The Relationship Between Engagement in Meaningful Activities and Quality of Life in Persons Disabled by Mental Illness

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ABSTRACT. A hypothesized relationship between engagement in meaningful activities and quality of life was tested for thirty-two individuals attending a community mental health agency's programs. They completed the Lehman Quality of Life Interview; the Derogatis Symptom Checklist-90-Revised, and the Engagement in Meaningful Activities Survey (EMAS), constructed for this study. It measures 12 facets of the meaningfulness of activities and includes some open-ended questions. Its test-retest reliability and Cronbach Alpha were .69 and .84, respectively. Participants were involved in a wide range of activities that were

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most lacking in providing appropriate challenge and a sense of control. Engagement in meaningful activities was significantly correlated with satisfaction with life as a whole ($p < .05$), but depression accounted for most of the variance. Some support is provided for the theorized value of meaningful activity engagement and recommends strategies to increase the meaningfulness of activities. Findings alert clinicians to the importance of treating depression.

KEYWORDS. Meaningful activities, quality of life, occupational therapy, mental disorders, disabilities

INTRODUCTION

A basic tenet of occupational therapy (OT) theory is that engagement in meaningful activities/occupations leads not only to enhanced occupational performance, but also to life satisfaction. Egan and DeLaat stated, "meaningful activities are those which fulfill a goal or purpose that is personally or culturally important" (cited in Law, Polatajko, Baptiste, & Townsend, 1997, p. 36). Participation in such activities is seen as meeting psychological, biological and cultural needs; it also provides opportunities to discover new information, to use capacity, and to create, promoting a sense of mastery and self-worth (Kielhofner, 1992). Other benefits are health, survival and quality of life (Yerxa et al., 1990; Yerxa, 1998). Townsend and Brintnell (1997) noted that occupation promotes connection with others and contributes to the making of meaning for persons. They claimed that it is the meaningfulness of occupations, which contributes to a high quality of life and to its spiritual aspects.

Occupational therapists must consider these life satisfaction benefits, thought to be associated with engagement in meaningful activities, in their work with persons disabled by severe and persistent mental illness. This is because they are deficient in opportunities to engage in meaningful activities (Champney & Dzurec, 1992; Kearns, 1990; Kelly, 1999; Massimini, Cziksentmihalyi, & Carli, 1987; Solomon, 1992). They have deficits in living skills, social and leisure opportunities, as well as an absence of meaning in life in comparison to persons without

these disorders (Barris et al., 1985). Increasing involvement in meaningful daily occupations in an attempt to enhance life satisfaction is an important goal for this population because their disorders are chronic in nature.

This study examined a hypothesized relationship between engagement in meaningful activities and life satisfaction in clients with severe and persistent mental illness. Two developments facilitated this study. First, the demonstration that the quality of life (QOL) construct, which has been shown to be a highly relevant outcome measure of programs for this population, can be used as an index of life satisfaction (Baker & Intagliata, 1982; Bigelow, Garneau, & Young, 1990; Fabian, 1990; Lamb et al., 1993; Lehman & Burns, 1990; Oliver, Huxley, Priebe, & Kaiser, 1997; Rosenfield, 1992; Stahler & Tash, 1982; Tantam, 1988; Trauer, Duckmanton, & Chiu, 1998). Quality of life is a multidimensional construct derived from a person's physical and occupational functioning, as well as his psychological and physiological status. It contains subjective components, which are affected by values and expectations, as well as objective components (Renwick, Brown, & Nagler, 1996; Spilker, 1990).

Second, although meaningfulness of occupations has not been measured in previous research, the OT literature has suggested criteria for its measurement (Cikalo & Woodside, 1993; Engelhardt, 1983; Fidler & Fidler, 1983; Reilly, 1962; Rogers, 1983; Sharott, 1983; Trombly, 1995; Yerxa, 1998; Yerxa et al., 1990). These criteria, including items such as the activity's congruity with one's value system and needs, its ability to provide evidence of competence and mastery and its value in one's social and cultural group, were used by the authors of this study to construct an instrument to measure the meaningfulness of activities (Goldberg & Brintnell, 1994).

This study provides one of the first empirical tests of the hypothesis that the life satisfaction, as measured by QOL, of persons with severe and persistent mental illness is related to their engagement in activities that are meaningful. In addition, it describes a sample of this population's self-reported activity involvement, as well as the sample's perception of the meaningfulness of its activities. The effects of depression and anxiety on QOL were also assessed, as these were found to have confounding effects (Lehman, 1996; Lehman & Burns, 1990; Oliver et al., 1997).

LITERATURE REVIEW

Meaningful Activities and Quality of Life

Studies of OT programs using meaningful activities with individuals with severe and persistent mental illness and reporting improved QOL neither looked at the concept in a comprehensive way nor measured it empirically. Inferences about QOL were based on evidence of enhanced occupational performance and/or other positive behavioral changes (Coviensky & Buckley, 1986; Klasson & MacRae, 1985). Some studies in the psychiatric rehabilitation literature had similar limitations. Solomon (1992) examined the relationship between meaningful activities and QOL in the community. She did not use any standardized measure of QOL and her assessment of meaningful activity involvement was limited; still, she concluded that clients should be involved in more meaningful activities in order to improve their QOL.

A study measuring QOL paradoxically found that those who participated in rehabilitation services, including occupational therapy programs, were less satisfied than those who did not (Hachey & Mercier, 1993). The authors hypothesized that this might be related to the fact that those who attended programs had a lower QOL to begin with and possibly were discouraged that they were so dependent on rehabilitation services that did not seem to meet their perceived needs.

In contrast, Holzner, Kemler and Meise (1998), found that compared to a waiting list control group, those participating in a work related rehabilitation program, scored significantly higher on two QOL measures in almost all areas of life. It is possible that this program met more of this sample's needs in that it was focused on entry into the workforce, and, therefore, the activities were more meaningful.

Several other studies looked at general activity involvement and life satisfaction/QOL scores (Borge, Martinsen, Ruud, Watne, & Friis, 1999; Champney & Dzurec, 1992; Kearns, 1990; Kelly, 1999). They all reported a significant positive relationship; however, the type of activities engaged in or their meaningfulness were not systematically examined and, in some cases, the QOL measures were incomplete.

Studies which examined the relationship between objective measures of specific QOL domains (living situation, employment, leisure opportunities, etc.) and the subjective estimate of satisfaction with life as a whole data from a variety of QOL standardized measures reported a range of results. Lehman (1983a) found that employment was positively correlated with overall life satisfaction and Priebe, Warner,

Hubschmid, and Eckle (1998) also found that employed samples had increased subjective and objective scores of income and well-being as compared to unemployed control groups. Other studies did not find the same significant relationship (Fabian, 1989; Franklin, Simmons, Solovitz, Clemons, & Miller, 1986). This may be because objective conditions overall are described in quantitative rather than qualitative terms. Simply being involved in a given amount of leisure activities or work might not be as predictive of QOL as being involved in activities that are identified as being meaningful to the individual, regardless of the amount of time spent. Boyer, Hachey and Mercier (2000) found no significant correlation between subjective perception of both work performance and quality of life which would seem to support this rationalization.

In an attempt to explore this issue further, Arns and Linney (1993) demonstrated that an improvement in vocational status resulted in increased life satisfaction by modifying feelings of self-efficacy and self-esteem. The authors hypothesized that people disabled by mental illness have a severely damaged self-concept because of their lack of social roles and work-related identities. Teaching skills which led to becoming successful workers provided them with valued roles and accomplishments. This enhanced their feelings of self-efficacy, which then led to increased self-esteem and life satisfaction.

The roles of self-efficacy (or mastery/control) and self-esteem also were highlighted by other researchers investigating the factors that contribute to subjective QOL (Robinson & Pinkney, 1992; Rosenfield, 1987, 1992). In one of these studies, it was found that the practice of Clubhouse member empowerment led to the development of mastery, which led in turn to higher QOL (Rosenfield, 1992). Rosenfield concluded that motivating clients to engage in activities that provide a sense of competence, mastery, and self-determination is a good investment in improving QOL.

Psychopathology Effects on Quality of Life Assessment

Researchers have questioned the effects of psychiatric symptoms on participants' abilities to assess their QOL (Lehman, 1983b). In a study attempting to address this concern, Lehman found that the only significant finding was a high negative correlation between anxiety and depression symptoms and global QOL (satisfaction with life as a whole). Because of this, he recommended that QOL studies control for anxiety

and depression symptoms as a precautionary measure (Lehman, 1983b; Lehman, 1996; Lehman & Burns, 1990).

In another study, it was found that QOL ratings were affected when psychopathology was controlled (Simpson, Hyde, & Faragher, 1989), and many others found that depression was the most significant factor (Atkinson & Caldwell, 1997; Dickerson, Ringel, & Parente, 1998; Koivumaa-Honkanen, Honkanen, Antikainen, Hinitkka, & Viinamaki, 1999; Sullivan, Wells, & Leake, 1992; Tollefson & Andersen, 1999). Because of all these findings, the present study was designed to control for depression and anxiety symptoms.

Summary

There is support in the literature for a positive relationship between activity engagement and QOL. Some studies reporting this association based their conclusions solely on clinical judgment. In others, QOL was measured but only selectively and, in many of these, activities were viewed in very general ways and were assessed only superficially for the meaning they had for the study group.

Some researchers identified the construct of mastery, which leads to enhanced self-esteem, as being the overriding factor involved in enhancing QOL and this is in concert with OT theory. Finally, researchers have demonstrated that psychopathology (especially depression and anxiety symptoms) affect QOL ratings and recommended that studies control for this phenomenon.

SPECIFIC OBJECTIVES

The primary objective of this preliminary study was to test the following hypotheses:

1. There is a positive relationship between the extent of engagement in meaningful activities and subjective QOL (satisfaction with life as a whole) in people living in the community with disabilities related to mental illness.
2. There are positive relationships between the extent of engagement in meaningful activities and subjective satisfaction with eight domains of life: living situation (home and neighborhood); daily activities and functioning; family; social relations; finances; work and school; legal and safety issues; and health of people living in the community with disabilities related to mental illness.
3. There is a negative relationship between amount of psychopathology (depression and anxiety) and subjective QOL (satisfaction with life as a whole) in people living in the community with disabilities related to mental illness.

A secondary objective of the study was to obtain a snapshot of a small cohort of individuals living in the community with severe and persistent mental illness, including a view of their activity involvement, an assessment of the extent to which their activities were meaningful, and their overall QOL. In addition, the relationship between the activities they associated with making them feel good about themselves and the extent of perceived meaningfulness of these activities was explored.

METHODOLOGY

Participants

The participants for this cross-sectional correlation study were people with a mental illness living in the community and attending programs at a private, non-profit mental health agency in a large western Canadian city. Sixty-three individuals were selected at random from approximately 235 who met the criteria for being severely and persistently mentally ill (formerly referred to as the chronically mentally ill, as defined by the American Plan for the Chronically Mentally Ill, 1980, Tessler and Goldman, 1982). The criteria included: diagnosed with a major mental illness, e.g., schizophrenia, major depression, bipolar disorder, other psychotic disorders, anxiety, dissociative or personality disorders; functionally disabled in self-care, self-direction, interpersonal relationships, learning, and/or social transactions; not self-supporting. For this study, participants were also required to be between the ages of 18 to 65 and diagnosed for at least two years. People with coexisting developmental and/or disabling physical disorders were excluded.

Of the 63 individuals selected, nine did not qualify because they did not meet all the aforementioned criteria, they appeared too cognitively impaired at the initial contact, or they were too difficult to find. Twenty-two people refused to participate, and the remaining 32 constituted the study sample.

Table 1 describes the demographics of the study participants. They comprised a cross-section of people with severe and persistent mental illness who were connected to a community agency, which provided support and psychosocial rehabilitation (outreach, day programs, recreation).

Procedure

A research assistant not known to the clients assisted with recruiting participants and he collected all the data. Training was provided in carrying out the interviews and administering the measures.

All individuals chosen at random were sent a letter describing the project and requesting that they consider participating. The research assistant made a follow-up phone call to these individuals using a standardized script for guidance with answering questions. Those who agreed to participate were scheduled for a convenient time at their choice of location: their home or the agency.

At the start of the session, the process was described and participants were requested to sign informed consents. Relevant demographic information (Lehman, 1988) was collected and three measures were administered: the Engagement in Meaningful Activities Survey (EMAS) (Goldberg & Brintnell, 1994) (Figure 1); the Quality of Life Interview (QOLI) (Lehman, 1988); and the Symptom Checklist-90, Revised (SCL-90-R) (Derogatis, 1992). The interviews lasted an average of 79 minutes. At the end, participants received an honorarium of $20.00, a thank-you letter and a local university pin with the slogan, "Research Makes Sense."

Following a two to 10-week interval, 15 participants repeated the EMAS in order to obtain data on its test-retest reliability and they received an additional $5.00. They were asked about any major changes in their mental status since their first interview; those who did relate relevant changes were asked to repeat the SCL-90-R.

Measures

Engagement in Meaningful Activities Survey

The EMAS was developed to measure the extent of engagement in meaningful activities. It uses a self-rating Likert scale (Figure 1). An interview schedule for open-ended questions is included to capture a description of the participants' activity involvement and their top three

TABLE 1. Demographic Characteristics of Sample (n = 32)

Variable	N	%
Gender:		
male	20	62.5
female	12	37.5
Education:		
elementary school	6	18.8
high school	13	40.6
college/university	13	40.6
Marital Status:		
single	21	65.6
separated/divorced	9	28.1
married	2	6.2
Parental Social Class (n = 31):		
lower		21.9
middle		65.6
upper		9.4
Diagnosis (n = 31):		
schizophrenia	21	65.6
depressive disorder	5	15.6
bipolar disorder	3	9.3
borderline personality disorder	2	6.2
Agency Program Affiliation (n = 37)*		
recreation		68.7
outreach		25.0
rehab/day		12.5
volunteer		9.3

Variable	Mean	SD	Minimum	Maximum
Current age	42.3	9.91	27	64
Age at first diagnosis	24.7	7.51	8	48*

Total N greater than 32 due to participant affiliation with more than one program

FIGURE 1. Engagement in Meaningful Activities Survey (EMAS): Likert Scale

Below is a list of statements about your activities. Please read each one carefully and place an X in the box that best describes **to what extent these statements are true for you.**

Take your time and try to be as accurate as possible.

I will calculate the totals when we are all finished.

	Never	1	2	3	4	5	Always
The activities I do help me take care of myself (e.g., keep clean, budget my money).							
The activities I do reflect the kind of person I am.							
The activities I do express my creativity.							
The activities I do help me achieve something which gives me a sense of accomplishment.							
The activities I do contribute to feeling competent.							
The activities I do are valued by other people.							
The activities I do help other people.							
The activities I do give me pleasure.							
The activities I do give me a feeling of control.							
The activities I do help me express my personal values.							
The activities I do give me a sense of satisfaction.							
The activities I do have just the right amount of challenge.							
Total							

rankings of those activities, which are associated with making them "feel good about themselves" (Goldberg & Brintnell, 1994, p. 2).

The items measuring the extent of meaningful activity involvement were derived from an analysis of OT and other human occupation literature (Cikalo & Woodside, 1993; Czikszentmihalyi, 1990; Engelhardt, 1983; Fidler & Fidler, 1983; Reilly, 1962; Rogers, 1983; Sharott, 1983; Trombly, 1995; Wood, 1998; Yerxa, 1998; Yerxa et al., 1990). The EMAS was designed to be easily understood by those participants who might have some limitations in their reading ability.

The measure was assessed by a colleague with expertise in this area and was found to have good face validity. It was pilot-tested with one of the agency's staff and four clients who met the criteria for the study sample. The EMAS performed well and was easy to administer, taking 10 to 15 minutes for completion. As a result of this testing, some refinements were made, e.g., the questions were made more concrete so that they would be more understandable. A retest with four more clients was carried out and improvements were noted on the original problem areas.

Item analysis of this measure included computing point biserial correlations to determine the item discrimination index. The range was .42 to .74 (mean = .61). Cronbach alpha of the entire measure was .84. Standard error of measurement was .27.

Although two participants required repeat SCL-90-Rs, the retest depression and anxiety scores were within one standard deviation of the sample mean and so were included in computing the test-retest reliability of the EMAS. The resulting intraclass correlation (ANOVA estimate of reliability) was .69 ($n = 15$, $p = .004$).

Quality of Life Interview

The QOLI is an investigator-generated tool designed by Lehman (1988) for use with persons with severe and persistent mental illness. Its psychometric properties have been extensively assessed and reported by Lehman (1988, 1996).

Lehman incorporated some of the content and structure from other mental health measures and QOL literature in general health care. This measure has been used extensively as both a clinical assessment tool and an outcome measure (Arns & Linney, 1993; Fabian, 1989; Felton et al., 1995; Lehman, 1996; Lehman, Postrado, Roth, McNary, & Goldman, 1994; Levitt, Hogan, & Bucosky, 1990; Packer, Husted, Cohen, & Tomlinson, 1997; Pinkney, Gerber, & Lafave, 1991; Rosenfield & Neese-Todd, 1993; Simpson et al., 1989; Sullivan et al., 1991).

The QOLI has 143 items in a structured interview format. It measures life conditions in eight domains: living situation (home and neighborhood), daily activities and functioning, family relations, social relations, finances, work and school, legal and safety issues and health. This comprises the objective data. It also measures the individuals' satisfaction with conditions in those domains as well as satisfaction with life as a whole. All the satisfaction scales comprise the subjective data and are scored using a 1 = terrible to 7 = delighted Likert scale for which there is a visual analogue. The entire interview takes about 45 minutes.

Symptom Checklist-90, Revised

The SCL-90-R is a 90-item self-report standardized symptom inventory developed by Derogatis (1992) for use by both psychiatric and

medical patients. It has proven to be very sensitive to the presence and alteration of depressive disorders (Derogatis, 1992).

Each of the items on this inventory is rated on a five-point Likert scale of distress which ranges from 0 = not at all to 4 = extremely. It identifies and scores nine clusters of symptoms; however, for this study, only the depression and anxiety scores were used; these were the ones which were most commonly found to have significant effects on ratings of satisfaction with life as a whole and/or life in several domains (Atkinson & Caldwell, 1997; Dickerson et al., 1998; Koivumaa-Honkanen et al., 1999; Lehman, 1983b; Packer et al., 1997; Simpson et al., 1989; Sullivan et al., 1992; Tollefson & Andersen, 1999). These data allowed for control of the effects of these relevant psychiatric symptoms on quality of life scores.

RESULTS

Objective Quality of Life Data

QOLI objective quality of life data provided the following additional descriptive information about the sample (n = 32). The vast majority of the participants (81.3%) was living in their own apartments or in a house and had lived there for at least four years. They were moderately active in leisure activities. They saw their families a little more than once per month and their friends about once per month. The majority (75%) received government social services benefits for the severely handicapped. The average monthly income was $931.56 (Canadian). Six (18.6%) had been employed during the previous six months, all on a part-time or minimal basis. Of the remaining individuals, 77.8% identified psychiatric reasons for not working. Four (12.5%) had attended school on a part-time basis over the past six months and 13 (40.6%) did volunteer work. One (3.1%) was a victim of violent crime and seven (21.9%) had been victims of nonviolent crimes. This sample reported functioning well, physically, but having reduced mental health and experiencing subsequent curtailment of their social roles.

Subjective Data

As shown in Table 2, the domains with which the participants were most satisfied as indicated by mean ratings were: living situation, both home (5.24) and neighborhood (4.97); social relations (4.67); and daily

TABLE 2. Subjective Quality of Life Interview (QOLI) Ratings (n = 32)

Item	Mean	SD	Min	Max
Satisfaction with Life as a Whole	3.98	1.21	1.00	5.50
Satisfaction with Domains:				
Living Situation:				
home	5.24	.77	3.50	6.33
neighborhood	4.97	.72	3.33	6.50
Daily Activities and Functioning	4.66	.92	1.83	6.17
Family Relations	4.32	1.52	1.75	7.00
Social Relations	4.67	.84	2.83	6.33
Finances	4.09	1.41	1.00	6.75
Work (n = 6)	4.47	.50	4.00	5.00
School (n = 4)	4.75	.50	4.00	5.00
Legal and Safety	4.62	1.22	1.00	7.00
Health	4.24	.92	2.17	6.33

activities and functioning (4.66). Satisfaction with school also was also rated very highly (4.75); however, this item pertained to only four participants. Satisfaction with finances was the lowest rated domain item (4.09), but satisfaction with life as a whole was lower than all the other ratings (3.98).

Engagement in Meaningful Activities Survey

Table 3 shows the means, standard deviations and ranges of ratings of the EMAS. Participants rated their activities highest for helping with self-care, giving pleasure and giving satisfaction. Activities were rated lowest for providing feelings of control and having just the right amount of challenge.

Symptom Checklist-90, Revised

The SCL-90-R depression and anxiety scores are summarized in Table 4. For both these symptoms, this sample's scores were comparable to the norms for male and female psychiatric outpatients (Derogatis, 1992).

TABLE 3. Extent of Engagement in Meaningful Activities (EMAS) Ratings (n = 32)

Item	Mean	SD	Min	Max
1. Taking Care of Self	3.88	1.10	1	5
2. Reflecting the Kind of Person I Am	3.69	1.28	1	5
3. Expressing My Creativity	3.34	1.33	1	5
4. Helping Me Achieve Something	3.72	1.05	1	5
5. Contributing to Competence	3.38	1.16	1	5
6. Valued by Other People	3.19	1.12	1	5
7. Helping Other People	3.31	1.23	1	5
8. Giving Pleasure	3.81	1.00	1	5
9. Giving a Feeling of Control	3.03	1.09	1	5
10. Helping Express Personal Values	3.50	1.16	1	5
11. Giving a Sense of Satisfaction	3.81	.93	2	5
12. Having Just the Right Amount of Challenge	2.97	1.15	1	5
Total	41.63	8.25	13	60

TABLE 4. Symptom Checklist-90, Revised (SCL-90-R) Depression and Anxiety Scores (n = 32)

Symptom	Mean	SD	Min	Max
Depression	50.06	8.46	34	72
Anxiety	49.25	8.58	33	65

Testing of Hypotheses

A Pearson-product-moment correlation coefficient was computed between the mean EMAS extent of engagement in meaningful activities ratings and the QOLI satisfaction with life as a whole ratings. As seen in Table 5, the resulting r = .342 was significant at $p = .028$ which is a weak to moderate positive correlation (Fitz-gibbon & Morris, 1987). This supports the first hypothesis of this study.

Table 5 also shows the results of Pearson-product-moment correlations computed between the EMAS extent of engagement in meaningful activities ratings and satisfaction with life in the QOLI domains. Only two correlations were significant at $p < .05$ level. These were between engagement in meaningful activities and daily living and functioning domain (r = .384), and satisfaction with living situation, home, domain (r = .377). This demonstrates very limited support for the second hypothesis.

TABLE 5. Correlations (r) and P-Values Between Extent of Engagement in Meaningful Activities (EMAS) Ratings and Quality of Life Interview (QOLI), Satisfaction with Life as a Whole and Life in the Domains Ratings (n = 32)

Item	(r)	*p*
Life as a Whole	.342	.028*
Living Situation:		
Home	.377	.017*
Neighborhood	.036	.423
Daily Activities and Functioning	.384	.015*
Family Relations	−.062	.368
Social Relations	−.067	.358
Finances	.002	.496
Work (n = 6)	−.007	.485
School (n = 4)	.114	.267
Legal and Safety	−.260	.076
Health	.272	.066

*1- tailed significance $p < .05$

When the domain satisfaction ratings were correlated with each other and with satisfaction with life as a whole, both satisfaction with living situation, home, and satisfaction with daily activities and functioning were positively correlated with finances (r = .324 and .601) respectively, and they were also correlated with each other (r = .503). Satisfaction with life as a whole was correlated with satisfaction with daily activities and functioning (r = .404). All of these correlations were significant at $p < .05$.

A computation of Pearson-product-moment correlations for the SCL-90-R depression and anxiety scores and QOLI satisfaction with life as a whole ratings tested the hypothesized negative relationship between quality of life and depression and anxiety. Significant weak to moderate negative correlations were found (depression: r = −.414, $p = .009$; anxiety: r = −.334, $p = .031$) in support of this hypothesis.

Correlations were also computed for mean depression and anxiety scores and satisfaction with the domains and all the significant ones were negative. Depression was moderately correlated with satisfaction with daily activities and functioning ($r = -.548, p = .001$) and finances ($r = -.510, p = .001$) and weakly correlated with health ($r = -.341, p = .028$). Anxiety was weakly correlated with social relations ($r = -.420, p = .008$) and finances ($r = -.420, p = .008$). All of these results are shown in Table 6.

The findings that depression and anxiety have significant negative relationships with satisfaction with life as a whole required determining whether the previously reported relationship between EMAS extent of engagement in meaningful activities and satisfaction with life as a whole held when the effects of depression and anxiety were controlled. This was effected by means of a stepwise multiple regression analysis in which EMAS, depression and anxiety were entered as predictors of satisfaction with life as a whole. The results showed that depression accounted for 17% of the variance in satisfaction with life as a whole, significant at $p = .018$. EMAS and anxiety did not significantly add to this prediction.

Engagement in Meaningful Activities Survey: Self-Reported Activity Data

All the participants answered the EMAS open-ended questions (Goldberg & Brintnell, 1994) about their daily activity involvement. The number of activities reported ranged from two to 15. They covered a wide spectrum and represented typical occupations within the standard self-care, leisure and productivity groupings. Examples included grooming, watching TV, going out to a mall, working on the computer, attending mental health appointments/programs, doing volunteer work.

All participants responded to the question asking to name the three activities which "make me feel good about myself" (Goldberg & Brintnell, 1994, p. 2), although one participant needed a great deal of prompting. Another participant could name only two activities and four named only one. These activities also covered a wide range. The most frequent responses were: doing creative/expressive activities (n = 13), socializing with family/friends (n = 9), attending mental health programs (n = 9), working/volunteering (n = 8), reading (n = 7), watching TV/videos (n = 6), listening to music (n = 4), working on the computer (n = 4), and going out for coffee (n = 4).

TABLE 6. Correlations (r) and P-Values Between Symptom Checklist-90, Revised (SCL-90-R) Depression and Anxiety Scores and Quality of Life Interview (QOLI), Satisfaction with Life as a Whole and Satisfaction with Life in Domains Ratings (n = 32)

Item	Depression	Anxiety
Life as a Whole	−.414	−.334
	.009*	.031*
Living Situation:		
Home	−.208	−.150
	.126	.206
Neighborhood	.106	.091
	.281	.311
Daily Activities and Functioning	−.548	−.263
	.001*	.073
Family Relations	−.217	−.279
	.116	.061
Social Relations	−.222	−.420
	.111	.008*
Finances	−.510	−.420
	.001*	.008*
Work (n = 6)	−.112	−.095
	.272	.303
School (n = 4)	−.198	−.225
	.139	.108
Legal and Safety	.040	−.147
	.413	.212
Health	−.341	−.290
	.028*	.054

*1-tailed significance $p < .05$

To determine if there were any patterns between these activities and the EMAS ratings, the profiles of those participants who had the top and bottom 10 EMAS ratings were reviewed. This comparison is shown in Table 7. The higher rating group had more responses than the lower rating one (30 and 27, respectively) and they reported some activities two or more times more frequently. These included: creative/expres-

TABLE 7. A Comparison of Engagement in Meaningful Activities Survey (EMAS) Valued Activities Between Top 10 and Bottom 10 Ratings (n = 20)

Activities	Top 10	Bottom 10
Number	30	27
Creative/Expressive	5	3
Work/Volunteering	3	0
Social	3	2
Coffee Outings	1	2
Mental Health Programs	4	0
Physical Fitness	2	3
Listening to Music	2	2
TV/Movies	4	5
Reading	4	1
Computing	1	2
News Discussions	0	1
Making Checklists	1	0
Visiting a Library	0	1
Grocery Shopping	0	1
Attending Hockey Games	0	1
Horseback Riding	0	1
Attending Theatre/Symphony	0	1
Waking Up in A.M.	0	1

sive activities, work/volunteering, attending mental health programs, and reading.

DISCUSSION

Engagement in Meaningful Activities Survey

The EMAS performed well in psychometric testing. All reliability assessment scores were above minimum acceptable standards (Kirshner & Guyatt, 1985; Mehrens & Lehman, 1973). Test-retest reliability should be reassessed since there was such a large difference in time (two to 10 weeks) between tests for the individuals in question.

Face validity was established by conferring with expert colleagues. There was also some evidence of construct validity as there was a significant positive relationship between the EMAS and the QOLI satisfaction with daily activities and functioning ratings (r = .384). This result confirmed the expectation that a meaningful activity would be satisfying.

Further validation of this measure is required as "meaningful," is abstract and the pilot was on a relatively small and homogenous sample. A first priority is to test its construct validity. If the results of such tests are supportive, studies are needed using larger samples of this population as well other populations in which disability affects engagement in activities. Studies of the general population would yield valuable data as well.

Descriptive Data

On the significant demographic variables, this sample was representative of the population as described by Tessler and Goldman (1982). When compared to samples participating in recent comparable North American studies, our participants had more independent and stable living situations, more education and a little more financial support (Dickerson et al., 1998; Felton et al., 1995; Hachey & Mercier, 1993; Lehman, 1983a; Lehman et al., 1994; Levitt et al., 1990; Pinkney et al., 1991; Sullivan et al., 1991; Tempier et al., 1998). In spite of their strong connections to community resources and support opportunities, no individuals were financially self-sufficient, and they all lived below the low-income cutoff point (Edmonton Social Planning Council, 2000). This would tend to increase stress levels and impede access to resources for health promotion, career development, and recreation.

Of all the domains, financial situation was the one with which they were the least satisfied and this was consistent with other samples (Felton et al., 1995; Hachey & Mercier, 1993; Lehman et al., 1995; Sullivan et al., 1991). Community mental health stakeholders need to lobby for more reasonable financial supports for this population as well as increased opportunities for them to earn money without jeopardizing their eligibility for income support as necessary. This would enhance their QOL and reduce the risk of relapse.

The other subjective QOLI data showed that this sample was as satisfied with life as a whole and with life in eight domains as was one other sample (Felton et al., 1995), but was less satisfied than four others (Hachey & Mercier, 1993; Lehman et al., 1995; Lehman et al., 1994; Sullivan et al., 1991), in spite of its relative enhanced objective status. Their perceived dissatisfaction may be due to environmental factors. According to Campos and Johnson (1990), QOL scores must be assessed in a context of cultural sensitivity and with consideration of data, which show that the level of life satisfaction is related to the disparity

between one's expectations and achievements. This study took place at a time when the Alberta (Canada) government was undergoing a process of mental health reform, and there was a great deal of media coverage emphasizing its commitment to supporting a wide array of new community resources. This may have contributed to an environment of heightened expectation and then subsequent disappointment when clients' life circumstances (minimally or not being productive members of society and living in poverty) did not change in any major way.

High expectations and increased levels of hopefulness about being able to take advantage of new opportunities may also have developed if a substantial portion of the sample participants diagnosed with schizophrenia (65.6%) had reduced negative symptoms as a result of taking new antipsychotic medications. Again, the contrast between the high expectations and their unchanged life circumstances may have resulted in disappointment, which was reflected in their satisfaction ratings.

Satisfaction with life as a whole was rated lower by this sample and two others than satisfaction with life in most of the domains (Dickerson et al., 1998; Hachey & Mercier, 1993; Lehman et al., 1995). Although these differences should be tested for statistical significance, it may mean that perception of overall life satisfaction is more than the addition of all the quality of life components as delineated in the eight domains of the QOLI. There are likely some highly personal dimensions, which remain unidentified by existing QOL measures. A study using qualitative research methods would allow for a more in-depth exploration and a fuller understanding of what contributes to this population's satisfaction with life as a whole. This would add invaluable information to assist with the task of developing relevant programs.

Testing of Hypotheses

The support for a hypothesized positive relationship between engagement in meaningful activities and quality of life as measured by satisfaction with life as a whole has to be discussed in light of the fact that when depression and anxiety were controlled, the contribution of the extent of engagement in meaningful activities was no longer significant. Since depression had the largest effect, the assumption is that it has a strong influence on how QOL as a whole is perceived. The implication for clinicians is that depression, as a diagnosed disorder on its own, or coexisting with schizophrenia, has to be deliberately treated. This was also recommended by Packer et al., 1997; Dickerson et al., 1998; Koivumaa-Honkanen et al., 1999; and Tollefson and Andersen, 1999.

It is quite likely that an individual cannot engage successfully in meaningful activities or that his/her activities will not be perceived as meaningful as long as he/she is experiencing symptoms of depression. On the other hand, clinical experience has demonstrated that engagement in meaningful activities can work in combination with other interventions to help lift a depressive mood and can contribute to developing resilience to stress (Kobasa, 1982 [as cited in Yerxa, 1998]). The positive correlations between EMAS ratings and satisfaction with life as a whole and between satisfaction with life as a whole and satisfaction with daily activities and functioning seem to support these data, as well, as do client anecdotal testimonies (Cikalo & Woodside, 1993; CMHA, BC Division, 1995; Woodside, Cikalo, & Pawlick, 1995).

The moderate negative correlation between satisfaction with the daily activities and functioning domain and depression ($r = -.548$, $p = .001$) also provides some support for the aforementioned clinical impression; however, EMAS ratings and depression were not correlated, which would be expected. Additional research needs to be done using the EMAS with larger samples to determine what the results would be under more rigorous testing circumstances.

Since work and school could potentially fulfill the criteria for meaningful activities, it was noteworthy that the EMAS ratings and satisfaction with work and school were not correlated. It may be that the work and school experiences for the participants in this study were not meaningful. Too often people with mental illness are involved in work and school programs which are not tailored to the person's interests or are not challenging enough (Cikalo & Woodside, 1993; Research and Training Centre on Mental Illness and Work, 1996). The fact that only six of the study participants were actually working and only four were going to school made it too small a sample from which to make conclusive inferences. Nonetheless, it does highlight the productivity role erosion experienced by this sample.

Support for the third hypothesis of this study, that there were significant negative correlations between depression and anxiety, and satisfaction with life as a whole, was consistent with other research findings (Atkinson & Caldwell, 1997; Dickerson et al., 1998; Koivumaa-Honkanen et al., 1999; Lehman 1983b; Packer et al., 1997; Simpson et al., 1989; Sullivan et al., 1992; Tollefson & Andersen, 1999). These findings add strength to the recommendation that depression and anxiety need to be actively treated. Quality of life can best be

enhanced when both psychosocial and medical interventions are used simultaneously for this purpose, and occupational therapists in community practice have a paramount role in identifying symptoms, addressing them within the scope of their practice, and advocating for additional treatment as necessary.

Activity Data

Given that the literature and clinical impression supports the view that this population is under-involved in daily activities and lacking in those, which are meaningful, the daily activity lists of this sample were longer and more varied than expected, and the EMAS ratings were relatively high (41.63 out of a maximum of 60). It is possible that the participants in this study had more than the usual amount of opportunities for activity involvement because of their strong connection to a mental health agency, and they found these to be more meaningful than professionals might assume. In a review of several studies dealing with this issue, it was concluded that therapists were not good judges of how their patients valued their activities (Trombly, 1995). This assessment emphasizes the importance of ensuring that therapists focus on their clients' perspectives rather than their own and is consistent with the client centered approach inherent in the Canadian Model of Occupational Performance (Law et al., 1997).

Paying attention to the lowest rated items on the EMAS can assist clients and occupational therapists with developing strategies to enhance the meaningfulness of activities. These strategies should include engaging in more activities which provide opportunities for choice and decisionmaking and which are sufficiently challenging without being overwhelming. This supports occupational therapy theory (Kielhofner, 1995; Law et al., 1997; Yerxa, 1990), as well as findings of several other studies (Arns & Linney, 1993; Massimini et al., 1987; Robinson & Pinkney, 1992; Rosenfield, 1992). Attention should also be paid to the types of activities engaged in by study participants who had high EMAS ratings. Consideration has to be given to the intrinsic value of creative/expressive activities, work/volunteering, attending mental health programs and reading. Finally, occupational therapists need to be reminded of the words of one consumer who stated that "not everyone likes or needs to be engaged in many activities. We must be respectful of those who find meaning in quiet" (Cikalo & Woodside, 1993, p. 18-19).

CONCLUSIONS

This preliminary research explored meaningful activity engagement and its relation to QOL in a group of people disabled by mental illness. It was designed to obtain empirical support for occupational therapy, and psychiatric rehabilitation theories provide some direction to mental health stakeholders regarding community activity programs for this population.

The process included developing a measure of meaningful activity engagement whose psychometric properties showed promise. The findings from the data analysis clearly showed that there is a relationship between the extent of engagement in meaningful activities and QOL but that depression and anxiety confound this relationship. It is recommended that these symptoms be vigorously treated if QOL is to be enhanced.

The greatest dissatisfaction for this study's participants was with their financial status. Since their ratings of satisfaction with the financial domain were positively correlated with ratings of satisfaction with daily activities and functioning ($r = .601$, $p = .000$), and negatively correlated with depression and anxiety ($r = -.510$, $p = .001$ and $r = -.420$, $p = .008$, respectively), another recommendation is that stakeholders lobby more vigorously for increased financial support for this group. This includes facilitating access to resources for career development opportunities and allowing persons with disabilities to earn money without penalty when they are healthy enough to do so. As long as they continue to live in poverty, their ability to engage in meaningful activities and their QOL are reduced.

Of interest to occupational therapists working in community mental health is that this study supports the widely held view that it is the clients who must determine what is meaningful for them, but activities that increase feelings of control and that provide the right amount of challenge are to be encouraged. Although there are a wide range of activities that could potentially meet these criteria, there were clusters which were more associated with meaningfulness than others and these included: creative/expressive activities, socializing with friends and family, attending mental health programs, working/volunteering, and reading. Previous studies have stressed the value of socializing and work activities for this population, but the identification of creative/expressive activities and introspective activities like reading obliges the OT profession to rethink the role these activities may potentially play.

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Unipolar Depression: A Literature Review of the Most Current Epidemiological Theories

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ABSTRACT. This literature review is a discussion of the current epidemiological theories regarding the diagnosis, course, demographics, etiology, co-morbidity, and treatment of unipolar depression. It is written for the health care professional who must maintain knowledge of the most current information regarding chronic episodic depression. Directions for future research are also offered.

KEYWORDS. Major depression, recurrent depression, drug-resistant depression, antidepressants

According to the American Medical Association (AMA), approximately 12-20% of people in the United States experience depression severe enough to cause functional impairment, an increased risk of suicide, higher health care expenses, and significant losses in produc-

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