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## Does employment alter the course and outcome of schizophrenia and other severe mental illnesses? A systematic review of longitudinal research

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#### ABSTRACT

*Introduction*: This review synthesized prospective evidence to assess whether achieving employment alters the course of schizophrenia-spectrum disorder.

*Method:* Researchers identified relevant analyses for review via PubMed, expert referral, and reference review and systematically applied two levels of screening to 1484 citations using seven a priori criteria.

*Results:* A total of 12 analyses representing eight cohorts, or 6844 participants, compared illness course over time by employment status in majority schizophrenia-spectrum samples. Employment was consistently associated with reductions in outpatient psychiatric treatment (2 of 2 studies) as well as improved self-esteem (2 of 2 studies). Employment was inconsistently associated with positive outcomes in several other areas, including symptom severity, psychiatric hospitalization, life satisfaction, and global wellbeing. Employment was consistently unrelated to worsening outcomes.

*Discussion:* Achieving employment does not cause harm among people with schizophrenia-spectrum disorder and other severe mental illnesses. Further detailed mechanistic analyses of adequately powered long-term follow-up studies using granular descriptions of employment are needed to clarify the nature of associations between employment and hypothesized benefit.

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#### 1. Introduction

Negative outcomes often observed among people with psychiatric illness, including early school or work dropout, stigma, disability enrollment, poverty, and passive time use, lead mental health professionals to identify these persons as vulnerable to the stressors of employment (Hayes and Halford, 1996; Krupa et al., 2003; Eklund et al., 2010). Yet the field awaits a systematic examination of available evidence regarding whether employment has a positive or negative influence on the course and outcome of severe mental illnesses (e.g., schizophrenia, bipolar, and major depressive disorder).

In the general population, joblessness is associated with poor physical health (Studnicka et al., 1991; Martikainen and Valkonen, 1996; Korpi, 1999), anxiety and depressive symptoms (Bromberger and Matthews, 1994; Claussen, 1994; Comino et al., 2000), low self-esteem (Linn et al., 1985; Feather, 2011), and suicide (Eisenberg and Lazarsfeld, 1938; Yur'yev et al., 2012), even among people without previous psychological vulnerability (Montgomery et al., 1999). Conversely, returning to work is associated with improved psychological health (Payne and Jones, 1987; Caplan et al., 1989), financial security (Payne and Jones, 1987), self-esteem (Caplan et al., 1989; Vinokur et al., 1991), quality of life (Caplan

et al., 1989; Vinokur et al., 1991), and physical health (Ferrie, 2001). Evidence in populations with disabilities also indicates that employment is more helpful than harmful (Inge et al., 1988; Burkhauser and Daly, 2011; Hall et al., 2013). Previous reviews of the related observational literature in psychiatric populations have documented many plausible associations between employment and other outcomes (Marwaha and Johnson, 2004; Waddell and Burton, 2006; Kukla, 2010; Drake et al., 2012; Schennach et al., 2012), yet none reported conclusive findings. The lack of research consensus may be due to undiscovered research: none of the previous research summaries included a systematic literature search.

We aimed to provide a systematic review to improve understanding of how employment improves or exacerbates the course and outcome of severe mental illness. We focused on observational research because researchers cannot practically or ethically randomize participants to employment versus joblessness. Acknowledging that it is not possible to establish a direct causal link between employment and the course of severe mental illness in the absence of randomization, we relied on the best available evidence of the possible causal relationship between employment and other, non-vocational outcomes—prospective cohort studies.

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Review



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We considered two a priori hypotheses: 1) Among non-workers with severe mental illness, transitioning to employment is not associated with worsening non-vocational outcomes compared to people who remain jobless; and 2) Among non-workers with severe mental illness, transitioning to employment is associated with improvements in nonvocational outcomes compared to people who remain jobless. These roughly correspond to the following—1) employment is not harmful; and 2) employment is beneficial.

#### 2. Methods

Our systematic review followed PRISMA (Moher et al., 2009) and MOOSE (Stroup et al., 2000) reporting guidelines.

#### 2.1. Eligibility criteria

We included analyses that met the following criteria: (1) the majority of the sample included adults (18 +) diagnosed with schizophreniaspectrum disorder; (2) the researchers defined "employment" as a job paid at the market rate for which anyone could apply (i.e., competitive employment) and defined "joblessness" as no employment of any kind, including sheltered employment; (3) quantitative assessments were conducted prospectively and reported at least twice for both work and non-work outcomes (i.e., pre–post comparison) to provide information about illness trajectory change; (4) statistical analyses tested associations between work and non-work outcome patterns; (5) the sample size was greater than ten participants; (6) was published since 1980; and (7) was published in the English language.

#### 2.2. Search strategy

Scientific librarians provided guidance in the development of the search strategy. English-language manuscript titles and abstracts in Medline/PubMed from 1980 to November 2013 were searched within two topic areas: employment (keywords: "employment," "unemployment," "unemployed," "occupation") and diagnosis (keywords: "schizoaffective disorder," "schizophrenia," "bipolar disorder," "major depressive disorder," "severe mental illness," "serious mental illness"). We also manually reviewed references of relevant articles and contacted content experts to identify additional articles before merging them into a single non-duplicative list of abstracts. The lead investigator removed non-relevant titles and abstracts based on the inclusion criteria, resulting in a list of potentially eligible analyses. After retrieving full texts of potentially relevant analyses, two reviewers independently assessed each article to determine its eligibility and identified instances where more than one report describe the same study (i.e., duplicate publications) in order to avoid exaggerating effects by dual counting study data (Tramer et al., 1997). Discrepancies were resolved by consensus.

#### 2.3. Data extraction

Using a standardized, piloted data extraction form, two researchers independently extracted study data to reduce the potential for error (Tricco et al., 2011). For each study we extracted details on the study population, work outcomes, and non-vocational outcomes. Discrepancies were resolved by consensus. In the case of duplicate publications or companion papers of a primary study, we evaluated all available data to maximize the information yield.

#### 2.4. Data synthesis

We grouped the included analyses by cohort into tabular displays of each study's primary data source (i.e., parent study), relevant comparisons and measures, and outcome findings. The resulting summary matrices and tables allowed for cross-study comparisons (Mays et al., 2005). We rated the findings based on the strength of the association as either not significant (p > .05) or significant (p < .05).

We grouped the findings by outcome construct to identify agreements and discrepancies within the existing literature, as well as priorities for future research. We identified plausible outcome domains via previous literature reviews. Strong evident associations were rated as either indicative of improvement or worsening by comparing the reported and the preferred direction of association. The preferred direction of association considered indicative of "improvement" within each outcome domain was as follows: psychiatric symptoms (reduction), psychiatric hospitalization (reduction), other psychiatric services (reduction), psychiatric service costs (reduction), psychoactive medication use (reduction), substance use (reduction), living situation (increase in independent housing), incarceration (reduction), disability status (reduction), social function/support (increase), self-esteem (increase), life satisfaction (increase), and global functioning (increase).

Many studies examined more than one scale or subscale within a non-vocational outcome domain. We categorized these data into more than one outcome area. When a study analyzed more than one measure within a domain, we used the most general measure in the summary table of findings (e.g., total symptom score, not subscales of symptom severity). When there was more than one analysis relating employment to a single non-vocational measure, we elected to use the most causally robust analysis reported (e.g., lagged analyses which temporally separate the exposure and outcome versus concurrent associations rather than a cross-sectional analysis).

When more than one study reported analyses on the same nonvocational outcome using the same parent study data, we collapsed these findings into one summary finding reflecting the more conservative finding. To illustrate: if one study met the criteria for "improvement" and the other met the criteria for "no difference," we rated that finding "no difference" and if one study met the criteria for "no difference" and the other met the criteria for "worsening," we rated that finding "worsening." We noted which ratings reflected a study that reported more than two years of study data to facilitate more detailed crossstudy comparison. All members of the review team independently checked the final tables for accuracy and omissions.

#### 2.5. Methodological assessment

As a protection against bias, we assessed the included analyses' methodological differences. Each potential protection from bias was scored as positive (present), negative (absent), or not applicable.

#### 3. Results

#### 3.1. Study selection

Over the past two decades, 12 analyses representing eight cohorts investigated whether changes in employment status altered the clinical course and other non-vocational outcomes of severe mental illness. For a summary of the retrieval process results, see the PRISMA flowchart (Moher et al., 2009) in Fig. 1.

#### 3.2. Study characteristics

Table 1 summarizes the characteristics of the eight cohorts included in the 12 eligible analyses. The median number of participants across the cohorts was 187 (range = 143 to 5431 participants), and the median percentage of patients with a psychotic disorder was 75% (range = 61 to 100%). The median follow-up period was 18 months (range = 12 to 120 months). The client population varied greatly across the cohorts, including people with co-occurring disorders (Bush et al., 2009; Xie et al., 2010; McHugo et al., 2012), people early in the course of illness (Drake et al., 2013), people with severe mental illness over 45 years of age (Twamley et al., 2008), and people with significant Download English Version:

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