9) males; 84% (47) female. Age 20-30u 20% (10), 31-40y 41% (21), 41-50y 31% (16), 51-60y 3% (2), 61-70 3% (2) | | | Yes | Mean Restraints per 1000 patient days | 237.8 | 56.4 | | | | 314.1 | 35.4 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cluster | 45 nursing homes; 430 restrained residents initially identified, 333 at endline | Registered nurses [40% with management roles], social workers | Severe cognitive impairment (median score 10/11 out of 16 on Dementia Screening Scale); 82.4% female, 17.6 % male (control), 71.2 % female, 28.8% (experimental); limited physical | cluster randomisation at nursing home level, intervention at staff level (change agents) | No | Reduction of duration of restraint use 100% OR | 2.16 | | 1.05 | 4.46 | | | | | | |
| Cluster | 36 nursing homes (18 control, 18 intervention); 2166 residents (control), 2283 residents (intervention) | Fully trained nurses, nursing staff with 1 year training or on-the-job training | Average age 85 (control), 83 (experimental); 77% female* (control), 73% female (experimental) **no male value stated* | cluster randomised at nursing home level, | Yes | Prevalence of Physical Restraint Use at 6m follow up | 22.6 | 91.512509 | 18.5 | 26.8 | 1868 | 29.1 | 89.881315 | 25 | 33.3 | 1802 |
| | 1291 patients | | 4 phases, Males: 521 (59.6%) 23 (57.5%), 101 (63.1%), and 135 (62.2%). Mean age for 4 phases; 54.5 (sd 20.5), 55.8 (sd 19.2), 53.5 (sd 21.1), and 56.4 (sd 21.4) | | Yes | Physical restraint hours at maintenance phase | 58.3 | 103.8 | | | 135 | 178.9 | 446.5 | | | 521 |

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| | 6517 patients | | Pre-intervention; Median age 35.5, male 59.7% (3892), female 40.3% (2625). Post intervention median age 36.9, male 58.4%(2875), female 41.6% (1761) | | Yes | Number of restraints per 1000 patients days | 3.7 | 1.93 | | | 4236 | 7.99 | 2.69 | | | 6517 |
| Cluster | 162 staff and 162 residents (control), 184 staff 191 residents (interventi on), at baseline; 133 staff and 165 residents (control), | Registered nurses, licensed practical nurses, and nursing aides; average age 41.8 (control), 43.5 (experimental); 90.7% female* (control), 89.7% female (experimental); 15.3 years in healthcare (control) 16.4 years in health care (experimental) **no male value stated* | Group home residents with dementia; Average age 83.4 baseline, 84 endline (control), 80.5 baseline, 81 endline (experimental); 78.4% female* (control), 69.1% female (experimental) **no male value stated* | cluster randomised at nursing unit level (20 to interv, 20 controls); intervetion at the staff level (interv 184 staff; control 162 staff); ouctomes patient | No | Risk of being restrained at follow-up OR | 0.35 | | 0.15 | 0.83 | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stratified cluster randomisation | 2 intervention (50 beds) and 2 control wards (38 beds) | | The mean & SD age of the patients was 40.2 &10.6 in the intervention cluster and 38.4 & 10.6 years in the control cluster. | | No | Difference in proportion of patient-days with seclusion, restraint, or room observation | 0.88 | 0.0721538 | 0.86 | 0.9 | 50 | 0.97 | 0.1258044 | 0.93 | 1.01 | 38 |
| | | | | | No | Monthly average of full restraint events | 21.43 | | | | | 37.67 | | | | |
| | 52 staff | none reported | | | No | Restraint rate per 1000 patients days | 20.3 | | | | | 27.6 | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Random | 77 caregivers | Age;gender of caregivers | Age; gender of patients | | Yes | Use of physical restraint post treatment | 0.53 | 0.9 | | | 24 | 10.77 | 3.21 | | | 24 |
| NR | Staff: 33, Patients:18 | Mean age 39, Male 17, female 16 | Mean age 26, male 12, Female 6 | Intervention to staff with outcomes at patient and staff level | Yes | Weekly frequency of staff use of physical restraints (over 40 weeks) | 2 | 2.53 | | | 18 | 14 | 3.31 | | | 18 |
| NR | Staff: 23, Patients:20 | Mean age 47, Male 13, female 10 | Mean age 26, Male 15, female 5 | | No | Mean number of physical restraints per week by AM and PM shift (Baseline v Practice) | AM:0.2, PM:0.35 | | | | 20 | AM: 2.67, PM: 2.60 | | | | 20 |
| NR | 70 clients | | 28 women; 42 men. Clients age ranged 18-79 | | No | Average rate of restraint per 1000 days of client care | 0 | | | | | 0.39 | | | | |
| NR | 397 patients | | NR | | No | Average no. of days restrained | 6.4 | | | | | 8.2 | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| random | 55 in intervention group, 96 in control group | | Age; gender of patients | Randomised at nursing home level | No | Use of restraints at follow-up score | 1.5 | | | | 55 | 3.7 | | | | 87 |
| Cluster | 83 in intervention group, 114 in control group | | Age; gender of patients | | No | Multivariate logistic regressionof being subject to any restraint—OR | 2.48 | | | | | | | | | |
| NR | 60 staff | Males, females 17 | | | No | Average monthly frequency of restraint | 5.5 | | | | | 17.3 | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NR | NR | | Age; gender of children and youth served by PARS trained mental health facilities | | No | Number of restraint and seclusions per 1000 client days at 3 facilities | 1:25, 2:7, 3:13 | | | | | 1:67, 2:63, 3:9 | | | | |
| NR | 37 nurses | All female nurses, mean age 25.65 | | | No | Clinical practice of restraint use (attitudes towards not practice) | 28.05 | 3.59 | | | 37 | 28.41 | 3.28 | | | 37 |