
Occupational Engagement in Persons With Schizophrenia: Relationships to Self-Related Variables, Psychopathology, and Quality of Life

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KEY WORDS

- mental health
- occupation
- quality of life
- self
- schizophrenia

Previous research suggests that having schizophrenia involves not being fully equipped to engage in daily occupations. This study was aimed at exploring relationships between occupational engagement and the issues of self-related variables, psychiatric symptoms, and quality of life. Seventy-four outpatients with schizophrenia entered the study. Instruments used in this study were Profile of Occupational Engagement in People with Schizophrenia, Locus of Control, Mastery, Sense of Coherence, Brief Psychiatric Rating Scale, and Lancashire Quality of Life Profile. The results showed that a high level of occupational engagement was related to higher ratings of self-related variables, fewer psychiatric symptoms, and better ratings of quality of life, and vice versa. A significant difference and a linear trend were found among the three subgroups of different levels of occupational engagement and the estimated variables. In the regression model, negative symptoms and internal locus of control together explained 47% of the variance in occupational engagement. The results add a new dimension to understanding mental health and suggest the importance of assessing the level of occupational engagement.

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Introduction

That engagement in occupations affects health and influences quality of life is a commonly held belief (Chan, Krupa, Lawson, & Eastbrook, 2005; Kielhofner, 2002; Meyer, 1922/1977; World Health Organization [WHO], 2001; Yerxa, 1998). For persons with schizophrenia, time use research has contributed to the knowledge base concerning occupational engagement and has provided glimpses of actual lifestyles (Bejerholm & Eklund, 2004, 2006b; Hayes & Halford, 1996; Minato & Zemke, 2004; Shimitras, Fossey, & Harvey, 2003). For example, the level of engagement has been shown to vary along a continuum, ranging from being alone and performing mostly quiet activities, associated with little sense of meaning, to having ongoing occupations interpreted as being meaningful and often entailing social interactions in a variety of places (Bejerholm & Eklund, 2006b). Little empirical research investigating the relationship between the level of engagement and health-related factors—such as psychopathology, self-related variables, and quality of life—has been carried out, however.

In the present study, the construct of occupational engagement is viewed as a lifestyle characteristic (Christiansen, 2005) and involves occupational performance, the dynamic interplay among personal, occupational, and environmental factors (Law et al., 1996). Occupational engagement describes the extent to which a person has a balanced rhythm of activity and rest, a variety and range of meaningful occupations and routines, and the ability to move around in society and interact socially, implying that occupational engagement occurs over time. Moreover, occupational engagement involves interpretation and comprehension emanating from experience (Bejerholm & Eklund, 2006b), the process that forms the basis for ongoing occupational engagement and a cyclical means of maintaining a sense of

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self and well-being (Rebeiro & Cook, 1999). Thus, occupational engagement has both objective and subjective aspects (Chugg & Craik, 2002).

Studying the relationship between self-related variables and occupational engagement may be one way of investigating how personal factors, involved in the dynamic interplay among personal, occupational, and environmental factors (Law et al., 1996), may affect to what extent a person with schizophrenia is able to engage in occupations. By engaging in occupations, experience becomes a source of comprehension and meaning (Kegan, 1982; Rebeiro & Cook, 1999; Rotter, 1966). One of the disabling consequences of schizophrenia, however, is difficulty in perceiving reality, which affects a person's sense of self (Davidson, Stayner, & Haglund, 1998; Green, Kern, Braff, & Mintz, 2000; McKibbin, Brekke, Sires, Jeste, & Patterson, 2004). These changes in cognitive functioning decrease the ability to interpret and make sense of experiences and may result in a sense of detachment and inability to reflect, which is a part of the occupational engagement process. Therefore, to understand occupational engagement in persons with schizophrenia, it is important to investigate self-related variables, such as having internal locus of control (Rotter, 1966), a sense of coherence (Antonovsky, 1987, 1993), and mastery (Pearlin, Menaghan, Lieberman, & Mullan, 1981). Earlier research has shown that, in a normal population, higher levels of aspiration and achievement in daily occupations were related to internal locus of control (Freeman, Anderson, Kairey, & Hunt, 1982; Nowicki & Barnes, 1973). Schizophrenia research has shown that structure in the day (Rosenfield, 1992), satisfaction with daily occupations (Aubin, Hachey, & Mercier, 1999; Eklund, Hansson, & Bejerholm, 2001), the need to engage in daily occupations, living conditions (Bengtsson-Tops, 2004), and access to social contacts (Bengtsson-Tops, 2004; Pearlin et al., 1981) are aspects related to self-related variables. These findings, although not focused on occupational engagement per se, strongly indicate that self-related variables may be related to occupational engagement as defined in this study. To our knowledge, this relationship has not been investigated.

Investigating the relationship between psychopathology and occupational engagement is yet another way of studying how personal factors may affect occupational engagement in persons with schizophrenia. It has been emphasized that the level of occupational engagement depends on the stage of illness (Brown, 1998; Emerson, Cook, Polatajko, & Segal, 1998; Nagle, Cook, & Polatajko, 2002). Consequently, occupational engagement perhaps should be interpreted in light of the progression of the illness (Bejerholm & Eklund, 2006b; Emerson et al., 1998).

In schizophrenia research, a distinction often is made between negative and positive symptoms because of their clinical implications. Negative symptoms refer to what is lacking in functioning, such as affective flattening, poverty of speech, poor grooming, lack of motivation, and social withdrawal, whereas positive symptoms refer to delusions and hallucinations (Sadock & Sadock, 2003). A recent study showed that the severity of psychiatric symptoms seemed to be related to the level of occupational engagement (Bejerholm & Eklund, 2006a). Involvement in daily life has been shown to reduce negative symptoms in persons with schizophrenia (Halford, Harrison, Kalyansundaram, Moutrey, & Simpson, 1995; Leff, Thornicroft, Coxhead, & Crawford, 1994; Mairs & Bradshaw, 2004). Furthermore, negative symptoms have been shown to be a better determinant than positive symptoms for how persons with schizophrenia are able to engage in daily occupations (Green et al., 2000; Palmer et al., 2002). Nevertheless, the relationship between psychopathology and occupational engagement requires further clarification, and the research performed so far suggests that differentiation is warranted among negative, positive, and depressive symptoms and their relation to occupational engagement.

Quality of life is an important indicator of community adjustment, and measurements of quality of life are intended to reflect and capture the current life situation of persons with schizophrenia (Chan et al., 2005). The dimension of quality of life takes into account a broad range of variables. Most of them are concerned with different subjective perceptions of life circumstances, such as satisfaction with work, leisure, finances, living situation, safety, family relations, social relations, and religion (Barry & Zissi, 1997; Hansson et al., 1999; Lehman, 1988; Oliver, Huxley, Priebe, & Kaiser, 1997). Within occupational therapy, increased occupational engagement is viewed as a goal toward enhanced quality of life (Chan et al., 2005; Christiansen, Baum, & Bass-Haugen, 2005; Goldberg, Brintnell, & Goldberg, 2002; Laliberte-Rudman, Hoffman, Scott, & Renwick, 2004). The role of an occupational therapist often is to offer and provide the conditions necessary for satisfactory quality of life (Hachey & Mercier, 1993). Still, little research supports such a link between occupational engagement and quality of life, not the least because occupational therapists do not traditionally use quality-of-life measures to evaluate the outcome of treatment (Laliberte-Rudman et al., 2004). Consequently, it is not clear whether a connection exists between the extent of occupational engagement and quality of life in research or in clinical practice. Nevertheless, the research performed to date has shown a substantial relationship between other aspects of daily life and quality of life (Chan

et al., 2005; Eklund & Backstrom, 2005; Eklund et al., 2001; Goldberg et al., 2002; Laliberte-Rudman et al., 2004; Mercier & King, 1994). For example, perceived meaningfulness and satisfaction with daily occupations have been shown to be related to subjective quality of life (Eklund & Backstrom, 2005; Eklund et al., 2001; Goldberg et al., 2002). Some studies found that objective conditions, such as the range of daily occupations or having a job, were related to quality of life (Aubin et al., 1999; Borge, Martinsen, Ruud, Watne, & Friis, 1999; Eklund & Backstrom, 2005; Ruggeri, Gater, Bisoffi, Barbui, & Tansella, 2002). Other studies did not (Eklund, Hansson, & Ahlqvist, 2004; Kelly, McKenna, & Parahoo, 2001). Thus, previous findings from studies of occupational factors suggest that especially subjective aspects of daily occupation, but in some cases also objective conditions, are related to quality of life. Whether occupational engagement is associated with quality of life seems not to have been investigated, however. In all, it is difficult to identify which specific factors have a favorable influence on quality of life.

This study explores possible relationships between occupational engagement and personal factors, such as self-related variables and psychopathology, and quality of life. We hypothesized that a high level of occupational engagement would be associated with higher ratings of self-related variables, less severe psychiatric symptoms, and better quality of life. It also was our intention to illuminate the relevance of the occupational therapy assumptions that occupational engagement promotes health and quality of life and thereby contributes to psychosocial occupational therapy's knowledge base about persons with schizophrenia.

Method

Selection Procedure

The criteria for the selection of participants were a diagnosis of schizophrenia based on *DSM-IV-TR* (American Psychiatric Association, 2000) and an age of 20–55 years. The participants were outpatients in a geographically defined catchment area in a Swedish town. Patients who had visited the outpatient clinic during the past 12 months were selected from the local patient register for the study. Initially, 124 individuals were identified, but 5 were considered dangerous or unable to communicate, and the physicians responsible for their treatment advised against contacting them. Thus, 119 individuals were included.

For reasons of confidentiality, the primary contact person made the initial contact. This person was responsible for continuous contact with the patient and for the treat-

ment planning. The primary contact person gave information about the study by providing an information sheet, repeating the information orally if necessary, and asking for the patient's consent.

Forty individuals declined participation at this stage. The interviewer, the first author of the present study, then contacted and maintained subsequent contact with the participants and arranged appointments. If a person did not show for the first appointment, two additional appointments were made, if necessary. Another 5 individuals were lost because they did not keep the third and last appointment. The total dropout of 45 individuals resulted in a participation rate of 62%.

Furthermore, to obtain an unbiased rating regarding the evaluation of occupational engagement, another rater was consulted who was not influenced by previous information about the collected variables regarding psychopathology, quality of life, and sense of self. The data collection took between 1½ hours and 3 hours and was carried out at the outpatient clinic, which was a familiar place to the participants. The data for the group as a whole was collected during 9 months from autumn to spring.

Dropout Analysis

There were no differences regarding age ($p = 0.48$) or sex ($p = 0.55$) between the dropouts and the participants. The dropout analysis revealed no statistically significant differences with respect to subgroups of participants ($p = 0.192$); disorganized, catatonic, residual, and undifferentiated schizophrenia were classified into one subgroup, participants with paranoid schizophrenia into a second subgroup, and those with schizophreniform disorder or schizoaffective disorder formed a third subgroup. The project was approved by the Research Ethics Committee of the Faculty of Medicine at Lund University in Sweden.

Participants

Seventy-four participants entered the study (see Table 1). The mean age was 42 years, and ages ranged from 22 to 55 years. The most predominant diagnostic subgroup was paranoid schizophrenia. About two-thirds of the sample were men. Most were unmarried and lived alone, with no children. Living in an apartment was the most common form of accommodation. Forty-four individuals had at least a high school education, and 35 had some form of vocational education, such as clerical training, a short training period in social care or health care, or training for manual work. Five individuals had a university degree. Most of the participants, however, had a sick or disability pension. Twelve individuals perceived themselves as having some kind of employment.

Table 1. Demographic Characteristics (N = 74)

Characteristic	No. of Participants (%)
Diagnosis	
Paranoid schizophrenia	36 (49)
Disorganized schizophrenia	10 (14)
Catatonic schizophrenia	1 (1)
Undifferentiated schizophrenia	9 (12)
Residual schizophrenia	2 (3)
Schizophrenia, not specified	4 (5)
Schizophreniform disorder	4 (5)
Schizoaffective disorder	8 (11)
Gender	
Men	49 (66)
Women	25 (34)
Living single/with partner (n = 72)	
Single	52 (72)
Partner	8 (11)
Parents	1 (1)
Sheltered living	7 (10)
Other	4 (6)
Children (n = 73)	
Yes	8 (11)
No	65 (89)
Education (n = 73)	
No high school	29 (40)
High school	25 (34)
College	19 (26)
Work situation (n = 73)	
Disability or sick pension	53 (72)
Open-market employment	7 (10)
Sheltered work	5 (7)
Unemployed	6 (8)
Student	2 (3)

Instruments

Occupational Engagement

The Profile of Occupational Engagement in people with Schizophrenia (POES) identifies occupational engagement and translates this knowledge into a profile of occupational engagement (Bejerholm, Hansson, & Eklund, 2006). The instrument was initially developed on the basis of qualitative research concerning time use and occupational engagement of persons with schizophrenia (Bejerholm & Eklund, 2004, 2006b). POES is constituted by a Part I and a Part II. Part I involves the data collection—the patient's completion of one or more 24-hour time use diaries. For each diary, the patient is asked to fill in and provide an account of the use of time during the previous 24 hours regarding occupation, social and geographical environment, and the personal experience that the event evoked. The assessor also conducts a supplementary interview. The interview works as a cognitive aid and helps the patient to recall the chronological orders of the events and the experiences evoked. The second part, the assessment, consists of nine items rated on a four-category ordinal scale: daily rhythm of activity and rest, variety and range of occupations, place, social environment, social interplay, interpre-

tation, extent of meaningful occupations, routines, and initiating performance. An estimation is made by the occupational therapist and each item may be plotted on a graph, resulting in a profile of occupational engagement. A sum score indicates the level of engagement. A higher score indicates a higher level of occupational engagement. POES has been shown to have satisfactory content validity, interrater agreement, internal consistency (Bejerholm et al., 2006), and construct validity (Bejerholm & Eklund, 2006a).

Self-Related Variables

The Locus of Control scale is a 13-item questionnaire, constructed by Rotter (1966). The scale measures whether an individual perceives reinforcements to be a function of his or her own actions (internal control) or externally determined (external control). Persons with an internal locus of control believe that their own actions determine the rewards they obtain, whereas those with an external locus of control believe that their own behavior does not matter and that rewards in life are generally outside of their control. Ratings are made on a 4-point scale. A low score indicates an internal control, whereas a high score indicates external control. For this study, a Swedish version was used (Eisemann, Perris, Palm, Palm, & Perris, 1988). The Locus of Control scale has satisfactory internal consistency and test-retest reliability (Rotter, 1966).

Mastery is another self-related variable, and the mastery scale is intended to measure the individual's perceived control over circumstances that significantly affect his or her life (Pearlin et al., 1981). Mastery is measured using a 7-item scale with four rating alternatives, in which 4 indicates the highest level of perceived mastery. A high score indicates a higher level of mastery. The scale has shown satisfactory psychometric properties (Marshall & Lang, 1990; Rosenfield, 1992).

The Sense of Coherence scale (Antonovsky, 1987, 1993) was used to assess a third self-related variable. According to Antonovsky (1987), the sense of coherence indicates how well a person manages stress and stays healthy in various circumstances. Comprehensibility, manageability, and meaningfulness are constructs that constitute the Sense of Coherence scale. Items are rated by the participants on a 7-point scale with two anchoring responses (e.g., *never* and *very often*). A higher score indicates a stronger sense of coherence. The instrument has proven to be valid and reliable (Antonovsky, 1993; Bengtsson-Tops, Brunt, & Rask, 2005; Langius, Björvell, & Antonovsky, 1992). A short version with 13 items, shown to have the same psychometric properties as the original 29-item scale, was used (Langius & Björvell, 1993; Langius et al., 1992).

Psychopathology

Psychopathology was assessed by means of the Brief Psychiatric Rating Scale (BPRS) (Kolakowska, 1976; Overall & Gorham, 1962). The BPRS consists of 18 items rated on a 7-point scale on the basis of an interview and observed behavior. A high score indicates a higher level of symptoms. The items include, for example, disorganization, disorientation, depressive symptoms, and hostility, and allow for analysis of positive, negative, and depressive symptoms and general psychopathology. Good inter-observer and intra-observer reliability has been demonstrated (Kolakowska, 1976; Overall & Gorham, 1962), but the fact that worse psychometric properties were obtained when the scale was used by less experienced BPRS raters implies that proper use of the scale requires specialized training. A test of interrater reliability, comparing the interviewer trained for the present investigation with another researcher, resulted in a coefficient of 0.87 (Eklund, Hansson, & Bejerholm, 2001).

Quality of Life

A Swedish version (Hansson, Svensson, & Bjorkman, 1998) of the Lancashire Quality of Life Profile (LQOLP) was used (Oliver, Huxley, Bridges, & Mohamad, 1996; Oliver et al., 1997). The profile is administered as a structured interview and includes the individual's subjective ratings concerning 9 quality-of-life domains: work, leisure, religion, finances, living situation, safety, family relations, social relations, and health. The subjective ratings are made on a 7-point Likert scale. The global well-being scale and global assessment of quality of life according to Cantril's (1965) ladder, also included in the LQOLP, were used in the analysis as well. In all these measures, a higher score indicates a better situation regarding the targeted phenomena: composite quality of life, global well-being, and global assessment of quality of life. The LQOLP has demonstrated good internal consistency and test-retest reliability (Hansson et al., 1998; Niewenhuizen, Schene, Boevink, & Wolf, 1998; Oliver et al., 1997).

Data Analysis

The statistical calculations were based on a sample of 72 participants; 2 had to be excluded because they could not recall all parts of the day. The POES sum scores may range between 9 and 36. The participants were divided into three subgroups based on this range: low (9–18), medium (19–27), and high (28–36) level of engagement. The non-parametric Kruskal–Wallis test was used for comparison of self-related variables and psychopathology among these subgroups. In addition to this estimation of differences

among subgroups, a Jonckheere–Terpstra test was used to determine whether there were any positive or negative linear trends in scores in relation to the level of engagement. The subgroups also were compared with regard to age, by means of the Kruskal–Wallis test, and gender, by means of a chi-square test, to assess any influence of these factors on occupational engagement.

Further analysis of how occupational engagement was related to self-related variables, psychopathology, and quality of life was based on assumptions regarding which variables would logically be viewed as dependent and independent variables. We assumed that personal factors, such as self-related variables and psychopathology, should be treated as independent variables influencing occupational engagement. We did not assume a cause-and-effect relationship, only a mutual relationship, between occupational engagement and quality of life. The associations among occupational engagement and self-related variables and psychopathology were first estimated by means of Spearman's rank order correlation test. Linear regression analysis then was used. An enter model was used, with successive removal of the independent variable that contributed least to the explanation of occupational engagement, as long as the removed variable contributed less than 10% to the variation. Using this procedure, hypothetical confounders were removed from the analysis (N. Guner, personal communication, November 8, 2005). Before the multivariate statistical testing, frequency distributions for the participants' POES ratings were investigated and found to be normally distributed. Finally, the hypothesized relationship between occupational engagement and quality of life was estimated by means of Spearman's rank order correlation test.

Results

Differences Among Groups Based on Level of Occupational Engagement

The participants' ratings on the self-related and the clinical variables are presented in Table 2, along with the analysis of how the groups based on occupational engagement differed regarding these variables. The ratings differed significantly regarding variables such as locus of control, mastery, and sense of coherence, depending on whether they belonged to the subgroup of low, medium, or high level of engagement. Moreover, negative, positive, and depressive symptoms and general psychology differed significantly among the subgroups. Thus, differences existed among all possible comparisons between the subgroups.

In addition, a significant linear trend was confirmed; it showed that the scores of locus of control, mastery, sense of

Table 2. Self-Related Variables and Variables of Psychopathology According to Levels of Occupational Engagement (N = 72)

Variable (possible range)	Level of Engagement						P
	Low (n = 21)		Medium (n = 29)		High (n = 22)		
	Mean Rank (median)		Mean Rank (median)		Mean Rank (median)		
Locus of control (1–4)	53.1	(2.9)	33.3	(2.5)	23.3	(2.3)	0.000
Mastery (1–4)	23.1	(2.3)	34.4	(2.4)	49.9	(3.0)	0.001
Sense of coherence (1–7)	24.1	(3.5)	31.6	(3.6)	52.6	(4.5)	0.001
Negative symptoms (1–7)	50.6	(3.5)	39.8	(2.5)	18.8	(1.5)	0.001
Positive symptoms (1–7)	46.0	(2.7)	35.3	(2.2)	28.0	(1.9)	0.02
Depressive symptoms (1–7)	43.7	(4.0)	37.3	(3.0)	28.5	(3.0)	0.04
General psychopathology (1–7)	47.8	(2.4)	37.9	(2.2)	23.9	(2.0)	0.001

Note. Ranges and medians are based on the clients' mean scores on the respective instruments.

coherence, negative symptoms, and general psychology increased from low, to medium, to high level of engagement, all at $p < .001$. Positive ($p = .007$) and depressive symptoms ($p = .012$), however, also showed linear trends in relation to the levels of engagement. There were no differences among the subgroups regarding age ($p = .58$) or sex ($p = .87$).

Relationships Between Self-Related Variables or Psychopathology and Occupational Engagement

In Table 3, the correlations between self-related variables or psychopathology and occupational engagement are presented. All of the investigated variables were significantly associated with occupational engagement. Negative symptoms, locus of control, sense of coherence, mastery, and general psychopathology showed highly significant correlations.

Regression analysis resulted in a model in which negative symptoms and locus of control together explained 47% of the variance in occupational engagement (see Table 4). Negative symptoms alone explained 35% of the variation.

Relationships Between Occupational Engagement and Quality of Life

The associations between occupational engagement and different estimates of quality of life are presented in Table 5. The composite score of quality of life was found to have a moderately strong association to occupational engagement.

Table 3. Correlations Between Occupational Engagement and Self-Related Variables and Psychopathology (N = 72)

Self-Related and Psychopathology Variables	Occupational Engagement
Locus of control	-.54***
Mastery	.50***
Sense of coherence	.53***
Negative symptoms	-.59***
Positive symptoms	-.33**
Depressive symptoms	-.29*
General psychopathology	-.49***

* $p < .05$, ** $p < .01$, *** $p < .001$.

Discussion

Our hypothesis—that a high level of occupational engagement would be associated with higher ratings of self-related variables, fewer psychiatric symptoms, and better ratings of quality of life—was confirmed by the results. Thus, occupational engagement can give yet another dimension to quality of life and well-being in persons with schizophrenia. The self-related variables and the variables of psychopathology were regarded as personal factors, involved in the dynamic interplay among the person, the occupation, and the environment, which are the basic ingredients in the occupational engagement process. Thus, the way in which the self processes experiences, under the influence of the prevailing symptoms, would have an impact on the extent to which a person with schizophrenia becomes engaged in occupations. The linear trend found further indicated that those who had a low level of engagement exhibited little sense of coherence; external locus of control; low ratings of mastery; and more negative, positive, and general psychiatric symptoms. These findings supplement the findings from a previous qualitative study, in which a low level of engagement was related to withdrawal; predominance of quiet activities; little sense of meaning; and time spent in mainly one place, alone, and with few occupational opportunities (Bejerholm & Eklund, 2006b).

Self-Related Variables and Occupational Engagement

Locus of control was the self-related variable that best explained occupational engagement. According to Rotter (1966), internal locus of control is based on expectancies, in terms of mental representations of experience in the past and the current occupational situation, that have a causal influence on behavioral choices. Thus, the process leading to internal locus of control resembles the process of occupational engagement. Both involve anticipation, interpretation, and comprehension regarding occupational performance, serving as the basis for an ongoing and cyclical means of maintaining a sense of self and well-being

Table 4. Regression Analysis of the Effect of Self-Related Variables and Psychopathology on Occupational Engagement (N = 72)

Dependent Variable	Final Model			Independent Variable	Beta	R ² change
	F value	P value	R ²			
Occupational engagement	30	.000	.47	Negative symptoms	-.49	.35
				Locus of control	-.36	.11

(Csikszentmihalyi, 1993; Kielhofner, 2003; Rebeiro & Cook, 1999). Furthermore, the similarities in logic behind the constructs may help to explain the intricate relationship between internal locus of control and a higher level of occupational engagement. Thus, the sense of self seems to be an important aspect in relation to the level of engagement. It is through this ongoing force of engagement with immediate and realistic feedback that the self can go on adjusting to reality and understanding the world. This conclusion is in line with the results of a study by Hans (2000), showing that increased self-awareness was related to internal locus of control.

Psychopathology and Occupational Engagement

Psychopathology—in this study described in terms of positive, negative, and depressive symptoms and general psychopathology—was significantly correlated to occupational engagement. This finding is in line with a recent study that investigated associations between the POES and global functioning (Bejerholm & Eklund, 2006a).

Although positive symptoms such as delusions and hallucinations (Sadock & Sadock, 2003) are usually addressed and evaluated in connection with treatment with psychotropic medication (Goldstein, 1999; Lewis, 2002), negative symptoms have been shown to be even more important determinants for how persons with schizophrenia engage in daily occupations (Bengtsson-Tops, 2004; Green, 1996; Green et al., 2000; Palmer et al., 2002). In addition, increased engagement has been shown to decrease the degree of psychopathology and negative symptoms (Halford et al., 1995; Mairs & Bradshaw, 2004). This connection between negative symptoms and occupational engagement also was found in the regression analysis in this study, in which negative symptoms constituted the most significant independent variable in explaining occupational engagement. This relation could be due to the fact that hav-

ing negative symptoms—involving flattening of affect, poverty of speech, poor grooming, lack of motivation, and social withdrawal (Sadock & Sadock, 2003)—to a large degree has characteristics in common with having a low level of occupational engagement (Bejerholm & Eklund, 2006b). In a cross-sectional study, it could not be determined whether increased psychopathology and decreased sense of self were related to few occupational opportunities, or vice versa. These issues, however, are presumably related in a dynamic way, because in real life psychopathology forms part of the personal factors involved in occupational performance. Moreover, psychosocial occupational therapy is about helping persons with schizophrenia to become better, to become occupied with experiences of events that are real, instead of their being occupied with their chaos of thoughts and delusions that sometimes takes over in how they perceive the world. The results of the present study suggest that the reality orientation of occupational therapy may have an effect on psychopathology, which also has been indicated in previous research (Bejerholm & Eklund, 2006b). Thus, the lack of energy and loss of ability to engage in occupations should not be understood in relation to occupational and environmental circumstances alone but also in relation to personal factors, affected to various extents by medication, stage of illness, and psychopathology. Altogether, perhaps psychopathology could be within the reach of occupational therapy.

Occupational Engagement and Quality of Life

Engagement in meaningful and satisfying occupations plays a central role in quality of life (Champney & Dzurec, 1992; Eklund & Backstrom, 2005; Goldberg et al., 2002). These findings are in line with the results of this study, in which significant correlations were found between occupational engagement and quality of life. Thus, parallels can be drawn between these two constructs, as suggested by Laliberte-Rudman and colleagues (2004). Occupational engagement as reflected in the POES, however, captures more of the actual realities experienced because it is based on time use diaries. Satisfaction with life areas, which is usually addressed when estimating quality of life, is, on the other hand, not directly linked to real-life situations. Ruggeri and colleagues (2002) asserted that it is important to understand

Table 5. Correlations Between Occupational Engagement and Quality of Life (N = 72)

Quality-of-Life Variables	Occupational Engagement
Composite quality-of-life score	.58***
Global assessment of quality of life	.47***
Global well-being	.40***

*** $p < .001$.

the meaning of quality-of-life scores in relation to other indicators of mental health, and the findings from the present study suggest that occupational engagement could be viewed as such an indicator.

Implications for Practice

This study provides further knowledge about occupation, health, and quality of life in persons with schizophrenia. Together with previous research (Bejerholm et al., 2006; Bejerholm & Eklund, 2006a, 2006b), this study further confirms that occupational engagement should be considered in the treatment and rehabilitation process, especially because occupational engagement is likely to be related to recovery and the course of illness (Brown, 1998; Emerson et al., 1998; Nagle et al., 2002). According to Kelly and associates (2001), little occupational engagement should be looked into, whatever the cause. Little or a low level of occupational engagement might result from withdrawal in a negative sense, caused by a deprived environment, few occupational opportunities, or a deficient ability to process the occupational and environmental stimuli. A low level of engagement, however, also could be the result of withdrawal that is positive. In this sense, withdrawal constitutes a coping strategy in daily life, a way to adapt to and keep a safe distance from reality. This assumption is further supported by Sells, Stayner, and Davidson (2004).

It is interesting to speculate on how a higher level of occupational engagement could be achieved and whether a higher level of engagement always implies a more developed sense of self, increased quality of life, and a decrease in psychopathology, and vice versa. The crux here is that a higher level of occupational engagement may not always be associated with occupational balance in a systematic way; that is, the patient seems to be in balance regarding activity and rest and intrinsic and extrinsic factors, just because he or she shows ongoing occupational engagement. Thus, the rehabilitation process for persons with schizophrenia seems to involve constantly walking the line between being over-occupied (having too much to do) and under-occupied (having too little to do), and either of these states may be detrimental. With these states in mind, it would be interesting to assess whether the patient seems over-occupied, under-occupied, or in occupational balance, in addition to estimating occupational engagement. Tentatively, over-occupation would imply that the person has too many occupational opportunities, a too stimulating and intrusive environment, or deficient processing of occupational and environmental stimuli, leading to an increase in arousal. Consequently, under-occupation would infer that the person's environment is under-demanding, the occupational

opportunities are too few, or the person has deficient processing of occupational and environmental stimuli, leading to a decrease in arousal.

Recent qualitative research has emphasized that the recovery of the self takes time and that withdrawal and quiet activities could be viewed as a necessary stage in recovery of the self in persons with schizophrenia (Bejerholm & Eklund, 2006b; Gould, DeSouza, & Rebeiro-Gruhl, 2005; Sells et al., 2004). Consequently, when planning interventions, the occupational therapist should consider meaningful occupational engagement that facilitates self-definition and corresponds to the internal needs of being (Fidler & Fidler, 1978; Wilcock, 1998) rather than aiming only for a higher level of engagement, despite the clear association to increased quality of life demonstrated in the present study. Accordingly, from an occupational therapy perspective, it is assumed that an increased sense of self after psychosis is not the result of dramatic experiences but of the experience and interpretation of engagement in daily occupations, which provide opportunities for a sense of self to be nourished and grow.

Methodological Limitations

This study has some limitations that affect the possibility of generalizing the results. The limited size of the final sample and the fact that it was a Swedish study among persons living in the community limits the external validity. Thus, the participants are not necessarily representative of persons with schizophrenia in general. Another methodological problem is the dropout rate of 38%, which was probably related to the study context. First, the researchers had no connection with the staff working at the outpatient clinic. Second, for reasons of confidentiality, the researchers did not make the initial contact with the patients. These circumstances could have made it easier for the patients to decline participation compared to a research project integrated with everyday psychiatric care. The fact, however, that the research project was not part of the patients' psychiatric care is likely to have decreased the risk of bias and increased the internal validity, and the dropout analysis did not reveal any differences between the participants and the dropouts according to known background characteristics.

The accuracy with which the participants completed the time use diary, the first part in POES, should be considered as well. It has been stated that cognitive functions (Spaulding et al., 1999) and flattening of affect (Gerhardsson & Jonsson, 1996) may influence the ability to identify recent events. When a person, however, has sensory and cognitive impairments it is favorable to use a time use diary that covers the previous 24 hours, supplemented

by an interview performed by an occupational therapist, compared to a self-generated diary that is filled in by the person alone, at home, at any time (Bejerholm & Eklund, 2004; Pentland & McColl, 1999). Moreover, the temporal order implied in a time use diary fits well with the natural logic of daily occupations, which facilitates the recall of experiences. It also has been stated that only a little time passes between the actual performance and the recording of a time use diary when based on the previous 24 hours (Robinson, 1999), which implies that the event is still fresh in mind and the person is likely to stay closer to reality (Bejerholm & Eklund, 2004; Robinson, 1997). Moreover, previous research has successfully used data collection based on the recall of performed daily occupations in a time use perspective among persons with schizophrenia (Hayes & Halford, 1996; Minato & Zemke, 2004; Shimatras et al., 2003) and among persons with persistent mental illness (Leufstadius, Erlandsson, & Eklund, in press).

The fact that the POES and the LQOLP were designed for the population with schizophrenia could have contributed to the associations between these variables, implying that part of the relationship was due to a “schizophrenia factor.” Furthermore, it seems that the variables were connected to a large extent, which might indicate, as Priebe and colleagues argued (Priebe, Kaiser, Huxley, Roder-Wanner, & Rudolf, 1998), that self-ratings are closely related because they reflect an underlying common construct. Another possible influence on connections between variables is the interviewer effect (Kazdin, 2003), which is a risk if all data are collected by the same person. This limitation, however, was mitigated in that an independent rater assessed the level of engagement according to the POES.

Colinearity could be suspected among several independent variables investigated in this study. This possibility was taken into account by making the linear regression analysis. Between the quality-of-life scores, one would suspect colinearity also, but that three measures were used and yielded similar results supports the validity of the results.

Dividing the POES sum scores into three subgroups of occupational engagement was a novel approach in analyzing the data. The results, however, indicated clear differences among these subgroups on all investigated variables, which suggest that this division might be relevant also in clinical contexts, when identifying individuals at risk of disengagement and poor well-being.

Linear regression analysis, an enter model, was used, although the other calculations were based on nonparametric tests. According to Grimm and Yarnold (2001), it is customary within psychology and the social sciences to perform linear regression analysis. The initial estimation, however, should be based on ordinal data, especially if equal

intervals can be assumed (Hicks, 2002), which was the case in the present study (N. Guner, personal communication, November 8, 2005). Furthermore, in linear regression the data are not forced in a certain direction, as when data are dichotomized.

Conclusions

A higher level of occupational engagement was associated with higher ratings of self-related variables, fewer psychiatric symptoms, and better ratings of quality of life. Our study suggests that engagement in daily occupations is an important aspect of mental health and quality of life. The information obtained contributes to the knowledge base of psychosocial occupational therapy about persons with schizophrenia. The results also highlight the relevance of recognizing occupational engagement within the field of psychiatric treatment and, in addition, put occupational therapy in its rightful place within the field of psychiatry.

The individual’s interpretative resources involved in the occupational engagement process were reflected in the results, in terms of the connections among occupational engagement and self-related variables and psychopathology. It is likely that the interpretative resources involved in the occupational engagement process influence the ability of the self to grasp and interact with the immediate environment and, thus, engage in occupations. We further speculate that the ability to interpret, reflect on, and bring meaning to occupations seems to play a key role regarding the severity of the schizophrenic disorder.

As indicated by the results of this study, greater effort should be made by professionals to help persons with schizophrenia to engage in and navigate their daily life. Although the interventions do not have to be intense or radical, professionals need to consider meaningful occupational engagement that facilitates self-definition and corresponds to the patient’s internal need of being. If patients are introduced to daily occupations they can make sense of, they can start to interpret, experience, and relate to the world around them. ▲

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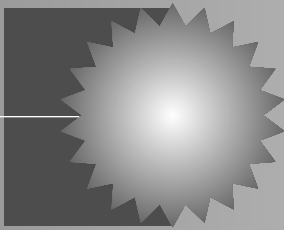
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