

Psychiatric Readmission in Youth: A Review of the Literature

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Methodology

- Literature search on child and adolescent psychiatric readmissions—388 papers
- Reviewed 76 for prospective and retrospective studies of factors associated with re-admission
- Found 13 studies appropriate for inclusion
 - 9 Retrospective studies, 4 Prospective
 - 1 study risk-adjusted

Retrospective—Fort Bragg Demo

- Foster; Do Aftercare Services Reduce Inpatient Psychiatric Readmissions
 - 204 patients, enrolled 1995, **risk-adjusted**
 - Fort Braff Demo with intermediate and wraparound services versus comparison Outpatient Department services
 - Demo increased access to aftercare—91% vs. 38% within 60 days
 - Children who received aftercare are only slightly less likely to be readmitted
 - Parental burden increases readmission

Retrospective Studies

- Carlisle et al; Aftercare, Emergency Department Visits, and Readmission in Adolescents
 - 4472 patients (first hospitalization), enrolled 2002-2004
 - 13% readmitted or psych Emergency Department (ED) visit within the first 30 days
 - Matched cases with and without aftercare
 - 29.7% adolescents with aftercare had psych ED visit or readmission within 1 year (versus 25.3% adolescents without aftercare)
 - Adolescents in aftercare had more readmissions within 1 year (18.8% vs. 14.8%) and had shorter mean time to first readmission
 - Aftercare increases risk of readmission by 38%

Retrospective Studies

- Fontanella; The Influence of Clinical, Treatment, and Healthcare System Characteristics on Psychiatric Readmission of Adolescents
 - 522 patients, enrolled 1997-1998
 - 37.9% readmission within one year, more than half by 90 days
 - **Factors associated with readmission**
 - Younger age, symptom severity, intellectual disability, violent behavior, abuse, greater levels of family risk, prior hospitalization, medication non-compliance, provider variability, day treatment/therapeutic foster home
 - Medium to high risk families—children 1.6 to 2.1 more likely to be readmitted
 - Longer Length of Stay (LOS) associated with readmission

Retrospective Studies

- Bobier; Factors Associated with readmission to adolescent psychiatric care
 - 71 patients, enrolled 2001-2003
 - 47.9% readmission rate
 - Compared readmits to non-readmits
 - **Factors associated with readmission**
 - Medication non-adherence
 - History of child sexual abuse
 - Trend towards younger age

Retrospective Studies—Psychosis

- Gearing; Developing a Risk-Model of Time to First-Relapse for Children and Adolescents with a Psychotic Disorder
 - 87 mood/psychotic patients under 18, enrolled 1999-2003
 - 57% relapse requiring re-admission
 - 77% med adherence
 - Adherent children 1/3 risk of relapse with readmission
 - 25% risk of relapse within 7 months, 33% risk of relapse within the first year, 44% risk by second year, and 60% overall
 - **Predictive factors:** medication non-adherence, female gender (2x), receiving clinical treatment, and decline in social support before first hospitalization (associated with 40% greater risk)

Retrospective Studies

- Pottick; Factors Associated with Inpatient and Outpatient Treatment for Children and Adolescents with Serious Mental Illness
 - 2,160 patients, enrolled 1986
 - Diagnosis associated with inpatient admission—Internalizing disorders more likely to receive inpatient treatment (44% vs 16%)
 - Hospitalized youth received more treatment (34% prior hospitalization, 4.65 times odds ratio(OR); 48% prior mental health services, 2.5 odds ratio)
 - Odds ratio of hospitalization with private insurance 11 times and public insurance 4 times compared to no resources.

Retrospective Studies

- Pavkov; State Hospital Reentry Among Youth with Serious Emotional Disturbance: A Longitudinal Study
 - 3,969 patients, enrolled 1987-1992
 - Youths with access to local support services less likely to be readmitted
 - **Factors associated with readmission**
 - Younger (every year increase of age decreased likelihood of readmission by over 4%)
 - Longer prior hospitalizations
 - Psychosis
 - Lower median income

Retrospective Studies

- Yampolskaya; Predictors for Readmission into Children's Inpatient Mental Health Treatment
 - 1,432 patients, enrolled 2004-2008
 - 19% readmitted during 4 years, 10% readmitted within 1 year, 5% multiple readmissions
 - **Factors associated with readmission**
 - Maltreatment history, greater severity (Odds Ratio (OR)=1.07)
 - Shorter length of inpatient stay (OR=0.99)
 - Aftercare mental health services—type of services and time to initiation; longer delay=greater likelihood of readmission
 - Diagnostic comorbidity

Retrospective Studies

- Fontanella; Psychotropic Medication Changes, Polypharmacy, and the Risk of Early Readmission in Suicidal Adolescent Inpatients
 - 318 patients, Medicaid-enrolled, 1998
 - At least one medication change in 78% of patients
 - Addition of antidepressant, mood stabilizer, anti-psychotic
 - Addition of antidepressant associated with 85% lower risk
 - Polypharmacy (23%)—3 or more medications from different drug classes associated with **2.6x** higher risk

Prospective Studies

- Arnold et al; Rates and Predictors of Rehospitalization Among Formerly Hospitalized Adolescents
 - 180 patients, enrolled 1991-1995
 - **Factors associated with readmission**
 - Younger, affective disorders
 - Suicidality not predictive of readmission
 - Readmission rates—6 months: 19%; 24 months: 32.7%, 10 years: 48.5%.

Prospective Studies

- Blader; Symptom, Family, and Service Predictors of Children's Psychiatric Rehospitalization Within One Year of Discharge
 - 109 patients, enrolled 14 month period before 2004
 - Readmission rate: 33.9%
 - 81% readmitted within first 90 days
 - **Independent contribution to increased risk**
 - Severity of conduct problems
 - Low parental involvement
 - Corporeal punishment

Prospective Studies

- Brinkmeyer; Family Engagement, Consumer Satisfaction and Treatment Outcome in the New Era of Child and Adolescent In-Patient Psychiatric Care
 - 45 patients, enrolled before 2004
 - 32% readmission rate, 9 month follow-up
 - Inpatient evaluation only
 - **Readmission associated with**
 - Poorer engagement in inpatient treatment
 - Lower ratings of parent satisfaction

Prospective Studies

- James; Post-discharge services and psychiatric rehospitalization among children and youth
 - 200 patients, enrolled 2002-2005
 - 43% readmitted, 28% received no post-discharge care
 - 3/4 rehospitalized within first year
 - Highest risk within first 30 days, 30-day readmission rate 9%
 - Over 2.5 years, a 76% lower readmission rate was associated with longer course of post-discharge services including non-intensive Mental Health services and/or non-Mental Health services
 - No supportive services or intensive-only increased risk
 - **Factors associated with increased readmission rate:** younger age at first admission, longer first hospitalization, psychosocial risk factors, no services post-discharge or high-intensity services only
 - **Factors unrelated to readmission:** discharge diagnosis, Global Assessment of Functioning score, current alcohol use, family involvement

Limitations

- Complexity of factors affecting re-admission and referral to and engagement in aftercare services
 - Individual patient characteristics
 - Family characteristics
 - Service system characteristics
- No prospective risk adjusted studies
- Most studies conducted in the 90's

Factors Associated with Re-Admission

- Severity of Illness
 - Affective Illness
 - Oppositional Defiant Disorder
 - Psychosis
- Non-adherence to medication
- Family risk
- Prior Hospitalization
- Younger age at first hospitalization

Inconsistent Factors

- Suicidality/Self-injurious behavior
- Abuse/Neglect
- Length of Stay
- Aftercare services