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Interventions to improve coordinated care outcomes after psychiatric hospitalization in the United States: A component taxonomy and systematic review

Ashley G Kimbrough
Towson Therapy Group
Hannah C Smith
University of Maryland School of Medicine
Matthew L Gordon
Loyola University Maryland
Corinne N Kacmarek
corinne.kacmarek2@va.gov

VA Capitol Health Care Network

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Abstract

Interventions designed to coordinate the transition from psychiatric hospitalization back into the community can mitigate adverse outcomes, but it is unclear which intervention components can optimize post-discharge recovery outcomes. Individuals discharged from psychiatric hospitals in the United States (US) encounter unique barriers, such as a fragmented health care system and shortage of mental health providers. Evaluating specific components of coordinated care interventions, and their clinical impact, is needed to determine how treatment resources can be used most effectively to overcome care barriers unique to the US. We identified randomized controlled trials of care coordination interventions for US individuals at high risk of psychiatric hospitalization from inception through November 2024, rigorously categorized interventions for 18 distinct components, and narratively synthesized the impact of intervention components on four primary outcomes: rates of psychiatric rehospitalization and changes in symptoms, functioning, and quality of life. Of 2,491 articles, 21 met the inclusion criteria and encompassed 17 intervention programs. Interventions lasted an average of 11.3 months and took place in large cities on the Eastern and Western US coasts. Most studies had some bias concerns. The most common intervention components were maintaining clinical contact over time (n = 16, 76%), coordinating non-housing services (n = 15, 71%), and providing psychoeducation (n = 10, 48%). The average number of components used per study was 5.2 (SD = 3.0, range = 1 – 11). Psychiatric rehospitalization was the most common outcome (n = 11; 52%). 80% (*n* = 4/5) of studies demonstrated improved symptoms, 40% (2/5) showed improved quality of life, 50% showed improved functioning (2/4), and 36% (4/11) showed lower psychiatric rehospitalization rates compared to the control group after treatment completion. There was not an intervention component that favored the treatment group for all four primary outcomes. Due to the breadth of intervention components and outcomes, most outcome x intervention component interactions were represented by a single study, which made it challenging to identify superior intervention components. Some conclusions mirrored those from other systematic reviews that included studies from multiple countries despite this review being restricted to studies conducted in the US. Direct comparisons of intervention components and outcomes between countries are needed to determine whether local culture and health policy landscape moderate clinical impact.

Introduction

The period following discharge from psychiatric hospitalization is a critical juncture that can influence the trajectory of a patient's recovery. A lack of care coordination can impede community reintegration and lead to adverse outcomes such as suicide risk, return to substance use, homelessness, and criminal justice involvement (Ilgen et al., 2008; Olfson et al., 2016; Smith et al., 2020). Barriers on the patient, provider, and community level can impede this post-discharge transition process. Barriers include residual mental health symptoms, poverty, interpersonal difficulties, and stigma (Gerson & Rose, 2012; Mutschler et al., 2019). In the United States (US), low integration of health care services serves as an additional barrier (Tikkanen et al., 2020).

In high-income countries, several interventions have been developed to address these barriers and improve recovery outcomes for individuals recently discharged from psychiatric hospitalization or with high hospitalization rates. For example, Assertive Community Treatment (ACT) is designed to reduce psychiatric hospital admissions, enhance quality of life, and improve social functioning using an intensive, team-based approach that delivers and coordinates various social services (Marshall & Lockwood, 1998). There is also Critical Time Intervention (CTI), which is a manualized, nine-month intervention that is designed to bolster connections to social services and stable housing (Herman et al., 2007; Herman & Mandiberg, 2010). Case management is another approach and often involves connecting individuals to basic necessities (e.g., housing and food), social programs (e.g., educational and vocational rehabilitation programs), and health services (e.g., medication management, therapy) (Hornstra et al., 1993).

The impact of care coordination interventions on post-psychiatric discharge outcomes is dependent upon the specific interventions, comparators, and outcomes being measured. For example, a meta-analysis by Marshall & Lockwood (1998) showed that ACT reduced psychiatric hospital rehospitalization and length of stay, and improved contact with social services after discharge, but did not improve social and psychological functioning compared to standard outpatient treatment. Also, patients who received ACT spent fewer days in the hospital than patients who received case management (Marshall & Lockwood, 1998). Another meta-analysis found that case management was not more effective than control interventions at reducing psychiatric rehospitalization, but, as in other reviews, meta-analyzed outcomes were limited due to outcome heterogeneity across studies (Hegedüs et al., 2019).

Up to 69 outcomes have been identified in systematic reviews of coordinated care interventions, such as health services utilization (e.g., rates of psychiatric readmission or length of hospital stay), changes in symptoms or functioning, connection with housing, or patient satisfaction with the intervention (Hegedüs et al., 2019; Tyler et al., 2019). Further, many coordinated care interventions lack a theory of change and clear intervention objective, which can make it difficult to draw valid conclusions about intervention effectiveness (Tyler et al., 2019). Given that many coordinated care interventions, including ACT, contain multiple intervention components, such as multidisciplinary teams, direct provision of services, and coordination with other social services, it is critical to identify whether certain intervention components are better than others at optimizing post-discharge outcomes so that treatment resources can be used most effectively in the post-discharge period.

Comparing intervention components from studies across countries with different health policies and treatment accessibility could also muddy the impact of intervention components on treatment outcomes. The system of care in the US is unique relative to other countries, with private (vs. state) providers being the predominant care deliverers, and private insurance being the primary payor (Keisler-Starkey & Bunch, 2022; Maioni, 1998). Care availability, quality, and out-of-pocket costs depend on insurance coverage, with insured individuals reporting better health care access and quality than uninsured individuals, and access to specialty care depending on payor type (Nguyen & Sommers, 2016; Wray et al., 2021). The US also has a shortage of psychologists and psychiatrists relative to 10 other

high-income countries (Tikkanen et al., 2020). Given these differences, coordinated care interventions delivered in high-income countries with a single payor health care system may not be as feasible or effective in the US, where interventions may need to accommodate greater gaps in health care infrastructure. The purpose of this review was to rigorously categorize components of coordinated care interventions delivered in the US and summarize their impact on clinical outcomes for individuals recently discharged from a psychiatric hospital or with a history of psychiatric hospitalizations.

Methods

Inclusion criteria

The systematic review was developed in accordance with the PRISMA statement for systematic review protocols (Page et al., 2021). This review was registered in PROSPERO (#CRD42024623063). Systematic reviews, protocol papers, and conference abstracts were not considered for inclusion. We did not apply date restrictions.

Participants

We included studies conducted in the US with adult (18+) populations that were psychiatric inpatients during study enrollment, or that required a history of psychiatric hospitalization for inclusion in the study. We did not include studies that exclusively recruited eating disorder, substance use disorder, neurocognitively impaired, developmentally disabled, homeless, or forensic populations.

Intervention

Interventions delivered by a healthcare provider to a patient or their family were considered for inclusion. We defined a health care provider as someone working in a medical setting who received foundational training in mental health care delivery. This included licensed independent providers (i.e., people with a professional degree in their health care field who are licensed by local boards of clinical practice), students in a graduate education program focused on mental health or medicine (e.g., masters or doctoral-level psychology, nursing, or physician programs), and paraprofessionals employed by a mental health organization who are trained to provide clinical services to psychiatric populations. We included interventions that started during or after an inpatient psychiatric hospital stay and were described as aiming to reduce psychiatric readmission or coordinate the transition to the community. Studies that only delivered medication or medical procedures during the discharge period and studies that delivered interventions exclusively during psychiatric hospitalization were excluded. See Fig. 1 (PRISMA diagram) for a complete list of exclusion criteria.

Comparator

Only randomized controlled trials (RCTs) with at least one comparison group were considered for inclusion.

Outcomes

We considered outcomes for all studies that met the inclusion criteria that were compared between the treatment and control groups after intervention completion. Primary outcomes for this review were psychiatric rehospitalization, symptoms, functioning, and quality of life. We report outcomes from the longest follow-up period in each study to highlight sustained impact.

Intervention components

Intervention components were derived from a review of seminal articles describing components of case management (Holloway, 1991; Lim et al., 2022; Marshall & Lockwood, 1998), ACT (Marshall & Lockwood, 1998; McGrew et al., 1994; Olfson, 1990; Scott & Dixon, 1995), and CTI (Baumgartner & Herman, 2012), particularly components that differentiated between such interventions. Intervention components also included other mental health interventions like psychotherapy and medication management (Hegedüs et al., 2019; Tyler et al., 2019; Vigod et al., 2013). A total of 18 intervention components were identified: starting inpatient, providing home-based visits, delivering psychotherapy, prescribing medication, providing psychoeducation or health coaching, working with a peer support specialist, assessing a patient's needs, developing a care plan, connecting patients with housing services, connecting patients with non-housing services, monitoring care quality, maintaining patient contact over time, delivering care as part of a multidisciplinary team, having a low staff-to-client ratio, using assertive outreach to communicate with patients, monitoring medication adherence (by non-prescribers only), being available 24/7 for patients, and providing social or familial support.

Intervention components by outcome

For each intervention component, we divided the number of studies evaluating that outcome that favored the intervention group by the total number of studies evaluating that outcome at longest follow-up. Studies that did not evaluate an outcome were marked as not applicable and, thus, not included in outcome calculations for intervention components. For example, if two studies began inpatient (intervention component) and both evaluated symptom change (outcome) over time, but only one favored the treatment group for symptoms, that would be calculated as 50% of the studies that began inpatient favored symptoms. If just one study evaluated quality of life, which favored the treatment condition, that would be calculated as 100% of the studies that began inpatient favored quality of life.

Search strategy

We conducted a preliminary search of PubMed, the Cochrane Database of Systematic Reviews, and PROSPERO on October 11, 2024, for systematic reviews on interventions to improve transition and discharge outcomes for psychiatric inpatients. This search yielded four published reviews and 0 registered reviews in preparation. Tyler et al. (2019) categorized the objectives and outcomes of interventions delivered during psychiatric hospitalization to facilitate discharge planning. Hegedus et al. (2019) conducted a meta-analysis of case management on psychiatric readmission rates for recently discharged psychiatric inpatients and excluded interventions that initiated contact after discharge. Vigod and colleagues (2013) compared psychiatric rehospitalization rates for psychiatric inpatients from interventions delivered before discharge, after discharge, or with components that bridged the discharge transition. Finally, (Ojo et al., 2024) examined the role of family medicine providers on community care transitions for psychiatric inpatients. Our review differs from these by including currently and formerly hospitalized patients, including coordinated care interventions delivered before and after discharge, categorizing intervention components, and restricting studies to those conducted in the US, which will enable conclusions that are most relevant to the US health care system.

We conducted an initial search of PubMed to identify eligible articles and refine the inclusion and exclusion criteria. The syntax was iteratively refined using keywords in the title and abstract of articles previously identified as having met the inclusion criteria. After finalizing the inclusion and exclusion criteria, the final syntax was entered into PubMed, Ovid MedLine, PsycINFO, and CINAHL. We used the Systematic Review Accelerator's Polyglot Search Translator to accommodate the syntax language of other databases (Clark et al., 2020). We searched for studies from inception through November 22, 2024. Using Boolean logic, we searched for the following combinations of keywords in titles and abstracts: ((mental[Title/Abstract]) OR (psychiatric[Title/Abstract])) AND ((peer[title/abstract]) or (case management[title/abstract) or (intervention[Title/Abstract]) OR (treatment[Title/Abstract])) AND (hospita*[Title/Abstract]) AND ((transitio*[Title/Abstract]) OR (discharg*[Title/Abstract]) OR (readmission[Title/Abstract]) OR (rehospital*[Title/Abstract]) or (functio*[Title/Abstract])) AND (random*[Title/Abstract]). We also searched the reference lists of included studies.

The titles and abstracts of articles identified through the search were uploaded into Rayyan, a systematic review management platform (Ouzzani et al., 2016). Duplicates were removed using Rayyan's automatic duplicate detection based on digital object identifier, article title, and article records with over 95% similarity. [masked] and [masked] blindly and independently screened titles and abstracts, and [masked], [masked], and [masked] independently screened the full text of articles that passed initial screening. Discrepancies were resolved through discussion until consensus was reached.

Data extraction and synthesis

[masked] and [masked] independently extracted and consolidated the following data from included studies into a Microsoft Word table: author, location, sample size and population, intervention type, intervention health care provider, intervention length, comparator, and main findings (Table 1). Given the anticipated heterogeneity in outcomes based on prior reviews (Hegedüs et al., 2019; Tyler et al., 2019;

Vigod et al., 2013), we planned to summarize findings based on guidelines for synthesis without meta-analysis (SWiM) (Campbell et al., 2020).

Among the included articles, [masked] and [masked] independently reviewed each article and coded all applicable intervention components. [masked] and [masked] then independently reviewed the articles with discrepant coding between [masked] and [masked]. Coding was discussed amongst reviewers until a consensus of intervention components for each study was achieved. Intervention component definitions and sources are in Supplement 1.

Risk of bias

[masked] evaluated each study's risk of bias using the Risk of Bias-2 (RoB-2) tool for randomized controlled studies (Higgins et al., 2019).

Results

Data sources

The electronic database search identified 2,491 articles. After removing duplicates, 1,300 titles and abstracts were screened, of which 1,155 were excluded, leaving 145 articles for full-text review. Of these 145, the most common reasons for exclusion were not being conducted in the US (n = 61), no adult population with a current or history of psychiatric hospitalization (n = 28), and technology-based interventions that were not delivered by a health care provider (n = 15). Twenty-one articles met the inclusion criteria. See Figure 1 for PRISMA diagram.

Risk of bias

Of the 21 studies that met inclusion criteria, two (10%) were at low risk of bias (Britton et al., 2019; Celano et al., 2017), 13 (61%) had some concerns (Bauer et al., 2006; Baumgartner & Herman, 2012; Bond et al., 1990; J. Curtis, 1996; J. L. Curtis et al., 1992; D'Ercole, 1997; Hanrahan et al., 2014; Herman et al., 2011; Lee et al., 2020; Primack et al., 2022; Sledge et al., 2011; Tomita & Herman, 2012, 2015), and six (29%) were at high risk of bias (Dixon et al., 2009; Franklin et al., 1987; Gaudiano et al., 2023; Havassy et al., 2000; Riblet et al., 2021; Tomita et al., 2014). Most studies had insufficient information about *a priori* data analysis plans, randomization procedures, and handling missing outcome data. Risk of bias evaluations for each study are presented in Table 2.

Population characteristics

In the 21 included studies, the sample size ranged from 19 to 435 participants, with a mean of 172.81 (SD = 199.97). A third (33%; n = 7) of studies included patients with any serious mental illness (e.g., personality disorder, schizophrenia, bipolar disorder), 38% (n = 8) only included psychotic disorders, 24%

(n = 5) only included patients with suicidal ideation, and 5% (n = 1) only included bipolar disorder. Fourteen studies (67%) included patients with current or lifetime substance use, but inconsistencies in reporting across studies (current vs. past substance use, use vs. abuse vs. dependence) made it difficult to quantify average substance use representation. Studies were most often conducted in New York (n = 9, 43%), followed by undisclosed locations (n = 7, 33%). The remainder took place on the Eastern and Western US coasts (n = 5; 24%), with specific cities not identified.

Study characteristics

Setting and length

Among the 21 studies, there were 17 unique interventions[1]. On average, interventions lasted 11.3 months (Mdn = 7.5, SD = 12.83, range = 1 to 52 months). Of the 21 included studies, authors most frequently described the delivered intervention as “case management” (33%, n = 7) (Bauer et al., 2006; J. Curtis, 1996; J. L. Curtis et al., 1992; D’Ercole, 1997; Franklin et al., 1987; Hanrahan et al., 2014; Havassy et al., 2000). The same “intensive outreach case management” intervention was evaluated by two studies (Curtis et al., 1992, 1996). Curtis et al., 1996 did not include the “case management” control condition from Curtis et al., 1992 in outcome analyses. Also, one of the control groups in Curtis et al., 1992 (non-intensive “case management”) was the experimental condition in D’Ercole et al., 1997.

Psychotherapy was the second most common intervention (n = 6; 29%)(Britton et al., 2019; Celano et al., 2017; Gaudiano et al., 2023; Lee et al., 2020; Primack et al., 2022; Riblet et al., 2021). Psychotherapy lasted one to six months and included one to seven therapy sessions along with follow-up telephone contacts. Psychotherapeutic approaches included motivational interviewing (Britton et al., 2019), positive psychology (Celano et al., 2017), acceptance and commitment therapy (Gaudiano et al., 2023), cognitive behavioral therapy (Lee et al., 2020), and suicide prevention tailored to the military population (Primack et al., 2022; Riblet et al., 2021).

Authors described evaluating CTI in six studies (29%)(Baumgartner & Herman, 2012; Dixon et al., 2009; Herman et al., 2011; Tomita et al., 2014; Tomita & Herman, 2012, 2015). Four of the studies that evaluated CTI utilized the same sample but analyzed different outcomes (Herman et al., 2011; Tomita et al., 2014; Tomita & Herman, 2012, 2015). One study (Dixon et al., 2009) evaluated a brief version of CTI delivered over three instead of nine months. One study (5%) described delivering ACT (Bond et al., 1990) and one study (5%) described providing peer support, where individuals in recovery from a major mental illness were supervised and trained to use their personal experiences to support others in recovery (Sledge et al., 2011).

Comparator

Fourteen of the 21 studies (67%) used treatment as usual as their comparator, which typically included a referral to outpatient services, medication management, and a post-discharge safety plan for interventions initiated during psychiatric hospitalization (Bauer et al., 2006; Baumgartner & Herman, 2012; Britton et al., 2019; J. Curtis, 1996; J. L.; D'Ercole, 1997; Dixon et al., 2009; Franklin et al., 1987; Herman et al., 2011; Lee et al., 2020; Riblet et al., 2021; Sledge et al., 2011; Tomita et al., 2014; Tomita & Herman, 2012, 2015). Seven studies (33%) used an active control (Bond et al., 1990; Celano et al., 2017; Curtis et al., 1992; Gaudiano et al., 2023; Hanrahan et al., 2014; Havassy et al., 2000; Primack et al., 2022).

Outcomes

Across all studies, there were 25 outcomes that were compared between intervention and comparator conditions after intervention completion. The primary outcomes for this review were symptoms, quality of life, functioning, and psychiatric rehospitalization. Five (24%) examined symptom reduction (Bauer et al., 2006; Bond et al., 1990; Celano et al., 2017; Gaudiano et al., 2023; Riblet et al., 2021), five (24%) examined quality of life (Bauer et al., 2006; Bond et al., 1990; Gaudiano et al., 2023; Hanrahan et al., 2014; Havassy et al., 2000), four (19%) examined functioning (Bauer et al., 2006; Baumgartner & Herman, 2012; Bond et al., 1990; Gaudiano et al., 2023), and eleven (52%) examined psychiatric rehospitalization (Bauer et al., 2006; Bond et al., 1990; Celano et al., 2017; J. L. Curtis et al., 1992; D'Ercole, 1997; Franklin et al., 1987; Gaudiano et al., 2023; Hanrahan et al., 2014; Primack et al., 2022; Sledge et al., 2011; Tomita & Herman, 2012),.

Other outcomes included satisfaction with legal issues (Dixon et al., 2009), legal involvement (Bond et al., 1990; Dixon et al., 2009)[2], days spent in a psychiatric hospital (Bond et al., 1990; D'Ercole, 1997; Franklin et al., 1987; Sledge et al., 2011; Tomita & Herman, 2012), suicidal ideation (Britton et al., 2019; Celano et al., 2017; Lee et al., 2020; Primack et al., 2022), suicide attempts (Celano et al., 2017; Lee et al., 2020; Primack et al., 2022), housing stability (Bond et al., 1990; Franklin et al., 1987; Herman et al., 2011), positive cognition (Celano et al., 2017; Gaudiano et al., 2023), self-injury (Celano et al., 2017), death (J. Curtis, 1996), health care service utilization (J. L. Curtis et al., 1992; Franklin et al., 1987; Havassy et al., 2000), days between discharge and an outpatient visit (Dixon et al., 2009), number of scheduled outpatient visits (Dixon et al., 2009), continuity of care (Dixon et al., 2009; Tomita & Herman, 2015), medical hospitalization (Hanrahan et al., 2014), medical or psychiatric hospitalization (Bauer et al., 2006), time until any hospitalization (Gaudiano et al., 2023), social contact (Dixon et al., 2009), distress (Gaudiano et al., 2023; Havassy et al., 2000), psychiatric emergency room visits (Havassy et al., 2000), substance use (Havassy et al., 2000), and quality of family relationships (Tomita et al., 2014). Many studies assessed multiple outcomes.

Intervention components

Table 3 lists the operational definition and source of the 18 a priori components included in the intervention component taxonomy. The most common intervention component was maintaining patient contact, which was present in 76% (n = 16) of studies, followed by coordinating non-housing services (n = 15, 71%) and providing home-based visits (n = 11, 52%). The least common intervention components were assertive outreach (5%; n = 1), 24/7 availability (5%; n = 1), peer support (5%; n = 1), and low staff-to-client ratio (5%; n = 1). The average number of components used per study was 5.2 (SD = 3.0, range = 1 – 11).

Outcome by intervention component

Figure 2 shows the proportion of studies that favored the treatment group, by intervention component, for the four a priori outcomes of interest: psychiatric rehospitalization, symptoms, quality of life, and functioning. Table 4 shows the proportion of studies that favored each outcome for each intervention component.

Symptoms

Of the five studies that evaluated symptom reduction, four (80%) favored the intervention (Bauer et al., 2006; Bond et al., 1990; Celano et al., 2017; Riblet et al., 2021). Both Bond and Bauer had some concerns of bias, Celano was at low risk of bias, and Riblet was at high risk of bias. The following intervention components favored the intervention group for 100% of studies evaluating symptoms: home-based visits (1/1 studies; Bond et al,. 1990), prescribe medication (1/1; Bauer et al., 2006), psychoeducation or health coaching (2/2; Bauer et al., 2006; Riblet et al., 2021), assess person's needs (2/2; Bond et al, 1990; Riblet et al., 2021), develop a care plan (1/1; Bond et al., 1990), coordinate non-housing services (2/2; Bauer et al., 2006; Bond et al., 1990), maintain contact (3/3; Bauer et al., 2006; Bond et al., 1990, Riblet et al., 2021), multidisciplinary teams (1/1; Bauer et al., 2006), low staff-to-client ratio (1/1; Bond et al., 1990), assertive patient outreach (1/1; Bond et al., 1990), and medication monitoring (1/1; Bond et al., 1990). Celano et al., (2017) delivered psychotherapy only.

Quality of Life

Five studies evaluated quality of life and two of these (40%) favored the intervention (Bauer et al., 2006; Hanrahan et al., 2014). Both studies had some bias concerns. Both studies favored the intervention group for the components: prescribe medication (2/2; Bauer et al., 2006; Hanrahan et al., 2014), psychoeducation or health coaching (2/2; Bauer et al., 2006; Hanrahan et al., 2014), monitor quality of care (1/1; Hanrahan et al., 2014), multidisciplinary teams (1/1; Bauer et al., 2006), and 24/7 availability (1/1; Hanrahan et al., 2014).

Functioning

Four studies evaluated functioning as an outcome, with two (50%) favoring the intervention (Bauer et al., 2006; Bond et al., 1990). Both had some bias concerns. The studies favored the intervention group for prescribe medication (1/1; Bauer et al., 2006), assess a person's needs (1/1; Bond et al., 1990), develop a care plan (1/1; Bond et al., 1990), multidisciplinary teams (1/1; Bauer et al., 2006), low staff-to-client ratio (1/1; Bond et al., 1990), assertive outreach (1/1; Bond et al., 1990), and medication monitoring (1/1; Bond et al., 1990).

Psychiatric rehospitalization

Of the 11 studies that evaluated psychiatric rehospitalization as an outcome, four (36%) favored the intervention over the control condition (Bond et al., 1990; Gaudiano et al., 2023; Sledge et al., 2011; Tomita & Herman, 2012). Bond, Sledge, and Tomita & Herman had some bias concerns and Gaudiano was at high risk of bias. The following intervention components favored the intervention group for all studies using that component: peer support (1/1; Sledge et al,. 2011), low staff-to-client ratio (1/1; Bond et al., 1990), assertive outreach (1/1; Bond et al., 1990), and medication monitoring (1/1; Bond et al., 1990). Gaudiano et al., (2023) began inpatient and used psychotherapy. Tomita & Herman (2012) began inpatient and utilized home-based visits, psychoeducation or health coaching, coordinate non-housing services, monitor care quality, maintain contact, and social/familial support.

[1] 21 is the denominator of all ratios describing study characteristics and outcomes by intervention component.

[2] Legal issues and satisfaction with legal services were collapsed into one "legal outcomes" variable for analysis.

Discussion

This review provided a component taxonomy of care coordination interventions delivered in the United States and summarized the clinical impact of these components. Across 21 studies, 17 intervention programs used 18 different intervention components and compared 25 outcomes between treatment and control groups. Due to the breadth of both intervention components and outcomes, it was challenging to identify intervention components associated with reduced psychiatric rehospitalization and improved symptoms, functioning, and quality of life since most intervention component and outcome combinations were represented by a single study. We provide recommendations for future care coordination research to improve the clinical utility of findings.

Intervention characteristics and outcomes

Of the 11 studies that evaluated psychiatric rehospitalization as an outcome, just four observed a reduction in psychiatric rehospitalization in the treatment group: one used CTI (Tomita & Herman, 2012), one used ACT (Bond et al., 1990), one used acceptance and commitment therapy (Gaudiano et al., 2023), and one used peer support (Sledge et al., 2011). The number of intervention components in these studies ranged from 2–9, so the type of intervention components may matter more than the number of different components utilized to reduce rates of psychiatric rehospitalization. There was not an intervention component shared by all four studies. Maintaining contact was used by all studies except Gaudiano et al., 2023. CTI and ACT studies both used home-based visits, coordinated non-housing services, and maintained contact with patients over time, along with others that did not overlap between the two studies.

The impact of peer support and acceptance and commitment therapy on reducing psychiatric rehospitalization is less expected given that these interventions did not involve frequent patient-provider contact or resource support, as was customary with CTI and ACT: Sledge et al. (2011) used two components (peer support and maintain contact) and Gaudiano et al. (2023) used two components (began inpatient and acceptance and commitment therapy). In prior research, peer support has not been shown to be superior to treatment as usual for reducing psychiatric hospitalization (Gillard et al., 2022).

About half of included studies started inpatient, and this intervention component did not frequently favor the treatment group across a myriad of outcomes. The ideal initiation of coordinated care interventions is unclear and may matter less than intervention components combined with discharge planning, like medication management or coordinating with community providers (Vigod et al., 2013). Of note, interventions that start inpatient and include discharge planning have been associated with reduced psychiatric rehospitalization (Durbin et al., 2007; Owusu et al., 2022; Xiao et al., 2019). Discharge planning delivered exclusively during the inpatient stay or with follow-up (typically up to three months, if at all) has been shown to reduce the risk of psychiatric readmission by 35% relative to control groups (Steffen et al., 2009).

Discharge planning was not an intervention we coded for in this review because it has not considered a core component of case management and related interventions (Holloway, 1991; Lim et al., 2022; Marshall & Lockwood, 1998) like ACT (Marshall & Lockwood, 1998; McGrew et al., 1994; Olfson, 1990; Scott & Dixon, 1995) and CTI (Baumgartner & Herman, 2012). However, discharge planning may more effectively identify and problem-solve social and environmental barriers to post-discharge transitions than intervention components that tend to comprise these aforementioned interventions. We excluded 12 studies delivered exclusively during psychiatric hospitalization due to our pre-registered decision to exclude such interventions. Three included studies developed a care plan, but only one planned for discharge while hospitalized and did not evaluate rates of psychiatric hospitalization (Dixon et al., 2009). Finding ways to develop the care plan before hospital discharge may reduce the likelihood of later psychiatric rehospitalization when combined with other elements of case management.

Prescribing medication favored three of four outcomes of interest: symptoms, quality of life, and functioning, but not psychiatric rehospitalization; and monitoring medication adherence favored symptoms, functioning, and psychiatric rehospitalization, but not quality of life. These findings are consistent with literature highlighting the importance of medication counseling, reconciliation, and adherence on psychiatric rehospitalization (Durbin et al., 2007; Owusu et al., 2022; Vigod et al., 2013). In this review, medication monitoring was done exclusively by non-prescribers because prescribers were not part of the treatment teams. Having prescribers and non-prescribers on treatment teams could enhance patient contact and reinforce the importance of medication, thus improving clinical outcomes. Four studies included in this review used a multidisciplinary treatment team and all administered medication, but did not describe having non-prescribers monitor medication side effects or adherence; and all found that rates of psychiatric rehospitalization were not lower for the intervention compared to control groups (Bauer et al., 2006; J. Curtis, 1996; J. L. Curtis et al., 1992; D'Ercole, 1997). Having multiple providers monitor medication adherence and experiences could maximize psychopharmacological benefit beyond prescribing alone.

Studies conducted in the US were the focus of this review. Despite major differences in health care infrastructure between the US and other high-income Western countries, some findings from this review mirrored those from reviews that included studies across the globe (though most studies from these reviews were conducted in high-income Western countries). For example, we identified a myriad of outcomes across included studies; symptom improvement was the most common outcome that favored the intervention group; many interventions did not favor the treatment group for reducing psychiatric hospitalization; and specific intervention components like medication monitoring, developing a care plan, maintaining contact over time, and home-based visits were associated with reduced psychiatric rehospitalization and symptom improvement (Hegedüs et al., 2019; Tyler et al., 2019; Vigod et al., 2013). Associated cultural similarities between the US and other high-income Western countries may be more consequential to the impact of coordinated care interventions than differences in payor, possibly because those with a serious mental illness in the US are more likely to have lower incomes, be disabled, and be insured by the state (Keisler-Starkey & Bunch, 2022). This could lead to treatment patterns and social service access that more closely mirror those in countries with single-payor health care systems, such as access to integrated care, mental health treatment specialists, and other social benefits (Tikkanen et al., 2020).

Interventions designed to reduce psychiatric rehospitalization may nevertheless benefit from addressing location-specific environmental factors that are associated with rehospitalization. In a review of post-discharge predictors of psychiatric rehospitalization, 64% of articles addressing patient factors significantly reduced rehospitalization, but 100% of articles evaluating environmental and social factors reduced rehospitalization (Sfetcu et al., 2017). Predictors of psychiatric rehospitalization, specifically, have been well-studied, but most interventions do not address multilevel components that reduce readmission rates. Other environmental factors associated with reduced psychiatric rehospitalization include geographic factors like proximity to a hospital and higher average educational attainment (Sfetcu et al., 2017). Similarly, patients attribute poverty and stigma to challenges in the post-discharge

transition (Mutschler et al., 2019). Patients have identified that social support and engagement in meaningful activities help improve community reintegration following psychiatric hospital discharge (Mutschler et al., 2019). Eight studies included in this review provided social and familial support. Three of these evaluated psychiatric rehospitalization, but only one reduced psychiatric rehospitalization compared to the control group (Tomita and Herman, 2012).

In other reviews, intervention components associated with reduced rehospitalization addressed issues on a person, as opposed to environmental, level, such as bridging communication between inpatient and outpatient providers, discharge planning support, and supporting medication adherence (Durbin et al., 2007; Owusu et al., 2022; Vigod et al., 2013). We identified similar intervention components in several studies included in this review: coordinating housing and non-housing services, developing a care plan, prescribing medication, and monitoring medication; however, only CTI (Tomita & Herman, 2012), which coordinated non-housing services, and ACT (Bond et al., 1990), which developed a care plan and monitored medication adherence, favored the treatment group for reducing psychiatric rehospitalization. It could be that coordination between inpatient and outpatient health care providers is uniquely beneficial compared to coordination between the interventionist and other services, like housing support or food assistance. Additionally, the timing of this coordination and planning may be more effective at reducing hospitalization if delivered before discharge, as was the case in the CTI intervention (Herman et al., 2011; Tomita et al., 2014; Tomita & Herman, 2012, 2015).

The combination of intervention components, timing of delivery (inpatient vs. outpatient), and alignment between intervention components and objectives may interact to influence an intervention's impact on psychiatric rehospitalization (Tyler et al., 2019). Evaluating intervention components and setting-specific environmental factors in future research may help determine moderators of intervention effectiveness on rates of psychiatric rehospitalization (Durbin et al., 2007).

Limitations

We did not conduct a meta-analysis or certainty assessment, which can limit conclusions about the strength of the evidence for or against different types of interventions for specific outcomes. Also, we did not compare interventions conducted in the US to interventions conducted in other countries, so we cannot draw conclusions about the moderating impact of country on coordinated care effectiveness. In addition, our risk of bias assessment was completed by just one individual; having two risk of bias assessors could improve the reliability of this measure.

Recommendations

In order for future studies to meaningfully evaluate coordinated care interventions, it will be necessary to clearly specify the intervention components and evaluate fidelity to these components, and align outcomes with stated intervention aims (Gaynes et al., 2015). Additionally, though most patient samples in this review included patients with substance use, the interventions did not explicitly address substance use, which could have diminished the positive impact of care coordination interventions.

Substance use is also associated with psychiatric rehospitalization, poor quality of life, and functional impairment, and rates of dual diagnosis with mental health conditions are high (American Psychiatric Association, 2022). Evidence-based interventions, such as cognitive behavioral therapy and pharmacotherapy for substance use disorders, can and should be incorporated into care coordination interventions to maximize clinical benefit for this subpopulation.

It is important to consider intervention change mechanisms (e.g., knowledge) and evaluation plans in the context of the local culture. For example, one review found that knowledge-based interventions improved knowledge of mental health and reduced psychiatric rehospitalization and were most common in Asian countries; interventions delivered in Asian countries also had better outcomes than interventions delivered in the US and United Kingdom, potentially suggesting a better intervention-culture match (Tyler et al., 2019). Studies in this US-focused review that included a knowledge-based intervention (i.e., psychoeducation) also had a positive impact on several outcomes, including symptoms, quality of life, and various types of health service utilization, but not psychiatric rehospitalization. Evaluating alignment between culture, intervention components, and outcomes can help determine whether interventions that appear ineffective for certain outcomes could, instead, be mismatched with certain environments and benefit from tailoring. For example, interventions that connect patients with community resources could be particularly impactful in the US, where individuals tend to have more unmet social needs than individuals in other high-income Western countries (Tikkanen et al., 2020). Such interventions could be less impactful if the care coordination is insufficient to address structural issues that limit access to services, such as a limited supply of psychiatrists (Tikkanen et al., 2020).

Among the included studies, nearly half did not report their location, and, of those that did, they were mostly restricted to metropolitan areas in California and New York. There are substantial differences in health care access across the continental US, with rural and southern areas experiencing the lowest health care quality and greater barriers to health care access (Kaboli et al., 2026; Miller & Vasan, 2021; Zahnd et al., 2025). Thus, future intervention research should provide at least the region and rurality in which interventions are embedded to better contextualize clinical findings. Direct comparisons of intervention components and outcomes between countries are needed to determine how much culture and health policy landscape moderate clinical impact for different intervention components. Further, exploring patient perspectives about their main unmet needs after psychiatric hospitalization could inform decisions about outcomes that could provide meaningful information about what effective coordinated care looks like.

Conclusions

Care coordination interventions in the US may need to better address environmental factors like proximity to hospitals, access to social services, health care policy (e.g., inpatient discharge planning processes), and culture (e.g., stigma), which vary by region and rurality, to improve care coordination after hospitalization. Improving the identification of discrete intervention components in clinical trials and reporting important social moderators of treatment effectiveness, such as city, state, and level of

rurality, can improve our understanding of intervention components likely to produce the greatest clinical impact within their social context.

Declarations

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declaration

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Author Contribution

AGK conceptualized the review, registered the protocol, co-analyzed data, and wrote the initial draft; HCS extracted data, co-developed tables, and edited the manuscript; MLG extracted data and edited the manuscript; CK supervised AGK, HCS, and MLG, conducted the final database search, extracted data, co-analyzed results, co-developed tables and figures, and edited the manuscript. All authors reviewed and approved the final manuscript.

Data Availability

The data used for this study is available upon request.

References

1. American Psychiatric Association. (2022). Substance-Related and Addictive Disorders. In *Diagnostic and Statistical Manual of Mental Disorders 5th edition text revision*. American Psychiatric Association Publishing. https://doi.org/10.1176/appi.books.9780890425787.x16_Substance_Related_Disorders
2. Bauer, M. S., McBride, L., Williford, W. O., Glick, H., Kinosian, B., Altshuler, L., Beresford, T., Kilbourne, A. M., & Sajatovic, M. (2006). Collaborative Care for Bipolar Disorder: Part I. Intervention and Implementation in a Randomized Effectiveness Trial. *Psychiatric Services*, *57*(7), 927–936. https://doi.org/10.1176/ps.2006.57.7.927
3. Baumgartner, J. N., & Herman, D. B. (2012). Community Integration of Formerly Homeless Men and Women With Severe Mental Illness After Hospital Discharge. *Psychiatric Services*, *63*(5), 435–437. https://doi.org/10.1176/appi.ps.201100392
4. Bond, G. R., Witheridge, T. F., Dincin, J., Wasmer, D., Webb, J., & De Graaf-Kaser, R. (1990). Assertive community treatment for frequent users of psychiatric hospitals in a large city: A controlled study. *American Journal of Community Psychology*, *18*(6), 865–891. https://doi.org/10.1007/BF00938068

5. Britton, P. C., Conner, K. R., Chapman, B. P., & Maisto, S. A. (2019). Motivational Interviewing to Address Suicidal Ideation: A Randomized Controlled Trial in Veterans. *Suicide and Life-Threatening Behavior*, *50*(1), 233–248. https://doi.org/10.1111/sltb.12581
6. Campbell, M., McKenzie, J. E., Sowden, A., Katikireddi, S. V., Brennan, S. E., Ellis, S., Hartmann-Boyce, J., Ryan, R., Shepperd, S., Thomas, J., Welch, V., & Thomson, H. (2020). Synthesis without meta-analysis (SWiM) in systematic reviews: Reporting guideline. *The BMJ*, *368*, l6890. https://doi.org/10.1136/bmj.l6890
7. Celano, C. M., Beale, E. E., Mastromauro, C. A., Stewart, J. G., Millstein, R. A., Auerbach, R. P., Bedoya, C. A., & Huffman, J. C. (2017). Psychological interventions to reduce suicidality in high-risk patients with major depression: A randomized controlled trial. *Psychological Medicine*, *47*(5), 810–821. https://doi.org/10.1017/S0033291716002798
8. Clark, J. M., Sanders, S., Carter, M., Honeyman, D., Cleo, G., Auld, Y., Booth, D., Condron, P., Dalais, C., Bateup, S., Linthwaite, B., May, N., Munn, J., Ramsay, L., Rickett, K., Rutter, C., Smith, A., Sondergeld, P., Wallin, M., … Beller, E. (2020). Improving the translation of search strategies using the Polyglot Search Translator: A randomized controlled trial. *Journal of the Medical Library Association : JMLA*, *108*(2), 195–207. https://doi.org/10.5195/jmla.2020.834
9. Curtis, J. (1996). Deaths among former psychiatric inpatients in an outreach case management program. *Psychiatric Services*, *47*(4), 398–402. https://doi.org/10.1176/ps.47.4.398
10. Curtis, J. L., Millman, E. J., Struening, E., & D'Ercole, A. (1992). Effect of Case Management on Rehospitalization and Utilization of Ambulatory Care Services. *Psychiatric Services*, *43*(9), 895–899. https://doi.org/10.1176/ps.43.9.895
11. D'Ercole. (1997). Effects of diagnosis, demographic characteristics, and case management on rehospitalization. *Psychiatric Services*, *48*(5), 682–688. https://doi.org/10.1176/ps.48.5.682
12. Dixon, L., Goldberg, R., Iannone, V., Lucksted, A., Brown, C., Kreyenbuhl, J., Fang, L., & Potts, W. (2009). Use of a Critical Time Intervention to Promote Continuity of Care After Psychiatric Inpatient Hospitalization. *Psychiatric Services*, *60*(4), 451–458. https://doi.org/10.1176/ps.2009.60.4.451
13. Durbin, J., Lin, E., Layne, C., & Teed, M. (2007). Is Readmission a Valid Indicator of the Quality of Inpatient Psychiatric Care? *Journal of Behavioral Health Services & Research*, *34*(2), 137–150. https://doi.org/doi: 10.1007/s11414-007-9055-5
14. Franklin, J. L., Solovitz, B., Mason, M., Clemons, J. R., & Miller, G. E. (1987). An evaluation of case management. *American Journal of Public Health*, *77*(6), 674–678.
15. Gaudiano, B. A., Ellenberg, S., Johnson, J. E., Mueser, K. T., & Miller, I. W. (2023). Effectiveness of acceptance and commitment therapy for inpatients with psychosis: Implementation feasibility and acceptability from a pilot randomized controlled trial. *Schizophrenia Research*, *261*, 72–79. https://doi.org/10.1016/j.schres.2023.09.017
16. Gaynes, B. N., Brown, C., Lux, L. J., Ashok, M., Coker-Schwimmer, E., Hoffman, V., Sheitman, B., & Viswanathan, M. (2015). *Management Strategies To Reduce Psychiatric Readmissions*. Agency for Healthcare Research and Quality (US). http://www.ncbi.nlm.nih.gov/books/NBK294451/

17. Gerson, L. D., & Rose, L. E. (2012). Needs of persons with serious mental illness following discharge from inpatient treatment: Patient and family views. *Archives of Psychiatric Nursing*, *26*(4), 261–271. https://doi.org/10.1016/j.apnu.2012.02.002
18. Gillard, S., Bremner, S., Patel, A., Goldsmith, L., Marks, J., Foster, R., Morshead, R., White, S., Gibson, S. L., Healey, A., Lucock, M., Patel, S., Repper, J., Rinaldi, M., Simpson, A., Ussher, M., Worner, J., & Priebe, S. (2022). Peer support for discharge from inpatient mental health care versus care as usual in England (ENRICH): A parallel, two-group, individually randomised controlled trial. *The Lancet. Psychiatry*, *9*(2), 125–136. https://doi.org/10.1016/S2215-0366(21)00398-9
19. Hanrahan, N. P., Solomon, P., & Hurford, M. O. (2014). A Pilot Randomized Control Trial: Testing a Transitional Care Model for Acute Psychiatric Conditions. *Journal of the American Psychiatric Nurses Association*, *20*(5), 315–327. https://doi.org/10.1177/1078390314552190
20. Havassy, B. E., Shopshire, M. S., & Quigley, L. A. (2000). Effects of Substance Dependence on Outcomes of Patients in a Randomized Trial of Two Case Management Models. *Psychiatric Services*, *51*(5), 639–644. https://doi.org/10.1176/appi.ps.51.5.639
21. Hegedüs, A., Kozel, B., Richter, D., & Behrens, J. (2019). Effectiveness of Transitional Interventions in Improving Patient Outcomes and Service Use After Discharge From Psychiatric Inpatient Care: A Systematic Review and Meta-Analysis. *Frontiers in Psychiatry*, *10*, 969. https://doi.org/10.3389/fpsyt.2019.00969
22. Herman, D. B., Conover, S., Felix, A., Nakagawa, A., & Mills, D. (2007). Critical Time Intervention: An Empirically Supported Model for Preventing Homelessness in High Risk Groups. *The Journal of Primary Prevention*, *28*(3), 295–312. https://doi.org/10.1007/s10935-007-0099-3
23. Herman, D. B., Conover, S., Gorroochurn, P., Hinterland, K., Hoepner, L., & Susser, E. S. (2011). Randomized Trial of Critical Time Intervention to Prevent Homelessness After Hospital Discharge. *Psychiatric Services*, *62*(7), 713–719. https://doi.org/10.1176/ps.62.7.pss6207_0713
24. Herman, D. B., & Mandiberg, J. M. (2010). Critical Time Intervention: Model Description and Implications for the Significance of Timing in Social Work Interventions. *Research on Social Work Practice*, *20*(5), 502–508. https://doi.org/10.1177/1049731509360667
25. Higgins, J. P., Savović, J., Page, M. J., & Sterne, J. A. (2019, August 22). *Revised Cochrane risk-of-bias tool for randomized trials (RoB 2)*.
26. Holloway, F. (1991). Case Management for the Mentally Ill: Looking at the Evidence. *International Journal of Social Psychiatry*, *37*(1), 2–13. https://doi.org/10.1177/002076409103700102
27. Hornstra, R. K., Bruce-Wolfe, V., Sagduyu, K., & Riffle, D. W. (1993). The Effect of Intensive Case Management on Hospitalization of Patients With Schizophrenia. *Psychiatric Services*, *44*(9), 844–847. https://doi.org/10.1176/ps.44.9.844
28. Ilgen, M. A., Hu, K. U., Mooos, R. H., & McKellar, J. (2008). Continuing Care After Inpatient Psychiatric Treatment for Patients With Psychiatric and Substance Use Disorders. *PSYCHIATRIC SERVICES*, *59*(9).

29. Kaboli, P., Blaine, A., Mares, J., Fortney, J., Ono, S., & O'Shea, A. M. J. (2026). Health care access from the rural perspective: A narrative review. *The Journal of Rural Health*, *42*(1), e70119. https://doi.org/10.1111/jrh.70119
30. Keisler-Starkey, & Bunch, L. N. (2022). *Health Insurance Coverage in the United States: 2021* (Nos. P60-278; Current Population Reports). US Government Publishing Office.
31. Lee, D. J., Bryan, C. J., & Rudd, M. D. (2020). Longitudinal suicide ideation trajectories in a clinical trial of brief CBT for U.S. military personnel recently discharged from psychiatric hospitalization. *Psychiatry Research*, *293*, 113335. https://doi.org/10.1016/j.psychres.2020.113335
32. Lim, C. T., Caan, M. P., Kim, C. H., Chow, C. M., Leff, H. S., & Tepper, M. C. (2022). Care Management for Serious Mental Illness: A Systematic Review and Meta-Analysis. *Psychiatric Services (Washington, D.C.)*, *73*(2), 180–187. https://doi.org/10.1176/appi.ps.202000473
33. Maioni, A. (1998). *Parting at the Crossroads: The Emergence of Health Insurance in the United States and Canada*. Princeton University Press.
34. Marshall, M., & Lockwood, A. (1998). Assertive community treatment for people with severe mental disorders. *Cochrane Database of Systematic Reviews*, (2. Art. No. CD001089). https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001089/full
35. McGrew, J. H., Bond, G. R., Dietzen, L., & Salyers, M. (1994). *Measuring the Fidelity of Implementation of a Mental Health Program Model*. *62*(4), 670–678.
36. Miller, C. E., & Vasan, R. S. (2021). The southern rural health and mortality penalty: A review of regional health inequities in the United States. *Social Science & Medicine*, *268*, 113443. https://doi.org/10.1016/j.socscimed.2020.113443
37. Mutschler, C., Lichtenstein, S., Kidd, S. A., & Davidson, L. (2019). Transition Experiences Following Psychiatric Hospitalization: A systematic Review of the Literature. *Community Mental Health Journal*, *55*(8), 1255–1274. https://doi.org/10.1007/s10597-019-00413-9
38. Nguyen, K. H., & Sommers, B. D. (2016). Access and Quality of Care by Insurance Type for Low-Income Adults Before the Affordable Care Act. *American Journal of Public Health*, *106*(8), 1409–1415. https://doi.org/10.2105/AJPH.2016.303156
39. Ojo, S., Okoye, T. O., Olaniyi, S. A., Ofochukwu, V. C., Obi, M. O., Nwokolo, A. S., Okeke-Moffatt, C., Iyun, O. B., Idemudia, E. A., Obodo, O. R., Mokwenye, V. C., & Okobi, O. E. (2024). Ensuring Continuity of Care: Effective Strategies for the Post-hospitalization Transition of Psychiatric Patients in a Family Medicine Outpatient Clinic. *Cureus*. https://doi.org/10.7759/cureus.52263
40. Olfson, M. (1990). Assertive Community Treatment: An Evaluation of the Experimental Evidence. *Psychiatric Services*, *41*(6), 634–641. https://doi.org/10.1176/ps.41.6.634
41. Olfson, M., Wall, M., Wang, S., Crystal, S., Liu, S.-M., Gerhard, T., & Blanco, C. (2016). Short-term Suicide Risk After Psychiatric Hospital Discharge. *JAMA Psychiatry*, *73*(11), 1119–1126. https://doi.org/10.1001/jamapsychiatry.2016.2035
42. Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan—A web and mobile app for systematic reviews. *Systematic Reviews*, *5*(1), 210. https://doi.org/10.1186/s13643-016-0384-4

43. Owusu, E., Oluwasina, F., Nkire, N., Lawal, M. A., & Agyapong, V. I. O. (2022). Readmission of Patients to Acute Psychiatric Hospitals: Influential Factors and Interventions to Reduce Psychiatric Readmission Rates—ProQuest. *Healthcare*, *10*(9). https://doi.org/DOI:10.3390/healthcare10091808
44. Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, *372*, n71. https://doi.org/10.1136/bmj.n71
45. Primack, J. M., Bozzay, M. L., Gaudiano, B. A., Weinstock, L. M., Armey, M. F., Brick, L. A., Holman, C. S., & Miller, I. W. (2022). A Randomized Controlled Trial of the Veterans Coping Long Term With Active Suicide (CLASP) Program. *Psychiatric Annals*, *52*(5), 199–207. https://doi.org/10.3928/00485713-20220512-01
46. Riblet, N. B., Stevens, S. P., Watts, B. V., Gui, J., Forehand, J., Cornelius, S., Powell, R., Lewicki, K., Wasserman, D., & Shiner, B. (2021). A Pilot Randomized Trial of a Brief Intervention to Prevent Suicide After Inpatient Psychiatric Discharge. *Psychiatric Services*, *72*(11), 1320–1323. https://doi.org/10.1176/appi.ps.202000537
47. Scott, J. E., & Dixon, L. B. (1995). Assertive community treatment and case management for schizophrenia. *Schizophrenia Bulletin*, *21*(4), 657–668. (1996-04394-011). https://doi.org/10.1093/schbul/21.4.657
48. Sfetcu, R., Musat, S., Haaramo, P., Ciutan, M., Scintee, G., Vladescu, C., Wahlbeck, K., & Katschnig, H. (2017). Overview of post-discharge predictors for psychiatric re-hospitalisations: A systematic review of the literature. *BMC Psychiatry*, *17*(227), 1–15. https://doi.org/DOI 10.1186/s12888-017-1386-z
49. Sledge, W. H., Lawless, M., Sells, D., Wieland, M., O'Connell, M. J., & Davidson, L. (2011). Effectiveness of peer support in reducing readmissions of persons with multiple psychiatric hospitalizations. *Psychiatric Services (Washington, D.C.)*, *62*(5), 541–544. https://doi.org/10.1176/ps.62.5.pss6205_0541
50. Smith, T. E., Haselden, M., Corbeil, T., Tang, F., Radigan, M., Essock, S. M., Wall, M. M., Dixon, L. B., Wang, R., Frimpong, E., Lamberti, S., Schneider, M., & Olfson, M. (2020). Relationship Between Continuity of Care and Discharge Planning After Hospital Psychiatric Admission. *Psychiatric Services*, *71*(1), 75–78. https://doi.org/10.1176/appi.ps.201900233
51. Steffen, S., Kösters, M., Becker, T., & Puschner, B. (2009). Discharge planning in mental health care: A systematic review of the recent literature. *Acta Psychiatrica Scandinavica*, *120*(1), 1–9. https://doi.org/10.1111/j.1600-0447.2009.01373.x
52. Tikkanen, R., Fields, K., Williams II, R., & Abrams, M. (2020). Mental Health Conditions and Substance Use: Comparing U.S. Needs and Treatment Capacity with Those in Other High-Income Countries. *The Commonwealth Fund*. https://doi.org/10.26099/09ht-rj07

53. Tomita, A., & Herman, D. B. (2012). The impact of critical time intervention in reducing psychiatric rehospitalization after hospital discharge. *Psychiatric Services (Washington, D.C.)*, *63*(9), 935–937. https://doi.org/10.1176/appi.ps.201100468
54. Tomita, A., & Herman, D. B. (2015). The role of a critical time intervention on the experience of continuity of care among persons with severe mental illness after hospital discharge. *The Journal of Nervous and Mental Disease*, *203*(1), 65–70. https://doi.org/10.1097/NMD.0000000000000224
55. Tomita, A., Lukens, E. P., & Herman, D. B. (2014). Mediation analysis of critical time intervention for persons living with serious mental illnesses: Assessing the role of family relations in reducing psychiatric re-hospitalization. *Psychiatric Rehabilitation Journal*, *37*(1), 4–10. https://doi.org/10.1037/prj0000015
56. Tyler, N., Wright, N., & Waring, J. (2019). Interventions to improve discharge from acute adult mental health inpatient care to the community: Systematic review and narrative synthesis. *BMC Health Services Research*, *19*, 883. https://doi.org/10.1186/s12913-019-4658-0
57. Vigod, S. N., Kurdyak, P. A., Dennis, C.-L., Leszcz, T., Taylor, V. H., Blumberger, D. M., & Seitz, D. P. (2013). Transitional interventions to reduce early psychiatric readmissions in adults: Systematic review. *British Journal of Psychiatry*, *202*(3), 187–194. https://doi.org/10.1192/bjp.bp.112.115030
58. Wray, C. M., Khare, M., & Keyhani, S. (2021). Access to Care, Cost of Care, and Satisfaction With Care Among Adults With Private and Public Health Insurance in the US. *JAMA Network Open*, *4*(6), e2110275. https://doi.org/10.1001/jamanetworkopen.2021.10275
59. Xiao, S., Tourangeau, A., Widger, K., & Berta, W. (2019). Discharge planning in mental healthcare settings: A review and concept analysis. *International Journal of Mental Health Nursing*, *28*(4), 816–832. https://doi.org/10.1111/inm.12599
60. Zahnd, W. E., Hung, P., Crouch, E. L., Ranganathan, R., & Eberth, J. M. (2025). Health care access barriers among metropolitan and nonmetropolitan populations of eight geographically diverse states, 2018. *The Journal of Rural Health*, *41*(1), e12855. https://doi.org/10.1111/jrh.12855

Tables

Tables 1 to 4 are available in the supplementary files section

Figures

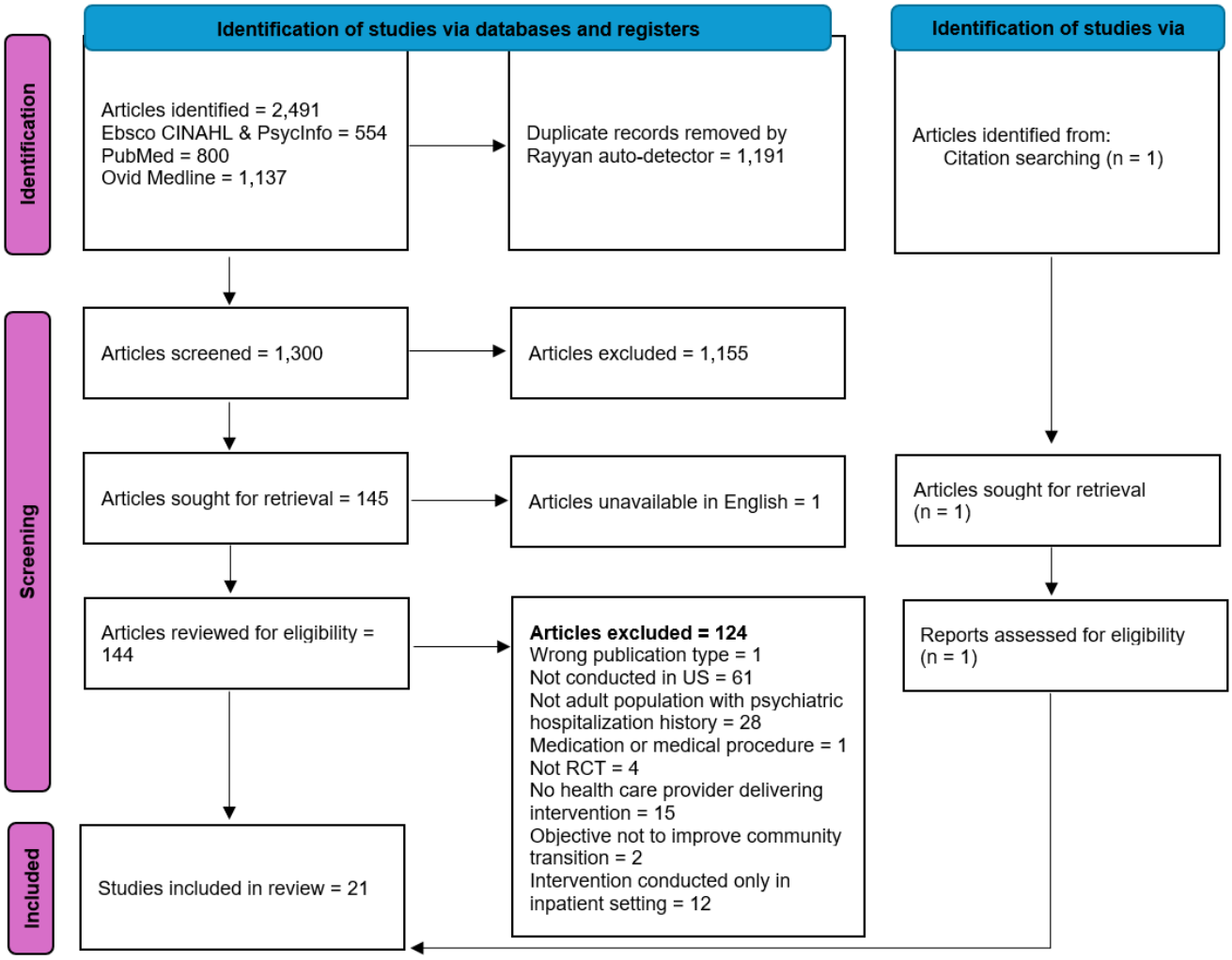


Figure 1

PRISMA diagram for identifying eligible studies

Note. Figure from Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

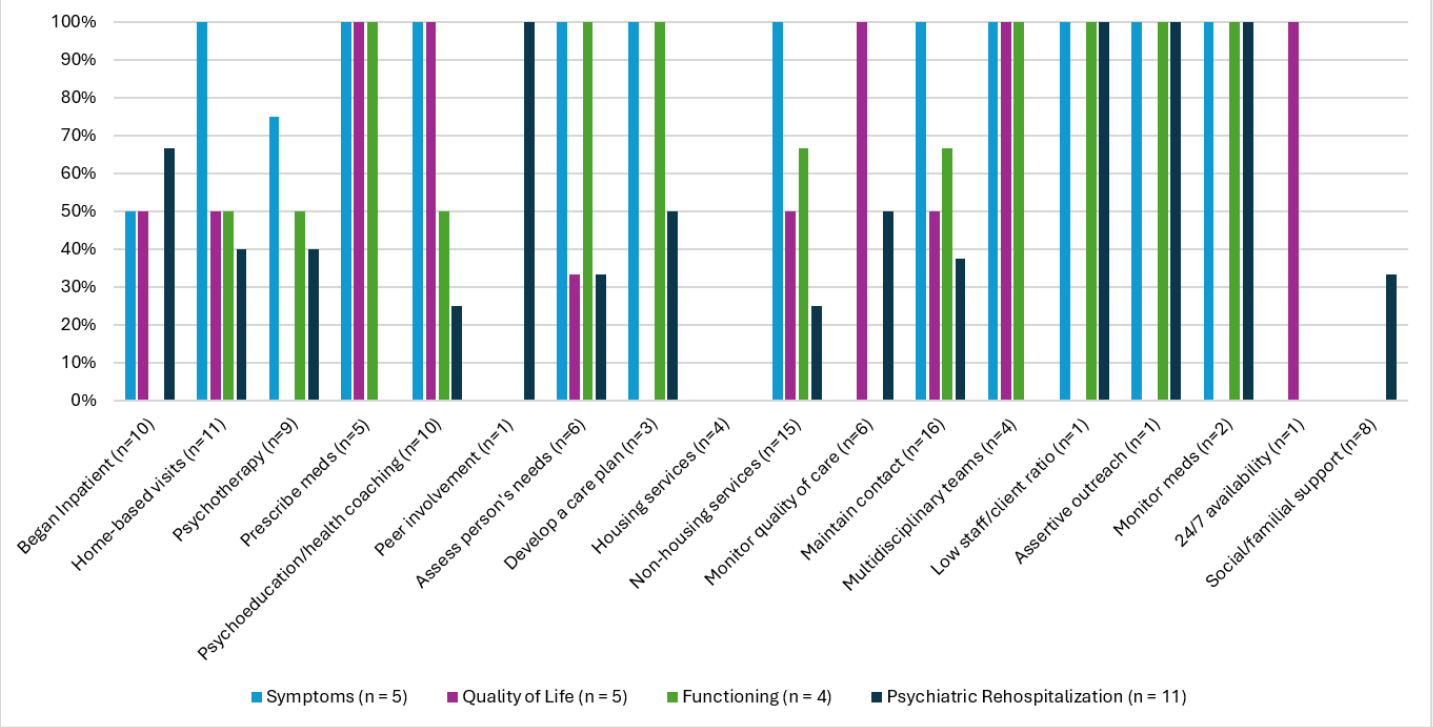


Figure 2

Proportion of studies favoring interventions with specific components for primary outcomes

Note. All studies with a particular intervention component did not examine each outcome. See text for number of studies per intervention component and outcome.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Supplement1interventioncomponentsourcesv.2.docx
- Table1studycharacteristicsv.3.docx
- Table2RoB.docx
- Table3interventioncharacterisitcsv.5.docx
- Table4interventioncharacteristicsbyoutcomesupdated2.docx