

Review / Meta-analyses

Interventions for involuntary psychiatric inpatients: A systematic review

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ABSTRACT

Background: Observational research has found that involuntary treatment provides limited benefits in terms of long-term clinical outcomes. Our aim was to review literature on existing interventions in order to identify helpful approaches to improve outcomes of involuntary treatment.

Methods: This systematic review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement guidelines. Seven databases (AMED, PsycINFO, Embase Classic, Embase 1974–2017, CINAHL, MEDLINE, and BNI) were searched and the results were analysed in a narrative synthesis.

Results: Nineteen papers describing fourteen different interventions were included. Using narrative synthesis the interventions were summarised into three categories: a) structured patient-centred care planning; b) specialist therapeutic interventions; c) systemic changes to hospital practice. The methodologies used and outcomes assessed were heterogeneous. Most studies were of low quality, although five interventions were tested in randomised controlled trials (RCTs). Preliminary evidence supports structured patient-centred care planning interventions have an effect on long-term outcomes (such as readmission), and that specialist therapeutic interventions and systemic changes to hospital practice have an effect on reducing the use of coercive measures on wards.

Conclusions: This review shows that it is possible to conduct rigorous intervention-testing studies in involuntary patients, including RCTs. Yet, the overall evidence is limited. Structured patient-centred care planning interventions show promise for the improvement of long-term outcomes and should be further evaluated.

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1. Introduction

The most recent United Nations' convention on the rights of people with disabilities raised growing concerns about providing treatment in the absence of consent [1,2]. Historically the problematic ethical nature of involuntary treatment has been justified based on the principle of beneficence, by which subjecting people to involuntary treatment is in their best interest, and a clear benefit is expected [3]. Currently, involuntary treatment has different aims across countries and happens under different circumstances, but the ethical basis underlying its existence and

continued practice is at least in part the same, i.e. to manage risk to self and others and to avoid a significant deterioration of patients' mental health [4–6]. Yet, observational studies found that although involuntarily treated patients improve enough to be discharged based on the country's regulations (for example presenting a reduced risk to themselves and/or others) they show limited benefits in terms of long-term clinical improvement, a deterioration of social functioning and high readmission rates within the following year [7,8]. Additionally, involuntary treatment is experienced as distressing and disempowering and might negatively impact future relationships with mental health services [9–11].

Rates of involuntary treatment have been increasing in numerous European countries [12]. Sometimes involuntary treatment is the only option for providing treatment to highly vulnerable and distressed patients [13,14]. Despite the important place it holds in psychiatric practice, there has been relatively limited experimental research to inform practices, which appear to be largely based on traditions rather than on evidence [15].

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Hence, novel and systematically developed interventions to improve the outcomes of involuntary treatment are required.

With this review, we aimed to systematically appraise the available literature to identify helpful approaches to improve outcomes of involuntary treatment.

Our specific research questions are:

- a) What interventions have been studied with involuntary inpatients?
- b) Which study designs were used to assess their outcome(s) and which interventions showed evidence of benefit?

2. Methods

This systematic review was conducted according to the PRISMA guidelines (Appendix 1) [16]. We searched published and grey literature on involuntary inpatients in order to identify all interventions offered before discharge from involuntary care and their outcomes. The protocol for this review was preregistered on PROSPERO (CRD42017060418).

2.1. Search strategy

We searched the following databases: AMED, PsycINFO, Embase Classic, Embase 1974–2017, CINAHL, MEDLINE, and BNI. Grey literature was searched using Google Scholar and Open Grey. Additional studies were identified through hand-searching reference lists from relevant texts. Articles from inception to December 21st 2017 were included in our search. The searches were re-run on May 30th 2018 and none of the additional papers identified met the inclusion criteria. For the full search strategy see supplementary material.

2.2. Inclusion/exclusion criteria

Studies were included if they contained a description of an intervention or practice used with adults receiving involuntary psychiatric inpatient care. Coercive measures (e.g. forced medication, restraint or seclusion) were not considered interventions. To be eligible, at least 50% of the study's sample needed be adults (aged 18–65) who were receiving involuntary inpatient treatment at the time of recruitment to the study. If the sample consisted of fewer than 50% inpatients, or fewer than 50% involuntary patients, the study was excluded. Other than excluding reviews and opinion pieces that were not based on a specified sample that met the inclusion criteria, no restrictions were applied to the research studies' designs, to be as inclusive as possible.

Papers that were not available in the Latin alphabet were excluded because unfortunately we had neither the linguistic capacity within the research team nor the resources for translation.

Studies whose participants' only psychiatric diagnosis was of substance-use problems or eating disorders were excluded. Involuntary treatment for people with these diagnoses can be differently regulated under different national legislations and sometimes carried out outside of psychiatric services. Comorbid substance use or eating disorders were included, as long as the primary reason for involuntary treatment was neither substance use nor an eating disorder.

2.3. Screening procedures

Screening was conducted by three authors in line with recommendations outlined by the Centre for Reviews and Dissemination [17]. An initial piloting phase of the inclusion and exclusion criteria was conducted by MC and TM to test, further

refine the inclusion criteria. One author (MC) screened all titles for eligibility, then a randomly selected subsample of 50% (using a random sequence generator) was independently screened by EB, and a further randomly selected subsample of 20% was independently screened by TM. Disagreements between authors on inclusion at title-screening were recorded and counted to assess inter-rater reliability. A high level of agreement was achieved: between MC and TM it was 96% and between MC and EB it was 92%. Disagreements were resolved by including texts if there was any indication they may be eligible from their titles. Full texts were obtained for the 383 texts whose titles and abstracts indicated they may meet the inclusion criteria, and the reference lists of relevant reviews were screened by MC and TM for additional texts. Disagreements between authors at full-text screening were resolved through discussion with the review team as a whole. If the percentage of involuntary patients in the sample was not stated in the paper, the authors were contacted by MC. Uncertainties and disagreements on inclusion were discussed and resolved by the authors. They included a psychiatrist and psychologist (SP), two psychiatrists (TM and DG) and two research psychologists (MC and EB).

2.4. Data extraction and quality assessment

Data were extracted using structured tables, including details on the sample, the study design and outcomes assessed. The intervention descriptions were also extracted for the narrative synthesis. The quality of the included papers was rated independently by MC, TM and EB using the McGill Mixed Method Appraisal Tool (MMAT) [18]. This tool is well-suited to the variety in designs and measures of the included studies, and has been found to be both reliable and efficient. Criteria against which quality is assessed depended on the type of methods studies used. Scores ranged on a five-point scale from 0 (no criterion met) to 4 (all criteria met). In studies with a mixed method design, both components were rated according to MMAT criteria, and the score of the weakest component was taken as the overall score of the study. Disagreements on quality ratings were resolved through discussion between raters and with DG.

2.5. Data analysis

As the articles found were highly heterogeneous in design and outcome, we used a narrative approach to synthesise the characteristics of the interventions. The narrative synthesis took place in two stages based on the guidelines set out by Popay and colleagues [19]. First an initial framework of criteria was developed to explore the interventions' commonalities and differences. These criteria included factors such as whether the intervention was an alternative or an addition to involuntary treatment, who was involved in delivering the intervention, what training they received, what expertise and role they had, the aim(s) of the intervention and the duration and frequency of sessions. These criteria were identified inductively: familiarisation with the descriptions of the interventions led to the formulation of the criteria. This process was carried out independently by two researchers (MC and TM), and through discussions among the entire research team a framework of criteria was developed and refined through an iterative process. The second stage of the analysis consisted of characterising each intervention based on the framework of criteria developed in the first stage. This allowed us to consider and explore the commonalities and differences between interventions in greater depth. Through discussion between the researchers, tables were drawn up to capture the essential elements for each of the interventions and interventions were categorised into groups

3. Results

3.1. Study selection

The original search yielded 7630 papers after duplicates were removed, and 37 records were identified through searching grey literature (N=8) and hand-searching (N=29). Of those, 7427 were excluded through title and abstract-screening because they were not relevant to the research question. Of the 203 full texts examined, 184 were excluded because they did not meet our inclusion criteria (see Fig. 1 for the PRISMA diagram of study selection). Nineteen research articles met the inclusion criteria, referring to fourteen distinct interventions. The characteristics of these studies and their interventions are summarised in Table 1.

3.2. Interventions

Nineteen research papers met the inclusion criteria. Some of these papers described the same research projects and interventions, so in total 14 different interventions were found. Through narrative synthesis [19] interventions were grouped into three broad categories: “Structured patient-centred care planning”, “Specialised therapeutic interventions” and “Systemic changes to hospital practice”. Studies and interventions are presented in detail in Table 1, including whether the effect of the interventions on the outcomes they assessed was significant.

Of the 14 interventions, five were assessed in randomised controlled trials. The quality ratings of the studies, grouped by intervention category, can be found in Table 2. A subset of criteria

from the framework developed to compare and categorise interventions is presented in Table 3.

The outcomes most commonly assessed were readmission to hospital (N=4), aggressive behaviour (N=2) and use of coercive measures (N=2). Several studies also assessed symptoms and/or behavioural outcomes (N=3).

3.2.1. Structured patient-centred care planning

Five interventions were structured care planning interventions. All were based on notions of patient-centred care, with the aim of increasing the involvement of patients in their recovery plans. How this involvement was encouraged differed. For example, Kisely et al [20] and Papageorgiou et al's [21] [22], interventions were different versions of advance directives, (i.e. a patient-authored statement of preference for future treatment if capacity is lost), and Lay et al [23–27] and Kikuchi et al's [28] both involved post-discharge preventive monitoring. In Rosenman et al's [29] intervention, ‘personalised advocacy’, patient involvement was encouraged by an advocate who looked out for the patient's best interest and helped to represent their wishes in care meetings. All five interventions also included coordination with after-care, through standard care co-ordination [20,21,23,28,29] or through reaching out in regular monitoring contacts by a mental health worker [23] or a clinician [28]. The interventions were generally delivered by clinicians working in inpatient settings, who were trained by researchers. The exceptions were the Lay et al [23–27] intervention, in which one specific mental health worker was assigned to each individual patient and maintained contact with them throughout the 2-year course of the study, and ‘personalised

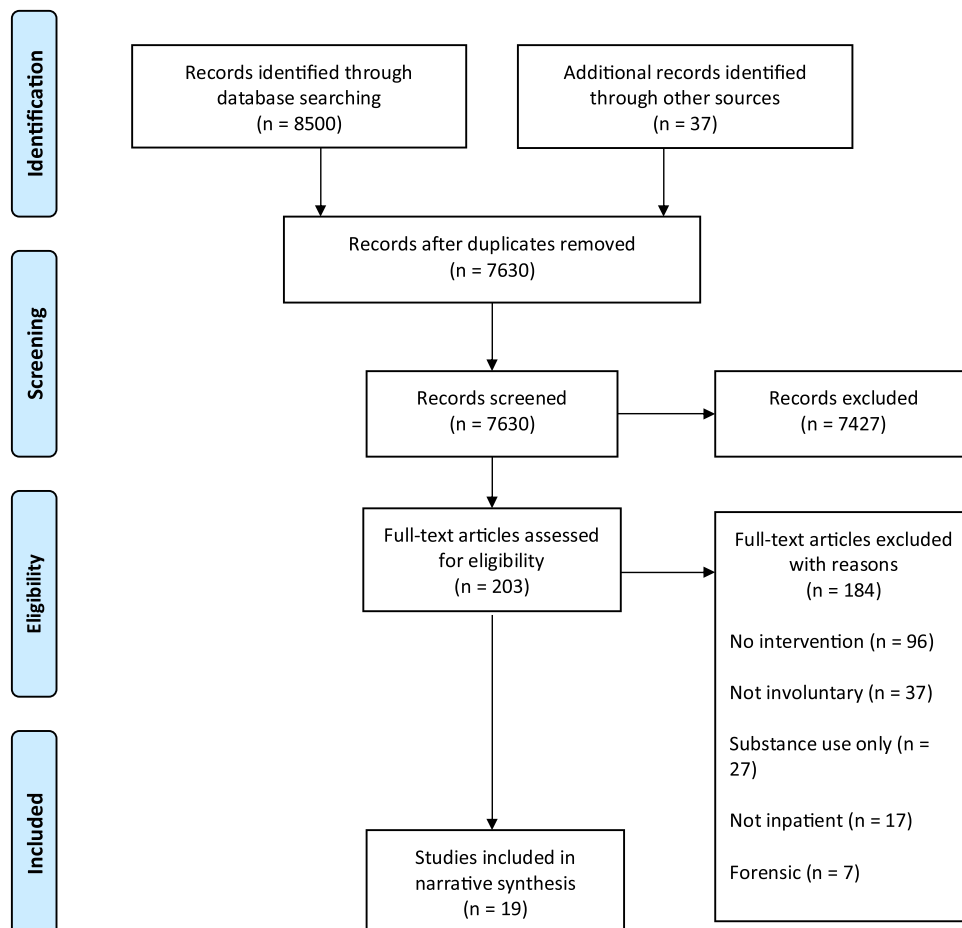


Fig. 1. Study selection (PRISMA flow diagram).

Table 1
Study characteristics, intervention descriptions and outcomes (** Significant P < 0.05).

Intervention Type	Intervention Name	Authors, year and country	Description	Design	Sample size (N=) Proportion involuntary (%)	Outcomes
Structured patient-centred care planning	Crisis cards, discharge planning and preventive monitoring	Lay et al. 2017 Lay et al. 2015 Lay et al. 2013 Lay et al. 2012 Drack-Schönenberger et al. 2015 Switzerland	Intervention comprised three components: 1) Individualised psycho-education - between 1 and 3 sessions of individualised psychotherapy completed upon recruitment whilst the participant is an inpatient, covering information on the participants' diagnosis, their support networks and individual risk and protective factors for potential future crises 2) Crisis-cards - co-produced by participant and professional, and given to the participant upon discharge, containing information on contact persons, treatment preferences, individualised risk factors for relapse, personal and social resources and use of mental health care services 3) Preventative monitoring - occurs post-discharge, monthly, for 24 months. Participants are contacted by the same researcher they completed the crisis cards with, and their mental health is assessed, if there are risk signs of relapse, participants are reminded to activate the resources they had specified within their crisis cards.	RCT	238 (85.3%) ¹	Primary outcome: Involuntary readmission at 12 months 24 months** Secondary outcomes: Voluntary readmission Length of stay ** Perceived coercion Empowerment Functioning
	Advance Directives	Papageorgiou et al. 2002 Papageorgiou, et al. 2004 UK	Participants indicated their preferences for care if they were to lose capacity in the future. This was completed within a booklet containing 7 statements on future preferences for treatment. Participants completed and signed the advance directive, and copies were given to the participants' keyworker, GP and filed in the patient's records.	RCT	161 (100%)	Primary outcome: Involuntary readmission (12 months) Secondary outcomes: Voluntary readmission Satisfaction with treatment Behaviour and symptoms Self-efficacy
	Continuing Personalised Advocacy	Rosenman et al. 2000 Australia	Participants were assigned an advocate (a qualified lawyer) upon involuntary admission. The advocate represents the patient's individual interests (not the carers', clinicians' or state's interests). The role includes: 1) seeking treatment options from clinicians, 2) voicing the patient's current preferences and prior experiences and 3) watching out for unnecessary infringements on the patient's autonomy.	Quasi-randomised controlled trial	105 (100%)	Involuntary rehospitalisation** Voluntary rehospitalisation Compliance with aftercare** Community tenure (days) and rehospitalisation (voluntary and involuntary) ** Costs** (excluding the cost of the lawyer's salary) Satisfaction with care** Primary outcome: Patient involvement in discharge planning Secondary outcome: Patient experience of motivational aftercare planning
	Motivational Aftercare Planning	Kisely et al. 2017 Australia	Intervention combines advance directives and motivational interviewing. Staff were trained in active listening skills and motivational interviewing to create enhanced recovery plans with patients upon discharge. This intervention builds on existing discharge planning procedures to make them more structured and focused, and included: 1) the patient's strengths, 2) areas they would like to strengthen, 3) Strategies to keep them well, 4) Past behaviour that kept them well, 5) triggers for relapse, 6) How they have managed triggers previously, 7) Their preferences for treatment if they were to become unwell.	Cluster-level controlled trial	3 wards (aggregate data from 297 ward plans) (100%)	Primary outcome: Patient involvement in discharge planning Secondary outcome: Patient experience of motivational aftercare planning
	Continuous Follow Up in the Community	Kikuchi et al. 2016 Japan	The intervention starts at discharge from inpatient care for individual's discharged to independent living contexts. Care managers contacted the participant for one year, either by phone or in person. During these contacts several physical and mental health outcomes were assessed including psychological vulnerability, compliance with prescribed medication and social functioning.	Retrospective cohort study	200 (130 intervention, 70 TAU) (72.5%)	Primary outcome: Readmission Secondary outcome: Involuntary readmission**
	Individual Peer Support	Rogers et al. 2016 USA	Individualised 1:1 peer support is provided within the community upon discharge. The peer support specialists were recruited, trained and supervised, and told to meet the participants for an hour 2-3 times a week. Support was adapted to individual needs but included helping with compliance to the court-ordered treatment, practical support and emotional support.	RCT	113 (100%)	Social support Quality of life Perception of recovery Symptoms and functioning
Specialised therapeutic interventions	Animal Assisted Psychotherapy	Nurenberg et al. 2015 USA	This is a form of psychotherapy involving animals. Patients received equine or canine assisted therapy. The sessions involved scripted and	RCT	90 (56%)	Primary outcome: Aggressive behaviour** Secondary outcome:

Table 1 (Continued)

Intervention Type	Intervention Name	Authors, year and country	Description	Design	Sample size (N=) Proportion involuntary (%)	Outcomes
			increasingly complex ground exercises involving group interactions with the animal, patients and therapist. These included greeting, grooming and leading the animals (in the equine-assisted psychotherapy group this did not include riding the horses).			Aggression indicators: likelihood of invading personal space Symptoms Empowerment Attitudes to animals Behaviour and symptoms **
	Narrative Group Therapy	Mehl-Madrona 2007 Canada	Narrative group therapy was carried out on inpatient wards. Narrative approaches use a storied approach to understand behaviour. Current and future behaviour is understood as logically following the plot of stories in which one lives, and that alternative stories can be constructed to change future outcomes (i.e. involuntary hospitalisation). The groups take place on the ward and are led by a social worker and a family physician or psychiatrist. The hourly sessions every day of the working week cover these themes including the context of patients' admission to hospital, recalling positive experiences and considering the future.	Cluster-level controlled pre-post study	3 wards (72.2%)	
	Acceptance and Commitment Therapy	Razzaque 2012 United Kingdom	A mindfulness-centred therapeutic protocol utilising techniques that involve participants bringing their attention to the internal and external experiences occurring at that moment, to make healthy contact with thoughts, feelings, memories and sensations that have been feared or avoided. The intervention consisted of daily 20 minute one-to-one sessions provided over a period of 2-3 weeks.	Case series	3 (100%)	Primary outcome: Aggressive behaviour (reports from nursing shifts, interviews and ward review) Secondary outcome: Expression of self-harm and suicidal ideation Symptoms Both reported a reduction but not quantified
	Sensory Modulation Treatment	Gardner 2016 USA	The sensory modulation intervention involved providing materials so participants could use their olfactory, gustatory, visual, proprioceptive, auditory, vestibular and tactile senses. For example stress balls, clay and widgets were provided for the tactile senses. Optimum levels of arousal can be achieved through regulation of the degree, intensity and nature of responses to sensory output. This was delivered in both a group format and one-to-one.	Case series	20 (100%)	Primary outcome: Perceived arousal level Secondary outcome: experience of the intervention
	Crisis Residential Programmes	Greenfield et al. 2008 USA	This is an alternative form of housing and treatment to a locked psychiatric ward, which involves an unlocked home-like hostel which was staffed by trained mental health consumers (clinicians were involved in a limited way for certain tasks such as medication management). The emphasis was on patients being involved in decisions and using self-help principles to work towards recovery. The intended length of stay was 8 days, with a maximum of 30 days. Assertive community outreach continued to be provided upon discharge.	RCT	393 (100%)	Costs Level of functioning ** Symptoms Self-esteem Quality of life Satisfaction with treatment **
Systemic changes to hospital practice	"Rooming In"	Richardson 1996 Australia	Rooming in involves family members or friends (confidantes) providing a constant vigil with the patient in a single, safe hospital room as an alternative to seclusion or restraint. The confidantes' welfare and needs were watched over and seen as equally as important as the patients'. Confidantes were screened to ensure they were capable of the role.	Retrospective case control study	151 (100%)	Patients' and confidantes' perceptions of "Rooming In"
	Multimodal Intervention Program	Guzman-Parra et al. 2016 Spain	This programme comprised of 4 strategies on different levels of the organisation: 1) Leadership and organisational changes - discussion groups were held with staff to explore barriers and facilitators to reducing the use of seclusion 2) Registration and monitoring of patients at risk of restraint 3) Nursing staff were trained in de-escalation techniques 4) Involvement of patients in the treatment program - an individualised plan of treatment was created after admission for high-risk patients. This plan was discussed with patients and put into practice whenever they became agitated or violent.	Retrospective pre-post study	1 ward (aggregate data from a 42-bed ward) (90.9%)	Primary outcome: Frequency and duration of mechanical restraining episodes ** Secondary outcomes: Patients' condition prior to mechanical restraint Reason for restraint Patient cooperation during the intervention

Table 1 (Continued)

Intervention Type	Intervention Name	Authors, year and country	Description	Design	Sample size (N=) Proportion involuntary (%)	Outcomes
	"Understanding Hospitalisation"	Strachan 2004 USA	This is a psychoeducation and skills training module facilitated twice a week by two social workers. It was divided into 3 sections: 1) The participant's legal status 2) The relationship between a participant's legal status and their treatment plan - participants were given a copy of their treatment plan and discussed this with the groups' co-facilitators 3) Building and practicing skills that participants could use to be active in their treatment - participants were given the opportunity to identify components of their treatment plan that they would like to work on, or negotiate with their treatment teams.	Retrospective case series study	55 (100%)	Cognitive ability Behaviour Symptoms Learning from "Understanding Hospitalisation" **

Table 2

Quality ratings of included studies.

Type of intervention	Study design	Study	Overall MMAT score (/4)	Mixed Method Appraisal Tool criteria ^{6,7}			
				1	2	3	4
Structured patient-centred care planning	RCT ¹	Lay et al. [23]	2	+	-	+	-
		Lay et al. [25]					
		Lay et al. [27]					
		Lay et al. [24]					
Quasi-randomised controlled trial ³ Cluster-level controlled trial	RCT ¹	Drack-Schönenberger et al. (2016)	2	+	+	?	-
		Papageorgiou et al. (2004)					
		Papageorgiou et al. [21]					
		Rosenman et al. [29]					
Specialised therapeutic interventions	Retrospective cohort study ⁵ RCT ¹ RCT ¹ Cluster-level controlled study ³ Case series ⁴ Case series	Kisely et al. [20]	2	+	?	+	?
		Quantitative ³	2	+	-	+	+
		Qualitative ²	2	+	+	-	-
		Kikuchi et al. (2016)	3	+	+	?	+
		Nurenberg et al. [30]	3	-	+	+	+
		Rogers et al. [35]	1	+	?	-	-
		Mehl-Madrona [31]	1	-	+	?	?
		Razzaque et al. 2013	0	?	-	-	N/A
Gardner [33]	1	-	?	-	-		
Systemic changes to hospital pra	RCT ¹ Retrospective case control study ⁴ Retrospective pre-post study ⁴ Retrospective case series study ⁴	Quantitative ⁴		+	?	-	-
		Qualitative ²					
		Greenfield et al. [38]	2	+	+	?	?
		Richardson [39]	1	-	-	-	+
Guzman-Parra et al. [36]	3	+	?	+	+		
Strachan [37]	2	-	+	+	-		

Randomised Controlled Trial criteria: 1: Randomisation 2: Allocation concealment 3: Complete outcome data 4: Withdrawal/dropout rate.

Qualitative criteria: 1: sources of data relevant? 2: process of analysis appropriate? 3: findings related to context? 4: findings related to researcher's influence?

Non-randomised trials: 1: Selection bias minimising 2: Measurement appropriateness 3: Comparability of groups 4: Outcome data.

Quantitative descriptive studies: 1: sampling strategy relevance 2: representativeness of sample 3: Are measurements appropriate? 4: Is there an acceptable response rate?

(N.A for case report/series) measurements appropriate 4: response rate >60%.

Retrospective Cohort studies: 1: Selection bias minimising 2: Measurement appropriateness 3: Comparability of groups 4: Outcome data complete?

⁶Standard dropout criterion set out by MMAT guidelines were used (<20).

⁷Criteria met: Yes (+), No (-), Can't tell (?).

advocacy' in which patients who were in hospital involuntarily were assigned a lawyer as an advocate [29].

Two interventions were tested in randomised controlled trials: a complex intervention involving crisis cards, discharge planning and preventive monitoring in the community [23] and advance directives at discharge [21]. A quasi-randomised design was used to assess how continuous personal advocacy affected length of stay and readmission [29]. Two interventions were described in cluster-level pre-post controlled designs: one was a prospective trial of a combination of motivational interviewing and crisis cards, aiming to increase patients' involvement in decision-making [20]. The other was a retrospective cohort study of the effect of continuous

follow-up in the community on voluntary and involuntary readmission [28].

3.2.1.1. Randomised controlled trials and quasi-randomised controlled trials. The intervention developed and described by Lay and colleagues [23–27] involved a combination of three elements described in other interventions: personalised psycho-education, crisis cards and monthly monitoring of patients after discharge. This was the largest RCT found in involuntary inpatients, and the results showed that at 24 months the intervention group were less likely to be involuntarily readmitted than the control group.. Papageorgiou's (2002) randomised controlled trial did not find any

Table 3
Intervention characteristics – subset of criteria used for narrative synthesis.

Categories	Interventions	How often does it take place?				When and where does the intervention take place?			Who is involved in administering the intervention?					
		One-off	Daily & <weekly	Weekly	Monthly	In hospital	At discharge	Post-discharge	Trained professional	Psychotherapist	Family/carer	Peers/other patients	Animals	
Structured patient-centred care planning	Crisis cards, discharge planning and preventive monitoring				✓	✓	✓	✓	✓					
	Advance Directives			✓			✓	✓	✓					
	Continuing Personalised Advocacy	✓					✓		✓					
	Motivational Aftercare Planning	✓					✓		✓					
	Continuous Follow-Up in the Community				✓			✓	✓					
	Individual Peer Support			✓				✓					✓	
Specialised therapeutic interventions	Animal Assisted Psychotherapy			✓		✓			✓					✓
	Narrative Group Therapy	✓				✓			✓				✓	
	Acceptance and Commitment Therapy	✓				✓			✓					
	Sensory Modulation Therapy	✓				✓			✓					
	Crisis Residential Programmes							✓					✓	
Systemic changes to hospital practice	Rooming In					✓						✓		
	Multimodal Intervention Program								✓	✓				
	"Understanding Hospitalisation"					✓			✓					

support for advance directives having an effect on involuntary readmission or any of the other outcomes assessed [21,22].

Using a quasi-randomised design Rosenman and colleagues (2000) found support for personalised advocacy reducing readmission, and increasing satisfaction and engagement with health-care services [29].

3.2.1.2. Non-randomised controlled studies. The intervention described by Kisely et al [20] involved creating an advance directive. The clinician helping the patient with this was trained in active listening and used motivational interviewing skills to discuss potential future crises. Kisely et al reported patients' involvement in their care plans increased. This was assessed by the researchers, using an ad-hoc checklist [20].

One retrospective cohort study assessing preventive monitoring showed that patients were less likely to be involuntarily readmitted to hospital in the following year compared to those that did not receive preventive monitoring [28].

3.2.2. Specialist therapeutic interventions

Five distinct interventions were delivered by professionals that had specific qualifications to treat patients. Three of these were different forms of psychotherapy: animal assisted psychotherapy [30], acceptance and commitment therapy [31] and narrative group therapy [32]. Two interventions were similar to the psychotherapies in that the people delivering them had specific training, but they were not forms of psychotherapy. One of these was sensory modulation treatment [33], and the other was peer support in which peers were trained to provide support to patients who were recently discharged from hospital [34]. With the exception of individual peer support, all of these interventions were carried out and outcomes evaluated while patients were in

hospital, so no long-term effects were measured. Individual peer support began at discharge from involuntary inpatient care.

The designs varied greatly, ranging from RCTs [30,34], to a cluster-level controlled pre-post study [31] and case series [32,33].

3.2.2.1. Randomised controlled trials. The best evidence in this category is for equine assisted psychotherapy's effect on aggressive behaviour – particularly towards other patients [30]. The other intervention assessed in an RCT, individual peer-support, did not produce an effect on the included variables [35]. Animal-assisted psychotherapy showed significant reductions in aggressive behaviour, measured through the proxy of hospital incident reports.

The design of the study assessing the group narrative therapy intervention [32] makes drawing conclusions difficult, as only aggregate ward-level data that was routinely collected at admission and discharge is available from all patients, and it is not known whether they attended the group or not. However the wards on which narrative group therapy was offered showed a significant improvement in symptom scores compared to the control wards, suggesting the intervention may have provided some benefits.

3.2.2.2. Case series. Three patients took part in acceptance and commitment therapy, and it reduced aggressive behaviour in participants, as reported in nursing reports. Symptoms were also improved according to clinician reports and expressions of self-harm and suicidal ideation were reduced – however this was not quantified or tested statistically [32].

Sensory modulation appeared to improve the appropriateness of patients' arousal level and the treatment appeared to be experienced positively by patients. However the rate of attrition of 85% meant outcomes of only a small minority of patients could be assessed [33].

3.2.3. Systemic changes to hospital practice

The third category encompasses four interventions that were substantial, systemic changes to hospital practice. This includes a complex intervention programme that involved changes in staff training, hospital organisation and procedures ('Multimodal intervention programme' [36]), a systemic approach including staff training and psychoeducation for patients [37] and two alternatives to standard involuntary inpatient care: a non-clinical home-like living arrangement for involuntary patients managed by peers ('Crisis residential programme' [38]) and a way of providing care for patients involving a simply furnished room and their carers ('Rooming in' [39]). One study was a randomised controlled trial [38], two were uncontrolled retrospective studies [36,37], and one had retrospectively matched controls [39].

3.2.3.1. Randomised control trial. The crisis residential programme appeared to improve satisfaction with treatment and level of functioning compared to the control group (treatment as usual in a locked inpatient hospital), but did not find a significant difference in costs, symptoms, self-esteem or quality of life [38].

3.2.3.2. Retrospective studies. Rooming-in was described as an approach to reduce the distress of involuntarily admitted patients. It was supported by some qualitative reports of appreciation by patients, families and staff, and retrospective comparisons showed patients who were roomed-in had fewer inpatient days, however this was not formally evaluated [39]. The multimodal intervention programme showed a reduction in the use of coercive measures as reported in hospital records [36]. The 'Understanding Hospitalisation' psychoeducation module which aimed to help patients understand their diagnosis and the reasons for their involuntary hospitalisation was found to improve knowledge about involuntary treatment, reduce patients' perceived coercion and reduce the number of staff-reported negative behavioural events in male patients only. The association between the module and staff-reported behavioural events was mediated by patients' feeling listened to.

4. Discussion

4.1. Main findings

The interventions for involuntary inpatients which have been currently evaluated in international research can be summarised into three categories: a) Structured patient-centred care planning; b) Specialised therapeutic interventions; c) Systemic changes to hospital practices. These interventions were mostly evaluated in poor quality study designs, which were non-controlled. That being said, researchers in this area have managed to carry out five RCTs [21,23,30,35,38]. These RCTs faced difficulties with high attrition [23,30], significant differences at baseline despite randomisation [38] and contamination [35], which all may reduce precision in the estimation of the effects of the interventions.

From the evidence currently available we cannot conclude on the effectiveness of any particular intervention. However, the principles and categories of interventions which were identified can guide the development of novel interventions and the methodological limitations of previous studies can inform the adaptation of research protocols.

4.2. Strengths and limitations

This is the first study investigating interventions developed and tested for people who are involuntarily hospitalised [12,40]. One of the strengths of this research is the breadth of the search strategy and the multidisciplinary team involved in the screening and

analysis. The searches covered not only studies published in peer-reviewed scientific journals but also grey literature; the inclusion criteria aimed to provide as wide and inclusive a view of the topic as possible. The screening and data analysis processes involved professionals of different backgrounds (research and clinical psychologists, and psychiatrists) who brought different perspectives to the decisions on paper inclusion and on the understanding and categorisation of the interventions.

This study also has some limitations. The search strategy was deliberately designed using a wide a range of terms related to the features of interest of the population, i.e. involuntary psychiatric inpatients. This means that papers that did not use any terms related to involuntary hospitalisation, but would otherwise meet our inclusion criteria, may not have been identified or included. This methodological choice was motivated by the primary aim of identifying interventions which were developed with the population of involuntary patients in mind. To increase the sensitivity of our screening process, if it was not clear whether the population was involuntary from the full-text, authors were contacted.

A second limitation is related to the fact that the studies identified were carried out in different countries with different legislations and systems of care, which vary greatly when it comes to involuntary psychiatric treatment [12]. This may reduce both the comparability of studies and adaptability of interventions to different settings.

A third limitation is the fact that we were unable to perform a formal analysis of the effect of interventions (e.g. a meta-analysis) due to the heterogeneity of studies' outcomes and designs. However, our main interest was to identify as many interventions as possible, in an understudied area, and for this reason we had to compromise on the quality of included studies and on the ability to rigorously estimate the effect of interventions on outcomes.

A fourth limitation is the fact that although we aimed to conduct a review of interventions designed and studied in involuntary inpatients, we included studies with samples that were exclusively involuntary and samples with a mix of voluntary and involuntary patients. This decision was made because of the limited available evidence on exclusively involuntary samples and to maximise inclusivity to avoid any potentially useful interventions being omitted.

4.3. Comparison with available literature

In terms of clinical benefits, it appears that interventions involving structured patient-centred care planning have the potential to improve long-term outcomes. This reflects the findings of a similar review carried out on all interventions (i.e. including those initiated in community settings) aimed to reduce involuntary readmissions [41]. In that review, interventions which included advance patient-led statements were the only ones found to be associated with a reduction in involuntary readmissions. The presence of procedures facilitating involvement in decision-making, offering choice and promoting self-management seems particularly important for interventions in this patient population to be effective. This is reflected in other research on Motivational Aftercare Planning [20] which focused on how an intervention to increase patients' involvement in their recovery plans can lead to a change in how people view themselves, their role in their recovery and their sense of agency [42]. This also resonates with qualitative studies of patient experiences which report that involuntary patients wish to be more involved in clinical decisions in hospital and so do their family members [43]. This involvement can improve their experience of care [10,44–46], which is, in turn, linked to more favourable long-term clinical outcomes [7,8].

In the literature, two studies have shown that interventions delivered by professionals who are external to the usual care team of the patients may be effective in improving clinical outcomes. This may be explained by literature that indicates involuntary treatment leads to a loss of faith and decreased trust in healthcare services [47,48]. However other factors may explain the apparent effectiveness of the interventions, and this shared feature may not be the most important contributor to the benefit found.

Specialised therapeutic interventions and systemic changes to hospital care may help in reducing the use of coercive measures, and potentially improve the experience of care [38].

Several of the specialised psychological interventions conducted on wards appeared promising. This is in line with previous studies carried out in psychiatric wards which have suggested that providing psychotherapies in wards is feasible and acceptable [49] and might be a way of improving ward atmosphere and relationships between patients and clinicians [50]. However, these interventions are likely to be more expensive than those based on training existing staff as they require trained therapists. No formal cost-effectiveness analyses that take all of the relevant factors of these approaches into account are available, which would be helpful to understand their sustainability in routine practice.

Many of the interventions focused on conflicts on wards (aggressive behaviour) and use of coercive measures. A multimodal approach to tackling conflict appeared to be effective in reducing coercion [36]. This intervention holds some similarities with the successful intervention with the same aim developed in the UK by Bowers and colleagues, the “Safewards Model” [51], which was excluded because of the proportion of involuntary inpatients in published reports, which was lower than 50%. The combined evidence from both programmes point towards a rationale for complex systemic interventions within wards to reduce coercive measures.

4.4. Implications

This review has identified that research on interventions to improve practice and outcomes of involuntary psychiatric treatment is scarce and heterogeneous. However, potential benefits of available approaches are suggested.

Hospital-based psychotherapies and changes in practice may be able to reduce incidents and improve experience of care.

Structured patient-centred care planning could have longer lasting effects and reduce the likelihood of these patients relapsing and being involuntarily readmitted.

Although the current early state of the evidence means that no definitive conclusions can be made on how to change practice, these findings are promising avenues for interventions and research to build on. Steps should be taken to ensure patients who are treated involuntarily have the option to take part in research, and guidelines should be created on how to facilitate the involvement of involuntary patients in research. This is consistent with the protocol that came out of the United Nations’ Convention on disability, which asserts that people should not be excluded from research based on disability [2]. This review provides further support to this and shows that it is possible to study interventions for involuntary inpatients using robust and rigorous research methods.

Challenges faced in the previous studies included significant differences at baseline between intervention and control groups [38]; contamination due to failure to administer the intervention as planned; and difficulties in following patients up, leading to high drop-out rates, leaving studies underpowered [23,30]. These problems should be addressed in future studies. These studies should include robust randomisation strategies and high quality

training and supervision for those delivering the interventions. Ideally, studies should be powered and resourced to assess not only service outcomes but also patient-reported outcomes.

New interventions should build on the promise showed by the identified approaches. Based on the preliminary results collected, different types of intervention may be required depending on the area of care that needs to be improved. For example helpful strategies to reduce violent incidents in hospital may require different approaches than those that may be used for improving long-term clinical outcomes. The increasing availability of routinely collected data may help to reduce challenges related to recruitment and retention and to test these interventions in wider and more generalisable samples of patients from this population.

Authors’ contribution

DG, MC, TM and SP designed the review protocol. MC, EB and TM carried out screening and analysis of included papers. DG and SP were called as adjudicators in case of disagreements. DG and MC drafted the paper. TM, EB and SP provided their revisions for important intellectual content. All authors approved the final version of the manuscript.

Declaration of interest

The authors do not have any conflict of interest in relation to this paper.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.eurpsy.2018.07.005>.

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