

Psychopathology and Boredom: A Neglected Association

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Abstract

Boredom is a common and pervasive subjective state that is known to have important implications for human performance in industrial and academic settings. However, there has been considerably less interest in boredom among clinical researchers. This is surprising given the centrality of anxiety, depression and other negative mood states in contemporary theories of psychopathology. More recently, Todman (2003) has argued that persistent boredom can adversely affect the course and treatment of a variety of psychiatric disorders and may be a sub-clinical or prodromal expression of anhedonia. Findings from three studies are discussed in the context of this putative anhedonia-boredom relationship.

Introduction

Boredom may be one of the most under-appreciated symptoms in modern psychiatry. There are no instruments that are routinely used in clinical settings to assess an individual's susceptibility to boredom, nor are there questions about its frequency, duration or severity on the standard psychiatric interview. But what are we to make those cases where the experience of boredom is unrelenting or unusually intense, or where it has become reliably associated with an unusually large proportion of the activities and environments that are valued and prescribed by the host culture? Is the information conveyed by such conditions as trivial and irrelevant as current clinical practice would seem to suggest? I hope to make the case in the following pages that this unfortunate but common attitude toward boredom has caused us to overlook an important source of diagnostic and prognostic information. In particular, I hope to illustrate though findings from my own research and the research of others (a) that persistent state boredom can be conceptualized as a more transitory and less extreme variant of anhedonia; and (b) that there are other maladaptive variations in the intensity, prevalence, duration and attribution of boredom that are also associated clinically important phenomena. Before proceeding, however, I need to establish at least a working definition of the term boredom; a task that is surprisingly difficult considering the frequency with which the term is evoked in everyday discourse.

Defining Boredom

As is the case with any emotion, a truly comprehensive definition of boredom should encompass a variety of perspectives and levels of explanation. Specifically, it should be possible to define boredom in terms of its phenomenology, its objective/observable features, its physiological underpinnings, and its functional characteristics. The research that will be described in the following pages has been guided by a definition that is an amalgam of views from several different authors, including that of Mikulaus and Vodanovich (1993) who have proposed that boredom is a 'state of low arousal and dissatisfaction, which is attributed to an inadequately stimulating situation' (p.3).

Although my own definition is similar to that of Mikulaus and Vodanovich, there are some important points of departure. First, whereas Mikulaus and Vodanovich believe that the feeling of constraint is not an integral part of the boredom experience, my colleagues and I are very much of the opinion (as are most other researchers in the field) that *attentional constraint* is both central and critical to the experience of boredom. The source of the disagreement appears to be in how the term 'constraint' is defined. Mikulaus and Vodanovich (1993) appear to restrict its meaning to external constraints, stating, for example, that "constraints take many forms including physical, social, legal and practical/financial" (p. 7). However, we would contend that the most important constraints are probably psychological in nature, as they include the covert coping strategies (e.g., daydreaming) that we all

employ to deal with monotonous environments. If these strategies are inefficient or inaccessible, then, for all intents and purposes, they are constraints.

A second point of departure is that we believe that Mikulaus and Vodanovich's 'inadequately stimulating situation' should be replaced with the construct of '*uninteresting environments*'. Individuals are not just stimulated by environments, they explore them physically and psychologically (Csikszentmihali, 2000). This emphasis on reciprocity makes explicit the widely assumed Interest-Boredom continuum and makes obvious the fact that individuals learn not only how to cope with boredom, but also how to *anticipate* it by monitoring their capacity to sustain interest in a particular endeavor.

Boredom and Function

Boredom can also be defined by its adaptive function. Like anxiety, boredom is hypothesized to have an important signaling function with respect to an individual's relationship to a given environment. It is a cue that the current strategy for exploring a particular environment has exhausted all available stores of novelty and positive reinforcement (Todman 2003). Despite its similarity to depression, I have suggested elsewhere that there are important differences between the two. The most important distinction lies in the fact that depressed/sad mood is a consequence of the conviction that *negative reinforcement* is inevitable and beyond one's control (e.g., Alloy et al., 1984). Bored individuals, by contrast, are convinced that *positive reinforcement* is no longer attainable and beyond their control.

Trait Boredom v. State Boredom

The subjective experience of boredom results from an interaction between individual differences in the predisposition to perceive environments as monotonous and variations in the intrinsic capacity of environments to evoke feelings of sameness. Consequently, any serious study of boredom obligates the researcher to distinguish between the concept of *susceptibility to boredom (trait boredom)* and the actual *experience of boredom (state boredom)*.

There are now several well-validated psychometric scales such as the Boredom Proneness Scale (BPS; Farmer & Sundberg, 1986) and the Boredom Susceptibility Scale (BSS; Zukerman, 1979) that are routinely used to assess trait boredom. Indeed, the development of the BPS, in particular, has been a major catalyst in the growth of research on boredom over the last 20yrs. By contrast, state boredom has been typically assessed using ad hoc single-item measures that require the individual to indicate (usually on a Likert-type scale) the degree to which they currently feel bored or have felt bored during a recent time period.

This trait-state distinction is more than an academic exercise, however. For example, if a measure of trait boredom was found to be positively associated with an important outcome such as relapse among recovering addicts, it would be important to know whether prolonged exposure to intrinsically monotonous environments in otherwise low boredom prone individuals produced the same effect. Since

environments are usually easier to modify (or avoid) than personality traits, the clinical implications in this hypothetical scenario are obvious.

Three Studies: Background

My colleagues and I have been interested for some time in the nature of the relationship between boredom and anhedonia, and particularly with respect to the question of whether it would be appropriate under certain circumstances to consider persistent boredom a sub-clinical or prodromal symptom that is characterized by exaggerated cravings for positive reinforcement. We have conjectured that as in the case with co-morbid psychiatric and substance use disorders, we would expect that persistently bored individuals who are co-morbid for persistent boredom and clinical syndromes to exhibit more severe symptoms than less bored individuals with the same disorders. The findings from three studies in which we have attempted to address these and related issues are presented below.

Study 1: Boredom, Anhedonia, Hallucination Proneness and Substance Use

Research over the last 30 years has clearly demonstrated that there are significant individual and group differences in the susceptibility to boredom (e.g., Sundberg et al., 1991) and that a high level of boredom proneness, assessed psychometrically, is associated with a wide range of untoward outcomes and characteristics, including alcohol dependence in men (Orcutt, 1984; Wiesbeck et al., 1996), reduced sociability (Leong and Schenller, 1993), and higher levels of negative affect, including hostility (e.g., Farmer and Sundberg, 1986; Gordon, Wilkerson, McGown and Jovanoska, 1997)

The present study attempted to extend this line of research by examining the relationship of boredom to two important symptoms that have not yet been explored: anhedonia and hallucinations.

In the case of anhedonia, I have suggested elsewhere that the conceptual, phenomenological and, possibly even neurophysiological (Zurita et al., 1996) overlap between boredom and anhedonia is probably not coincidental (Todman, 2003). I have therefore proposed that it might be useful, at least heuristically, to think of boredom as a multi-dimensional construct, along the lines depicted in figure 1. In this model, the dimensions represent *expectancies* about future encounters with new environments, and anhedonia is construed as a type of boredom that is distinguished by extremely high levels of persistence (high frequency/duration) and ubiquity (high extensiveness/ubiquity). Such a state ultimately gives rise to apathy that typically accompanies full-blown anhedonia (after all, why continue searching if there is nothing to find). In the case of boredom, we hypothesized that chronically bored individuals would also experience a hedonic-deficit state, but rather than apathy, they might also exhibit compensatory subjective cravings and seeking behaviors for positively reinforcing experiences. We therefore expected that these quite different and opposing modes of adaptation to a hedonic deficit would result in a negative

association between measures of anhedonia and feelings of persistent/frequent boredom.

The hypothesized boredom-hallucination-proneness association was based on two interlocking points that I originally articulated in the context of a case study that involved hallucinatory behavior as coping strategy for boredom (Todman, 2003). The first point is that there is the widely held view among researchers that hallucinations are not pathognomonic of mental illness and, in fact, are quite common in the general population (Slade & Bentall, 1988). Second, there is the observation that the environmental conditions that have been shown to promote and exacerbate hallucinations in hallucination-prone individuals are strikingly similar to the conditions that are known to induce feelings of boredom (i.e., stimuli that are high in redundancy, of low complexity, and which provide limited opportunities for engagement or exploration) (Margo et al, 1981). Hence the expectation of a boredom-hallucination-proneness association.

We also hoped to confirm that state boredom is predictive of current drug use, regardless of the contributions of trait boredom. We saw this as important question, since trait information is by definition static and thus not a particularly useful as tool for monitoring the changes in risk levels that occur in response to the passage of time and changes in circumstance.

Method

Participants

Eighty-four participants were recruited from the student population at the New School for Social Research. Demographically, the sample consisted of 60 women and 24 men, ranging in age from 18 to 42 years of age (Mean age= 28.7, SD= 9.5) and was 78% Caucasian, 12% Asian, 5% African American, 3% Hispanic, and 2% other. All of the participants received course credit for their participation in the study.

Materials

Boredom Proneness Scale (BPS; Farmer and Sundberg, 1986). The 28-item, true-false version of the scale (Farmer & Sundberg, 1986) was employed in the present study to assess the tendency to experience boredom. The scale has been found to be psychometrically sound (Vodanovich and Kass, 1999). Factor analytic studies suggest that the scale is multifactorial, although there are differing estimates of the number and the nature of the factors involved (Amed, 1990;Vodanovich & Kass, 1990).

Boredom Susceptibility Scale (BSS; Zukerman, 1979). This 18-item, true-false scale is a sub-scale of the Sensation Seeking Scale. Like the BPS, it is intended to be a measure of the propensity to become bored. Internal consistency, test-retest reliability, concurrent validity and other psychometric properties have been well-documented (Zukerman, Eysenck, & Eysenck, 1978). Correlations between the BPS

and BSS have been surprisingly modest, suggesting that the scales are measuring different aspects of the boredom proneness trait (Blaszczynski et al, 1990; Farmer & Sundberg, 1986).

Launay-Slade Hallucination Scale (LSHS; Launay & Slade, 1981). This self-report scale consists of 12 items and was designed to evaluate an individual's propensity to hallucinate based on the view that hallucinatory events lie along a continuum with normal function. Slade and Bentall (1988) established the reliability and validity of the LSHS on a normal control sample (N = 150) and modified the scale by substituting the true/false dichotomy with a 5 point Likert Scale.

The State Boredom Measure (SBM; Todman, 2004). The SBM is designed to be a state measure. It consists of eight questions about different aspects of the boredom experience, each of which is associated with a seven-point Likert-type scale. The participant is asked to base his/her responses on their recollections about boredom experiences during the preceding 14 days. The eight questions were created through a rational-theoretic process. Each of the test items can be grouped into one of four clusters or dimensions: Frequency/Duration; Degree of Unpleasantness/Aversiveness; Tolerance; Internal/External Attribution. Reliability and Validity were established using a sample of 160 adults, ranging in age from 24 to 65. The scale has good internal consistency (Alpha = 0.81), item-total correlations range from .67 to .30, and test-re-test reliability ranges from .78. to .45, across the eight items. In terms of validity, the eight items have been found to have correlations with the BPS and the BSS that range from .82 to .37 and .78 to .25, respectively.

The Snaith-Hamilton Pleasure Questionnaire (SHPQ; Snaith & Hamilton, 1995). This scale is a 14-item self-report scale that asks respondents to report the extent to which they have found pleasure in certain activities during the last few days. The scale was modified from the original format, which consisted of four response categories: Definitely agree, Agree, Disagree, and Definitely Disagree, with the latter two items receiving a "1" and the former two "0". The resulting maximum score was 14. The revised version of the scale used in the current study employed a 7 point Likert Scale. The scale ranged from 1= strongly disagree; 3 = disagree; 5= agree; 7 = strongly agree. Since all of the items inquire about whether the individual would have found pleasure in a specific activity (e.g., I would enjoy seeing other people's smiling faces), lower scores are associated with a diminishment in present-state hedonic tone. The SHPQ has been found to be psychometrically sound (Snaith & Hamilton 1995)

Procedure

The questionnaires were administered to participants in a group setting by a research assistant. After signing a consent form, participants were asked to complete a demographic questionnaire, which, in addition to basic information about gender, race, and education level, also requested information about smoking and television watching habits. The following questionnaires were administered in the following order for all subjects: SHPQ, LSHS, BSS, SBM, BPS, and demographic form. Approximately one month after the initial administration the same participants were asked to complete the SBM for a second time.

Results

The scores for each of the eight items on the SBM were summed across the two administrations to yield a single composite score for each item, thus reflecting the degree to which reported levels of boredom were sustained over the one-month period.

In terms of the initial hypotheses, the findings were as follows: As shown in Table 1., four of the eight items on the composite SBM (i.e., time 1 + time 2) were positively correlated with the SHPQ. Consistent with expectations, two of the four items were boredom frequency (SBM1) and boredom duration (SBM2). Two items from the SBM were also positively correlated with the LSHS, (unpleasantness [SBM4] and impact on quality of life [SBM5]), suggesting that individuals who were the most bothered by boredom (functionally and affectively) were also the individuals were more likely to be hallucination-prone.

The BSS measure failed to correlate with either the SHPQ or LSHS. However, the BPS was significantly correlated with both measures, Interestingly, controlling for state boredom (SBM) through a partial correlation analysis effectively eliminated the association between the BPS measure and hallucination-proneness, but not the association between anhedonia and BPS ($r=.26$, $P<.029$), indicating that there is more to the relationship than boredom prevalence or aversiveness.

Finally, two separate multivariate regression analyses were conducted using a backward removal procedure. The SHPQ, along with all of the trait and state variables were entered as a single block as predictor variables. The dependent variable for the first analysis was whether the individual self-described as a current drug user. In the second analysis the dependent variable was whether the individual had a history of treatment for drug use. The results of these analyses are summarized in Table 2. Importantly, state boredom items were found to be the only significant predictors of current drug use. Self-identified substance users reported feeling frequently bored and that the quality of their lives was being negatively affected by boredom. However, they did not feel that they had been experiencing unusually long periods of sustained boredom (quite possibly because of their drug use). By contrast, the only significant predictor of past involvement in drug treatment was the feeling that boredom was having a negative impact on the quality of life.

Study 2: Methadone Maintenance Treatment and State Boredom

My students and I have recently used the SBM (Todman, 2004) and a number of other measures to examine the role of state boredom in sample of patients in a methadone maintenance treatment (MMT) program in NYC. The study was conducted in the context of a larger study, which focused on the effects of aging and long term treatment with methadone. The inclusion of a state boredom measure in this study was prompted by findings from several studies that have suggested that there is an association between boredom and the tendency to use alcohol and other psychoactive substances (Johnston & O'Malley, 1986; Iso-Ahola & Crowley, 1991; Orcott, 1984). However, to our knowledge, there have been no studies to date that

have been able to demonstrate a relationship between state boredom and a patient's ability to remain abstinent while participating in a methadone maintenance treatment program. Moreover, since state boredom by definition varies over time and circumstance, we conjectured that if an association were to be found, it would be of considerably greater clinical utility than a trait measure association.

Method

Participants

The sample consisted of 156 participants, with a mean age of 45 years of age. Sixty-six percent of the participants were male. The average amount of time in methadone treatment was 10 years. All of the patients were paid for their participation.

Procedure and Materials

The patients were interviewed at one of three hospital-affiliated treatment sites by one of six research assistants. During the interview patients were asked to complete a battery of questionnaires. The scales included in the present analysis were the following: The SBM (Todman, 2004), a demographic information form, the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) and the Barratt Impulsiveness Scale (BIS; Barratt, 1993). The psychometric properties of the SBM are described above. The BSI is 53 item self-report measure of psychiatric symptoms. It consists of nine primary symptom dimensions and three Global indices of distress and dysfunction. The measure is psychometrically robust and is supported by a substantial research base. The BIS is a 30 item self-report measure of impulsiveness. It has proven reliability and construct validity in clinical and non-psychiatric populations (Barratt, 1993).

Information regarding urine toxicology results were obtained from the patients' clinical records.

Results

1. Patients who reported more state boredom, particularly in terms of frequency, duration and impact on quality of life, were more likely to report higher elevations on almost all of the clinical and global scales of the BSI (see Table 3). This finding seems to support the hypothesis that state boredom should be associated with greater symptom exacerbation and subjective distress. The one exception to this pattern was the Anxiety scale, which was correlated with boredom frequency but nothing else.

2. Participants who reported finding boredom particularly unpleasant over the last 14 days but who did not experience long periods of sustained boredom, were more likely to have drug-free urine toxicology results at 30days and at 60days prior to the administration of the SBM. In keeping with this finding, individuals who

reported having protracted periods of boredom over the previous 14 days were more likely have urine samples that were positive for opiates at 30 and 60 days from SBM administration. This suggests that despite an equal aversion to boredom, the abstinent patients may have developed coping mechanisms that allowed them to avoid extended periods of boredom. It is also important to note that the scores for depression, anxiety (BSI) and impulsivity (BIS) were also entered into the regression analysis with the SBM items in a single block using a backward removal procedure. As seen in Table 4, the SBM items proved to be the only significant predictors. Finally, the SBM provided no predictive value with toxicology results that were obtained 12 months prior to the administration of the SBM. This type of temporal gradient in predictive efficiency is consistent with the status of the SBM as a state measure.

Study 3: Expectancies and State Boredom in a Community-based Treatment Facility for the Mentally Ill.

Prior to the development of the SBM, we explored the role of expectancies on the experience of boredom in a sample of patients who were receiving care in a community-based day-treatment program for the severely mentally ill. We hypothesized that if boredom severity is in part a function of the degree to which current feelings of sameness are, or are not, generalized to future environments and experiences, we should be able to manipulate patients' feelings of boredom by the creation of new expectancies about future events.

We reasoned that if our earlier conjecture about the boredom-anhedonia relationship is correct, it would important to demonstrate that it is possible to change the average level of reported boredom by patients who are at risk for anhedonia by simply altering their expectations about a future event.

Method

Participants and Procedure

Ten days and two days before, and two days and 15 days after a planned outing to an amusement park for the entire patient population of the clinic, a sample of 59 patients were asked to indicate whether they could remember feeling bored for an hour or more during the preceding 24hrs. The patients ranged in age between 23 to 72 years of age, with a mean age of 44 years of age. Twenty-four of the patients were male, 96% were African American, and only 15 of the participants reported completing high school. All of the patients were receiving psychotropic medications at the time of the study.

Results

As shown in figure 2., the percentage of participants reporting significant levels of boredom steadily decreased during the 10 days prior to the trip (T1=30% v T2=18%), but returned to baseline after the completion of the trip (T3= 15% v T4= 27%). On a practical level, this finding says something about the importance of hope in the care of the severely mentally ill that is seldom broached in the literature. When the term 'hope' is mentioned in the context of care for such patients it usually refers to *the hope for symptomatic recovery*. However, the results of this study suggest that there is another aspect of hope that needs to be constantly monitored in the care of such patients. It is *the hope for change and an interesting future*.

Discussion and Conclusions:

So unpleasant is the feeling of boredom for some individuals that it has been suggested that if there is a hell, it will be a place of profound and unrelenting monotony. Even so, most clinicians do not consider boredom to be a particularly important factor in their formulations of clinical cases. The goal of the present paper was to illustrate the importance and relevance of boredom, particularly state boredom, to various psychopathological phenomena. Of particular interest was the question of whether anhedonia should be conceptualized as an extreme and persistent variant of state boredom.

In an early and simple survey study in a sample of severely mentally ill patients receiving care at a community based psychiatric center we were able to demonstrate that boredom levels are affected by cognitive expectancies. In addition to giving credence to the views of those who have cautioned against the adverse effects of under-stimulating treatment environments, the findings also highlight the centrality of the cognitive representation of time to the experience of boredom (Vodanovich & Watt, 1999). The findings clearly indicate that even very ill psychiatric patients have expectancies about the future. To the extent that these expectancies do not differ from the expectancies of the past, boredom will ensue. Consequently, we have argued that psychotic patients are in constant need of a type of hope that goes beyond the hope for symptomatic recovery. They require hope for an interesting life.

Beyond the findings from the community treatment sample, we have also conducted a more direct study of the hypothesized association between boredom and anhedonia, albeit with subclinical levels of anhedonia in a non-clinical sample. Still, the important finding from this study was the confirmation that boredom is associated with a pleasure-deficit marked by heightened cravings for positively reinforcing environments. These cravings, we contend, account for the paradoxically negative association between anhedonia and feelings of persistent/frequent boredom.

Given the prominence of the symptom of anhedonia in the diagnostic criteria of disorders such as Major Depression and Schizophrenia, the current findings underscore the question of whether complaints of persistent boredom should be considered a prodromal or even premorbid marker in at-risk populations. Of course, this is an empirical question that can only be answered by a longitudinal, follow-up study. Nonetheless, it seems unlikely, especially in the context of the current

findings, that the conceptual, phenomenological and even physiological overlap between the two is purely coincidental.

In the same study, hallucination-proneness was also found to be significantly associated with not only the trait of boredom proneness but also specific aspects of state boredom. Although the criticism that the study utilized a non-clinical population (rather than clinical population) is a valid and important one, it is important to keep in mind that the study was premised on the widely held opinion that hallucinations and the propensity to hallucinate exist on continuum that extends into the non-clinical population (Slade & Bentall, 1988). There is no reason to believe that different mechanisms underlie the hallucinatory behavior in psychotic patients.

Finally, in two of the studies we explored the role of boredom in drug use and drug treatment. In the case of the MMT population, we were able confirm the prediction that higher levels of state boredom would be associated with elevated scores on almost all of the symptom dimensions on the BSI measure. Furthermore, the only reliable predictors of both abstinence and the continued use of opiates within the previous 30 to 60 days came from the SBM. Beyond 60 days, however, no associations were found between any of the SBM items and compliance. Convergent evidence for this dynamic relationship between current substance use and state boredom was also obtained from a second study in a non-clinical sample.

Much of the evidence that has been presented is extremely preliminary and needs to be replicated in much larger and different samples before firm conclusions can be drawn. And of course there are a host of reasons, methodological and substantive in nature, why one should remain skeptical about some of the assumptions and claims that have been made about the anhedonia-boredom relationship. Nevertheless, we believe that there is now more enough circumstantial evidence to warrant a more serious look at what boredom, particularly state boredom, can tell us about the complex motivations associated with psychopathology.

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Table 1 *Correlations Between the Component items of the State Boredom Measure, the Boredom Proneness Scale (BPS), the Boredom Susceptibility Scale and the Snaith-Hamilton Pleasure Questionnaire (SHPQ) and (LSHS) (N= 84)*

	Anehdonia (SHPQ)	Hallucination Proneness (LSHS)
BPS	0.373*	0.348*
BSS		
SBM1	0.241*	
SBM2	0.300*	
SBM3		
SBM4		0.276*
SBM5		0.232*
SBM6		
SBM7		
SBM8	0.272*	

Note: $p < .05$. Only significant correlations shown.

Key: SBM1 = Frequency of state boredom; SBM2 =Duration of State Boredom; SBM3=Tolerance for State Boredom; SBM4= Unpleasantness; SBM5 =Impact on Quality of Life; SBM6=Attribution to age; SBM7=Attribution to Health; SBM8 =Attribution to Social Factors
 SHPQ = Snaith-Hamilton Pleasure Questionnaire
 LSHS = Launay-Slade Hallucination Scale
 BPS = Boredom Proneness Scale; BSS = Boredom Susceptibility Scale

Table 2 *Combined Summary of Linear Regression Analyses with Backward Removal for State and Trait Boredom Variables Predicting (a) Current Substance Use and (b) History of Treatment for Substance Use (N= 84)*

Variable	<u>B</u>	<u>SE B</u>	<u>β</u>	t	Sig
(a)					
SBM1	0.07	0.04	0.41	1.98	0.05
SBM2	-0.11	0.04	-0.62	-3.02	0.00
SBM5	0.08	0.04	0.41	2.01	0.05
SBM7	-0.04	0.02	-0.22	-1.91	0.06
(b)					
SBM5	0.02	0.01	0.26	2.22	0.03
BSS	-0.01	0.01	-0.21	-1.81	0.07

Note. R2 for (a) = .163 R2 for (b) = .083

*Key : SBM1 = Frequency of state boredom ; SBM2 = Duration of state boredom; SBM 5 = Impact on Quality of life; BSS = Boredom Susceptibility Scale. (All SBM items refer to the preceding 14 days)

Table 3 *Correlations Between the Component items of the State Boredom Measure (SBM), the Symptom and Global scales of the Brief Symptom Inventory (BSI) (N= 156)*

	BSI SUBSCALES										
	SOM	O-C	I-S	DEP	ANX	HOS	PHOB	PAR	PSY	GSI	PSDI
SBM1	.176*	.433**	.263**	.390**	.242**	.208**	.354**	.313**	.450**	.385**	.244**
SBM2	.266**	.446**	.294**	.406**	.ns	.265**	.294**	.308**	.480**	.395**	.173*
SBM5	.175*	.351**	.220**	.420**	.ns	.170*	.336**	.292**	.420**	.338**	.222**

**P < .001; *P < .05; ns = not statistically significant

Key: SOM – Somatization; O-C - Obsessive-Compulsive; I-S - Interpersonal Sensitivity; DEP – Depression; ANX – Anxiety; HOS – Hostility; PHOB - Phobic Anxiety; PAR - Paranoid Ideation; PSY – Psychoticism; GSI - Global Severity Index; PSDI - Positive Symptom Distress Index

SBM1 = Frequency of state boredom (over previous 14 days)

SBM2 = Duration of state boredom (over previous 14 days)

SBM5 = Impact of state boredom on quality of life (over previous 14 days)

Table 4 Summary of Linear Regression Analyses for SBM Variables Predicting Clean Urine Samples and Positive Opiate Samples Among Participants in Methadone Maintenance Treatment (N= 156)

Variable	<u>B</u>	<u>SE B</u>	β	t	Sig
(a)					
SBM2	-0.06	0.03	-0.22	-2.06	0.04
SBM4	0.10	0.05	0.24	2.21	0.03
(b)					
SBM2	-0.11	0.06	-0.21	-1.91	0.06
SBM4	0.17	0.09	0.22	2.02	0.05
(c)					
SBM2	1.45	0.89	0.17	1.62	NS
(d)					
SBM2	0.09	0.03	0.27	2.67	0.01
(e)					
SBM2	0.19	0.07	0.33	2.76	0.01
SBM5	-0.20	0.11	-0.22	-1.86	0.07

Note: (a) R2 = .074; (b) R2 = .064 ; (c) R2 = .00 ; (d) R2 = .084 ; (e) R2 = .074

Key: SBM 2 = Duration of State Boredom in past 14 days;

SBM4 = Unpleasantness of Boredom in past 14 days

SBM5 = Impact on of State Boredom on Quality of Life in past 14 days

a =Dependent Variable: Number of Methadone only UA past 30 days

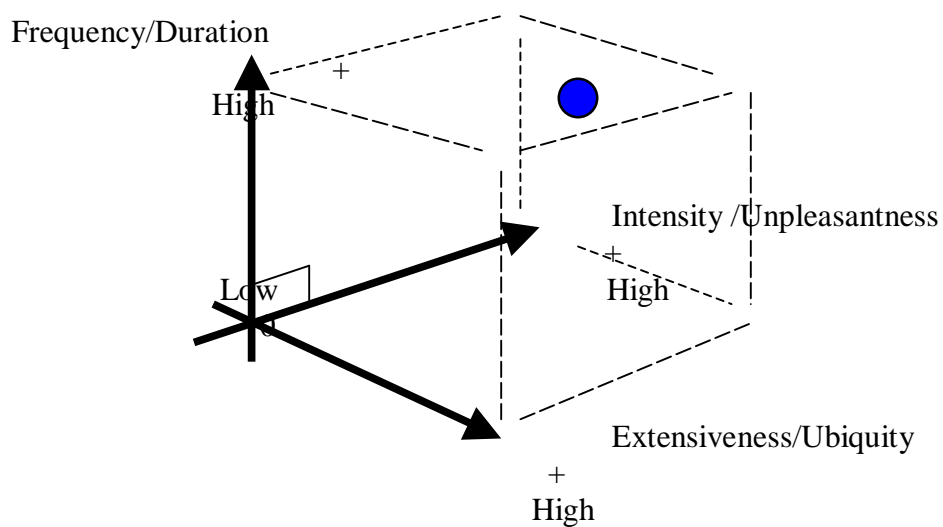
b = Dependent Variable: Number of Methadone only UA past 60 days

c= Dependent Variable: Number of Methadone only UA past 30 days

d = Dependent Variable: Opiate positive UA past 30 days

e =Dependent Variable: Opiate positive UA past 30 days

Figure 1. A Hypothetical Model of the Relationship between Anhedonia and Three Subjective Dimensions of Boredom



* Solid Circle Represents the Clinical State of Anhedonia = Expectancies of High levels of Persistent and Frequent Boredom + Expectancies of High Levels of Extensive Boredom
[Intensity/Unpleasantness may vary within limits due to adaptation]

Figure 2. Relationship Between Anticipation of a Positive Reinforcer (Trip) and the Course of Reported Boredom in a Sample of Chronically and Persistently Mentally Ill Participants in a Community Based Day Treatment Program (N=59).

