

Table 2. Characteristics of included systematic reviews

Study	Main inclusion criteria	Participant/ward characteristics	Comparison	Follow-up	Outcome measures	Comments	Risk of bias*
<i>Included in systematic review Pedersen (2024)</i>							
Celofiega, 2022 <i>Cluster-RCT, Slovenia</i>	Acute psychiatric wards that provide inpatient psychiatric treatment in six psychiatric hospitals	<p>Participant</p> <p>N at baseline I: 1251 C: 1939</p> <p>Age (mean, SD) I: 48.4 (17.0) years C: 49.2 (19.1) years</p> <p>Sex (% male) I: 55.1 C: 52.2</p> <p>Hospitalization length (mean, SD) I: 11.8 (14.2) days C: 8.3 (12.7) days</p> <p>Involuntary hospitalization (n, %) I: 116 (9.3) C: 430 (22.2)</p> <p>Ward</p> <p>Number of beds (mean, SD) I: 20.3 (3.6) C: 18.3 (3.0)</p> <p>Nursing staff (mean, SD) I: 14.2 (1.0) C: 15.2 (2.5)</p>	<p>Intervention: De-escalation education</p> <p>Control: Treatment as usual</p>	Baseline period of 5 months followed by an intervention period of 5 months.	Physical and mechanical restraint	<p>The study was conducted as part of a research project of the University Medical Center Maribor.</p> <p>The authors declared that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.</p>	High
Hvidhjelm, 2022 <i>Cluster-RCT, Denmark</i>	Forensic male patients who displayed ≥1 basic aggressive episode(s)	<p>Participant</p> <p>N at baseline I: 42 C: 94</p> <p>Age (n, %)</p> <p><27 years I: 11 (26.2) C: 26 (27.7)</p> <p>28-35 years I: 9 (21.4) C: 19 (20.2)</p> <p>36-45 years I: 12 (28.6) C: 28 (29.8)</p> <p>>45 years I: 10 (23.8) C: 21 (22.3)</p> <p>Sex (% male): NR</p>	<p>Intervention: Short-term Assessment of Risk and Treatability (START)</p> <p>Control: No START</p>	6 months	<p>Physical and mechanical restraint</p> <p>Duration of physical and mechanical restraint</p> <p>Compulsory care</p>	<p>Nothing is reported about funding of the study, except that all forensic psychiatric facilities in Denmark are publicly funded and subject to public health authorities.</p> <p>The authors declared that the research was conducted in the absence of any commercial or financial relationships that could be construed</p>	Some concerns

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		Hospitalization length <1 year (n, %) I: 13 (31.0) C: 51 (54.3)				as a potential conflict of interest.	
Kontio, 2014 ⁺ <i>Cluster-RCT, Finland</i>	Acute, closed, adult inpatient wards practising seclusion and restraint	Ward N at baseline I: 5 C: 5 Number of beds <i>2007-2008</i> I: 88 C: 78 <i>2009-2010</i> I: 91 C: 91 Nursing staff (n) <i>2007-2008</i> I: 96 C: 87 <i>2009-2010</i> I: 92 C: 87	Intervention: E-learning course Control: Treatment as usual	4 years (data is collected for 24 months over 4 years)	Physical and mechanical restraint Duration of physical and mechanical restraint Seclusion Duration of seclusion	The study was supported by the European Commission, the University of Turku, the Finnish Cultural Foundation, the Hospital District of Helsinki and Uusimaa, and the Hyvinkää Hospital Region. The authors alone are responsible for the content and writing of the paper. The authors report no conflicts of interest.	High
Putkonen, 2013 ⁺ <i>Cluster-RCT, Finland</i>	State-run secured hospital for criminal and civil patients with psychotic disorders and violent behavioral problems	Participant Age (mean, SD) I: 40.2 (10.6) years C: 38.4 (10.6) years Sex (% male) I: 100 C: 100 Ward Number of beds I: 50 C: 38	Intervention: Six Core Strategies Control: Treatment as usual	1 year (6 months of training followed by 6 months of supervised intervention)	Compulsory care	The study was funded by the Finnish Ministry of Health through the developmental fund for Niuvanniemi Hospital. Potential conflicts of interest are reported for dr. Tiihonen. The other authors report no conflicts of interest.	High
<i>Included in systematic review Baker (2021)</i>							
Bowers, 2015 <i>Cluster-RCT, UK</i>	Acute, psychiatric wards for adults of any gender	Ward N at baseline I: 16 C: 15 Number of beds (mean, SD) 19 (4.0)	Intervention: Safewards Control: Physical health intervention	24 weeks (8 weeks baseline period, 8 weeks of implementation,	Compulsory care	Funding was obtained by the National Institute of Health Research.	Some concerns

Study	Main inclusion criteria	Participant/ward characteristics	Comparison	Follow-up	Outcome measures	Comments	Risk of bias*
		Sex (n) Mixed gender: 16 Men only: 10 Women only: 5		and 8 weeks of intervention)		The authors declared no conflicts of interest.	
Van de Sande, 2011 <i>Cluster-RCT, the Netherlands</i>	Four acute psychiatric wards in Rotterdam	Participant N at baseline I: 80 C: 90 Age (mean, SD) I: 38 (13) years C: 40 (11) years Sex (% male) I: 66 C: 60 Involuntary admitted (n, %) I: 70 (88) C: 39 (43) Ward Number of beds I: 20 C: 16 Aggression incidents I: 49 C: 35 Seclusion incidents I: 49 33	Intervention: Structured short-term risk assessment (Brøset Violence Checklist, Crisis Monitor, Kennedy–Axis V scale, Brief Psychiatric Rating Scale, Dangerousness Scale, Social Dysfunction and Aggression Scale) Control: Treatment as usual	40 weeks (10-week baseline period followed by a 30-week intervention period)	Seclusion Duration of seclusion	The study was funded by the Dutch Ministry of Health to investigate interventions that might contribute to the reduction of use of seclusion in The Netherlands. The authors declared no conflicts of interest.	High
Abderhalden, 2008 <i>Cluster-RCT, Switzerland</i>	Psychiatric wards treating patients with any acute psychiatric disorder.	Participant Age (mean, SD) I: 39.0 (13.1) years C: 38.0 (14.3) years Sex (% male) I: 54.4 C: 55.2 Ward Number of beds (mean, SD) I: 17.5 (1.3) C: 18.0 (1.2) Nursing staff per bed (mean, SD) I: 0.67 (0.24) C: 0.73 (0.08)	Intervention: Structured short-term risk assessment (Brøset Violence Checklist) for every patient admission Control: Treatment as usual	6 months (3-month baseline period followed by a 3-month intervention period)	Compulsory care	The study was supported by grant 3251B0-100710 from the Swiss National Science Foundation. The authors declared no conflicts of interest.	High

Study	Main inclusion criteria	Participant/ward characteristics	Comparison	Follow-up	Outcome measures	Comments	Risk of bias*
		Length of stay (mean, SD) I: 20.7 (29.9) days C: 18.1 (26.5) days Involuntary admissions (%) I: 41.4 C: 38.4					
<i>Included in systematic review Molyneaux (2019)</i>							
Papageorgiou, 2002* <i>RCT, UK</i>	Inpatient compulsory treatment	N at baseline I: 79 C: 77 Age (mean, SD) I: 35.5 (11.3) years C: 36.3 (12.6) years Sex (% male) I: 53 C: 66 Number of days in hospital (grouped median, [min-max]) I: 94 (13-545) C: 123 (13-1546) Number of admissions in previous 5 years (grouped median, [min-max]) I: 1.3 (0-17) C: 1.4 (0-10)	Intervention: Advance statement Control: Treatment as usual	12 months	Compulsory admission	This work was funded by the National Health Service (NHS) Executive, London Research and Development Programme. The views expressed are those of the authors and not necessarily those of the NHS Executive or the Department of Health. The authors declared no conflicts of interest.	Low
Henderson, 2004* <i>RCT, UK</i>	Severe mental illness and ≥1 admission in last 2 years	N at baseline I: 80 C: 80 Age (mean, SD) I: 39.5 (12.1) years C: 38.6 (10.6) years Sex (% male) I: 59 C: 59 Number of previous psychiatric admissions (median) I: 5 C: 5	Intervention: Joint crisis plan Control: Treatment as usual and information leaflet	15 months	Compulsory admission	One author was supported by a Medical Research Council training fellowship in health services research, and one other author was supported by a South London and Maudsley Trust health services research committee grant. The authors declared no conflicts of interest.	Low
Thornicroft, 2013*	Relapsing psychotic disorder and ≥1	N at baseline I: 286 C: 284	Intervention: Joint crisis plan	18 months	Compulsory admission	The study was funded by the Medical Research	Low

Bijlage Table 2. Characteristics of included systematic reviews
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<i>RCT, UK</i>	admission in last 2 years	Age (mean, SD) I: 40.0 (11.8) years C: 39.6 (12.1) years Sex (% male) I: 49 C: 51 Number of admissions in previous 2 years (mean, SD) I: 1.54 (0.99) C: 1.44 (0.88) Total duration of admissions in previous 2 years (median, IQR) I: 66 (30-132) C: 55 (31-123)	Control: Treatment as usual		Duration of compulsory admission	Council UK and the National Institute for Health Research. The sponsor of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the manuscript. The authors declared no conflicts of interest.	
Ruchlewska, 2014* <i>RCT, the Netherlands</i>	Outpatient, psychotic/bipolar disorder, ≥1 crisis admission in last 2 years	N at baseline I (PACP): 69 I (CCP): 70 C: 73 Age (mean, SD) I (PACP): 40.3 (10.9) years I (CCP): 40.6 (11.6) years C: 39.4 (11.6) years Sex (% male) I (PACP): 72.5 I (CCP): 65.7 C: 67.1	Intervention: Two types of joint crisis plan 1) Patient advocate crisis plan (PACP) 2) Clinician facilitated crisis plan (CCP) Control: Treatment as usual	18 months	Compulsory admission	The trial was funded by the Dutch organization for health research and development (ZonMw) and BavoEuroport. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. The authors declared no conflicts of interest.	High
Lay, 2018 <i>RCT, Switzerland</i>	≥1 compulsory admissions to psychiatry during the past 2 years	N at baseline I: 119 C: 119 Age (mean, SD) I: 41.5 (12.3) years C: 43.4 (11.3) years Sex (% male) I: 40.3 C: 47.9 Psychiatric hospital admissions (mean, SD) I: 8.5 (12.1) C: 9.3 (14.4)	Intervention: Crisis plan with intensive monitoring Control: Treatment as usual	24 months	Compulsory admission Duration of compulsory admission	The study was funded by a private donation. The donator had no role in the study design or the collection, analysis, and interpretation of the data. The authors declared no conflicts of interest.	Some concerns

Study	Main inclusion criteria	Participant/ward characteristics	Comparison	Follow-up	Outcome measures	Comments	Risk of bias*
		Compulsory psychiatric admissions (mean, SD) I: 3.8 (5.2) C: 4.8 (8.5)					
<i>Included in systematic review de Jong (2016)</i>							
Swartz, 1999 <i>RCT, USA</i>	Severe mental illness > 1 year, decreasing Global Assessment of Functioning (GAF) score, intensive treatment for 2 years	N at baseline I: 129 C: 135 Age (mean, SD) I: 39.6 (10.4) years C: 39.8 (11.1) years Sex (% male) I: 50.4 C: 49.6	Intervention: Community treatment order Control: Case management	12 months	Compulsory admission	The study was supported by grants from NIMH. Nothing is reported about potential conflicts of interest.	High
Steadman, 2001 <i>RCT, USA</i>	Referral to outpatient commitment program	N at baseline I: 78 C: 65 Age (mean, SD) I: 41 (11) years C: 41 (12) years Sex (% male) I: 69 C: 40 Length of stay for the index hospitalization (median) I: 53 days C: 51 days	Intervention: Community treatment order Control: Standard care	11 months	Compulsory admission	Nothing is reported about potential funding source or conflicts of interest.	Some concerns
Burns, 2013 <i>RCT, UK</i>	Currently detained with psychosis	N at baseline I: 167 C: 169 Age (mean, SD) I: 39.8 (11.2) years C: 39.5 (11.7) years Sex (% male) I: 66 C: 67 Past psychiatric hospital admissions (median, IQR) I: 6 (3-8) C: 5 (3-9)	Intervention: Community treatment order Control: Standard outpatient care	12 months	Compulsory admission Duration of compulsory admission	The study was funded by the National Institute of Health Research. The sponsor of the trial had no role in trial design, data collection, data analysis, interpretation, or writing of the report. The authors declared no conflicts of interest.	Low

Study	Main inclusion criteria	Participant/ward characteristics	Comparison	Follow-up	Outcome measures	Comments	Risk of bias*
		Past involuntary hospital admissions (median, IQR) I: 4 (2-7) C: 3 (2-8)					
Staring, 2010 <i>RCT, the Netherlands</i>	Outpatient, severe mental illness, problems with service engagement	N at baseline I: 54 C: 55 Age (mean, SD) 39.0 (11.6) years Sex (% male) 71	Intervention: Treatment adherence Control: Standard community mental health care	12 months	Compulsory admission	Funding was provided by the Dutch Ministry of Health, Welfare, and Sports. The authors declared no conflicts of interest.	Some concerns
Priebe, 2013 <i>Cluster-RCT, UK</i>	Severe mental illness, receiving ≤75% of prescribed depot	N at baseline I: 78 C: 63 Age (mean, SD) I: 44.4 (9.6) years C: 42.7 (10.2) years Sex (% male) I: 76 C: 73 ≥1 hospital admission in past year (n, %) I: 20 (26) C: 12 (20) CTO at time of randomization (n, %) I: 3 (4) C: 4 (7)	Intervention: Financial incentives Control: Treatment as usual	12 months	Compulsory admission	The study was funded by the National Institute for Health Research Health Technology Assessment program. The funder had no role in study design, data collection, data analysis, interpretation, writing of the report, or decision to submit for publication. Potential conflicts of interest are reported.	Low
Johnson, 2005 <i>RCT, UK</i>	Crisis severe enough to consider admission	N at baseline I: 135 C: 125 Age (mean, SD) I: 38.0 (11.9) years C: 37.8 (11.7) years Sex (% male) I: 48 C: 54 Previous psychiatric admission (n, %) I: 93 (69) C: 89 (71)	Intervention: Crisis resolution teams Control: Standard care from inpatient services and community mental health teams	6 months	Compulsory admission Duration of compulsory admission	The study was funded by the Camden and Islington Health Authority and the Department of Health. The authors declared no conflicts of interest.	Some concerns

Study	Main inclusion criteria	Participant/ward characteristics	Comparison	Follow-up	Outcome measures	Comments	Risk of bias*
Ohlenschlaeger, 2008 <i>RCT, Denmark</i>	First-episode schizophrenia spectrum disorder	N at baseline I: 167 C: 161	Intervention: Integrated care Control: Standard care	12 months	Compulsory admission Physical and mechanical restraint Duration of physical and mechanical restraint Compulsory care Seclusion	The trial was funded by grants from the Danish Ministry of Health and the Danish Medical Research Council. The Copenhagen Hospital Corporation funded the first author during the research period. Nothing is reported about potential conflicts of interest.	Some concerns
Lay, 2015 <i>RCT, Switzerland</i>	≥1 compulsory admission in last 2 years	N at baseline I: 119 C: 119 Age (mean, SD) I: 41.5 (12.3) years C: 43.4 (11.3) years Sex (% male) I: 40 C: 48 Psychiatric hospital admissions (mean, SD) I: 8.5 (12.1) C: 9.3 (14.4) Compulsory psychiatric admissions (mean, SD) I: 3.8 (5.2) C: 4.8 (8.5)	Intervention: Psychoeducation plus focused monitoring Control: Treatment as usual	12 months	Compulsory admission Duration of compulsory admission	The study is implemented as a sub-project within the framework of the Zurich Programme for Sustainable Development of Mental Health Services (ZInEP). ZInEP is funded by a private donation. The donator had no role in the study design or the collection, analysis, and interpretation of data. The authors declared no conflicts of interest.	High

*For further details, see risk of bias table in the appendix.

+Studies were included in Baker (2021) as well.

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Table 3. Characteristics of included RCTs

Study	Main inclusion criteria	Participant/ward characteristics	Comparison	Follow-up	Outcome measures	Comments	Risk of bias*
Indregard, 2024 <i>RCT, Norway</i>	Patients referred for acute	N at baseline I: 245 C: 311	Intervention: Open-door policy	12 months	Physical and mechanical restraint Seclusion	The study was funded by public grants from the Research Council of	Some concerns

	psychiatric ward care	Age (mean, SD) I: 41.6 (14.5) years C: 41.6 (14.3) years Sex (% male) I: 49 C: 55 Involuntary admission (n, %) I: 180 (73) C: 234 (75) Admission in previous 2 years (n, %) 0 : I: 103 (42) C: 149 (48) 1 : I: 60 (24) C: 60 (19) 2 : I: 29 (12) C: 42 (14) ≥3 : I: 53 (22) C: 60 (19)	Control: Treatment as usual		Compulsory care	Norway and the South-Eastern Norway Regional Health Authority. The funders of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The authors declared no competing interests.	
Steinert, 2023 <i>RCT, Germany</i>	Wards that admitted involuntary patients regardless of their diagnoses, routinely recorded data on coercive measures and incidents of aggression and had the support of personnel for the study's objectives.	Ward N at baseline I: 27 C: 27 Number of coercive measures used per month and occupied bed (median, IQR) I: 0.96 (1.34) C: 0.98 (1.71) Number of assaults per month and occupied bed (median, IQR) I: 0.23 (0.57) C: 0.34 (0.57)	Intervention: Implementation of recommendations of the PreVCo program Control: Waiting list	12 months	Compulsory care	The study was funded by the German Innovationsfonds beim Gemeinsamen Bundesausschuss. The funder had no role in study design or data collection. Potential conflicts of interest are reported.	Some concerns
Cornelis, 2022 <i>RCT, the Netherlands</i>	Adults (18-65 years) with a diagnosis of at least one DSM-IV-TR or DSM-5 disorder who are experiencing an acute severe psychiatric crisis for which a psychiatrist indicated or executed a clinical admission	N at baseline I: 183 C: 63 Age (mean, SD) I: 40.0 (12.7) years C: 43.9 (12.2) years Sex (% male) I: 43 C: 52 Participants admitted in hospital (n, %) I: 18 (10) C: 8 (13)	Intervention: Intensive home treatment Control: Treatment as usual	12 months	Compulsory admission Duration of compulsory admission	The study was funded by De Stichting tot Steun Vereniging voor Christelijke Verzorging van Geestes- en Zenuwzieken. The funder of the study had no role in the study design, data collection, data analysis, data interpretation, report writing, or the decision to submit the paper.	Some concerns

		Participants admitted involuntary in hospital 1 year before initial crisis (n, %) I: 5 (28) 1 (13) Bed days of admitted participants (mean, SD) I: 28.1 (39.7) C: 31.4 (35.1)				The authors declared no competing interests.	
Tinland, 2022 <i>RCT, France</i>	Adults (>18 years) with a diagnosis of schizophrenia, bipolar disorder, or schizoaffective disorder according to the DSM-5 who were involuntary admitted to the hospital within the past 12 months	N at baseline I: 196 C: 198 Age (mean, SD) I: 37.4 (11.7) years C: 41.0 (12.7) years Sex (% male) I: 65 C: 57 Number of admissions in previous 1 year (mean, SD) I: 1.5 (0.9) C: 1.4 (0.8) Patients with admissions in previous 1 year (n, %) 1: I: 132 (67.3) C: 148 (75.5) 2: I: 45 (23.0) C: 37 (18.9) ≥3: I: 17 (8.7) C: 11 (5.6)	Intervention: Peer-worker psychiatric advance directives (PW-PAD) Control: Treatment as usual	12 months	Compulsory admission	This study was supported by an institutional grant from the French National Program of Health Services Research. The Clinical Research Direction of Assistance Publique Hôpitaux de Marseille was the sponsor of this trial. The funding sources had no role in the design or conduct of the study, collection, analysis, or interpretation of the data; preparation, review, or approval of the manuscript; or the decision to submit the manuscript for publication. Potential conflicts of interest are reported.	Some concerns
Valimaki, 2022 <i>Cluster-RCT, Finland</i>	Hospitals with at least one adult psychiatric ward that used coercive measures as defined in the Finnish Mental Health Act	Participant N at baseline I: 4163 C: 4186 Age (mean, SD) I: 41.5 (6.5) years C: 40.0 (5.1) years Sex (% male) I: 49 C: 56	Intervention: Evidence-based educational intervention (VIOLIN) Control: Treatment as usual	18 months	Physical restraint Seclusion Duration of seclusion	This study was funded by grants from the Academy of Finland, the Turku University Hospital and the University of Turku. The funding sources had no role in the design and conduct of the study; collection, management,	Some concerns

		<p>Patients involuntary admitted (n, %) I: 1146 (27.5) C: 1488 (42.2)</p> <p>Ward N at baseline I: 13 C: 15</p> <p>Number of beds I: 238 C: 235</p> <p>Number of nurses I: 335 C: 313</p> <p>Length of stay (mean, SD) I: 23.2 (20.4) days C: 31.8 (16.7) days</p>				<p>analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.</p> <p>Potential conflicts of interest are reported.</p>	
Hamann, 2020 <i>Cluster-RCT, Germany</i>	Adult (18-65 years) inpatients of participating acute psychiatric wards with a diagnosis of schizophrenia or schizoaffective disorder	<p>N at baseline I: 154 C: 151</p> <p>Age (mean, SD) I: 42.4 (12.9) years C: 41.2 (13.3) years</p> <p>Sex (% male) I: 47 C: 52</p> <p>Patients involuntary admitted (n, %) I: 61 (40) C: 42 (27)</p>	<p>Intervention: SDM-plus training</p> <p>Control: Treatment as usual</p>	12 months	Mechanical restraint	<p>Janssen Cilag supported the trial with an unrestricted grant. The company had no influence on the design of the trial, the collection, analysis, and interpretation of the data.</p> <p>Potential conflicts of interest are reported.</p>	Some concerns