

Activity Characteristics and Emotional Experience: Predicting Boredom and Anxiety in the Daily Life of Community Mental Health Clients

Bryan P. McCormick
Indiana University

Janet A. Funderburk
Georgia Southern University

Youngkhill Lee
Indiana University

Monica Hale-Fought
Mid-Town Mental Health Center, Indianapolis, IN

Little is known about the day-to-day experience of people with mental illness. The research that has been conducted has characterized the lives of people with severe and persistent mental illness (SPMI) as largely solitary and little meaningful activity. In addition, mood states of boredom and anxiety have been implicated in the functioning of clients with mental illness in community treatment settings. The purpose of this study was to examine the daily life of people with SPMI and identify if challenge/skill qualities of activity were related to mood states of boredom and anxiety. Subjects ($n = 8$) were drawn from a community mental health center in a Midwestern city. Data were collected using an experience sampling method and examined at the experience level of analysis ($n = 326$). Logistic regression was used to examine if activity characteristics predicted boredom or anxiety. Findings indicated that the majority of subjects' time was spent in activities in which skill exceeded challenge (75.1%). Activity characteristics were found to be significant predictors of the reporting of anxiety, but were not significant predictors of boredom. Findings are discussed in terms of future research and practice.

KEYWORDS: *Experience sampling; mental illness; anxiety; boredom; flow.*

Introduction

The previous fifty years has seen a marked change in society's approach to care for people with mental illness. This change has seen the evolution of care from total institutional care to the majority of services being provided in communities, with the goal of social integration and improved life quality (Jacobson & Burchard, 1992). At the same time, mental health services, particularly for the most impaired, have been only somewhat successful in achieving such goals (Mueser, Bond, Drake, & Resnick, 1998). Stein and Santos (1998) characterized the lives of people with severe mental illness as

Address correspondence to: Bryan P. McCormick, Department of Recreation and Park Administration, Indiana University, HPER Building, Room 133, Bloomington, IN 47405-7109. Email: bmcormi@indiana.edu.

marked by isolation with "little to do during the day that they see as useful; they often experience their lives as meaningless and chaotic; and their general health status is often inadequate" (p. 1). At the same time, although leisure activity in the lives of this population appears to be strongly related to life quality (Oliver, Huxley, Bridges, & Mohammad, 1997; Trauer, Duckmanton, & Chiu, 1998), relatively little is known about the day-to-day experience of people with mental illness (Delespaul, & deVries, 1987; deVries & Delespaul, 1989).

Studying the daily experience of individuals with severe mental illness, the researchers examined how characteristics of daily activities were indicative of individuals' negative mood states. Not every individual in the community welcomes and happily embraces free time. For some people, particularly when they have severe mental illness, leisure time may become a heavy burden because of persistent negative mood states such as boredom, anxiety, and depression. Working with psychiatric clients who experienced depression, anxiety, and excessive guilt, Martin (1969) claimed that individuals become emotionally uncomfortable with free time. The present study sought to examine characteristics of daily activity and its relationship to mood, among people with mental illness living in the community.

Review of Literature

Daily Functioning of People with Mental Illness

As noted previously, there has been little research to document and understand the ongoing experiences of people with severe and persistent mental illness (SPMI). The few studies that have been conducted tend to confirm stereotypical views of their lives as being dominated by solitary and passive activities. Much of their time appears to be spent in activities that provide little contribution to personal growth, or opportunities for creativity (Skalko, 1990). Delespaul and deVries (1987) reported the experiences of daily life of "ambulatory chronic mental health patients" finding that subjects spent 71% of their time at home, 37% of their time alone, and 10% of their time "doing nothing." Delespaul and de Vries (1987) also noted that in evenings "when time spent in organized leisure activity almost tripled for normal subjects, it remained unchanged for patients" (p. 540). In addition, the experience of "doing nothing" has also been found to be more common among people diagnosed with depression than among control groups without mental illness (Barge-Schaapveld, Nicolson, Berkhof, & de Vries, 1999). An examination of mood states indicated that depressed levels of mood were most frequently reported when alone, were least prevalent when with one to three individuals, and then increased again with four or more people; indicating that crowded settings were troublesome. Other studies that have attempted to link activity to subjective experience among people with schizophrenia have found that negative mood tended to be greatest during work, yet, at the same time, work occupied a very small portion of their lives (Barge-Schaapveld, Nicolson, Delespaul, & deVries, 1997). Thus, the characteriza-

tion by Stein and Santos (1998) of the lives of people with SPMI as largely solitary and with little meaningful activity appears to be consistent with the few studies of daily life among this population.

Characteristics of Activity and Mood States

One approach to understanding mood states has been to consider the characteristics of activity. Csikszentmihalyi's (1975; 1990; 1997) theory of flow argues that mood states are affected by the balance of elements of challenge and skill imbedded in activities. When high levels of challenge are met with high levels of skill, a state of flow occurs. In this state of flow, attention is focused on the activity. Although Csikszentmihalyi (1997) noted that flow experience is not directly related to an emotional state, its recollection may be a source of happiness. By contrast, when skills exceed the challenge of an activity, individuals are likely to experience boredom. Conversely, when skills are perceived to be less than the challenge of the activity, tension and anxiety result. Although much of Csikszentmihalyi's work has focused on the flow and optimal experience, others have examined the role of the character of activity on mood state. Voelkl (1990) found in an experience sampling study of nursing home residents, that they spent a large portion of their time in low challenge/low skill activities. This proportion of time was greater than that found among general population studies of adolescents or adults. At the same time, those activities reflecting the highest levels of subjective experiences, measured as positive mood states, matched medium to high challenge with medium to high skill (Voelkl, 1990). Furthermore, most activities characterized by medium to high skill and challenge were "independent activities" and represented elements of leisure/social activities.

The Experience of Boredom and Anxiety

In general, the experience of boredom and anxiety significantly affects individuals with SPMI. Extant literature provides us with an understanding of experiences associated with boredom and anxiety. While some researchers reported that boredom is significantly related to anxiety (Farmer & Sundberg, 1986; Vodanovich, Verner, & Gilbride, 1991), it is necessary to make conceptual explication of these two emotional states.

Boredom. Various perspectives in understanding boredom exist. Psychologists have focused on boredom as both a transitory emotion as well as a psychological trait. Some sociologists have considered boredom a socially constructed emotion, whereas existentialists contend that boredom occurs when individuals fail to create meaningful existence. In order to comprehend boredom in the lives of people with SPMI, a discussion of the full spectrum of perspectives is in order.

Zuckerman (1979) characterized boredom as "an aversion for repetitive experience of any kind, routine work, or dull and boring people and extreme restlessness under conditions when escape from constancy is impossible"

(p. 103). Mikulas and Vodanovich (1993) defined it as "a state of relatively low arousal and dissatisfaction, which is attributed to an inadequately stimulating situation" (p. 3). Both definitions suggest boredom as a transitory state resulting from an understimulating environment. Indeed, Weissinger, Caldwell, and Bandalos (1992) noted that boredom is a transitory state of mind in which a person is under a low arousal situation and hence, seeks optimal levels of arousal. According to Csikszentmihalyi's (1975; 1990; 1997) flow model, the experience of boredom occurs as an individual's skill level exceeds the situational demands at hand. In short, a majority of the research on boredom concentrates on its situational determinants.

However, it should be also noted that boredom has been discussed and assessed as a psychological trait (e.g., Farmer & Sundberg, 1986; Larson & Richards, 1991; O'Hanlon, 1981). In essence, individuals have a certain "proneness" to experiencing boredom, regardless of situational cues. O'Hanlon (1981) noted that degrees of boredom reported by different individuals in the same monotonous working environment varied greatly. He suggested that some workers performing monotonous jobs are not bored at all, while others claim they exert more 'effort' to pay attention to their jobs than their co-workers. Larson and Richards (1991) noted that the same adolescents who reported a high frequency of boredom at school also expressed high rates of boredom outside school. Farmer and Sundberg stated that the boredom-prone individual is "one who experiences varying degrees of depression, hopelessness, loneliness, and distractibility. . . . Boredom-prone persons tend to be amotivating and display little evidence of autonomous orientation" (p. 14). Farmer and Sundberg also suggested that there is a group of people who are bored to a greater degree than the rest of the population.

In a sense, existentialists' treatment of boredom reflects a trait perspective as well. An existential approach to boredom identifies boredom as the result of an individual being unable to create meaningful existence. Existentialism posits that an individual's existence and what he/she does with this existence is life's essence (Yalom, 1980). In his classic work, Frankl (1984) described the search for meaning as a primary motivational force, unique and specific to each individual. Existentialists have suggested that everything has meaning. From an existential perspective, Bargdill (2000) found that the most important aspect in the experience of life boredom was the development of emotional ambivalence. Ambivalent feelings developed once participants compromised their personal goals for less desirable projects. Bargdill also found that feelings of emptiness were also part of life boredom. He noted that the bored participants also tended to have a negative view of the future. Larkin (1979), for example, discussed boredom in a study of a high school population, characterizing it as an effect of the general lack of meaning confronting students. Somewhat in contrast, Askins (1980) characterized boredom as the construction of meaning in an otherwise meaningless situation, noting that "by establishing the occurrence as boring the subject renders a meaning to an otherwise meaningless experience. Thus boredom can

be seen as an accounting for the inability or unwillingness to produce meaningfulness to the specifics of an experience" (p. 137).

Boredom has also been a sociological topic of study. It is interesting to note that boredom has been treated as one of the most socially devalued emotions. From a sociological perspective, boredom is viewed as one's own fault and, therefore, there is almost a moral judgment about boredom (Darden & Marks, 1999). Using Durkheim's notion of anomie, some sociologists considered boredom as an inseparable concept from anomie, and, therefore, boredom connotes normlessness and engenders emotions (c.f., Darden & Marks, 1999). In general, Darden and Marks argued that sociologists have tended to view boredom as a socially constructed emotion. Using this symbolic interactionist view, they defined boredom as a:

socially disvalued emotion we experience in a setting where the drama fails for some reason; when the only scripts and props available are too well rehearsed and overly familiar; any roles which exist are undesirable and without the possibility of negotiation; there are no others whose roles we can or want to take, and we feel distant from our roles. . . . Since display of boredom is usually improper or rude, we often deny it while usually leaving the scene, either physically or through fantasy. (p. 17)

In sum, boredom has been considered as a transitory emotion, an underlying trait of the individual, and a definition or meaning of a situation. Yet in all the above approaches, there is a situational component. Although individuals may be prone to boredom, the experience is only identified as boring in situations that are perceived as understimulating, meaningless or overly familiar.

Anxiety. Anxiety is an emotional state concerned with feelings and subjective experiences and is influenced by many causative factors (McCaffery & Beebe, 1989). For Rapee (1996), anxiety is an unpleasant, but normal and functional affect that provides people with warning signs of perceived threats. Some of the earliest treatments of anxiety discussed it under the general rubric of "fear." Tillich (1952), an influential existential thinker who is credited with popularizing the concept of anxiety, defined anxiety as a type of fear. Thus, the fundamental feature of anxiety is fear or apprehension about the future (Clark & Watson, 1994). While there are some similarities between anxiety and fear, one common distinction is that in fear the source of the threat is known and in anxiety it is largely unknown (Epstein, 1972). In this regard, Carpenito (1993) defined anxiety as a state in which the individual experiences feelings of apprehension in response to a vague, non-specific threat. Wilson-Barnett and Batehup (1988) further noted that anxiety is a temporary response to a situation which is unclear or it may be a chronic disposition in which a person frequently responds to events with anxiety.

Thus in broad terms, there are two types of anxiety: state anxiety and trait anxiety. State anxiety is the transitory feeling of inadequacy or fear; it is a response to a particular situation or set of circumstances (Spielberger, 1972). In a general sense, state anxiety has been defined as how anxious one

feels at a particular time in a particular situation. Csikszentmihalyi's (1975; 1990; 1997) treatment of the concept of anxiety is relevant to state anxiety. According to Csikszentmihalyi (1975), one experiences anxiety if exposed to a situation where one's skill level is lower than the environmental challenge level one faces. Various external challenges that are perceived to be beyond the abilities of an individual, whether they be rock climbing, playing chess, or conducting surgery, may produce anxiety. Jones and Hardy (1990), studying anxiety from the perspective of cognitive psychologists, stated that anxiety occurs as a result of one's inability to use or the strained usage of coping resources to meet the demands of a given situation.

In contrast, trait anxiety refers to an individual's chronic disposition to respond anxiously to demands (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). That is, trait anxiety is an intrinsic characteristic of the person. Spielberger (1972) identified trait-anxiety by how anxious one feels in general. Trait anxiety can be further understood by the way that existentialists treated the concept.

Early existential psychology associated the experience of anxiety with one's being. Tillich (1952) argued that anxiety originates from the threat of nothingness or nonbeing. He noted that the perception of emptiness and meaninglessness produce anxiety, which threatens one's existence (e.g., self-concept, self-affirmation). Lazarus and Averill (1972) pointed out that anxiety results when cognitive systems no longer enable an individual to relate meaningfully to the world about him or her. They further noted that loss of one's identity and the attendant sense of meaninglessness are important events that influence anxiety. May (1950) cited anxiety as the result of a threat to the psychological existence of the personality, or self-concept. Similarly, Rogers (1951) noted that an individual experiences anxiety when he/she perceives something that is a threat to one's self-concept. In other words, Rogers viewed anxiety as an awareness of a discrepancy between one's self-concept and reality that threatened disintegration of the self-concept.

Thus both trait anxiety and state anxiety have been studied. As with boredom, anxiety can be both a condition of the individual as well as a result of situational characteristics of activities. However, unlike boredom, pervasive trait anxiety is recognized as a psychological disorder affecting children and adults.

Mood States and Functioning of People with Mental Illness

Mood states of people with SPMI have been identified as having serious impacts on their functioning. For example, both boredom and anxiety have been implicated in the functioning of clients with mental illness in community treatment settings. Test, Wallisch, Allness and Ripp (1989) found that young adults with schizophrenia reported using alcohol and nonprescribed drugs for anxiety reduction, relief of boredom, and a means for social contact. In addition, Goodwin et al (2003) found that panic attacks, associated with anxiety disorders, significantly increased the odds of alcohol or sub-

stance abuse among people with schizophrenia. Boredom has also been implicated in chronic smoking among inpatient psychiatric clients (Reichler, Baker, Lewin, & Carr, 2001). As well, anxiety has been found to be related to the occurrence of positive symptoms (hallucinations, delusions, etc.) of schizophrenia (Delespaul, de Vries & van Os, 2002; Emsley, Oosthuizen, Joubert, Roberts, & Stein, 1999; Myin-Germeys, Nicolson & Delespaul, 2001) and has been linked to suicide among people with schizophrenia (Funahashi, et al., 2000). Finally, affective states have been identified as playing a role in criminal behavior and arrest patterns among people with mental illness (Draine & Soloman, 2000). Thus, among people with mental illness in the community, the experience of both boredom and anxiety have been found to be harbingers of poor cognitive and social functioning.

The purpose of this study was to document the daily life of people with SPMI residing in the community. Specifically, this study intended to determine if qualities of activity were significantly related to key mood states of boredom and anxiety.

Methods

Sample

Participants were drawn from the population of clients receiving mental health services through a community mental health center in a medium-sized, midwestern US city. The community mental health center offers comprehensive services to over 13,000 clients with a variety of psychiatric diagnoses. Services are provided in the areas of Addictions, Adult Services, Child and Adolescent Services, and Acute Care. Within each of these services, a wide scope of programs are offered including inpatient programs, school based services, forensic services, intensive group homes, vocational services, home based services, homeless resource project, drug and alcohol clinic, and brief therapies. An array of professionals, groups and individual therapies are employed within each of these programs. The sample for this study was drawn from individuals receiving treatment in the Adult Services, day treatment program. Individuals in the day treatment program have regular access to doctors, nurses, social workers, primary care coordinators and activity therapists.

The study sample consisted of two females and six males with an age range of 34-49. One participant was a member of a racial minority. All participants were single at the time of data collection; however, one participant had been married previously. Participants generally reported 4-5 previous admissions for psychiatric treatment. Three participants lived independently in their own home or apartment, whereas the remainder lived in congregate housing (group home or shelter). Only one participant was employed at the time of the study.

Data Collection and Instrumentation

Data were collected through the use of experience sampling method (ESM) (Csikszentmihalyi & Larson, 1987). Voelkl and Brown (1989) noted that ESM was an appropriate method for the examination of context, challenge and skill demands of activities on subjective experience. Data were collected in three waves of group administration (4 participants first wave, 2 participants second wave, and 2 participants third wave). In this study, participants were signaled, via pre-programmed signalling watches, seven to ten times¹ per day for seven consecutive days. Signal times were selected at random using a two-stage process. First, seven to ten quarter-hours were selected between 9 am and 9 pm each day. Second, within each quarter hour, one minute was selected at random as the signal time. At each signal, participants reported on what they were doing, the degree of challenge and skill associated with the activity, and mood state in an experience sampling form (ESF). Challenge/skill associated with activity was reported on a 3-point ordinal scale and mood was recorded dichotomously (yes/no). Dichotomous scoring was chosen to minimize the cognitive demands on participants. Questionnaire booklets were collected seven days later along with a brief exit interview that collected demographic information and participants' perceptions of the ESM.

Informed Consent

Participants were initially identified through the staff at the community mental health center who specified clients as possible participants based on their perception of clients' literacy and cognitive skills. Once clients were identified as potential participants, a meeting was arranged with the investigator and a representative from the mental health center (recreation therapist). At this meeting, the general intent and procedures of the study were presented verbally to potential participants. Clients who agreed to participate were then presented with informed consent materials, both in written and oral form, which outlined procedures in greater detail. A total of 12 clients were identified as potential participants, 4 of whom declined participation. Participants were each offered a total of \$10 compensation (\$5 at inception, and \$5 upon completion) in food or merchandise coupons for participation in the study. Following acquisition of informed consent, clients were given training in the procedures of data collection. This training included an introduction to the paging devices (pre-programmed watch), instruction on completing the ESF, instruction on maintaining confidentiality if completing the ESF in a public place, and finally, supervised practice in public.

¹Only participants in first wave were signaled 10x per day. Due to limitations of the paging device (50 signals maximum), subsequent participants were only signaled 7x per day, to avoid having to change paging device during mid-week.

Data Analysis

Descriptive analyses were conducted to identify underlying characteristics of daily experience of participants. In order to examine if daily experience was indicative of mood, two logistic regression models were used to determine if mood was dependent upon characteristics of experience. Logistic regression was selected as the dependent (boredom & anxiety) and independent (challenge/skill categories) variables were measured at the nominal/ordinal level (Menard, 1995). Since the intent of this study was to examine mood and activity at the experience level (Voelkl & Baldwin, 2000), it was necessary to account for individual response patterns. In addition, given that both boredom and anxiety have been considered as trait variables, accounting for individual variation also accounted for variation in trait levels of the dependent variables. In many previous ESM studies, individual variation has been accounted for by standardizing scores for individuals as a deviation from their own means (e.g., Larson & Delespaul, 1992; Samdahl, 1989; Voelkl, 1990). Given the nominal level of measurement of mood variables, such a standardization process was not possible. Instead, individual variation was accounted for by entering subject variables to account for between-subject variance (c.f., Alliger & Williams, 1993; Williams & Alliger, 1994). In this approach a single categorical independent variable was created in which each category in the variable corresponded with one subject. This variable was entered first into a hierarchical logistic regression approach. Williams and Alliger (1994) indicated that "this step removes between-subjects variance and allows variables entered in subsequent steps to be tested for relationships with the dependent variable beyond any association attributable to response tendencies or traits" (pp. 850-851). Thus the challenge/skill categorical variable was entered in the second block of the hierarchical approach. Finally, in order to examine if the relationship of challenge/skill to mood state was dependent on the individual reporting, an interaction term was created. The rationale behind this strategy was that if there was a significant interaction, the relationship of activity characteristics to mood state could not be explained at the experience level (main effect). In the presence of a significant interaction, the relationship of activity characteristics to mood state could only be examined idiosyncratically (Voelkl & Baldwin, 2000).

In order to facilitate analysis and maintain adequate cell sizes, the challenge by skill characteristics were classified into three categories. Although Ellis, Voelkl and Morris (1994) have identified that low challenge/low skill activities can be characterized as "apathy," in this study, low challenge/low skill activities and instances in which skill exceeded challenge were grouped together ($n = 259$; 75.1%). This grouping was done as apathy and boredom were conceptually more similar than apathy and anxiety or flow. Furthermore, the findings indicated that participants reported no instances of low skill and low challenge; thus, the category only represented those instances in which skill exceeded challenge. Second, medium challenge/medium skill

and high challenge/high skill activities were collapsed into a single category ($n = 14$; 4.1%). Finally, those activities in which challenge exceeded skill were collapsed into a single category ($n = 72$; 20.9%).

Findings

A total of 536 signals were programmed which resulted in 378 responses (70.5%). Of all responses, 352 were recorded within 20 minutes of the signal. This yielded a useable response rate of 66%. Overall, respondents provided a mean of 44.75 responses per person (range 33-61).

Descriptive Analysis of Daily Life

A large proportion (72%) of respondents' time was spent in activities that provided little challenge (Table 1). In contrast, very little time was spent in activities that were highly challenging (4%). Approximately one quarter of respondents' time was spent in activities that provided moderate challenge. At the same time, Table 1 indicates that respondents identified few instances of low skill (3.0%), most activities were done with moderate skill (66.5%), and fewer activities were done with high skill (31%).

Mood states of boredom and anxiety indicated that anxiety was a more common experience than boredom (33.4% vs. 27.6%) across the sample; however there was a great deal of individual variation (Figures 1 and 2). Proportions of responses characterized by anxiety ranged from 1.2% to 80% across the eight participants, whereas the proportion of responses characterized by boredom ranged from 0% to 46%.

Experience and Anxiety

The logistic regression model with the challenge/skill by individual interaction included indicated that the interaction was not significantly related to the likelihood of reporting anxiety (Table 2, Model 3). Although the interaction block did increase the χ^2 value of the model by 8.40, this was not statistically significant. As a result, the logistic model (Table 2, Model 2) with the two relevant independent variables was interpreted.

TABLE 1
Frequencies of Challenge vs. Skill in Reports

Skill	Challenge			Col. Total (%)
	Low	Medium	High	
Low	1	3	6	10(.03)
Medium	153	69	5	227(.66)
High	96	9	3	108(.31)
Row Total (%)	250(.72)	81(.23)	14(.04)	345

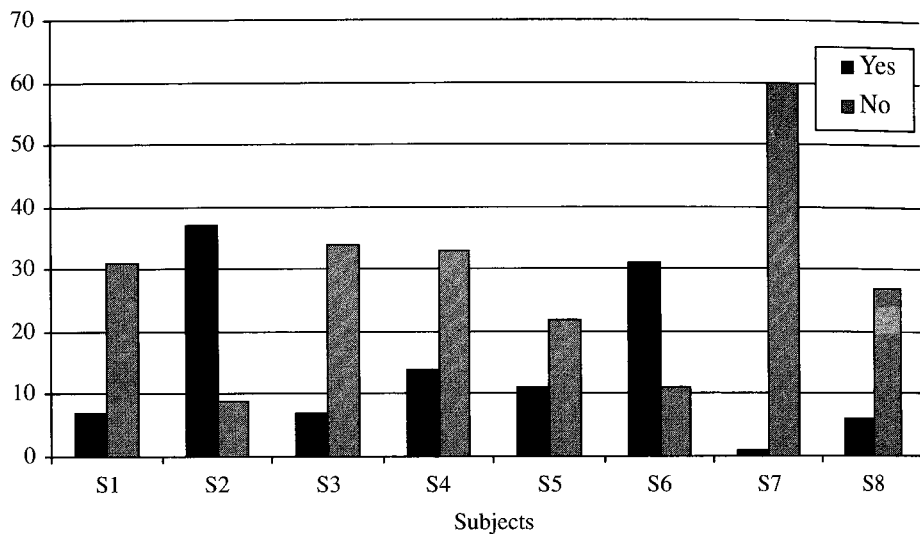


Figure 1. Frequency of reporting anxiety across all subjects.

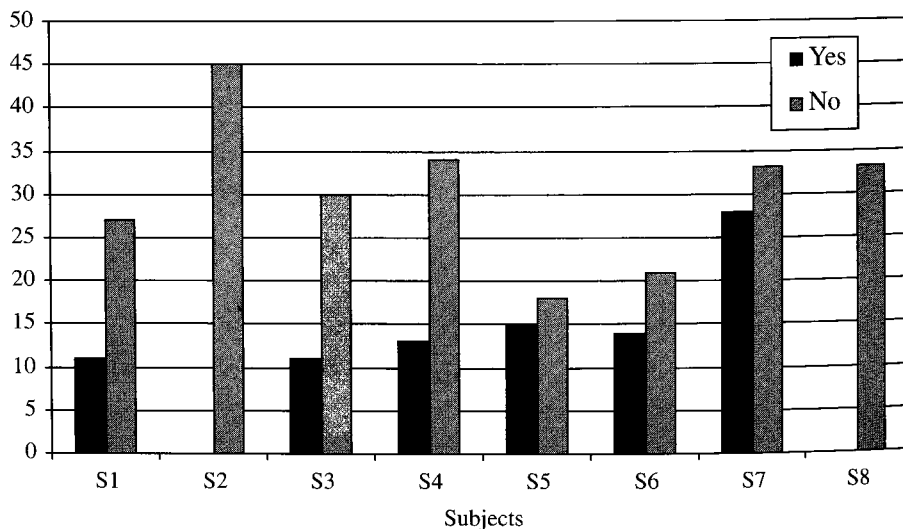


Figure 2. Frequency of reporting boredom across all subjects.

TABLE 2
Logistic Regression Results in Prediction of Anxiety

<i>N</i> = 334	Model 1 Person Variable	Model 2 Person + Challenge/Skill	Model 3 All Variables + Interaction
Model χ^2 (<i>df</i>)	125.13 (7)	145.14 (9)	153.54 (17)
Statistical significance	.000	.000	.000
Cox & Snell R^2	.31	.35	.37
Change in χ^2		20.01	8.40
Statistical significance of $\Delta\chi^2$.000	.396

<i>Individual predictor results for Model 2</i>						
	<i>b</i>	<i>S.E.</i>	Wald χ^2	<i>df</i>	<i>p</i>	Odds Ratio
Person			75.684	7	.000	
Person(1)	-.020	.425	.002	1	.963	.980
Person(2)	2.405	.380	40.112	1	.000	11.081
Person(3)	-.756	.432	3.065	1	.080	.470
Person(4)	-.250	.372	.453	1	.501	.778
Person(5)	.046	.397	.013	1	.908	1.047
Person(6)	2.163	.365	35.121	1	.000	8.698
Person(7)	-3.309	.915	13.071	1	.000	.037
Person(8)	-.279	.475	.345	1	.557	.756
Challenge/Skill Ratio			16.981	2	.000	
Skill > Challenge	-1.272	.311	16.770	1	.000	.280
Skill < Challenge	1.479	.513	8.300	1	.004	4.389
Skill = Challenge	-.207	.336	.379	1	.538	.813

Overall, the omnibus test of model coefficients indicated that the model was a significant predictor of anxiety ($\chi^2 = 145.14$; $df = 9$; $p < 0.001$). In addition, the model accounted for approximately 35% (Cox & Snell R^2) of the variation in the reporting of anxiety. There was a significant effect of the individual reporting the experience of anxiety. The individual variable alone accounted for 31% of the explained variance. Further examination of individual predictor results (Table 2) indicated that persons 2 and 6 reported anxiety at a much higher rate than the group, whereas person 7 underreported anxiety as compared to the rest of the group. These findings appear consistent with data presented in Figure 1 previously.

The challenge/skill characterization of activity was a significant overall predictor of reporting anxiety, accounting for a small but significant portion of the variance. Examination of individual predictors indicated that when skill exceeded challenge, there was a negative association with reporting anxiety ($b = -1.27$; $p < .001$). Examination of the odds ratio further explains the effect indicating that when skill exceeded challenge there was a 72%

reduction in the likelihood of reporting anxiety. In contrast, when skill was less than challenge there was a positive association with reporting anxiety ($b = 1.48$; $p < .001$). Again, the odds ratio indicated that when perceived skill was less than the perceived challenge of the activity, there was a greater than 400% increase in the likelihood of reporting anxiety. Finally, when challenge was equal to skill, there was no significant association with the reporting of anxiety ($b = -0.21$; $p = .538$).

Experience and Boredom

The logistic regression model with the challenge/skill by individual interaction included (Table 3, Model 3) indicated that the interaction was not significantly related to the likelihood of reporting boredom. In addition, although the omnibus test of model coefficients indicated that the model was significantly related to the prediction of boredom ($\chi^2 = 69.45$; $df = 9$; $p < 0.001$), neither the challenge/skill categories (Wald $\chi^2 = 4.42$; $df = 2$; $p = .110$) nor individual effects (Wald $\chi^2 = 8.87$; $df = 7$; $p = .262$) were

TABLE 3
Logistic Regression Results for Predicting Boredom

<i>N</i> = 326	Model 1 Person Variable	Model 2 Person + Challenge/Skill	Model 3 All variables + Interaction			
Model χ^2 (<i>df</i>)	65.00 (7)	69.45 (9)	80.33 (17)			
Statistical significance	.000	.000	.000			
Cox & Snell R^2	.18	.19	.22			
Change in χ^2		4.44	10.89			
Statistical significance of $\Delta\chi^2$.109	.208			
<i>Individual predictors results for model 2</i>						
	<i>b</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>p</i>	Odds Ratio
Person			8.871	7	.262	
Person(1)	2.042	2.946	.481	1	.488	7.710
Person(2)	−6.581	13.074	.253	1	.615	.001
Person(3)	1.613	2.944	.300	1	.584	5.017
Person(4)	1.728	2.941	.345	1	.557	5.629
Person(5)	2.495	2.943	.719	1	.397	12.121
Person(6)	2.366	2.942	.647	1	.421	10.657
Person(7)	2.621	2.935	.798	1	.372	13.753
Person(8)	−6.285	16.023	.154	1	.695	.002
Challenge/Skill ratio			4.416	2	.110	
Skill > Challenge	−.402	.258	2.432	1	.119	.669
Skill < Challenge	.099	.429	.053	1	.817	1.104
Skill = Challenge	.303	.292	1.076	1	.300	1.354

significantly related to the reporting of boredom. Thus in this analysis, challenge/skill categories and individual effects were not significantly associated with the reporting of boredom.

One issue that may be of concern in the above prediction model on boredom is that of zero cell count (Menard, 1995). Zero cell count occurs when the dependent variable is invariant for one or more categories of an independent variable. As was shown in Figure 3, two individuals in the sample reported no experiences of boredom. The effect of a zero cell count is that it produces a very high estimated standard error for coefficients associated with that category. Menard noted that such high estimated standard error terms are acceptable if one is concerned "more with the overall relationship between a set of predictors and a dependent variable than with the effects of the individual predictors" (p. 68). Such was the case in the present study, as individual predictors were included to account for individual variation across the sample, without particular interest in the prediction for any one individual.

Discussion

First, this study confirms previous studies of the everyday lives of people with SPMI. Overall, their lives were characterized by activities that provided fewer challenges than those of nursing home residents (cf. Voelkl, 1990). As a result, the overwhelming majority (75%) of their experiences were categorized by instances in which their skills exceeded the demands of the activity. In addition, activities in which medium to high challenge were met with medium to high skill (flow states) represented the smallest portion (4%) of their lives. Again, this is considerably less than that of nursing home residents (Voelkl, 1990). In the nursing home sample, 14% of subjects' reports were characterized by flow states. It would appear that the everyday lives of the subjects in the present study were characterized by very little stimulation. At the same time, it is not clear if this level of low stimulation is problematic. There is indication from previous research that passive leisure activity is related to a greater intensity of hallucinations among people with schizophrenia (Delespaul et al, 2002). Yet in this study, such low stimulation activities were not associated with a negative mood state. Overall, the nature of experience among community mental health center clients represented by this sample echoes Stein and Santos' (1998) characterization of the lives of people with SPMI as affording little stimulating activity.

The findings of this study provide equivocal support for the hypothesized relationship between characteristics of activity and subjective experience among people with SPMI. Although activities in which skill exceeds challenge have been hypothesized to be perceived as boring, this was not supported in this study. At the same time, such activities were found to be significantly negatively related to the reporting of anxiety. In contrast, those activities in which challenge exceeds skill have been hypothesized to be anxiety provoking; in this sample, this relationship was supported. Finally, the

theory of flow predicts that medium to high challenge, matched with medium to high skill should produce positive mood states. In the present study, activities characterized by flow conditions, were not significantly associated with the negative mood states of anxiety or boredom. In all of these significant relationships it is noteworthy that individual patterns explained substantially more variance in the dependent variables than the challenge/skill ratio variable.

A potential explanation for the domination of activities in which skills exceed challenge may be that such activities are not anxiety-producing. Given the noted problems anxiety produces for this population, it is possible that avoiding challenging activities may in fact represent a coping technique. The findings of this study indicated that low stimulation activities, in which skills exceeded challenge, were significantly negatively associated with reporting anxiety. In addition, there is evidence to indicate, at least among people with psychotic disorders (e.g., schizophrenia), that in situations of increased affect and increased stimulation there is a greater incidence of thought disorder (deVries & Delespaul, 1989). At the same time, it has also been found that very low stimulation activities, like "doing nothing" or watching television, are related to higher intensity hallucinations (Delespaul, et al., 2003). Although the present study did not find negative mood states associated with low stimulation activities, both overstimulation and understimulation have been found to be implicated in functioning in previous research. In addition, there is evidence to suggest that social context may play a greater role in the explanation of anxiety in this population (Blanchard, Mueser, & Bellack, 1998; deVries & Delespaul, 1989) than activity qualities.

In conclusion, the findings of this study are at best preliminary. Although individual patterns of response were accounted for in the analyses, it is unknown how well these eight individuals represent the larger population of people living in the community with SPMI. Given the preceding limitations, there are some tentative implications for those working with people with SPMI. First, there appears to be evidence to suggest that both overstimulation and understimulation can be problematic situations for this population. Situations in which demands of activity exceed the skills of the individual can be anxiety and stress-producing. People with SPMI appear to be more vulnerable to activity-related stress than people without SPMI (Myin-Germeys et al. 2003). In contrast, although low-stimulation activities in this sample were not significantly associated with the negative mood state of boredom, understimulating activities appear to be problematic for those with psychotic disorders. Although individual variation must be considered, the findings of this study indicate that an understanding of the challenge/skill ratio of activities is important in developing programs to improve the subjective experiences of people with SPMI. Finally, additional examination of the daily experience of people with SPMI would add greater understanding to the daily life and functioning of this population.

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