

DOES EMPLOYMENT PROMOTE THE PROCESS OF RECOVERY FROM SCHIZOPHRENIA? A REVIEW OF THE EXISTING EVIDENCE

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Abstract

The aim of this review is to appraise current evidence on the association between employment and specific, non-vocational components that are indicators of recovery from schizophrenia, such as symptom remission, neurocognitive functioning, social cognitive functioning, and quality of life. Out of 754 studies identified in a comprehensive bibliographical data search, 43 were selected for abstract screening and 18 were included in the final review. The studies were categorized in terms of the type of employment investigated (supported employment, Individual Placement and Support, competitive employment). Studies on the Individual Placement and Support programs provide the strongest evidence for their effectiveness in terms of non-vocational outcomes. Quality of life, psychopathology and well being were the most frequently investigated outcomes and only 2 studies utilized a global concept of recovery as a measure. Employment was also associated with positive changes in domains that are not directly related to working, e.g., leisure activities. The current review reports promising, but not conclusive, results in the improvement of quality of life, social functioning and other indicators of recovery, but there is still a need for high quality, long term follow-up, randomized studies to further investigate this relationship.

Key words:

Schizophrenia, Recovery, Return to work, Occupational rehabilitation, Support for employment

INTRODUCTION

The concept of recovery has been receiving significant attention for several years, but there is still a lack of consensus about the term “recovery.” Clinical definitions focus either on absence or reduction of symptoms. Alternatively, the Remission in Schizophrenia Working Group (RSWG) published in 2005 consensus-derived, operationally defined criteria for remission [1]. These

criteria were developed to provide researchers and clinicians with a robust, well defined outcome measure in the long-term treatment of the illness. Remission was defined using an absolute threshold of severity for a small number of core symptoms of the illness. The criteria define remission as at most a mild symptom intensity level, and not influencing an individual’s behaviour. The symptom criteria are combined with a time threshold of 6 months.

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The RSWG have indicated that further studies are necessary to assess relationships between symptomatic remission and other outcome measures, particularly functional outcome and quality of life.

According to the traditional clinical perspective, complete remission (which, it could be argued, is interchangeable with recovery) is defined as “a return to full premorbid functioning” [2]. However, Liberman and Kopelowicz [3] argue that term “full functioning” is not possible to measure. Moreover, the onset of schizophrenia often occurs in early adulthood, so return to premorbid functioning for mature adults cannot be considered an indicator of recovery [3]. In contrary to this clinical approach, Anthony identifies recovery as “a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness. Recovery involves the development of new meaning and purpose in one’s life as one grows beyond the catastrophic effects of mental illness” [4].

According to an operational definition of recovery proposed by Liberman et al., recovery includes a Brief Psychiatric Rating Scale (BPRS) score of 4 or less on psychosis items, full or part-time work or education, independent living, and socializing with friends at least once a week, all sustained for a period of 2 years [5]. Liberman and Kopelowicz clearly distinguishes between the process of recovery, and recovery as an outcome [3]. Harrow et al. developed another operational definition that requires elimination of psychotic and negative symptoms, adequate psychosocial functioning, including paid part-time or full-time work, presence of social activity, and no psychiatric hospitalizations over a 1 year period [6].

Another definition of “full recovery” from schizophrenia includes past but no current diagnosis of schizophrenia, no psychiatric hospitalizations for at least 5 years and satisfactory current psychosocial functioning (scores > 65 on the Global Assessment of Functioning scale) [7]. Clearly, definitions of recovery include very different aspects of functioning, such as symptom remission, employment or

social life. Research has demonstrated that serious mental illness may significantly affect some aspects, whereas other domains of functioning may become relatively free of the illness’ deleterious impact. For example, some people may perform well in their professional life while still experiencing some positive symptoms, or the opposite; an individual may be free of symptoms, but still have significant difficulties in social functioning. Therefore different terms are being used to describe partial recovery, i.e., recovery related to specific domains of functioning [8].

Quality of life is another component that is multidimensional and has extremely wide range of contexts. It includes the following dimensions: physical wellbeing, financial wellbeing, social wellbeing, emotional wellbeing and development.

A growing body of literature has shown, consistently, that schizophrenia patients compared to healthy people present social cognitive and neurocognitive impairments which are relatively stable and persistent, suggesting that this is a trait-dependent rather than state-dependant aspect of the disorder [9–11]. Social cognitive deficits have been widely described as modifying patients’ behavior when interacting with other people (theory of mind (ToM) deficits) [11–14] and in recognizing emotions [15–17] and other social information cues [9,18]. Therefore, social cognitive deficits are believed to be important predictors of functional outcome in schizophrenia [19,20]. Neurocognition comprises processes such as memory, attention, visuospatial functions and broadly understood executive functions, including mental flexibility. The improvement of cognitive functioning may have direct impact on education, professional development and career success and indirectly may improve social functioning. Thus, cognitive deficits are an obvious substrate for treatment in schizophrenia.

Importantly, although pharmacological therapy contributes significantly to a reduction of psychotic symptoms, it does not have a considerable impact on the improvement

of social skills or social cognitive deficits. Antipsychotic drugs of either class demonstrate little reliable effect upon social and emotional aspects of the illness [21]. For that reason other non-pharmacological treatments, such as different forms of employment, quite possibly training patients in the areas in which they are impaired, may hold more promise in terms of recovery, no matter how this is defined. Could employment also be a factor that facilitates the process of recovery? Generally, work improves self-esteem. It provides self-identity as well as satisfaction with being able to provide a financial contribution to the household. Knowledge about mental health in the workplaces has increased in recent years, which may in turn improve the chances of people with mental illness successfully gaining and maintaining employment [22].

There are 2 approaches to the employment of patients, more politically correctly termed “service users” which can be summarized as either “train then place” or “place then train” approach. “Train then place” refers to pre-vocational training, which prepares an individual for getting employment on an open and competitive market. It includes training in general skills, unpaid positions and different forms of sheltered employment [23]. However, new evidence now supports the greater effectiveness of the “place then train approach” (or supported employment) which focuses on getting individuals into employment first and then training them for successful performance in their respective positions.

Supported employment is one of the evidence-based psychosocial interventions that improve psychosocial functioning of service users [24]. The most well known form of this approach is Individual Placement and Support (IPS). In this model, employment specialists investigate their clients’ skills and knowledge in order to find them a job that matches their general abilities and preferences. Employment specialists work closely with clinicians, and also develop relationships with employers to support their clients most effectively [25]. The ultimate goal of employment

programs is that their participants obtain employment in the open market.

However, it is still unclear as to what psychosocial outcomes, such as e.g., life satisfaction or social functioning, can be positively influenced by being in employment. It is crucial to investigate this area, as some deficits that can impede recovery may be most effectively addressed with such psychosocial interventions.

This paper aims to appraise current evidence on the association between employment and specific, non-vocational components that are indicators of recovery, such as symptom remission, cognitive function, social and emotional functioning, and quality of life.

MATERIAL AND METHODS

Inclusion criteria

The review included studies investigating the relationship between employment and different aspects of the recovery process. A comprehensive search of the Medline, PsycArticles and PubMed databases for articles in English published in the years between 1993 and 2013 was conducted. This timeframe was selected in view of the rapid development of the research in the field during the past 2 decades.

Search strategy

Within the domain of psychiatric conditions, the term schizophrenia was used. Within the domain of employment, the following search terms were used: job, work, employment. Finally, within the domain of the recovery process, the following search terms were used: empowerment, social functioning, social skills, psychiatric rehabilitation, recovery, quality of life.

The following search strategy was utilised: ab (employment or work or job) and ab schizophrenia and ab (recovery or empowerment or quality of life or functioning or social skills or psychiatric rehabilitation). With the use of this strategy, 754 articles were identified in Pubmed

and 753 articles were found in a combined search of Medline and Psycarticles.

Selection process and search results

Titles and abstracts identified during the search were examined, and if the topic of a study was within the scope of the review, the full text of the relevant article was retrieved and verified. Out of 75 articles identified in Pubmed and 753 articles found in the combined search in Medline and Psycarticles databases, 43 publications were selected after abstract screening. Studies that did not seem to meet the inclusion criteria were excluded from the review. A further 25 studies were subsequently discarded as not meeting one or more of the inclusion criteria. Full texts were retrieved for 18 studies finally included in the review.

RESULTS

Recovery measures in different types of employment

These 18 studies investigated relationships between different types of work-related activity and recovery. In the 1st step, studies were categorized as either investigating the role of supported employment, or that of competitive employment in the recovery process. The category of supported employment is wide, and embraces different types of interventions, including Individual Placement and Support programs, which were considered most effective according to some of the older evidence [26]. These studies are discussed separately. Six studies explored outcome measures from different forms of supported employment programs, 2 studies focused on associations between individual placement and support interventions and recovery, and as many as 10 studies looked at the possible advantages of competitive employment in relation to recovery. Table 1 presents a summary of the included papers.

Supported employment programs and recovery

Six studies presented in Table 1 have shown positive outcome of supported employment programs on the

participants. Overall, participants were in paid employment and also were trained in their respective professional skills and how to structure their daily activities. Subjects with diagnosis of schizophrenia in the experimental group reported higher quality of life, marked reduction of symptoms, particularly negative ones, compared to control group. The positive change was noted not only with regard to areas directly related to employment but also to other characteristics, such as independence, recognition, neurocognitive performance (e.g., executive functions) [27,28], and social functioning especially in service users employed in community [29]. Participants' satisfaction with life was comparable with that of healthy persons [30].

Authors stress importance of continuity of work rehabilitation in sustaining clinical benefits of this activity [31]. All results of the studies have consistently shown that pay had significant motivational effect on involvement in work activity. Full participation provided subjects with sense of accomplishment and improved their self-esteem [32].

Individual Placement and Support program and recovery

Individual Placement and Support program raises concerns among clinicians regarding possible risks associated with service users returning to work without previous lengthy training and preparatory phase. It is being argued that stress related to new and challenging experience may lead to deterioration of individuals' mental health. Individual Placement and Support studies consistently reported positive findings which showed lower risk of hospitalization, enhanced mental health status, and life satisfaction in IPS participants while compared to vocational service users [33]. Participants of the experimental group also presented significantly greater decrease in depression than non-working subjects [34].

Competitive employment

Studies investigating effectiveness of competitive employment used either cross-sectional or non-randomized

Table 1. Summary of the reviewed 18 papers on employment and recovery

Reference	Work-related intervention	Population [n]	Study design	Measures	Diagnostic tools	Results
Holzner et al. (1998) [30]	supported employment	60	cross-sectional, non-randomized controlled study	life satisfaction functional quality of life	Munich List, the Everyday Life questionnaire	satisfaction with work, leisure-time activities, independence and friendships rated higher in the program group
Weinberg et al. (2009) [29]	supported employment	77	CCT, assessed twice, 6 weeks apart	negative symptoms and social functioning	PANSS, MANSA, SFS	increased levels of social functioning in employed group
Bell et al. (2005) [27]	supported employment	145	CCT	symptom severity, quality of life	PANSS, QLS	significant improvements in symptoms and QoL
Bell et al. (1997) [31]	supported employment	150	RCT (pay/no pay condition)	symptom intensity, rehospitalization rates	PANSS	significantly greater improvement in symptoms and lower rehospitalization rates in pay subjects
Bryson et al. (2002) [32]	supported employment	97	RTC (pay/no pay condition)	quality of life	QLS, The Quality of Life Interview – finance section	improvements in overall QoL and in the domain of Intrapsychic Foundations in pay condition
Bio et al. (2011) [28]	supported employment	112	RCT	cognition, quality of life negative symptoms	PANSS, Digit Span (WAIS-III), comprehension (WAIS-III), Stroop Test WCST – 64 cards, QoL	significantly improved negative symptoms, QoL and performance in cognitive measures after vocational rehabilitation
Burns et al. (2009) [34]	IPS	312	RCT	symptoms social functioning	PANSS, GAF-S, GAF-D, GSDS	employment associated with better clinical and social functioning
Drake et al. (2013) [33]	IPS	2 238	RCT	mental health quality of life	12-item Short-Form Health Survey, Quality of Life Interview	improvement in mental health and quality of life in intervention group while compared with controls
Priebe et al. (1998) [35]	competitive employment	24	RTC	psychopathology objective and subjective measures of well-being quality of life	BPRS, the Lancashire Quality of Life Profile	reduced symptoms and better QoL for employed patients
Bond et al. (2001) [36]	competitive employment	149	CCT	symptom severity, self-esteem	BPRS, The Rosenberg Self-Esteem Scale	symptoms reduced; increased self-esteem

Table 1. Summary of the reviewed 18 papers on employment and recovery – cont.

Reference	Work-related intervention	Population [n]	Study design	Measures	Diagnostic tools	Results
Tandberg et al. (2012) [37]	competitive employment	128	cross-sectional comparison	clinical, neurocognitive, global, and social functioning	PANSS, CDSS, CVLT, Verbal Learning Test, Digit Span Test, LNST Letter Number LNST Sequencing Test, Digit Symbol Test, Stroop Test, Verbal Fluency Test, WCST, the Bergen n-back task, Grooved Pegboard Test, GAF scale	better clinical, global and social functioning in employed patients no significant differences on neurocognitive measures
Marwaha et al. (2008) [38]	competitive employment	1 208	cross-sectional comparison	quality of life	the short version of Lehman's Quality of Life Interview (QOLI)	employment was important factor in explaining subjective QoL
Nordt et al. (2007) [40]	competitive employment	176	naturalistic longitudinal design	subjective quality of life	German version of the WHO-QoL-Bref	subjective QoL significantly improved and was rated higher by people in employment
Eklund et al. (2009) [39]	competitive employment	103	cross-sectional	quality of life activity factors	MANSA	minor importance of work status to subjective QoL domains, association between satisfying activities and most QoL domains
Bush et al. (2009) [42]	competitive employment	187	latent-class growth analysis of competitive employment identified trajectory groups	10-year services utilization and cost	summed direct service hours (therapy, medication checks, day treatment, case management and mental illness management services); participants reported days spent in psychiatric hospitals and jails using the residential timeline follow-back calendar	significantly greater decline in use of outpatient services for the steady-work group

Lloyd et al. (2010) [43]	161	competitive employment	cross-sectional study	empowerment recovery	CIM, The Empowerment Scale, The Recovery Assessment Scale, CANSAS	empowerment and recovery scores significantly higher for people in paid employment
Schnnach et al. (2012) [44]	186	competitive employment	CCT (baseline and 1-year follow-up assessment)	recovery (as defined by Liberman et al. [5])	PANSS, Hamilton Depression Rating Scale, SWN-K, SOFAS	higher SOFAS score and positive attitude towards treatment at discharge predicted remission at 1-year follow-up; having a job at follow-up predicted recovery
Angell et al. (2002) [41]	87	competitive employment	CCT	network sizes	three social network characteristics (informal nonkin network size, network reciprocity, and opposite sex contact) and 2 indicators of the client's subjective evaluation of social relationships (satisfaction with social relationships and loneliness), Community Adjustment Form	larger network sizes over a 6-month period in employed group

Intervention: IPS – individual placement and support.

Designs: CCT – clinical controlled trial; RCT – randomized controlled trial.

Diagnostic tools: BPRS – Brief Psychiatric Rating Scale; CANSAS – The Camberwell Assessment of Need Short Appraisal Schedule; CDSS – Calgary Depression Scale for Schizophrenia; CIM – The Community Integration Measure; CVLT – California Verbal Learning Test; GAF – Global Assessment of Functioning scale; GAF-D – disability; GAF-S – symptoms; GSDS – Groningen Social Disabilities Schedule; LNST – Letter-Number Sequencing Test; MANSA – The Manchester Short Assessment of Quality of Life; Munich List – The Munich List of Life Dimensions; PANSS – The Positive and Negative Syndrome Scale; QoL – Quality of Life; SFS – Social Functioning Scale; SOFAS – Social and Occupational Functioning Assessment Scale; Stroop Color and Word Test – Word Interference Test; SWN-K – The Subjective Well-being under Neuroleptic Treatment Scale, short version; WCST – Wisconsin Card Sorting Test.

longitudinal design. Feasibility of randomized controlled trial (RCT) design in investigating this type of employment is hindered by apparent cost and technical problems. Only 1 study randomized outpatients in treatment to employment or no employment condition [35].

Consistent results of 3 studies (Table 1) were published in unemployed patients who revealed higher scores in total psychopathology, negative symptoms, bizarre behavior, blunted affect, and depression compared to employed subjects [35–37].

Improved quality of life among subjects in competitive employment was found in several studies [38–40]. This type of employment may also be beneficial for general well-being [35], self-esteem [36], network sizes [41], satisfaction with leisure [35,36] and decline in use of outpatient services [42].

Two studies used measures of recovery as outcome to investigate its relationship between working in open market. Lloyd showed that ratings on the Recovery Assessment Scale and the Community Integration Measure were positively correlated with being in employment [43]. Schennah measured recovery and remission outcomes as defined by Liberman et al. [5] and found that employment status was a significant predictor for recovery [44].

DISCUSSION

The aim of the current review was to investigate the relationship between different types of employment and specific, non-vocational indicators of recovery. During the search process it was found that majority of the studies focused on the effectiveness of different forms of employment programs for vocational outcomes, and only a few focused on non-vocational outcome, such as quality of life or clinical status. There is a need for more studies in this area, especially as evidence of the positive impact of employment on outcomes other than the solely vocational is promising and remains in line with National Institute for Health and Care Excellence (NICE) recommendations [45].

The review's findings were interesting. It is worth mentioning that employment was associated with positive changes in domains that are not directly related to working, such as leisure activities [30,35,36]. Priebe argues that being in employment may increase the perceived benefits of leisure, professional success may facilitate leisure activity and involvement and finally income may make free time activities possible in the 1st place. This finding shows that being in employment can affect different areas of functioning and future studies on the non-vocational outcomes of professional activity should include such a wide catalogue of domains [35]. However, findings regarding the relationship between being in employment and neurocognitive functioning are inconclusive. Results of a cross-sectional study showed no significant differences on neurocognitive measures in employed and unemployed patients [37]. Nevertheless, Bio et al. in their RCT found that vocational rehabilitation significantly improved patients' performance in cognitive measures that assess executive functions [28]. Further studies are needed to investigate whether this inconsistency is due to differences in study design, or type of employment (open market vs. vocational rehabilitation) or both.

Quality of life, psychopathology and well being were the most frequently investigated outcomes. As few as only 2 studies utilized a global concept of recovery, and either used a recovery related scale [43] or an operationalized definition of recovery [44]. The majority of the studies investigated specific indicators of recovery which, while measured in isolation, do not provide enough data to assess the impact of employment on recovery. Moreover, different scales are being used to measure the same outcome, for example quality of life, which hinders comparability of the effectiveness of different forms of employment. Thus it is recommended to move towards construction of recovery indexes based on theoretical framework and clinical experience which would enable capturing complexity of this concept. Even so, there is no getting away from

the fact that the studies reviewed here were generally positive “across the board”: such homogeneity is very uncommon in schizophrenia research. In other words, the vast majority of the evidence points in the same direction.

Studies on the Individual Placement and Support programs provide the strongest evidence for their effectiveness in terms of non-vocational outcomes. Their design included randomized conditions and large samples (312 or 2238 participants). This type of supported employment is also most effective in terms of increasing the chances of people with schizophrenia gaining jobs in the open market [46].

It is not possible to draw undeniable conclusions from the studies analyzed in the current review, for several reasons. First, the majority of the studies used non-randomized approaches to investigate different forms of employment program effectiveness. Only 1 study (out of 11) utilized an RCT design to explore the relationship between being in competitive employment, and outcome in non-vocational domains [35]. Subjects were randomly selected from outpatient psychiatric facilities, and therefore findings of this study cannot be extrapolated to the general population of people with schizophrenia in competitive employment. Designing and conducting RCT studies in the population working in the open market presents a substantial challenge, and further methodological work on sampling in studies investigating effectiveness of competitive employment are needed. Studies on effectiveness of different forms of supported employment should ideally employ randomized approaches more frequently. This is especially crucial as there is always a question about causal relationship regarding employment and recovery which cannot be proved with the use of cross-sectional design.

Moreover, conclusions concerning casual employment should be based on solid arguments. For example Bush et al. argued that their results prove that employment facilitates recovery because the relationship was still present after controlling for age, education and illness

severity, many subjects reported that being employed enabled them to better manage their illness and employment outcomes were weakly associated with mental illness over time [42].

Secondly, in the majority of the reviewed studies, the samples were rather small. In cases where the reported differences approached the significance level and did not reach it, this absence of statistical significance might be due to a small sample size. Therefore, large-scale longitudinal investigations are needed to explore the unclear relationships between employment and non-vocational outcomes. It is worth noting that subjects in the IPS programs were followed up for 18 and 25 months, which enhances reliability of the positive findings regarding programs' effectiveness. In only 1 study out of 10 which included follow up assessments in their design, the follow up period was very short (6 weeks) and in 77 studies subjects were followed up for 12 months and longer. This is a positive finding as at least 3-month follow-up period is recommended. Finally, only 1 study compared the effectiveness of different forms of employment [36]. It would be useful to conduct RCTs comparing different forms of employment, and further, different forms of employment versus other therapeutic programs of psychosocial rehabilitation, such as Social Cognition and Interaction Training (SCIT).

There is a good evidence that psychosocial interventions implemented in combination with pharmacological treatment are related to significant improvements in social functioning, compared with medication only [47]. The current review reports promising, but not conclusive, results in the improvement of quality of life, social functioning and other indicators of recovery, but there is still a need for high quality, long term follow-up, randomized studies to further investigate this relationship. Finally, the methodology of our paper is a systematic literature review. Whilst our review provides valuable descriptions of all relevant literature, this is unable to provide a quantitative analysis of the effects of employment on recovery

in schizophrenia. In order to address these questions, a meta-analysis is needed which may be a plan for further exploring in future.

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