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Predictors of vocational outcomes using Individual Placement and Support for people with mental illness

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ABSTRACT

Objective: People with disabilities find it harder to enter the labour market than people without disabilities and those with a mental illness are, in relation to people with other disabilities, employed at an essentially lower extent. Many are effectively helped by the vocational rehabilitation model Individual Placement and Support (IPS), but there are still many individuals left in undesired unemployment. This study investigates potential predictors of the vocational outcomes of a one-year follow up of IPS in the north of Sweden.

Participants: The participants were 65 men and women, mostly younger than 30 years of age predominantly with a diagnosis of anxiety and/or depression.

Methods: Baseline data related to sociodemographic and clinical characteristics of the client, the client's own perceptions of everyday living and participation, self-esteem and quality of life, as well as the quantity of employment support, were investigated using analyses of logistic regression.

Results: Of three identified potential predictors, only psychiatric symptoms remained significant in the multivariate logistic regression analyses. A lower level of symptoms increased the odds with 5.5 for gaining employment during one year.

Conclusions: Careful investigation of how psychiatric symptoms influence clients' occupational performance is of importance. By understanding essential aspects of the relationships between the clients' individual characteristics, the rehabilitation context and the vocational outcomes, more appropriate and effective interventions may be offered to the individual client.

KEY-WORDS: psychiatric rehabilitation, social psychiatry, psychiatric symptoms, clients' perceptions, vocational rehabilitation

1. INTRODUCTION

In an occupationally just society all individuals are given access to occupations that are important and meaningful for them [1]. Participation in work is a desired and very important occupation among the great majority of people [2], but people with disabilities find it harder to enter the labour market than people without disabilities [3]. For people having a mental illness, the situation is even worse; they are employed at an essentially lower extent than people with other disabilities [4]. Needs for vocational rehabilitation are thus most prevalent in people with a mental illness [5]. The most common reason for receiving sickness benefits in Sweden in 2010 was a psychiatric diagnosis (34%), while musculoskeletal illnesses accounted for 25% [6].

Although a number of people with mental illnesses are effectively helped by the vocational rehabilitation model Individual Placement and Support (IPS) [7], there are still many individuals who remain in undesired unemployment [8]. IPS is a widely used model and was already, in the beginning of the 21st century, evaluated as an evidence based practice for vocational rehabilitation for people with severe mental illness [9]. Among the basic assumptions in IPS is a strong belief in employment for everyone who is motivated for work regardless of age, diagnosis, education or earlier experiences of work [10]. The critical challenges are: the client's motivation for work, a client-centred approach that guides a suitable match between the client's preferences, the work place environment, the work tasks and an ongoing collaborative support that meets the client's needs in his/her worker-role. A suitable ongoing support for the client can be created if the vocational service is integrated with the psychiatric services, thus providing an accessible and flexible psychiatric need-based support. IPS teams that more adhere to the IPS model, as measured by fidelity scales, have been shown to generate better vocational outcomes for their clients [11-12]. The vocational

outcomes are also influenced by a number of clinical and sociodemographic characteristics among clients [13].

A number of studies have dealt with the relationship between background factors of psychiatric clients and their ability to become employed in the open labour market. Most of these studies have investigated people with severe mental illness (SMI). Among sociodemographic variables such as age, gender, ethnicity, education and marital status, there are contradictory results, but mostly no associations to vocational outcomes have been demonstrated [14-15]. However, Wewiorski and Fabian [16] found that younger age was associated with better employment outcomes and they assumed that this could partly be explained by the development of medication and change of treatment in psychiatric services. Burke-Miller et al. [4] confirmed that younger people are more likely to achieve employment, and they also found that higher levels of education predicted employment, which was confirmed by Tsang et al. [15]. A person's previous work history is, on the other hand, viewed as a consistent predictor of employment [14-15] and is associated with opportunities of relevant life experiences, such as the ability to get along socially with others and adapt oneself in occupational related contexts.

Clinical variables such as psychiatric diagnoses and symptoms are frequently included as potential predictors, however with contradictory results [13-15]. This is partly due to the small spectrum of psychiatric diagnoses investigated and the vague definitions given to psychiatric symptoms. Several studies have nevertheless concluded [17-19] that having a diagnosis of schizophrenia, especially for persons with predominantly negative symptoms (low motivation, social withdrawal, etc.), is associated with poorer vocational outcomes and that persons with non-psychotic disorders are more likely to find employment. The occupational consequence

of various psychiatric symptoms can thus be seen to be of some importance for vocational outcomes.

Cognitive functioning is also associated with vocational outcomes. There is mostly a negative association between cognitive deficits in schizophrenia, in particular concerning span of attention, and employment [20]. The areas of perception, interpretation and processing of social information are also of importance, since there is an association with social skills [21]. Cognitive functioning was found to be the most intensively researched variable and was identified as a significant predictor of employment for people with schizophrenia [15]. Attention and working memory were the areas of cognitive functioning which gained the strongest support as significant positive predictors for employment.

Over and above the sociodemographic and clinical variables that have been the focus of investigation for many decades, recent research has highlighted more the personal characteristics of the clients, as well as features in the rehabilitation process. Cunningham, Wolbert and Brockmeier [22] showed that clients' self-perception of illness, attitudes to work and coping-styles were crucial for obtaining and maintaining employment. Similar findings were described by Johannesen, McGrew, Griss and Born [23] investigating the relationship between self-perceived barriers to employment and vocational outcomes, where mental illness and an inability to concentrate constituted the greatest barriers. Catty, Lissouba, White, et al. [24] showed that a lower number of met social needs was a significant predictor for entering employment when participating in IPS-programs, which was assumed to be an expression of a motivation for change. It was also found that a good working alliance between the client and the job-coach was predictive of getting a job. Schneider, Slade, Secker, et al. [25] confirmed the importance of motivation for successful vocational outcomes. The clients in their study

who had visited a job centre in the 3 months preceding the baseline interview, were seen as being close to the labour market and the job seeking behaviour was interpreted as an expression of motivation.

Still, confusion exists as to the functions and interactions of different factors influencing the outcome of work rehabilitation interventions. The distinction between moderators and mediators, usually seen as variables that can postulate when or for whom an intervention is successful, respectively explaining the process of why and how an intervention works, has been put forward as a way to move beyond basic questions of predictors [26]. According to this approach, our study mainly concerns moderators. A recent study [27] of client predictors of employment outcomes in high-fidelity IPS-programs, which does not mention the distinction between moderators and mediators, found work history to be the only significant predictor for job acquisition for clients with severe mental illness. This would support the basic assumption, in the model IPS, of the compensating function of the vocational rehabilitation approach, where IPS may *moderate* the relationship between client characteristics and employment outcomes.

In summary, a great number of potential predictors have been investigated for vocational success or failure among people with mental illness and in particular regarding people with SMI. Like all other human activities, a person's ability to engage in productive work and to get employed in the labour market can be profoundly affected by his or her mental illness, disability, self-perception and a range of contextual factors in the person's occupational performance context [5, 28].

In an earlier part of a current study of individual placement and support in the north of Sweden, during a 1-year follow up, we have shown that 18% of the participants enrolled in IPS entered employment [29]. This is a considerably lower employment rate than in other European studies [30] investigating IPS employment outcomes. To this must be added that 10% entered mainstream education and 45% moved on to unsalaried practice at a mainstream place of work for a prolonged period of time in our study. Being as the existing research of vocational outcomes for people with mental illness is still diversified and growing, it is of importance to identify what client characteristics are predictors of vocational outcomes, in order to make vocational rehabilitation through IPS more effective. The present paper aims to investigate characteristics and perceptions of the client and also the quantity of employment support per client, predicting employment. The purpose was to examine conditions that influence clients' gaining employment during a 12-month period in an IPS-programme. Examined conditions were:

- * *Sociodemographic*; age, gender, marital status, educational level and total amount of work experience.
- * *Clinical*; psychiatric diagnosis, psychiatric symptoms and global psychosocial functioning.
- * *Clients' perceptions*; self-esteem, quality of life, perceived occupational competence and assessment of occupational performance and also perceived participation in everyday life.
- * *Employment support*; the quantity of support given to each individual

2. METHOD

This paper is part of a current study of IPS in the north of Sweden, designed as a two-year follow-up of clients included into two IPS-services for people with a mental illness. Clients were included from March 2007 to November 2008. An earlier paper reported vocational and non vocational outcomes during a one-year follow up [29], based on interview

questionnaires, reports from job coaches and several standardized assessment tools described later in the paper. The collected quantitative data will be used in the present study, which was approved by the regional research ethics committee at Umeå University (Dnr 07-030M).

2.1 Participants

Ninety-one IPS-clients were eligible for inclusion in the study and 65 of these were willing to participate and gave informed consent. The reasons for declining to participate mainly concerned matters of personal integrity, a wish to safeguard privacy. Table 1 provides details regarding the demographics and characteristics of participants. Most of the participants were below 30 years of age and lived alone. The gender distribution was relatively even, while the level of education, as well as work experience and diagnosis varied among the participants. The most common category of psychiatric diagnosis was depression and anxiety disorders. Five participants did not complete their participation in the IPS service and the study from baseline to follow up at 12 months.

Table 1 about here!

2.2 Settings

The two IPS services are situated in small to medium size towns in northern Sweden. Both teams are organized as time limited projects. They are financed by a co-ordinating organization, where representatives of the employment office, social insurance bureau, psychiatric services and the local social services are represented. An important issue for enabling people with mental illness to enter the labour market is to promote cooperation between the service providers in all relevant parts of the welfare sector. One team started to implement Supported Employment (SE) in 2006 and the other in 2007. The staffing in one team consisted of five full time job-coaches and in the other team there were three coaches

working full time. Both teams were assessed as having a *fair* level of SE implementation according to the Individual Placement and Support fidelity scale [31].

2.3 Data collection procedure

The clients were contacted by the first author as soon as possible after inclusion, and given opportunity to choose a place where the interview could be held, this usually took place at the SE office. In most cases the interview for data collection lasted between 60 and 90 minutes. When needed, the clients received explanations of the statements in the self rating assessments in accordance with the manuals. The data about vocational outcomes and quantity of support, was continuously documented and then reported by the job-coaches every second month.

2.4 Instruments

Most of the instruments used in the present study are the same as in an earlier study investigating vocational outcomes from the follow up study in the northern Sweden [29] and are described in more detail there. In the present study data were collected using the following methods and instruments:

Sociodemographic data - collected using an interview-based questionnaire.

Vocational outcomes - type of work-related activities were continuously documented and were reported for each participant by the job coaches every second month.

Employment support - the number of hours assigned to the individual participant were continuously documented and were reported for each participant by the job coaches every second month.

Symptoms were assessed with the 18-item version of the Brief Psychiatric Rating Scale (BPRS) [32]. The scoring ranges from 1, indicating absence of symptoms, to 7, where the symptom is extremely severe. The participant is asked about their experience of each of the symptoms and the rater also observes the behaviour of the participant.

Self-esteem was measured by using the Rosenberg self-esteem scale [33]. The scale is a self-report questionnaire and consists of 10 items, where five of them are negatively formulated and five positively, and to which respondents answer using a 4-point scale: I strongly agree (1), I agree (2), I disagree (3) and I strongly disagree (4). A higher score indicates greater self-esteem.

Subjective quality of life was rated on the Manchester Short Assessment of Quality of Life (MANSA) [34]. On the MANSA, patients rate their satisfaction with life in general as well as satisfaction regarding 12 different life domains. Ratings are done on Likert-type scales ranging from 1 (couldn't be worse) to 7 (couldn't be better). The mean score of all 12 satisfaction ratings is taken as the indicator of subjective quality of life. The MANSA also include four items about objective quality of life, but these last items were not included in the present paper.

Occupational competence was assessed by the Occupational Self Assessment (OSA) [35], which is an instrument where clients report their perceived competence and assessment of everyday living activities and how different aspects in their environment are functioning. The Swedish version (1.0) "Min Mening" was used. It has a three-point rating scale (Hellsvik, 2000), where perceived competence is assessed as:

1) Does not function so well, 2) Does function quite well, 3) Does function well.

Perceived value is assessed as; 1) This is not so important, 2) This is important, 3) This is extremely important. Data from the environmental section was not analysed in this paper, but will be investigated in a future paper. Total or mean scores for all items have not been used, individual items will be analysed separately. The psychometric properties of the English version of the instrument were evaluated using Rasch analysis [36] and it provided preliminary evidence for the instrument's validity and reliability. The person separation, according to the analysis, was on a lower level than would be desired, but was considered acceptable.

Occupational participation was assessed by a self rating instrument which is under development, based on the dimensions in “activity and participation” of the ICF [37] and adjusted for the target group. It has been constructed by occupational therapists (Personal communication, ass. Prof. Maria Larsson Lund, 20th febr. 2007) working in Sweden with clients, who have some impairment in cognitive capacity. The clients are expected to evaluate to what extent they perceive that their health or disability is a problem for their participation in different aspects of their daily life situation. The instrument consists of 33 statements in total and is divided into two sections:

Section 1 contains 27 statements about daily activities such as using public transportation, focusing attention on specific activities, and coping with stress. A five-point rating scale is used: 0= no problem, 1= little problem, 2= moderate problem, 3= serious problem, 4= very serious problem.

In section 2 the clients perceived participation is summarized and consists of six statements such as “Performing activities and tasks on my own is...”, “ Being engaged in activities and

tasks that are meaningful for me is...”, “My possibilities to participate in my life situation are...”.

The same rating scale as above is used in section 2.

Total or mean scores for all items have not been used, individual items will be analysed separately.

Global psychosocial functioning was assessed with the Global Assessment of Functioning (GAF) at the end of each interview [38]. The Swedish version was used [39]. The scale has a possible range between 0 and 100, where higher scores reflect better social, occupational and psychological adjustment.

2.5 Statistics

The first step was to find and select potential predictors among all variables available in the data including sociodemographic and clinical factors, the clients’ own perceptions, as well as the impact of quantity of employment support during follow-up. Chi-square tests were performed for the dichotomized variables and an independent sample t-test was used for the only continuous variable. The 50th percentile was used as the cut-off value for assessments having a total sum score. The following variables were selected for analyses;

Sociodemographic: age ($\leq 26=1$, $>26=0$), gender, education level ($\geq$ high school=1, $<$ high school=0), marital status (married/cohabiting=1, no partner=0) and total amount of work experience (≥ 12 month=1, <12 month=0).

Clinical: diagnosis (depression/anxiety=1, all others=0), psychiatric symptoms ($\leq 30=1$, $>30=0$), and global psychosocial functioning ($\geq 55=1$, $<55=0$).

Clients’ perception: self esteem ($\geq 2,4=1$, $<2,4=0$), quality of life ($\geq 4,5=1$, $<4,5=0$), all items regarding occupational competence (3=1, 1-2=0), assessment of occupational

performance (2-3=1, 1=0) and all items regarding participation in everyday life (0-1=1, 2-4=0).

Employment support: the quantity of received support as a continuous variable.

In the analyses, three variables showed a significant association with getting a job at the $p \leq 0.1$ level. These were selected for the next step. In a second step, the identified potential predictors were first analysed by using univariate binary logistic regression (see Table 2). In the third step these variables were put into a multivariate binary logistic regression analysis. Next, a stepwise manual backward selection was used to eliminate non-significant predictors from the model and to retain only the variables that were significant to the outcome at issue $p < 0.05$. The logistic model was tested using the Hosmer-Lemeshow Goodness of Fit Test. Version 18.0 of the PASW statistical package was used for data analysis.

3. RESULTS

Three variables fulfilled the criteria of $p \leq 0.1$ and were identified as potential predictors:

a) Psychiatric symptoms (BPRS) ≤ 30 , b) Quality of Life (MANSA) ≥ 4.5 , c) No or minor problems (0-1) with initiating and performing a couple of tasks in order or at the same time (Participating in your life situation). See Table 2.

Table 2 about here!

The multivariate logistic regression analyses showed that only one of these potential predictors remained significant in the model. A lower level of symptoms (symptoms below or at a score of 30 as assessed by BPRS) increased the odds ratio to 5.5 for gaining employment during a 12-month period. The variables not remaining in the model: subjective quality of life of 4.5 or more, and no or minor problems with initiating and performing a couple of tasks in order or at the same time, were significantly associated with each other and with psychiatric

symptoms but did not alter the odds of psychiatric symptoms as a predictor. These results indicate that all three variables are intercorrelated and influence each other.

According to the Nagelkerke R Square analysis, the multivariate logistic model explained about 19% of the total variance. The Hosmer-Lemeshow Test showed a p -value of 0.603, which implied that there was a good correspondence between the observed and predicted values and thereby the logistic model was acceptable.

4. DISCUSSION

The purpose of this paper was to examine conditions that influenced clients' gaining employment during a 12-month period in IPS-programmes not integrated with psychiatric services in Sweden. The focus was on a population with different levels of anxiety and depression, but also included individuals with neuropsychiatric disabilities, and some with SMI. In order to identify potential predictors, the participants' sociodemographic characteristics, clinical state and own perceptions about their everyday competence and participation were examined. The results showed that only psychiatric symptoms could be identified as a significant predictor for entering employment. This is in line with the review of Drake and Bond [40], where they identified mental illness, cognitive deficits and co-occurring physical health problems as barriers to employment. Similar findings were shown in a study concerning employees sick-listed due to minor mental disorders [41], where the main negative predictor for employment was severity of problems, which implied a long duration of life problems and high baseline somatisation, anxiety and depression. It has also been shown in earlier studies, that clients' self-perception of illness were crucial for obtaining and maintaining employment [22-23].

It is important to discuss the results of a BPRS-score of ≤ 30 , what this really implies, and in what way it contributes to enabling employment. Leufstadius and Eklund, [42], showed that a high degree of general psychiatric symptoms (depression, anxiety, guilt feelings, stress etc.) as assessed by BPRS, increased the risk for spending less time in occupational activities and for having an imbalance in daily activities. This entails that the activity cycles that form the daily rhythm can be affected, thus jeopardizing the individual's mastery of his/her symptoms and adaptation to a challenging working day [43-45].

It will also be of importance to consider cognitive disabilities known to be related to anxiety disorders [46] and to vocational outcomes [15], being as symptoms of anxiety are frequent in the studied population. Essential aspects of executive functions like planning and adjusting behaviour in relation to changeable situations are found to be affected by anxiety in general, and may contribute to difficulties entering employment [46]. In our study one example of cognitive functioning related to executive functioning, the ability to initiate and perform a couple of tasks in order or at the same time, was identified as a potential moderator at the $p \leq 0.1$ level. This ability makes great demands on attention, planning, organisation of time and tasks, and also endurance, which all impact occupational performance.

The other potential moderator at the $p \leq 0.1$ level was a higher level of quality of life. In the literature, this is associated with lower levels of psychiatric symptoms, especially symptoms of depression and anxiety [47-49], which is confirmed in our results.

In earlier studies of IPS [24, 27], where the SE programmes had high levels of fidelity and the participants involved in most cases met the criteria of SMI, the strongest predictor was previous work history, i.e. having worked within the last three to five years. How this variable

positively influences the employment outcomes is important to investigate, because it is unclear if it is the working experience in itself or other factors that explain the outcome. In another study using IPS, but with both integrated and non integrated services [25], where the inclusion criteria was the presence of severe and enduring mental health problems, the only significant predictor found was visiting a job centre in the 3 months preceding the baseline interview. This was judged by the researcher as an expression of behaviour indicating a proximity to the labour market and it was assumed to also express motivation for work. It would be interesting, and in line with the discussion above, to investigate what this behaviour accounts for in terms of, for example, perceived psychiatric symptoms, quality of life, occupational competence and participation.

Schneider, et al. [25] point out that a large number of the participants, who were not placed in work (work practice), probably had such needs that the IPS service alone could not satisfy their needs and concluded that a closer liaison with mental health services, could address some of the barriers to work. The IPS-teams investigated in our study were not integrated with the psychiatric services. As symptoms level was found as a predictor for work, it can be assumed that a closer collaboration with the psychiatric services might have meant better outcomes for some of the participants.

There are several limitations in this study and one of the most important is the small sample size. Although the results are inconclusive, they indicate that further exploration is warranted in integrated and non-integrated settings of IPS for people with psychiatric disabilities other than severe mental illness. It is important, as mentioned in the introduction, to also investigate the rehabilitation process, but in the present study it is only the quantity of the IPS-services that was available for analysis, which was a clear limitation. The selected instruments for data

about the participants' self-perception of everyday life and participation do not produce total sum scores, thus the need for separate item analyses. This may have resulted in too low levels of person separation, thus making it difficult to identify possible differences between participants entering or not entering employment. Another limitation was that no assessment was used to examine the clients' social interaction skills, which is found to influence the ability to enter into the labour market [50].

5. CONCLUSION

Vocational rehabilitation is a complex process and the outcomes are thus influenced by several conditions. Among the variables examined in this study, psychiatric symptoms appeared to be the only significant predictor, which indirectly provides some support for an integration of the vocational and psychiatric services. This result indicates, however, that careful investigation of how psychiatric symptoms influence clients' occupational performance, and development of individual strategies for adaptation, is of importance. As the result only explains some aspects of the whole variance of the vocational outcome, a case-study, where it is possible to investigate different kinds of rehabilitation processes among the participants by combining both quantitative and qualitative data, would be useful for also identifying crucial rehabilitation- and macro level system factors for entering employment. By understanding essential aspects of the relationships between the clients' individual characteristics, the rehabilitation context and the vocational outcomes, more appropriate and effective interventions may be offered to the individual client. According to article 27 in the United Nations Enable (51), work and rehabilitation to work is a human right for people with disabilities who want to participate in work and earn one's living. Consequently, individuals with mental illness need access to the labour market, adequate support and resources for desired engagement in a working life.

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REFERENCES

- [1] Townsend A, Wilcock AA. Occupational justice and client-centred practice: A dialogue in progress. *Can J Occup Ther.* 2004; 71(2): 75-87.
- [2] Jakobsen K. If work doesn't work: How to enable occupational justice? *J Occup Sci.* 2004; 11(3): 125-134.
- [3] Saunders JL, Leahy MJ, McGlynn C, Estrada-Hernández N. Predictors of employment outcomes for persons with disabilities: an integrative review of potential evidence-based factors. *J Appl Rehabil Couns.* 2006; 37(2): 3-20.
- [4] Burke-Miller JK, Cook JA, Grey DD, Razzano LA, Blyler CR, Leff HS, et al. Demographic characteristics and employment among people with severe mental illness in a multisite study. *Community Ment Hlt J.* 2006; 42(2): 143-159.
- [5] Chamberlain MA, Moser VF, Ekholm KS, O'Connor RJ, Herceg M, Ekholm J. Vocational rehabilitation: an educational review. *J Rehabil Med.* 2009; 41(11): 856-869.
- [6] Goine H, Upmark M. Missbruk och sjukförsäkringen – kunskapsläge och diskussion kring omfattning och regelverk. Rapport för Missbruksutredningen (S2008:4) (in Swedish), Socialdepartementet; 2010.
- [7] Bond GR, Drake RE, Becker DR. An update on randomized controlled trials of evidence based supported employment. *Psychiatr Rehabil J.* 2008; 31(4): 280-290.
- [8] Twamley EW, Jeste DV, Lehman AF. Vocational rehabilitation in schizophrenia and other psychotic disorders: A literature review and meta-analysis of randomized controlled trials. *J Nerv Ment Dis.* 2003; 191(8): 515-523.
- [9] Bond GR, Becker DR, Drake RE, Rapp CA, Meisler N, Lehman AF, et al. Implementing Supported Employment as an Evidence-Based Practice. *Psychiatr Serv.* 2001; 52(3): 313-322.
- [10] Becker DR, Drake RE. A working life for people with severe mental illness. New York: Oxford Press; 2003.
- [11] Becker DR, Xie H, McHugo GJ, Halliday J, Martinez RA. What predicts supported employment program outcomes? *Community Ment Hlt J.* 2006; 42(3): 303-313.
- [12] Drake RE, Bond GR, Rapp C. Explaining the Variance Within Supported Employment Programmes: Comments on: "What predicts supported employment outcomes?". *Community Ment Hlt J.* 2006; 42(3): 315-318.

- [13] MacDonald-Wilson K, Rogers ES, Anthony WA. Unique issues in assessing work function among individuals with psychiatric disabilities. *J Occup Rehabil.* 2001; 11(3): 217-232.
- [14] Tsang H, Lam P, Ng B, Leung O. Predictors of employment outcome for people with psychiatric disabilities: a review of the literature since the mid 80's. *J Rehabil.* 2000; 66(2): 19-31.
- [15] Tsang HWH, Leung AY, Chung RCK, Bell M, Cheung W-M. Review on vocational predictors: a systematic review of predictors of vocational outcomes among individuals with schizophrenia: an update since 1998. *Aust NZ J Psychiat.* 2010; 44(6): 495-504.
- [16] Wewiorski NJ, Fabian ES. Association between demographic and diagnostic factors and employment outcomes for people with psychiatric disabilities: a synthesis of recent research. *Ment Hlt Serv Res.* 2004; 6(1): 9-21.
- [17] Anthony WA, Rogers ES, Cohen M, Davies RR. Relationships between psychiatric symptomatology, work skills and future vocational performance. *Psychiatr Serv.* 1995; 46(4): 353-358.
- [18] Hoffman H, Kupper Z. Relationships between social competence, psychopathology and work performance and their predictive value for vocational rehabilitation of schizophrenic outpatients. *Schizophr Res.* 1997; 23(1): 69-79.
- [19] Razzano LA, Cook JA, Burke-Miller JK, Mueser KT, Picket-Schenk SA, Grey DD, et al. Clinical factors associated with employment among people with severe mental illness. Findings from the Employment Intervention Demonstration Program. *J Nerv Ment Dis.* 2005; 193(11): 705 – 713.
- [20] Tryssenaar J, Goldberg JO. Improving attention in a person with schizophrenia. *Can J Occup Ther.* 1994; 61(4): 198-205.
- [21] Penn DL, Corrigan PW, Bentall RP, Racenstein JM, Newman L. Social cognition in schizophrenia. *Psychol Bull.* 1997; 121(1): 114-132.
- [22] Cunningham K, Wolbert R, Brockmeier MB. Moving beyond the illness: Factors contributing to gaining and maintaining employment. *Amer J Community Psychol.* 2000; 28(4): 481-494.
- [23] Johannesen JK, McGrew JH, Griss ME, Born D. Perception of illness as a barrier to work in consumers of supported employment services. *J Vocat Rehabil.* 2007; 27(1): 39-47.
- [24] Catty J, Lissouba P, White S, Becker T, Drake RE, Fioritti A, et al. Predictors of employment for people with severe mental illness: results of an international six-centre randomised controlled trial. *Brit J Psychiat.* 2008; 192: 224-231.
- [25] Schneider J, Slade J, Secker J, Rinaldi M, Boyce M, Johnson R, et al. SESAMI study of employment support for people with severe mental health problems: 12-month outcomes. *Health Soc Care Comm.* 2009; 17(2): 151-158.

- [26] Frazier PA, Tix AP, Barron KE. Testing moderator and mediator effects in counseling psychology research. *J Couns Psychol*. 2004; 51(1): 115-134.
- [27] Campbell K, Bond GR, Drake RE, McHugo GJ, Xie H. Client predictors of employment outcomes in high-fidelity supported employment. A regression analysis. *J Nerv Ment Dis*. 2010; 198(8): 556-563.
- [28] Fisher AG. Occupational therapy intervention process model: a model for planning and implementing topdown, client-centered, and occupation-based interventions. Fort Collins, Colorado: Three Star Press; 2009.
- [29] Authors. Individual placement and support – a model to get employed for people with mental illness – the first Swedish report of outcomes. *Scand J Caring Sci*, 2011; (online) doi: 10.1111/j.
- [30] Burns T, Catty J, Becker T, Drake R, Fioritti A, Knapp M, et al. The effectiveness of supported employment for people with severe mental illness: a randomised controlled trial. *Lancet*, 2007 Sep 29; 370(9593): 1146-1152.
- [31] Bond GR, Becker DR, Drake RE, Vogler KM. A fidelity scale for the individual placement and support model of supported employment. *Rehabi Couns Bull*. 1997; 40: 265-284.
- [32] Kolakowska T. The Brief Psychiatric Rating Scale, (BPRS). Oxford University; 1976.
- [33] Rosenberg M. Society and the Adolescent Self-Image. Revised edition. Middletown, CT: Wesleyan University Press; 1989.
- [34] Priebe S, Huxley P, Knight S, Evans S. Application and results of the Manchester Short Assessment of Quality of Life MANSA). *Int J Soc Psychiatr*. 1999; 45(1): 7-12.
- [35] Baron K, Kielhofner G, Goldhammar V, Wolenski J. OSA – Occupational Self Assessment. Model of Human Occupation Clearinghouse, Department of Illinois at Chigago; 1998. (Svensk översättning av Eva Marie Hellsvik, Förbundet Sveriges Arbetsterapeuter; 2000, publicerad med tillstånd av Gary Kielhofner.)
- [36] Kielhofner G, Forsyth K. Measurement properties of a client self-report for treatment planning and documenting therapy outcomes. *Scand J Occup Ther*. 2001; 8(3):131-139.
- [37] World Health Organization. International Classification of Functioning, Disability and Health. Geneva, Switzerland; 2001.
- [38] Endicott J, Spitzer R., Fleiss J. The global assessment scale: A procedure of measuring overall severity of psychiatric disturbance. *Arch Gen Psychiatr*. 1976; 33(6), 766-771.

- [39] Herlofson J, Landqvist M. MINI-D IV diagnostiska kriterier enligt DSM-IV. Danderyd: Pilgrim Press; 1995. Svensk översättning av: Quick reference to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), APA, Washington D.C; 1994.
- [40] Drake RE, Bond GR. The future of supported employment for people with severe mental illness. *Psychiatr Rehabil J*. 2008; 31(4): 367-376.
- [41] Brouwers EPM, Terluin B, Tiemens BG, Verhaak PFM. Predicting return to work in employees sick-listed due to minor mental disorders. *J Occup Rehabil*. 2009; 19(4): 323-332.
- [42] Leufstadius C, Eklund M. Time use among individuals with persistent mental illness: Identifying risk factors for imbalance in daily activities. *Scand J Occup Ther*. 2008; 15(1): 23-33.
- [43] Honey A. The impact of mental illness on employment: Consumers perspectives. *Work*, 2003; 20(3): 267-276.
- [44] Kennedy-Jones M, Cooper J, Fossey E. Developing a worker role: Stories of four people with mental illness. *Aust Occup Ther J*. 2005; 52: 116-126.
- [45] Dunn EC, Wewiorski NJ, Rogers ES. The meaning and importance of employment to people in recovery from serious mental illness: results of a qualitative study. *Psychiatr Rehabil J*. 2008; 32(1): 59-62.
- [46] Ferreri F, Leann K, Lapp LK, Peretti C-G. Current research on cognitive aspects of anxiety disorders. *Curr Opin Psychiatr*. 2011; 24: 49-54.
- [47] Kang S, Mahendran R, Siris SG, Heckers S, Chong SA. Subjective quality of life in first episode schizophrenia spectrum disorders with comorbid depression. *Psychiat Res*. 2004; 129(2): 141-147.
- [48] Angermeyer MC, Holzinger A, Matschinger H, Stengler-Wenzke K. Depression and quality of life: Results of a follow-up study. *Int J Soc Psychiatr*. 2002; 48(3):189-199.
- [49] Mendlowicz MV, Stein MB. Quality of life in individuals with anxiety disorders. *Am J Psychiat*. 2000; 157(5): 669-682.
- [50] Tsang HWH, Chan A, Wong A, Liberman RP. Vocational outcomes of an integrated supported employment program for individuals with persistent and severe mental illness. *J Behav Ther Exp Psy*. 2009; 40(2): 292-305.
- [51] United Nations Enable. Convention on the Rights of Persons with Disabilities, article 27. 2007 [cited 2011 May 12]. Available from: www.un.org/esa/socdev/enable/rights/convtexte.htm#convtext

Table 1. Characteristics of the participants

	n=65 (%)	
Age		
19 – 24 year	23	(35.4)
25 – 30 year	23	(35.4)
31 – 36 year	10	(15.4)
> 36 year	9	(13.8)
Gender		
Men	35	(53.9)
Women	30	(46.1)
Marital status		
Single	45	(69.2)
Married/partner	20	(30.8)
Education		
Not completed compulsory school	1	(1.5)
Compulsory school	24	(36.9)
High school	28	(43.1)
University	6	(9.2)
Residential adult college	5	(7.8)
Vocational school	1	(1.5)
Work experience		
No experience	8	(12.3)
0,5 – 12 months	22	(33.9)
13 – 24 months	6	(9.2)
25 – 36 months	8	(12.3)
37 – 48 months	6	(9.2)
5 - 10 years	8	(12.3)
> 10 years	7	(10.8)
Psychiatric diagnosis		
Depression, GAD (F32-F34, F40-F42)	26	(40.0)
Neuropsychiatric disorder (F84.5, F90)	11	(16.9)
Personality disorder (F60-F61)	10	(15.4)
Bipolar disorder (F31)	8	(12.3)
Psychosis (F20-F29)	7	(10.8)
Eating disorder (F50)	2	(3.1)
Post traumatic stress disorder (PTSD) (F43.1)	1	(1.5)

Table 2. Crude OR of the three identified potential predictors of gaining employment.

<i>Variable</i>	<i>Exp B OR</i>	<i>95% CI</i>		<i>P</i>
		<i>Lower</i>	<i>Upper</i>	
Psychiatric symptoms (BPRS) ≤ 30	5.52	1.08	28.25	0.040
Quality of life (MANSA) ≥ 4.5	3.87	0.91	16.39	0.066
No or minor problems with initiating and performing a couple of tasks in order or at the same time (Participation in your life situation)	3.70	0.96	14.32	0.058

Table 1. Characteristics of the participants.

Table 2. Crude OR of the three identified potential predictors of gaining employment.

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