Discharge planning in mental health care: a systematic review of the recent literature
Steffen S, Kosters M, Becker T, Puschner B

CRD summary
This review assessed the efficacy of discharge planning in mental health care. The authors concluded that discharge planning was effective in reducing readmission to hospital and improving adherence to aftercare for people with mental health disorders. Without further details on study quality and with other methodological concerns, it is difficult to assess the reliability of the authors' conclusions.

Authors' objectives
To determine the efficacy of discharge planning in mental health care.

Searching
MEDLINE, PsycINFO, PSYNDEXplus, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials (CENTRAL), and ACP Journal club were searched for articles from 1992 to 2007. Search terms were reported and reference lists of retrieved articles were handsearched.

Study selection
Randomised controlled trials (RCTs), controlled trials, and cohort studies comparing discharge planning with a control group in adult patients with mental health disorders were eligible for inclusion. Discharge planning was defined as multifaceted or single interventions, established prior to hospital discharge, that involved personal contact between hospital staff and patients, and aimed to prevent or solve anticipated problems after discharge. Studies had to provide outcome data on the process of patient care, such as readmission rates or length of stay, health outcomes, such as symptom reduction, or costs. Studies were excluded if they recruited patients under 18 or over 65 years old, or if they recruited mainly patients with organic mental health disorders, such as Alzheimer's disease or dementia.

The included studies compared discharge planning (preparation, or preparation and support) with a control group (cohort before intervention, usual care, or no contact) in patients from psychiatric wards or hospitals, general hospitals, or out-patient mental health clinics. The mean age of patients, where reported, was 37.8 years.

The authors did not state how many reviewers performed the study selection.

Assessment of study quality
The authors did not state that validity assessment was undertaken.

Data extraction
The data on readmission rates, adherence to out-patient treatment rates, mental health outcomes, and quality of life were extracted into predefined worksheets. All data were independently checked by a second reviewer.

Methods of synthesis
The risk ratio with 95% confidence interval was calculated for each dichotomous outcome and Hedges’ g with 95% confidence interval was calculated for each continuous outcome, using meta-analysis. Heterogeneity was explored using the I² and χ² statistics. Publication bias was assessed using the Begg test, funnel plots, and the fail-safe N method. Subgroup analysis of particular study characteristics and sensitivity analyses excluding each individual study one at a time were also undertaken. The number needed to treat was also calculated.

Results of the review
Twelve studies (n=5,655 participants) met the inclusion criteria, but one was excluded from meta-analysis due to a lack of data. Six of the remaining eleven were RCTs, two were cohort studies, and three were controlled trials. Sample sizes ranged from 19 (RCT) to 3,117 (cohort study). The length of follow-up, where reported, ranged from one month to one year. Publication bias was a potential problem for readmission rates and adherence to out-patient treatment.
**Readmission rates** (six studies, n=1,517): Discharge planning had significantly lower readmission rates (RR 0.66, 95% CI 0.51 to 0.84; NNT=15). There was no evidence of statistical heterogeneity. The fail-safe N test indicated that 15 null studies would be required to make this result no longer significant.

**Adherence** to out-patient treatment or continuity of care (six studies, n=3,842): Discharge planning had significantly higher adherence to out-patient treatment or continuity of care (RR 1.25, 95% CI 1.07 to 1.47; NNT=7). There was evidence of high statistical heterogeneity between studies ($I^2$ 76%). The fail-safe N test indicated that for adherence to out-patient treatment 45 null studies would be required to make this result no longer significant.

**Mental health** (four studies, n=374): Discharge planning produced significant improvements in mental health outcomes (Hedges' g -0.25, 95% CI -0.45 to -0.05). There was no evidence of statistical heterogeneity between studies.

**Quality of life** (four studies, n=544): There was no benefit from discharge planning in quality of life as measured by Lehman's Quality of life Interview, and the World Health Organization's Quality of Life - BREF. There was no evidence of statistical heterogeneity between studies.

Subgroup analysis indicated that there were significant differences between study designs (cohort studies versus controlled trials), and follow-up periods (less than one month versus one to three months). Sensitivity analysis indicated that the exclusion of any single study did not significantly change the overall results.

**Cost information**

One study reported that discharge planning reduced the costs by £2,248.65 per participant compared with no discharge planning, at one year after discharge.

**Authors' conclusions**

Discharge planning was effective in reducing readmission to hospital and improving adherence to aftercare among people with mental health disorders.

**CRD commentary**

The inclusion criteria were clearly defined and several relevant sources were searched. Publication bias was assessed and could not be ruled out. The data extraction was independently checked, which should minimise error and bias, but it was unclear whether study selection was also performed in duplicate. There was no mention of study quality assessment, which makes it difficult to judge the quality of the included studies. Studies were combined using meta-analysis and heterogeneity between them was explored, which was appropriate, but pooling the results of studies with different designs might not have been appropriate, especially as their quality was not known. Sensitivity and subgroup analyses were undertaken to check that the results were robust and they indicated some differences between study types and length of follow-up.

Without further details on the study quality and with the other methodological concerns, it is difficult to assess the reliability of the authors' conclusions.

**Implications of the review for practice and research**

**Practice**: The authors stated that their review cautiously supported the implementation of discharge planning in mental health care.

**Research**: The authors stated that high-quality RCTs and cost-effectiveness analyses were needed to assess whether the improvement in health outcomes and the reduction in mental health costs outweigh the costs of discharge planning in mental health care.

**Funding**

Deutsche Forschungsgemeinschaft (German Research Foundation), grant number BE 2502/3-1.

**Bibliographic details**

PubMedID
19486329

DOI
10.1111/j.1600-0447.2009.01373.x

Original Paper URL
http://onlinelibrary.wiley.com/journal/122310500/abstract

Indexing Status
Subject indexing assigned by NLM

MeSH
Cohort Studies; Community Mental Health Services /economics; Controlled Clinical Trials as Topic; Cost Savings; Humans; Length of Stay /economics; Mental Disorders /economics /rehabilitation; Odds Ratio; Patient Compliance /statistics & numerical data; Patient Discharge /economics; Patient Readmission /economics /statistics & numerical data; Quality of Life; Randomized Controlled Trials as Topic; Treatment Outcome; United States

AccessionNumber
12009106710

Date bibliographic record published
16/12/2009

Date abstract record published
16/06/2010

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.