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# Initial validation of a scale to measure purposelessness, understimulation, and boredom in cancer patients: Toward a redefinition of depression in advanced disease

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## ABSTRACT

*Objective:* The problem of boredom in people with cancer has received little research attention, and yet clinical experience suggests that it has the potential to profoundly affect quality of life in those patients. We were interested in developing a Purposelessness, Understimulation, and Boredom (PUB) Scale to identify this problem and to begin to differentiate it from depression.

*Methods:* Cancer patients and professionals were interviewed using a semi-structured format to elicit their perceptions of the incidence, causes, scope, and consequences of boredom. From their responses, 45 questions were developed, edited for clarity, and piloted. A total of 100 cancer patients were recruited to participate in the study. Preliminary validation of the PUB using a cross-sectional survey of the measure was conducted. Other instruments used for purposes of convergent and divergent validity included the Functional Assessment of Cancer Therapy Scale–Anemia, Zung Self-Rating Depression Scale, Boredom Proneness Scale, Leisure Boredom Scale, Cancer Behavior Inventory, Systems of Belief Inventory, and the Eastern Cooperative Oncology Group Performance Status Scale.

*Results:* The average age of the sample was 62.37 years ( $SD = 13.43$ ) and was comprised of 60 women (60.00%) and 40 men (40.00%). The results of a factor analysis on the 45 initial items (selected on the basis of professional and patient interviews) created a two-factor scale. The eight items from the strongest factor (items 1, 2, 3, 4, 5, 6, 9, 10) seemed to best tap the construct that could be deemed as overt boredom whereas the six items of the second factor (items 36, 38, 39, 42, 44, 45) seemed to tap the construct of boredom related to meaning and spirituality. Total scale internal consistency, when all 14 items were included in the analysis, yielded a coefficient alpha of 0.84 and good test–retest reliability at 2 weeks ( $r = .80, p < .001$ ). The novel 14-item PUB Scale was significantly correlated to other measures of boredom; the Boredom Proneness Scale ( $r = -.588, p < .001$ ) and the Leisure Boredom Scale ( $r = .576, p < .001$ ).

*Significance of results:* The PUB Scale was found to be a statistically viable tool with the ability to detect boredom and differentiate it from depression. In many respects this work is in concert with much of the current research and clinical effort going on in psycho-oncology that defines components of distress that in sum, redefines depression in advanced cancer.

**KEYWORDS:** Boredom, Scale, Cancer, Depression

## INTRODUCTION

In many respects, over the past several decades, cancer has been undergoing a transformation from an acute life-threatening illness to a chronic life-threatening illness, one requiring a complex process of adjustment by the patient (Passik et al., 1998). Treatments for chronic illnesses focus on slowing the progression of the disease, providing symptom control, and enhancing the adjustment to life with the limitations it may bring over a prolonged period of time. For the patient with an acute life-threatening disease, adjustment involves accepting the seriousness of the illness, dealing with separation from loved ones, ordering of one's affairs, and accepting the care from others necessary toward the end of life. The patient coping with chronic life-threatening illness has the same concerns, but they are spread over a prolonged period of time while the patient must also attempt to maintain self-esteem, occupational, social, sexual, and psychological role functions, and attempt to live fully.

The barriers to this type of adjustment are formidable. In a study conducted by Portenoy et al. (1994), the average cancer inpatient had 13 distressing physical and psychological symptoms and the average cancer outpatient had 10. The burden of such symptoms poses a challenge for the patient, as well as to the palliative care team, to overcome and/or remove such obstacles, thereby allowing a richer and more meaningful life to emerge. The findings noted long ago by the Psychosocial Collaborative Oncology Group (Derogatis et al., 1983), in which 47% of the 215 cancer patients studied had clinically apparent psychiatric disorders and adjustment disorder with depressed or anxious mood accounted for 68% of the diagnoses, highlights the fact that a large number of people with cancer encounter difficulty in making a successful adjustment to the disease. Patients who had clinically significant pain in that study were twice as likely as not to have an adjustment disorder. This result suggests that the constraints caused by untreated symptoms lead to real consequences in terms of people's ability to adjust after cancer enters their lives.

Increasing attention is being paid to the active total care of the patient under the rubric of palliative care (Portenoy & Bruera, 1998). This increased attention has also spawned an increase in research activity. Such activity is important to provide a scientific foundation for clinical practice. However, as palliative care has become more scientific, it has sometimes led to "medicalizing" of patients' symptoms and concerns. Thus, with regard to emotional distress, most of the attention has focused on the

more medical problems such as depression. However, patients have many other sources of distress not attributable to major depression. Patients are often unable to engage in their usual role function and are left with time in which they may not be cognitively or emotionally engaged. Considering the life-altering magnitude of a diagnosis of cancer, patients may consider many day-to-day problems, including boredom, too trivial to even mention to health care workers. Yet, clinical experience has shown us how these patients may spend hours each day in cognitive and emotional limbo.

Boredom is a sign of not being actively engaged in one's life. Little joy is present, activity is decreased, and, if prolonged, can lead to depression and/or aggression (Frankl, 1946). As the ability to do what one wants to do is thwarted by the constraints of cancer and/or its treatment and the necessity of doing what one does not want to do (e.g., unpleasant treatments), there is an increased likelihood of boredom occurring (Fenichel, 1951). There appears to be a paucity of research on boredom. Despite its prevalence in quality of life discussions and popular literature, there is a dearth of empirical research regarding the issue. In a review of boredom studies from 1926 to 1979, Smith (1981) found an average of less than one study per year with most of that research relating to industrial or educational concerns. Although complaints of boredom are a common symptom in clinical psychology and psychiatry, they are often addressed under other more traditional labels. The problem of boredom as a health care issue has been subsumed under research on other complaints such as depression, apathy, or fatigue. Although there are many common elements among the related concepts, boredom appears to have enough unique qualities to warrant a separate consideration. The issue of boredom in physical illness or specifically in cancer has elicited even less interest. Only five entries since 1887 were found relating boredom to physical illness and only one entry relating it to cancer. The one article relating to boredom and cancer (Hosier, 1987) was a case study of a woman who presented with depression and a fear of acquiring cancer, not the more general issue of boredom in cancer patients.

Much of the published literature on boredom has dealt with industrial or educational populations. Although some of the same issues regarding boredom may be relevant in cancer patients, there are elements that make this population unique. For example, either as a result of the disease process or the agents used in treatment, fatigue is often a major clinical problem and constraint to patients' lifestyles. Patients may have the desire to engage in activities, but simply not have the energy to do so.

Other patients may have special needs and, because they already feel they are a burden on friends and/or family, be reluctant to ask for additional assistance in doing activities simply for enjoyment. Often the enormous amount of time involved in the treatment process leaves little time or energy for many more of the mundane and pleasurable activities of life. These are some of the issues that make boredom particularly relevant to cancer patients.

## CANCER AND BOREDOM

Frankl (1946) used the term “existential vacuum” to describe the feeling of total and ultimate meaninglessness some people experience in their lives. This feeling of meaninglessness can manifest in a state of boredom. He states that depression, addiction, and aggression are only understandable if we recognize the existential vacuum that underlies such conditions. A meaning or purpose to life is essential to fill that vacuum. There are three ways to discover this meaning: (1) through creativity, (2) by interacting with something or someone, and (3) by accepting those things we cannot change. As one creates, interacts, and accepts, one not only discovers meaning, but that meaning constantly changes, providing new directions and a deeper purpose in life.

Greenson (1953) theorized that deprivation plays a pivotal role in depression, apathy, and boredom. One would not be surprised to find all three in cancer patients. The disease deprives the patient of health and frequently disrupts occupations, relationships, life goals, and financial stability. There has been considerable research interest in depression and cancer, but very little regarding apathy or boredom. Prevalence rates for depression in cancer patients varies from 1.5% in acute leukemia to 50% for those with pancreatic cancer (Porter et al., 1998). McKenna et al. (1995) estimate the overall prevalence for adjustment disorder with depressed mood or major depression in cancer patients to be 25%. Since apathy and boredom have a shared etiology with depression, according to Greenson (1953), could it be that some of the symptoms attributed to depression are actually the result of boredom or apathy that was not measured, assessed, or ultimately targeted for intervention?

## METHOD

### Participants

The current study was conducted to begin the process of investigating the problem of boredom in cancer patients by developing a scale to assess it. As

a preliminary step, cancer patients and professionals were interviewed using a semi-structured format to elicit their perceptions of the incidence, causes, scope, and consequences of boredom. From their responses, 45 questions were developed and edited for clarity. After completing the scale, each patient was interviewed regarding the clarity and comprehension of the items. Their comments and suggestions were considered along with investigator observations and the items were revised accordingly. Preliminary validation of this Purposelessness, Understimulation, and Boredom (PUB) Scale using a cross-sectional survey of the measure was conducted. A total of 100 cancer patients were recruited to participate in the study.

Patients were eligible for this study if they were undergoing treatment for malignancy at 1 of the 25 urban or rural oncology clinics associated with Community Cancer Care; were at least 18 years of age; able to read, understand, and write English; and were able to provide informed consent. One hundred patients were recruited to participate in the study.

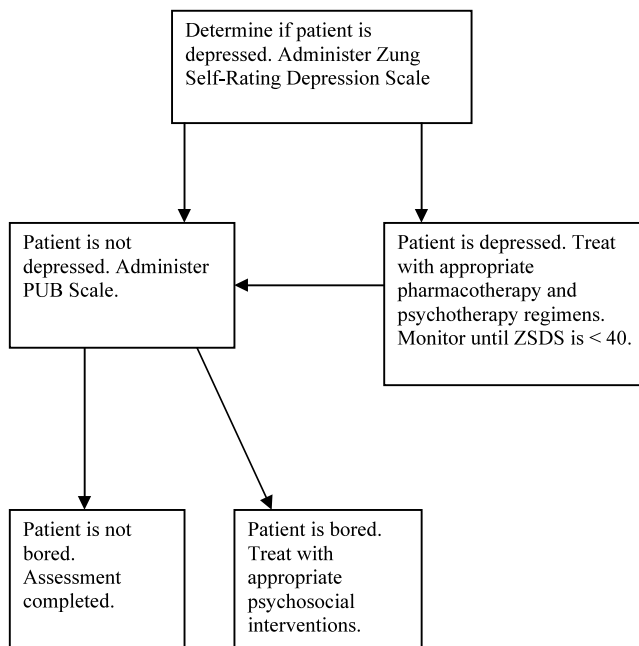
## Instruments

### *Sociodemographic and Medical Characteristics*

Sociodemographic factors including age, gender, education, marital status, and living arrangements were collected. Information about the status of the neoplasm and other medical comorbidity, psychotropic medication use, and psychiatric treatment history were recorded on the form.

### *Purposelessness, Understimulation, and Boredom (PUB) Scale*

This is a novel scale developed for the study (see Fig. 1). It consists of 45 items generated and reviewed from two phases of its development. The first phase of this project consisted of group and individual focus interviews with cancer patients and oncology professionals using a semi-structured format to elicit perceptions of the causes, scope, and consequences of boredom. Five themes emerged from the patient’s responses: (1) definitions and symptoms, (2) predisposing personality characteristics, (3) constraint, (4) social contact, and (5) spirituality/“meaning-making” as a coping strategy. Approximately 10 questions were developed for each category. These 45 items were then edited for clarity. Phase two of the project consisted of administering the preliminary scale to an additional 50 cancer patients. After completing the scale, each patient



**Fig. 1.** Possible algorithm for implementation of the PUB Scale into clinical practice.

was interviewed regarding the clarity and comprehension of the items. Their comments and suggestions were considered along with investigator observations and items were revised accordingly. Preliminary validation of the boredom scale using a cross-sectional survey of the measure was conducted as a corollary to the current study.

#### *Functional Assessment of Cancer Therapy Scale-Anemia (FACT-An)*

The FACT-An (Yellen et al., 1997) is a 46-item scale that consists of the Functional Assessment of Cancer Therapy Scale-General (FACT-G) plus additional items relating to the symptoms of fatigue and anemia, which is a 28-item questionnaire developed to measure general quality-of-life issues in cancer patients (Cella et al., 1993). The FACT-G consists of four subscales measuring physical, emotional, social, and functional well-being. Participants rate each item according to how true it has been for them during the past 7 days. Response options range from 0 indicating “not at all” to 4 indicating “very much so.” Scores are obtained for each of the subscales and when combined, these subscores generate a total quality of life score. The instrument has acceptable levels of reliability and validity (Cella et al., 1993; Winstead-Fry & Schultz, 1997). The measure has been shown to yield adequate to high internal consistency, exhibiting coefficient alphas ranging from 0.63 to 0.86 on the

subscales and 0.90 to 0.95 for the total scale (Cella et al., 1995; Brady et al., 1997). The scale has also shown high test-retest reliability ( $r = .87$ ) (Yellen et al., 1997).

#### *Zung Self-Rating Depression Scale (ZSDS)*

The ZSDS (Zung, 1965) is a 20-item self-report measure of the symptoms of depression. Subjects rate each item regarding how they felt during the preceding week using a 4-point Likert scale, with 4 representing the most unfavorable response. The sum of the 20 items, after correcting for the 10 items that are reverse-scored, produces a raw score that is converted into a total score. Scores are not meant to offer strict diagnostic guidelines but rather to denote levels of depressive symptomatology that may be of clinical significance. Overall, the ZSDS has been shown to be relatively valid and to have high internal consistency, exhibiting an alpha coefficient of 0.84 (Tate et al., 1993; Dugan et al., 1998). Passik and colleagues (2000) described the factor structure of the ZSDS in cancer patients, identifying a cognitive symptom factor, a manifest depressed mood factor, an eating-related somatic factor, and a non-eating-related somatic factor. The ZSDS was included to measure depression which would provide construct and divergent validity criteria for the new measure. It was felt that the measures should be moderately correlated but not overly redundant.

#### *Boredom Proneness (BP) Scale*

The BP Scale was developed to assess a respondent’s proclivity to experiencing boredom. It has shown internal consistency of .79 and test-retest reliability of .83 (Farmer & Sundberg, 1986; Ahmed, 1990). It has shown a moderate association with measures of depression including the Beck Depression Inventory ( $r = .44$ ,  $p = .001$ ; Farmer & Sundberg, 1986). The BP Scale has not been tested on the medically ill, but was included for the demonstration of convergent validity.

#### *Leisure Boredom Scale (LBS)*

The LBS is a 16-item self-report measure designed to assess individual differences in the perceptions of leisure as boredom (Iso-Ahola & Weissinger, 1990). Participants respond to each statement based on how strongly they agree or disagree with the statement on a 5-point Likert scale. Internal consistency for the LBS has been shown to be .88 (Iso-Ahola & Weissinger, 1990). The measure was included for construct validation.



### Cancer Behavior Inventory (CBI)

The CBI is a comprehensive self-efficacy measure for coping with cancer (Merluzzi & Martinez, 1997). It has 26 items and consists of six subscales measuring: (1) confidence in ability to maintain activity and independence, (2) ability to cope with treatment-related side effects, (3) acceptance of cancer and maintenance of a positive attitude, (4) ability to seek and understand medical information, (5) ability to regulate affect, and (6) ability to seek support. Participants are asked to rate their confidence in their ability to accomplish each item on a 9-point scale with 1 being “not at all confident” and 10 being “totally confident.” The CBI appears to be a reliable instrument based on Cronbach’s alpha rating for the entire scale (.96). It was included in the packet for construct validation.

### Systems of Belief Inventory (SBI)

The Systems of Belief Inventory is a brief, 15-item inventory designed to measure spiritual/religious beliefs and practices as well as the support one can gain from belonging to a community that shares those beliefs (Holland et al., 1998). Items are rated according to how true they are for patients based on a 4-point Likert scale rated from 0 “strongly disagree” to 3 “strongly agree.” The inventory has high internal consistency (Cronbach’s alpha = .93). It was included in the packet for construct validation.

### ECOG Performance Status Scale (ECOG)

The ECOG is a group of institutions that have formed a cooperative to perform drug studies (Eastern Cooperative Oncology Group, 1983). They developed a performance scale with five levels: 0 defines a person who can perform normal activities, 1 is a person with “symptoms, but ambulatory,” 2 is a person “in bed <50% of time,” 3 is a person “in bed >50% of time,” and 4 is a person “100% bedridden.” This scale was used to assess a participant’s ability

to perform activities of daily living. The patients’ performance status was rated by an oncologist or nurse. It was felt this would represent a global measure of the “constraint” imposed by cancer.

### Procedure

The study was reviewed and approved by the Western Institutional Review Board. A total of 100 cancer patients were approached and completed the consent form and were administered the PUB Scale and a randomly ordered package of questionnaires in order to begin to assess the validity of the PUB Scale. Twenty of the participants were asked to retake the test within 7 days to assess the scale’s test–retest reliability.

### RESULTS

The average age of the sample was 62.37 years ( $SD = 13.43$ ) and was comprised of 60 women (60%) and 40 men (40%). Most had a high school education (38%,  $n = 38$ ), followed by those with some high school experience (19%,  $n = 19$ ) and those with some college experience (19%,  $n = 19$ ). The vast majority (67%,  $n = 67$ ) were married, followed by those who were either widowed (15%,  $n = 15$ ) or divorced (11%,  $n = 11$ ). Almost all of the participants were Caucasian (90%,  $n = 90$ ) with the remainder (10%,  $n = 10$ ) being African-American. The participants were most likely to be retired (49%,  $n = 49$ ), working full-time (19%,  $n = 19$ ), or disabled (17%,  $n = 17$ ). Tumor type varied widely but was most often breast (22%,  $n = 22$ ) or lung (21%,  $n = 21$ ) cancer, followed by multiple myeloma (7%,  $n = 7$ ) and leukemia (7%,  $n = 7$ ).

Table 1 presents the total score means, ranges, standard deviations, and Cronbach’s alphas for each of the study measures. Participants displayed considerable variation in their scores on all measures. Of special interest were the ranges and variability

**Table 1.** Means, standard deviations, ranges, and Cronbach’s alphas measuring internal consistency of the measures

Measures	Mean	SD	Range	Alpha
45-item PUB Scale (novel)	87.02	19.74	50–149	.93
Boredom Proneness Scale	28.90	3.86	18–36	.84
Leisure Boredom Scale	2.57	0.72	1–4.56	.90
Functional Assessment of Cancer Therapy–Anemia	117.73	18.69	71–158	.82
Zung Self-Rating Depression Scale	39.53	9.45	21–70	.85
Cancer Behavior Inventory	168.24	39.92	59–230	.94
Systems of Belief Inventory	36.43	9.14	4–45	.94

of the novel 45-item PUB Scale. Scores on the PUB Scale ranged from 50 to 149 (mean = 87.02,  $SD = 19.74$ ), accounting for nearly 74% of the possible range (45 to 180) on the instrument. Variability and ranges for the remaining measures did not differ substantially from those reported in the literature. In addition, all of the measures exhibited adequate internal consistency as measured by Cronbach's alpha. All of the study measures had Cronbach's alphas greater than .82.

### Internal Consistency and Factor Analysis of the Novel PUB Scale

As noted above, internal consistency was determined for all of the measures in the study; however, special attention was given to the novel PUB Scale in the study. The following discussion examines the pilot tool's internal consistency and factor structure in detail.

The 45 items on the PUB Scale were examined from a variety of different approaches. First, descriptive statistics were calculated for each item, with attention paid to the item distributions, means, variance, range, and to item–total correlations. The item distributions were examined to identify items with ceiling or floor effects, low variability, or small range, which could lead to the elimination of less useful items. One rule of thumb for inclusion of an item in the final measure was that the distribution for the item was not skewed, as revealed by a mean value biased toward the extreme ends of the item range (on the 4-point scale). It was felt that means in the extreme ranges would not offer enough utility for discrimination. A second rule of thumb employed for the descriptives was that the items should exhibit adequate variability relative to the other items. Item variances ranged from 0.42 to 1.32. All 45 items were deemed to be adequate by these standards and thus were kept for further exploration.

Second, in an attempt to ensure divergent validity with depression, a series of Pearson correlations was conducted between the 45 individual items of the novel PUB Scale and the ZSDS and its subscales. As a general rule of thumb, items were marked for deletion if they exhibited a correlation above .60 with the ZSDS. When this criterion was applied, only six items (36, 38, 39, 42, 44, and 45) were marked for inclusion. These items were examined further and found to have a single factor structure and a coefficient alpha of .85.

Third, in an effort to ensure convergent validity with established measures of boredom, a series of Pearson correlations was conducted between the 45 individual items of the novel PUB Scale and the

Boredom Proneness Scale and the Leisure Boredom Scale. Eight items (1, 2, 3, 4, 5, 6, 9, 10) were identified that correlated highly with the aforementioned boredom measures. These items were also examined further and found to have a single factor structure and a coefficient alpha of .93.

Since the overall goal of the project was to derive a brief assessment tool to measure boredom, the above-identified items were then combined. The first approach to exploring the combined 14 items was through a principal components factor analysis, although caution should be used because the sample size ( $n = 100$ ) was smaller than optimal. Some authors suggest a ratio of four or five times the number of items (e.g.,  $45 \times 4 = 180$ ) as a minimal acceptable sample size (Tabachnick & Fidell, 2000). Accordingly, a preliminary factor analysis was calculated, but firm conclusions will require a larger confirmatory analysis.

A principal components factor analysis was completed using SPSS 10.0 software. An orthogonal varimax rotation was used to help identify simple factor structure. The results of the factor analysis (see Table 2) revealed a two-factor solution (number of factors to retain was based upon factors with eigenvalues over 1.0 and a factor scree plot) as expected based on the individual subscale analyses mentioned above. Upon examination, the eight items from the strongest factor (items 1, 2, 3, 4, 5, 6, 9, 10) seemed to best tap the construct that could be deemed as overt boredom. The six items loading on the second factor (items 36, 38, 39, 42, 44, 45) seemed to tap the construct of boredom related to loss of meaning and spirituality.

The second approach to exploring the combined 14 items was to conduct a reliability analysis. Total scale internal consistency, when all 14 items were included in the analysis, yielded a coefficient alpha of .84. The items were also examined to see if their removal would increase overall alpha; however, none were identified.

The test–retest reliability of the novel 14-item scale also was determined. A subset of 20 subjects from the study completed the novel items a second time within 7 days after initial administration. The 14-item scale yielded a significant Spearman–Brown coefficient ( $r = .80$ ,  $p < .001$ ), indicating acceptable test–retest reliability.

As a final analysis, the new 14-item PUB Scale and the two subscales (identified through the factor analysis) were correlated with the other study measures (see Table 3). The PUB Scale was significantly correlated to several of the measures, including the Zung Self-Rating Depression Scale ( $r = .562$ ,  $p < .001$ ), Boredom Proneness Scale ( $r = -.574$ ,  $p < .001$ ), and the Leisure Boredom Scale

**Table 2.** Results of a principal components factor analysis on the 14-item PUB Scale using an orthogonal varimax rotation

Factors and items	Coefficient alpha	% variance	Eigenvalue	Factor loading
Factor I: overt boredom	.93	39.63	5.55	
1: I feel bored.				0.83
2: I have difficulty keeping myself occupied.				0.88
3: I have trouble finding things to do that keep my interest.				0.85
4: I have long periods of time with nothing to do.				0.85
5: I sit around doing nothing.				0.82
6: I have too much time on my hands.				0.88
9: Time passes slowly.				0.83
10: I spend time doing mindless activities just to keep occupied.				0.65
Factor II: boredom related to spirituality	.85	25.43	3.56	
36: I feel a connection/closeness to a higher being or spiritual force.				0.70
38: My spiritual beliefs help me to understand and appreciate my life as it is at present.				0.89
39: My spiritual beliefs bring a sense of hope to my life.				0.86
42: I believe all things happen for a reason.				0.62
44: I believe healing comes from within.				0.71
45: I turn my health problems over to God or a spiritual force.				0.78

( $r = .616, p < .001$ ). In addition, Factor I of the 14-item scale was found to be similarly related to the Zung Self-Rating Depression Scale ( $r = .627, p < .001$ ), Boredom Proneness Scale ( $r = -.736, p < .001$ ), and the Leisure Boredom Scale ( $r = .720, p < .001$ ). Factor II of the 14-item scale was only significantly correlated to the Systems of Belief Inventory ( $r = -.419, p < .001$ ). Finally, the 14 item PUB Scale was also correlated to the CBI ( $r = -.325, p < .001$ ) and the FACT-An ( $r = -.663, p < .001$ ), indicating an association to both a lower self-efficacy and perceived quality of life and an increased sense of fatigue.

### Exploratory Analysis

To more fully explore the utility of the novel 14-item PUB Scale, an additional set of Pearson correlations were conducted after splitting the sample based on those who were depressed (ZSDS > 40) versus those who were not (ZSDS < 40). When examining the depressed group only, the novel 14-item PUB Scale was still significantly correlated to the Zung Self-Rating Depression Scale ( $r = .406, p < .01$ ), Boredom Proneness Scale ( $r = -.588, p < .001$ ), Leisure Boredom Scale ( $r = .576, p < .001$ ), and the Systems of Belief Inventory ( $r = -.312, p < .05$ ). However, when examining the nondepressed group, the novel 14-item PUB Scale was still significantly related to the Boredom Proneness Scale ( $r = -.299, p < .05$ ), Leisure Boredom Scale ( $r = .365, p < .01$ ), and the Systems of Belief Inventory

( $r = -.290, p < .05$ ), but not to the Zung Self-Rating Depression Scale ( $r = .267, n.s.$ ). This finding was also duplicated by the results of a *t* test ( $t_{1, 98} = 5.262, p < .001$ ), which indicated that there was a significant difference in boredom ratings based on whether or not the patient was depressed.

As a final way to explore these differences, a series of crosstabs and chi-square analyses were conducted. First, patients were identified as being bored, fatigued, or depressed according to median splits on the LBS or FACT-An, or according to the established cut-off point for the ZSDS (raw score > 40). A total of 51 patients were deemed to be bored, 50 were depressed, and 46 were fatigued. Crosstabs between boredom and depression showed 37 patients as bored and depressed, 14 as bored but not depressed, 12 depressed but not bored, and 36 neither bored nor depressed. Chi-square analysis showed this to be a significant relationship ( $\chi^2 = 22.37, p < .001$ ). Crosstabs between boredom and fatigue revealed 14 patients as both bored and fatigued, 37 bored but not fatigued, 32 as fatigued but not bored, and 16 who were neither bored nor fatigued. Again, a chi-square analysis indicated a significant relationship ( $\chi^2 = 15.29, p < .001$ ).

Taking this information into account, sensitivity and specificity statistics were calculated for the 14-item PUB Scale. Using the same notion of a median split to separate the sample (PUB median = 25), the PUB Scale had sensitivity of 72.5% and specificity of 68.7%. Modifying the cut-off point for overall accuracy, (PUB cut-off = 23), the PUB

**Table 3.** Pearson correlations of the 14-item PUB Scale with the other study measures

Study measure	14-item PUB Scale	Factor I of PUB Scale (8 item)	Factor II of PUB Scale (6 item)
Zung Self-Rating Depression Scale (ZSDS)	.562** <sup>a</sup> .000 <sup>b</sup> 100 <sup>c</sup>	.627** .000 100	.098 .334 100
ZSDS Factor I: cognitive	.422** .000 100	.437** .000 100	.119 .237 100
ZSDS Factor II: manifest depressed mood	.590** .000 100	.648** .000 100	.115 .254 100
ZSDS Factor III: somatic–noneating	.404** .000 100	.408** .000 100	.128 .206 100
ZSDS Factor IV: somatic–eating	.165 .101 100	.336** .001 100	–.177 .078 100
Boredom Proneness Scale (BPS)	–.574** .000 100	–.736** .000 100	.031 .758 100
Leisure Boredom Scale (LBS)	.616** .000 99	.720** .000 99	.061 .550 99
Cancer Behavior Inventory (CBI)	–.325** .001 100	–.410** .000 100	.008 .936 100
Systems of Belief Inventory (SBI)	–.353** .000 100	–.130 .199 100	–.419** .000 100
Functional Assessment of Cancer Therapy Scale–Anemia (FACT-An)	–.663** .000 100	–.688** .000 100	–.184 .067 100

\*\* $p < .01$

<sup>a</sup> $r$

<sup>b</sup> $p$ -level

<sup>c</sup> $n$

Scale yielded sensitivity of 80.4% and specificity of 64.6%.

## DISCUSSION

In this article we outline our efforts to create and begin preliminary validation of a scale to assess boredom, understimulation, and purposelessness in cancer patients. Through our clinical interactions with patients, we have come to believe that this is a relevant and important variable in understanding the experience of distress in advanced cancer. In developing this measurement tool, we began with focus groups that confirmed our observations that boredom detracts from the quality of life of our patients, and this led to the generation of items for

the tool. The tool underwent refinement as part of this study and now is a brief scale that has satisfactory internal consistency and reliability. Additionally, we have demonstrated that the tool has the beginnings of reasonable divergent and convergent aspects of construct validity as well. The main issue in this last and crucial aspect of validation, concerning convergent/divergent validity, is particularly germane to the limiting of the overlap between our assessments of PUB and assessments of depression. Indeed, the concept overlaps depression to some extent, but also has meaningful correlations with self-efficacy, fatigue, spirituality, and measures of boredom that were borrowed from other areas of psychology. This will be discussed in more detail below.



The PUB Scale correlates in the expected fashion with existing boredom scales (high positive), self-efficacy (moderate negative), and fatigue (high negative). Factor II is distinctly correlated with a measure of spirituality and Factor I specifically with fatigue. This pattern of results is suggestive of acceptable, preliminary construct validity. In working with the factor analysis of the PUB Scale, we worked to control the overlap with the ZSDS while making sure that the items retained for the measure appeared to have “face” validity. The two-factor scale maintains some substantial overlap to the ZSDS (sharing 31% of their variance), which is not surprising in two ways. First, boredom is certainly an aspect of depression, and second, the ZSDS is a measure of global distress and is not entirely specific to depression. While there is overlap in that 37/51 (72.5%) of the bored patients were also potentially suffering with depression, the crosstabs also suggest that some 15/51 (29%) of patients are potentially bored but not depressed. For the former group, depressed and bored, interesting questions can be generated as to the degree to which depression treatment impacts the experience of boredom. Does treating depression lead to improvement in boredom? Do they improve on the same or different time courses? Do psychosocial interventions work differentially on these two aspects of the depressive experience? And for the bored but not depressed patient, what meaning-making types of counseling and activities help alleviate this painful experience and give back life with a sense of purpose?

In many respects our work is in concert with much of the current research and clinical effort going on in psycho-oncology that, in sum, offers no less than a redefinition of the despair sometimes seen in cancer patients at the end of life. Various groups have focused upon loss of hope and meaning, demoralization, and loss of dignity, which emphasizes the limitations of Major Depression in understanding and intervening with advanced cancer patients (Angelino & Treisman, 2001; Chochinov, 2002; Nelson et al., 2002). Our work is, on the surface of it, a more simple-minded approach to these complex existential issues. It is possible that the subjective experience of boredom when recognized in our patients can lead to interventions that help to occupy and activate patients. Perhaps it is a way to penetrate the surface and open up a dialogue on issues of a deeper psychological and spiritual nature.

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