



# LUND UNIVERSITY

## Social interaction among people with psychiatric disabilities - Does attending a day centre matter?

Argentzell, Elisabeth; Leufstadius, Christel; Eklund, Mona

*Published in:*  
International Journal of Social Psychiatry

*DOI:*  
[10.1177/0020764013502318](https://doi.org/10.1177/0020764013502318)

2014

[Link to publication](#)

*Citation for published version (APA):*  
Argentzell, E., Leufstadius, C., & Eklund, M. (2014). Social interaction among people with psychiatric disabilities - Does attending a day centre matter? *International Journal of Social Psychiatry*, 60(6), 519-527.  
<https://doi.org/10.1177/0020764013502318>

*Total number of authors:*  
3

### General rights

Unless other specific re-use rights are stated the following general rights apply:  
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

### Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117  
221 00 Lund  
+46 46-222 00 00

## **Social interaction among people with psychiatric disabilities – Does attending a day centre matter?**

Argentzell, Elisabeth, Ph.D., O.T. Reg., Assistant Professor <sup>1</sup>

Leufstadius, Christel, Ph.D., O.T. Reg., Assistant Professor <sup>1</sup>

Eklund, Mona, Ph.D., O.T. Reg., Professor <sup>1</sup>

<sup>1</sup> Lund University, Department of Health Sciences, Occupational Therapy and Occupational Science, Sweden

Address for correspondence:

Elisabeth Argentzell

Lund University

Department of Health Sciences

Occupational Therapy and Occupational Science

Box 157

SE 221 00 Lund

Sweden

E-mail: [elisabeth.argentzell@med.lu.se](mailto:elisabeth.argentzell@med.lu.se)

## **Abstract**

**Background:** Engaging in social interaction has, for people with psychiatric disabilities, been shown to enhance well-being and the experience of meaning and to generally prevent the worsening of mental illness.

**Aims:** The aim of the study was to investigate how day centre attendees differed from non-attendees regarding different aspects of social interaction and to investigate how occupational factors, including day centre attendance, and previously known predictors were related to social interaction in the study sample as a whole.

**Methods:** 93 day centre attendees and 82 non-attendees with psychiatric disabilities were examined regarding social interaction, subjective perception of occupation, activity level, sense of self-mastery and socio-demographic and clinical variables. Data were analysed with non-parametric statistics, mainly logistic regression.

**Results:** Social support was mainly provided by informal caregivers such as family members. The day centre attendees had more social relations but did not experience better quality or closeness in their relationships than non-attendees. Important factors for social interaction were subjective perceptions of daily occupation, being married/cohabiting, self-mastery and severity of psychiatric symptoms.

**Conclusion:** Alternative ways of enhancing social interactions in the community is needed, targeting the group's feeling of satisfaction and value in daily life together with self-mastery.

**Key words:** social support, social environment, activities of daily life, community mental health centres

## **Background**

Social interaction is a fundamental need for all people (Townsend & Polatajko, 2007) and generates a feeling of belonging (Hammell, 2004). For people with psychiatric disabilities, engaging in social interaction plays an important role for community integration and for well-being (Strömberg, Sandlund, & Westman, 2005), quality of life (Lundberg, Hansson, Wentz, & Björkman, 2008) and experiencing meaning (Argentzell, Håkansson, & Eklund, 2012; Leufstadius, Erlandsson, Björkman, & Eklund, 2008). Importantly, both the number of people interacted with and the social support received correlate with better recovery for people with psychiatric disabilities (Munroe, Palmada, Russell, Russell, Taylor, Heir & McKay, 2007; Hendryx, Green & Perrin, 2008).

Still, social integration continues to be an elusive goal for people with psychiatric disabilities and reports of loneliness and social deprivation are common (Bejerholm & Eklund, 2004; Bengtsson-Tops & Hansson, 2001). Bengtsson-Tops and Hansson (2001) found that, in comparison to a healthy sample, people with psychiatric disabilities reported a significantly worse situation regarding both access to and the quality of social interaction. Their networks are often small (Macdonald, Hayes, & Baglioni, 2000) and mainly consist of family members (Sörgaard, Hansson, Heikkilä, Vinding, Bjarnason, Bengtsson-Tops, Middelboe, 2001).

### *Factors that facilitate social interaction*

Social interaction among people with psychiatric disabilities has been shown to be facilitated by having valued and satisfying daily occupations (Eklund, 2006). Occupations experienced as meaningful, being performed outside the home environment, and a supportive and trusting

attitude of others have also been found vital (Yilmaz, Josephsson, Danemark & Ivarsson, 2009). Social interaction has also shown to be related with activity level (Leufstadius, Erlandsson & Eklund, 2006) and living without housing support (Hansson, Middleboe, Sorgaard, Bengtsson-Tops, Bjarnson, Merinder & Vinding, 2002). Moreover, being younger, feeling in control of one's life (Eklund & Hansson, 2007), being female (Sörgaard et al., 2001), and having less severe negative and positive symptoms (Bengtsson-Tops & Hansson, 2001) have been shown to be associated with having more social interaction (;).

### *Social interaction and day centre attendance*

In Sweden, and internationally, day centres for people with psychiatric disabilities offer opportunities for taking part in social interactions and engaging in activities (Tjörnstrand, Bejerholm, & Eklund, 2011; Meehan, Robertson, Stedman, & Byrne, 2004). Guidelines for support for people with psychiatric disabilities in Sweden (National Board of Health and Welfare, 2011) state that day centre services, which are run by the social care, form a suitable rehabilitation strategy to counteract social isolation and enhance recovery. There is, however, limited research concerning day centre attendees' social life; besides the research that exists is inconclusive.

Both Tjörnstrand et al. (2011) and Catty, Goddard and Burns (2005) found that day centre support included social aspects. Kilian, Lindenbach and Lobig et al. (2001) showed that the degree to which attendees used day services and found them meaningful was associated with the type of self-perceived social integration each person had. Moreover, Bryant, Craik and McKay (2004) showed that, although mental health day services provided structure and supportive

networks, they also made the attendees feel alienated from society in large. Catty, Goddard and Burns (2005) showed that day centre attendees had more social interaction than people who attended a day hospital. Although a positive finding, the authors expressed concern that having a large amount of social interaction related only to the day centre might lead to social exclusion from the outside world, as implied by Bryant et al. (2004). This concurs with the findings of Hall and Cheston (2002) who reported that persons with psychiatric disabilities can at times identify with peers to such an extent that they choose not to have relations outside this group. However, the studies by Catty, Goddard and Burns (2005) also showed that the day centre attendees more often had confidants who were non-professionals. These partly contradictory findings indicate that the role of attending day centres in shaping people's social networks is not yet fully explored.

To our knowledge, no study has previously investigated the importance of visiting day centres for perceived social interaction among people with psychiatric disabilities, while also considering other variables known to be of importance for social interaction. This type of research is important in order to better understand the target groups' social interactions, which in turn is imperative for the development of optimal social rehabilitation for the target group.

## **Aim**

The aim of this explorative study was twofold. One was to investigate if day centre attendees differed from non-attendees with psychiatric disabilities regarding qualitative and quantitative aspects of social interaction. The other aim was to investigate how occupational factors, and

other factors previously found to be of importance for social interactions, were related to social interaction in the sample as a whole.

## **Methods**

### *Selection procedure and participants*

In accordance with the Swedish National Board of Health and Welfare (2006) psychiatric disabilities was defined as having difficulties to perform activities in important life areas due to a mental illness. These difficulties should be present and be assumed to remain under a longer period of time. The sample of the day centre attendees were people with psychiatric disabilities who were recruited from community-based day centres in Sweden. Four municipalities, urban as well as rural, were strategically selected for the study. Seven day centres were found in those municipalities. All of them were approached and all agreed to participate. All clients who attended these day centres for more than four hours a week and were between 18 and 65 years old were asked to participate in the study. Out of 195 invited clients, a total of 93 participants was obtained. A comparison group of non-attendees was selected among people with psychiatric disabilities who were patients at three psychosis outpatient units that served the selected municipalities. The selection criteria were; a) not attending a day centre for four hours or more per week and, b) being between 18-65 years of age. Being engaged in work or studies was an exclusion criterion. A local occupational therapist assessed these criteria. In two units the participants were recruited by a randomized selection process based on the units' registers. In one unit it was not possible to access the register, however. The waiting room principle was used instead and the unit's occupational therapist invited patients who fitted the inclusion and exclusion criteria. Thirty persons were invited this way but only 10 accepted. Out of totally 168

selected persons who were eligible for the comparison group, 82 agreed to participate. The mean age of the day centre attendees was 46 years and 59 % were male. The groups were comparable on most characteristics, but the non-attendees reported more often having a diagnosis of schizophrenia or other psychosis ( $p<0.001$ ) and the non-attendees had a higher education level ( $p<0.001$ ). Further characteristics are shown in Table 1.

Table 1 about here

The study was approved by the local Research Ethics Committee (No. 303/2006) and the principle of informed consent was applied.

### *Instruments*

Instruments were used to investigate; social interaction, subjective experiences of everyday activities, activity level, self-mastery, and socio-demographic and clinical factors.

*Social interaction.* A self-report Swedish version (Undén & Orth Gomer, 1989) of the instrument Interview Schedule for Social Interaction (Henderson, Duncan-Jones, Byrne, & Scott, 1980) was used to measure quantitative and qualitative aspects of social interaction. The Swedish version, termed Interview Schedule for Social Interaction – Self Rating version (ISSI-SR), has been shown to have good reliability and validity (Henderson et al., 1980; Undén & Orth Gomer, 1989), also when used with people with different psychiatric conditions (Eklund, Bengtsson-Tops & Lindstedt, 2007). The scale measures both the wider social interaction vital for community integration (social integration) and close relationships important for human development (attachment). The ISSI-SR consists of 30 items divided into four subscales.



Quantitative aspects of social interaction are examined in the two subscales; Availability of social integration, addressing the amount of social contacts a person has, and Availability of attachment, targeting accesses to close relationships. Both these quantitative subscales have a maximum score of six. Qualitative aspects of social interaction are measured by the subscales of Adequacy of social integration, which focuses on the level of satisfaction a person experiences regarding his or her social contacts, and Adequacy of attachment, which examines the satisfaction experienced with emotional relationships. The maximum scores are eight for Adequacy of social integration and ten for Adequacy of attachment. The total score intends to give a composite estimate of the person's perception of his/her social interaction. Since this was an explorative study, the total score as well as sub-scales and single items were analyzed when comparing day centre attendees and non-attendees.

*Subjective perceptions of everyday occupation.* The Occupational Value with pre-defined items (OVal-pd) instrument (Eklund, Erlandsson, & Persson, 2003) measures the participants' perception of the *occupational value* they find in everyday occupations. In this study an 18-item version was used (Eklund, Erlandsson, Persson, & Hagell, 2009). Three different value dimensions, concrete, symbolic and self-reward value, are addressed in the Oval-pd. The participant answers questions about the frequency with which he or she has experienced various examples of valued occupations during the last month on a scale from 1 (not at all) to 4 (very often). The OVal-pd has been shown to have good construct validity and reliability (Eklund et al., 2009). Furthermore, the instrument Satisfaction with Daily Occupations (SDO) was applied when exploring the participant's *satisfaction with daily occupations*. The SDO is performed as an interview asking the participant if he or she performs occupations in the areas of work,

leisure, home maintenance and personal care. The interviewer also asks the participant to rate his or her satisfaction with nine items in those occupational fields on a one-to-seven scale, where a high number indicates a high level of satisfaction. The instrument has shown good internal consistency, good test-retest reliability, good validity and an acceptable ability to discriminate between different psychiatric samples (Eklund, 2004; Eklund & Gunnarsson, 2008).

*Activity level.* A scale targeting level of activity is included in the SDO. The participant is asked to answer yes (1) or no (0) to whether he or she presently participates in each of nine specified occupational fields. The SDO measurement of activity level has demonstrated excellent test-retest reliability (Eklund & Gunnarsson, 2008).

*Self-mastery.* A person's self-mastery, defined as having control over one's life, can successfully be measured by the Pearlin Mastery Scale (Marshall & Lang, 1990), which has satisfactory psychometric properties concerning both validity and reliability (Pearlin, Lieberman, Menaghan, & Mullan, 1981). The Pearlin Mastery Scale is a self-report assessment where seven items are rated from 1 to 4, where a higher score indicates greater self-mastery.

*Socio-demographic characteristics.* With a questionnaire, designed for the present study, the informants were asked about different aspects of a socio-demographic nature. These were; gender, age, type of housing, civil status, educational level, being married/cohabiting or not, and living with children or not. The questionnaire also contained socially oriented questions such as whether or not the person had a close friend and had met a friend the last week.

*Clinical factors.* When rating the informants' *psychiatric symptoms* an 18-item version of the Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1962) was used. Each item is rated on a scale from 1 to 7, based on interview and observation, where a high score indicates more severe symptoms. The items may be divided into sub-scales of positive, negative and depressive symptoms and general psychopathology. BPRS has been shown to possess good inter-observer and intra-observer reliability (Kolakowska, 1976; Overall & Gorham, 1962), in particular when the interviewer acquires special training (Andersen et al., 1989) and uses a structured interview guide when conducting the interview (Crippa, Sanches, Hallak, Loureiro, & Zuardi, 2001). The interviewers in the present study received training in using BPRS and a test of inter-rater reliability gave alpha coefficients of 0.80 or more. Day centres are not medical institutions and diagnoses were thus not available for the attendees. However, since all of the persons in the study, by definition, had a history of psychiatric illness and had received a diagnosis at some point when in contact with the psychiatric care services, it was seen as reasonable to have an item in the socio-demographic questionnaire asking for the participants' *self-reported diagnosis*. An experienced psychiatrist then matched this self-report with the ICD-10 classification of mental disorders (World Health Organization, 1993) and grouped the diagnoses into four categories; Schizophrenia and other psychoses, Mood disorders, Anxiety, phobia and stress disorders and Other disorders.

### *Procedure*

Contact persons, who were staff members at the respective units, were given oral and written information about the aim of the study and the inclusion criteria for participation. Eligible participants were then given written and oral information about the study by the contact person

and were asked whether they agreed to participate in the study. Those who did gave their written consent. Four project assistants, who also were occupational therapists trained in using the instruments, collected data at the day centre or outpatient unit.

### *Data analysis*

Non-parametric statistics were used as the data were ordinal and categorical in nature. The Mann-Whitney U-test was used when comparing the day centre attendees and non-attendees on different aspects of social interaction, and Spearman correlations were calculated to estimate relationships between variables on ordinal scales. To analyse which variables could best explain the quantity and the quality of social interaction, the variables reflecting different aspects of social integration were set as dependent variables in five separate logistic regression models. The independent variables were participation in day centres (being an attendee or not), experienced occupational value, satisfaction with occupations, level of activity, and self-mastery, and the different socio-demographic and clinical factors. All variables that showed a relationship with the dependent variables at a p-value of 0.10 or less in univariate correlations were entered as independent variables in the models. Since no specific cutoff values have been suggested for the targeted variables, a median cut was chosen to create dichotomous group variables for the social interaction variables, perceived occupational value, satisfaction with daily occupations, activity level, self-mastery and the BPRS variables. Although age may be of importance to different aspects of everyday occupations it has also been assumed that the relationship may not be linear, and a grouping based on three groups has been proposed (Leufstadius & Eklund, 2008). Hence, when using age as an independent variable the participants were divided into three age groups,

those who were between 22-40, 41-51 and 52-65 years of age. The logistic regression analyses were based on the forward conditional model. The PASW software, version 18.0 was used.

## **Results**

### *Comparisons between day centre attendees and non-attendees regarding social interaction*

The day centre attendees and the non-attendees from the outpatient units were compared with respect to social interaction. The day centre attendees had a higher score on the subscale of Availability of social integration, reflecting the quantity of social contacts, whereas no significant differences were found for the other subscales of ISSI-SR or the total score.

At the item level of the ISSI-SR, a difference was found in that the day centre attendees met more people per week than the non-attendees, and the day centre attendees also had a larger number of people they could ask to borrow things from. There was also a significant difference between the groups in terms of qualitative aspects of the social interaction at the item level, showing that the day centre attendees were less satisfied with the number of people who could help them, and wanted more of such persons, than the non-attendees. No further differences on the item level were found (Table 2).

Table 2 about here

There was no significant difference between the day centre attendees and non-attendees regarding who they regarded as a supportive person (family member, friend or staff). For the whole group it was most common that the supportive and close person was a family member; for example, “someone you are very close to” was in most cases (63 %) a family member. However,

when asked if there was someone the participants could get support from, 18 % of the informants reported that they did not have such a person.

#### *Factors of importance for social interaction*

The independent factors that had been shown to be related ( $p < 0.10$ ) to different dimensions of social interaction in initial analyses were included in logistic regression analyses in order to further assess these factors' contributions. All models were supported by a Hosmer-Lemeshow test with a significance level higher than 0.05 (0.623 – 0.99).

The first model had the subscale of Availability of social integration (high/low) as the dependent variable and had eight independent variables (being a day centre attendee or not, being married/cohabiting or not, satisfaction with daily occupations, perceived occupational value, activity level, level of self-mastery, and negative and depressive symptoms). The strongest indicator for having high level of Availability of social integration was being married/cohabiting, with an odds ratio of over three (Table 3). Having a high level of satisfaction with everyday occupations was also a strong predictor, as indicated by an odds ratio of more than two. The model further suggested that a high level of perceived occupational value more than doubled the chance of experiencing a high level of Availability of social integration.

Table 3 about here

The second model had Availability of attachment as the dependent variable and eight independent variables were used (sex, being married/cohabiting, satisfaction with daily occupation, occupational value, self-mastery and depressive, negative, positive and general

psychiatric symptoms). Being married/cohabiting was the strongest indicator of belonging to the high group of Availability of attachment. An additional indicator was the perception of a high level of satisfaction with daily occupation, which was associated with a more than twofold chance of belonging to the high group of Availability of attachment (Table 3).

The third model contained Adequacy of social integration as the dependent variable and eight independent variables (age, being married/cohabiting, satisfaction with daily occupation, perceived occupational value, level of activity, self-mastery and depressive and general symptoms). Perceiving a high level of self-mastery was the strongest indicator of belonging to the high group of adequacy of social integration, with an odds ratio above two (Table 3). Further, a high level of satisfaction with daily occupation increased the chance of perceiving a high level of Adequacy of social integration.

The fourth model concerned the subscale Adequacy of attachment and included five independent variables (satisfaction of daily occupation, self-mastery and positive, depressive and general psychiatric symptoms). An odds ratio of close to four indicated that having a low level of depressive symptoms was strongly related to belonging to the high group of adequacy of attachment (Table 3). Furthermore, belonging to the low group regarding positive symptoms showed a more than twofold chance of being in the high group of Adequacy of attachment.

Finally, eight independent variables (being married/cohabiting occupational value, satisfaction with daily occupation, self-mastery, and negative, positive, depressive and general psychiatric symptoms), were entered in the model targeting the total ISSI-SR score. To be married or

cohabiting was the strongest indicator, as revealed by an odds ratio of above four (Table III). Lack of depressive symptoms also indicated a more than fourfold chance of belonging to the high group regarding the total ISSI-SR. Moreover, having a high level of satisfaction with daily occupation increased the odds by more than three of being in the high group regarding the total ISSI-SR score.

## **Discussion**

The findings showed that family members were the main source of supportive contacts and that few relied on staff in that sense, which confirms previous studies (Bengtsson-Tops & Hansson, 2001; Muller, Nordt, Lauber, & Rössler, 2007). The results of the specific items showed that quite a few participants lacked close contacts, suggesting that attention to the need for social support in the target group is highly warranted.

There was a difference between the day centre attendees and the non-attendees regarding quantitative aspects of the social interaction, in line with Catty, Goddard and Burns (2005), but there was no difference regarding qualitative aspects. The results also showed that even though the day centre group had a larger number of social contacts, they wanted more people who could help them. This would be linked to expectations set up and not fulfilled. A conclusion from this might be that the day centres could provide possibilities for meeting with people, but not for closer, emotional contacts. Previous studies have shown that existing day centre services were used mainly by people with psychiatric disabilities who had become resigned to their position as “outsiders” and needed a place to be where they would be accepted (Bryant et al., 2004; Kilian et al., 2001). Research so far thus indicates that day centres might offer this type of safe place with



possibilities for social interaction, but it is important that the community rehabilitation is conducted in such manner that it also promotes closer contacts and community integration.

For the study group as a whole, it appeared that subjective perceptions of satisfying and valued everyday occupations were important for both the number of social contacts and the access to close relationships. The importance of perceived occupational value has previously been demonstrated in relation to quantitative aspects of social interaction, such as the size of the social network (Eklund, 2006). It seems likely that valued and satisfying occupations are often performed in social contexts, and that the experience of meaning in occupation, a concept related to both valued and satisfying occupations, enhances social interaction, which has also been previously reported (Yilmaz et al., 2009).

Another important factor for social interaction was that of being married or cohabiting, an expected result that concurs with findings by Eklund and Hansson (2007). The fact that most people in the present study lived alone points to the importance of facilitating closer social relations. More social contacts, even closer ones, could be enhanced by peer support. Peer support has been shown to smooth the process of regaining social skills and control in life, and to provide hope for recovery (Coatsworth-Puspoky, Forschuk, & Ward-Griffin, 2006). Moreover, family members have a major supportive social role for people with psychiatric disabilities (Pernice-Duca & Onaga, 2006) and by giving these informal caregivers support from professionals the quality of the family relations could be enhanced.

The qualitative aspect of social integration was shown to be associated with self-mastery, satisfaction with daily occupations and the severity of different psychiatric symptoms. Having a high level of self-mastery and being satisfied with daily occupations have previously been

reported as important for the quality of people's social interaction (Eklund, 2006; Eklund & Hansson, 2007). Self-mastery has also been shown to be imperative for general recovery among people with psychiatric disabilities (Rebeiro, 2005), which accentuates the importance of considering self-mastery in the psychiatric rehabilitation of today.

The present study also showed that level of satisfaction with daily occupations was an indicator for the whole spectrum of social interaction. This indicates that engagement in satisfying occupations should be highlighted in psychiatric rehabilitation that aims to enhance social interaction. The finding that a low level of depressive symptoms was related to better social interaction is in line with earlier research (Eklund & Hansson, 2007).

It should be mentioned that due to the cross-sectional design of the study, no causal effects could be determined. The variables set as predictors in the analyses might as well be influenced by the different aspects of social interaction. For example, those with a high total ISSI-SR score might have been more liable to meet a spouse, have a low level of depression and be satisfied with their everyday occupations. However, although the direction of the relationships found is unknown, the identified associations indicate factors that should be addressed when desiring to enhance the social integration and interaction among people with psychiatric disabilities.

### *Limitations*

The fact that the waiting room principle was used in one unit is a limitation of this study. The proportion of non-participants was also greater in this subsample. Thus, for 10 out of the 82 persons in the comparison group there may have been unknown systematic influences in the

sampling, but this disadvantage was set against the advantage of having all psychosis units represented in the comparison group. Moreover, in both samples, people with more severe psychiatric symptoms may have been among the non-participants, as the participants were generally rated as having moderate levels of psychopathology. This indicates that those who had more severe psychiatric disabilities tended not to participate in the research project, which means that the studied sample might thus not be fully representative of the target group. The fact that the non-attendees more often reported a diagnosis of schizophrenia may be seen as another drawback. However, self-reported diagnosis did not explain any of the variance in social interaction in the logistic regression analyses, which is in line with findings from previous research (Eklund, 2006). The variation between the groups in the current study with respect to self-reported diagnosis should thus not constitute a major problem. A further limitation of this cross-sectional study is that no causal relationships could be established.

## **Conclusion**

People with psychiatric disabilities received their main social support from family members, but still often lacked a close and supportive contact. Day centres provided opportunities for more social contacts, but not for closer contacts, suggesting that measures such as peer support should be emphasized in day centres. The subjective experiences of occupation seemed important for perceptions of the social network, hence should social support provided from the community not only focus on creating more social ties but also on helping towards a sense of meaning in the individual's everyday life and towards integration in the surrounding community. Self-mastery was crucial mainly for the adequacy of social integration, further emphasizing the importance of user involvement in the services, which includes taking and having control over one's daily occupations.

## **Conflict of interest**

The authors declare that they have no conflict of interest.

## **Acknowledgement**

This study was funded by grants from the National Board of Health and Welfare (6104/2009-325) and the Swedish Research Council (K2006-27X-20067-01-3). Additional thanks to the informants who participated in the study.

## References

- Andersen, J., Larsen, J., Schultz, V., Nielsen, B., Korner, A., & Behnke, K. (1989). Psychiatric Rating Scale: Dimension of schizophrenia: reliability and construct validity. *Psychopathology*, 22, 168-176.
- Argentzell, E., Håkansson, C., & Eklund, M. (2012). Experience of meaning in everyday occupations among unemployed people with severe mental illness. *Scandinavian Journal of Occupational Therapy*, 19, 49-58.
- Becker, T., & Kilian, R. (2008). Daily living: does this matter for people with mental illness? *International Review of Psychiatry*, 20, 492-497.
- Bejerholm, U., & Eklund, M. (2004). Time use and occupational performance among persons with schizophrenia. *Occupational Therapy in Mental Health*, 20, 27-47.
- Bengtsson-Tops, A., & Hansson, L. (2001). Quantitative and qualitative aspects of the social network in patients with schizophrenia living in the community. Relationships to sociodemographic characteristics, clinical factors and subjective quality of life. *International Journal of Social Psychiatry*, 47, 67-77.
- Bryant, W., Craik, C., & McKay, E. A. (2004). Living in a glasshouse: Exploring occupational alienation. *Canadian Journal of Occupational Therapy*, 71, 282-189.
- Catty, J., Goddard, K., & Burns, T. (2005). Social services and health services day centre care in mental health: social networks and care needs of their users. *International Journal of Social Psychiatry*, 51, 23-34.
- Catty, J., Goddard, K., White, S., & Burns, T. (2005). Social networks among users of mental health day care – predictors of social contacts and confiding relationships. *Social Psychiatry and Psychiatric Epidemiology*, 40, 467-474.
- Coatsworth-Puspoky, R., Forschuk, C., & Ward-Griffin, C. (2006). Peer support relationships: an unexplored interpersonal process in mental health. *Journal of Psychiatric and Mental Health Nursing* 13, 490-497.
- Crippa, J., Sanches, R., Hallak, J., Loureiro, S., & Zuardi, A. (2001). A structured interview guide increases Brief Psychiatric Rating Scale reliability in raters with low clinical experience. *Acta Psychiatrica Scandinavica* 103, 465-470.
- Eklund, M. (2004). Satisfaction with Daily Occupations - A tool for client evaluation in mental health care. *Scandinavian Journal of Occupational Therapy*, 11, 136-142.
- Eklund, M. (2006). Occupational factors and characteristics of the social network in people with persistent mental illness. *American Journal of Occupational Therapy*, 60, 587-594.
- Eklund, M., Bengtsson-Tops, A., & Lindstedt, H. (2007). Construct and discriminant validity and dimensionality of the Interview Schedule for Social Interaction (ISSI) in three psychiatric samples. *Nordic Journal of Psychiatry*, 62, 182-188.
- Eklund, M., Erlandsson, L.-K., & Persson, D. (2003). Occupational value among individuals with long-term mental illness. *Canadian Journal of Occupational Therapy*, 70, 276-284.
- Eklund, M., Erlandsson, L.-K., Persson, D., & Hagell, P. (2009). Rasch analysis of an instrument for measuring occupational value: Implications for theory and practice. *Scandinavian Journal of Occupational Therapy*, 16, 118-128.
- Eklund, M., & Gunnarsson, A. B. (2008). Content validity, discriminant validity and responsiveness of the Satisfaction with Daily Occupations (SDO) instrument: A screening tool for people with mental disorders. *British Journal of Occupational Therapy*, 71, 487-495.

- Eklund, M., & Hansson, L. (2007). Social network among people with persistent mental illness: Associations with sociodemographic, clinical and health-related factors. *International Journal of Social Psychiatry*, 53, 293-305.
- Hall, S., & Cheston, P. (2002). Mental health and identity: the evaluation of a drop-in centre. *Journal of Community and Applied Social Psychology*, 12, 30-44.
- Hammell, K. (2004). Dimensions of meaning in the occupations of daily life. *Canadian Journal of Occupational Therapy*, 71, 296-305.
- Hansson, L., Middelboe, T., Sørgaard, K. W., Bengtsson-Tops, A., Bjarnason, O., Merinder, L., Vinding, H. R. (2002). Living situation, subjective quality of life and social network among individuals with schizophrenia living in community settings *Acta Psychiatrica Scandinavica*, 106, 343-350.
- Henderson, S., Duncan-Jones, P., Byrne, D., & Scott, R. (1980). Measuring social relationship: The interview schedule for social interaction. *Psychological Medicine*, 10, 723-724.
- Hendryx, M., Green, C. A., & Perrin, N. A. (2008). Social support, Activities and Recovery from Serious Mental Illness: STARS Study Findings. *Journal of Behavioral Health Services & Research*, 36, 320-329.
- Kilian, R., Lindenbach, I., Lobig, U., Uhle, M., & Angermeyer, M. (2001). Self-perceived social integration and the use of day centers of persons with severe and persistent schizophrenia living in the community: a qualitative analysis. *Social Psychiatry and Psychiatric Epidemiology*, 36, 545-552.
- Kolakowska, T. (1976). *Brief Psychiatric Rating Scale*. Oxford, UK: Oxford University.
- Leufstadius, C. & Eklund, M. (2008). Time use among individuals with persistent mental illness: identifying risk factors for imbalance in daily activities. *Scandinavian Journal of Occupational Therapy*, 15, 23-33.
- Leufstadius C, Erlandsson L-K, Eklund M. (2006). Time use and daily rhythm among people with persistent mental illness. *Occupational Therapy International*, 13, 123-41.
- Leufstadius, C., Erlandsson, L.-K., Björkman, T., & Eklund, M. (2008). Meaningfulness in daily occupations among individuals with persistent mental illness. *Journal of Occupational Science*, 15, 27-35.
- Lundberg, B., Hansson, L., Wentz, E., & Bjorkman, T. (2008). Stigma, Discrimination, Empowerment and Social Networks: a Preliminary Investigation of Their Influence On Subjective Quality of Life in a Swedish Sample. *International Journal of Social Psychiatry*, 54, 47-55.
- Macdonald, E. M., Hayes, R. L., & Baglioni, A. J. (2000). The quantity and quality of the social networks of young people with early psychosis compared to closely matched controls. *Schizophrenia Research*, 46, 25-30.
- Marshall, G., & Lang, E. (1990). Optimism, self-mastery, and symptoms of depression in women professionals. *Journal of Personality and Social Psychology*, 59, 132-139.
- Meehan, T., Robertson, S., Stedman, T., & Byrne, G. (2004). Outcomes for elderly patients with mental illness following relocation from a stand-alone psychiatric hospital to community-based extended care units. *Australian and New Zealand Journal of Psychiatry*, 38, 948-952.
- Muller, B., Nordt, C., Lauber, C., & Rössler, W. (2007). Changes in social network diversity and perceived social support after psychiatric hospitalization: Results from a longitudinal study. *International Journal of Social Psychiatry*, 53, 564-575.

- Munroe, J., Palmada, M., Russell, A., Taylor, P., Heir, B., & McKay, J. (2007). Queensland extended care service for people with severe mental illness and the role of occupational therapy. *Australian Occupation Therapy Journal* 54, 257-265.
- National Board of Health and Welfare. (2006). What is a psychiatric disability? The national psychiatry co-ordination gives their definition of the concept of psychiatric disability [Vad är ett psykiskt funktionshinder? Nationell psykiatrisamordning ger sin definition av begreppet psykiskt funktionshinder.]. In psykiatrisamordning (Ed.).
- National Board of Health and Welfare. (2011). National guidelines - psychosocial interventions for persons with schizophrenia.[Nationella riktlinjer för psykosociala insatser för personer med schizofreniliknande tillstånd - stöd för styrning och ledning.]
- Overall, J., & Gorham, D. (1962). The Brief Psychiatric Rating Scale. *Psychological Reports*, 10, 799-712.
- Pearlin, L. I., Lieberman, M. A., Menaghan, E., & Mullan, J. T. (1981). The stress process. *Journal of Health and Social Behavior* 22, 337-356.
- Pernice-Duca, F., & Onaga, E. (2006). Examining the contribution of social network support to the recovery process among clubhouse members. *American Journal of Psychiatric Rehabilitation*, 12, 1-30.
- Rebeiro, K. (2005). Reflections on...The recovery paradigm: Should occupational therapist be interested? *Canadian Journal of Occupational Therapy* 72, 96-102.
- Strömberg, G. E., Sandlund, M., & Westman, G. (2005). Social needs of people with severe functional impairments living in a rural district in Sweden. A population-based study. *European psychiatry*, 20, 559-561.
- Sörngaard, K. W., Hansson, L., Heikkilä, J., Vinding, H. R., Bjarnason, O., Bengtsson-Tops, A., Middelboe, T. (2001). Predictors of social relations in persons with schizophrenia living in the community: a Nordic multicentre study. *Social Psychiatry and Psychiatric Epidemiology*, 36, 13-20.
- Tjörnstrand, C., Bejerholm, U., & Eklund, M. (2011). Participation in day centers for people with psychiatric disabilities - Characteristics of the occupations. *Scandinavian Journal of Occupational Therapy*, 18 (4), 243-253.
- Townsend, E., & Polatajko, H. (2007). *Enabling occupation II: advancing an occupational therapy vision for health, well-being and justice through occupation*. Ottawa: CAOT Publications ACE.
- Undén, A.-L., & Orth Gomér, K. (1989). Development of a social support instrument for use in population surveys. *Social Science and Medicine*, 29, 1387-1392.
- World Health Organization. (1993). *The ICD-10 classification of mental and behavioural disorders. Diagnostic criteria for research*. Geneva.
- Yilmaz, M., Josephsson, S., Danemark, B., & Ivarsson, A.-B. (2009). Social processes of participation in everyday life among persons with schizophrenia. *International Journal Qualitative Studies of Health and Well-Being*, 4, 267-279.

**Table 1.** Description of socio-demographic and clinical characteristics for the day centre attendees and the non-attendees.

Characteristics	Number of participants	
	Day centre attendees (N=93)	Non-attendees (N=82)
Gender: male/female	55 (59 %)/38 (41 %)	36/45 (44 %/56 %)
Age: mean (min – max)	46 (22 - 63)	Mean 47 (24 - 65)
Civil status		
Married/cohabiting	17 (19 %)	18 (22 %)
Single	72 (81 %)	63 (78 %)
Education level		
Not completed nine-year compulsory school	5 (6 %)	2 (3 %)
Completed nine-year compulsory school	35 (41 %)	10 (13 %)
Completed 6th form college	41 (47 %)	42 (53 %)
University or college degree	6 (7 %)	25 (32 %)
Lives with children	10 (12 %)	13 (18 %)
BPRS negative symptoms mean (min-max)	2.1 (1-4.5)	2.4 (1-5)
BPRS positive symptoms mean (min-max)	1.7 (1-3.8)	1.8 (1-4.2)
BPRS depressive symptoms mean (min-max)	2.7 (1-5)	2.6 (1-6)
BPRS general psychopathology mean (min-max)	2 (1.2-4.8)	1.9 (1-3.5)
Proportion of participants with schizophrenia and other psychoses	43.5 %	81.8 %



**Table 2.** Description of the day centre attendee's and the non-attendee's social interaction.

	Day centre %	Non-attendees%	<i>p-value</i>
<i>Sub-scales of the ISSI-SR</i>			
Availability of social integration; mean (min-max)	1.9 (0-6)	1.4 (0-5)	0.025
Adequacy of social integration; mean (min-max)	4.7 (0-8)	4.4 (0-8)	n.s.
Availability of attachment; mean (min-max)	4.4 (0-6)	4.3 (0-6)	n.s.
Adequacy of attachment; mean (min-max)	6.6 (0-10)	6.4 (0-10)	n.s.
<i>Items of the ISSI-SR<sup>1)</sup></i>			
Percentage of participants who met few (0-5)/ many (6 or more) people per week	52/48	71/29	0.010
Number of people a person can ask to borrow things from; mean (min-max)	3.7 (0-50)	2.4 (0-15)	0.021
Percentage of participants who were satisfied/ wanted more people who can help them	38/62	56/44	0.020
Percentage of participants who wanted more/ were satisfied/ wanted fewer people in their social network	31/68/1	57/40/3	0.003

<sup>1)</sup> On the item level, only those where statistically significant differences between the groups were found are shown here.

**Table 3.** Results from logistic regression analyses with the different variables of ISSI-SR as dependent variables and satisfaction and value in everyday occupations, level of self-mastery, socio-demographic and clinical factors as independent variables and in the models.

	Odds ratio	95 % CI	<i>p-value</i>	Proportion of explained variance, as indicated by Nagelkerke R squared
<i>Availability of social integration</i>				
Married/cohabiting	3.02	1.294-7.039	0.011	20 %
High level of satisfaction with daily occupation	2.56	1.277-5.122	0.008	
High level of value in daily occupation	2.32	1.157-4.668	0.018	
<i>Availability of attachment</i>				
Married/cohabiting	3.94	1.748-8.864	0.001	16 %
High level of satisfaction in daily occupation	2.67	1.294-5.492	0.008	
<i>Adequacy of social integration</i>				
High level of mastery	2.66	1.310-5.409	0.007	16 %
High level of satisfaction with daily occupation	2.18	1.073-4.438	0.031	
<i>Adequacy of attachment</i>				
Low level of depressive symptoms	3.95	1.675-9.292	0.002	15 %
Low level of positive symptoms	2.65	1.283-5.475	0.008	
<i>Total score of ISSI-SR</i>				
Married/cohabiting	4.59	1.732-12.205	0.002	27 %
Low level of depressive symptoms	4.49	1.861-10.843	0.001	
High level of satisfaction in daily occupation	3.00	1.468-6.148	0.003	

