

INVESTIGATING PATIENT EXPECTATIONS AND TREATMENT OUTCOME IN A  
CHRONIC LOW BACK PAIN POPULATION

By

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To my wonderful parents for their support in helping me reach my dreams

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## LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
CAMP	Chronic Analgesic Management Program
CBT	Cognitive Behavioral Therapy
GLM	General Linear Model
IOM	Institute of Medicine
PCO	Patient Centered Outcome
PCOQ	Patient Centered Outcome Questionnaire
NCHS	National Center for Health Statistics
NRS	Numerical Rating Scale

Abstract of Thesis Presented to the Graduate School  
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*Objective.* This study aimed to measure the outcomes that patients consider clinically meaningful across four treatment domains: (1) pain, (2) fatigue, (3) emotional distress, and (4) level of interference and determine if patients met their own success criteria. Additionally, the role of expectations in treatment outcome was examined. This study also aimed to determine how change in levels of pain, fatigue, disability, and level of interference varied according to the type of treatment delivered to participants.

*Patients.* Forty-seven chronic low back pain patients were recruited from university-affiliated pain clinics.

*Design.* The study design was longitudinal consisting of two randomly assigned treatment conditions. The first treatment condition used opioid medication only and the second treatment condition used both opioid medication and brief cognitive-behavioral therapy. Pre-treatment and post-treatment assessments were conducted which occurred approximately three months after the initiation of treatment.

*Outcome Measures.* The Patient Centered Outcome Questionnaire was completed by participants at both pre-treatment and post-treatment assessment.

*Results.* Results suggest that patients did not meet their own success criteria in treatment across any of the four domains. There was a significant main effect of time for level of pain indicating that both treatment groups had a decrease in their level of pain at post-treatment,  $F(1, 45) = 11.98, p < .001$ . There was a significant main effect of time for level of interference domain indicating that both groups experienced a reduction in the level of pain-related interference with daily activities,  $F(1, 45) = 5.46 p < .05$ . There were no significant effects of time for emotional distress or fatigue or any significant group by time interactions. Contrary to our hypothesis, no significant correlations were found between pre-treatment expectations and usual level ratings at post-treatment across the four domains.

*Conclusion.* Patients sought larger reductions in pain, fatigue, level of distress and level of interference than they attained at post-treatment. Enhancing opioid treatment with Brief Cognitive Behavioral Therapy did not yield additional improvements for the four domains assessed in patients with chronic low back pain.

## CHAPTER 1 INTRODUCTION

The National Center for Health Statistics (NCHS) reported that one in four adult Americans stated that they experienced a period of pain lasting more than 24 hours within the previous month; one in ten people reported the pain being present for a minimum duration of one year.<sup>1</sup> In addition, approximately 25% of the United States population reported experiencing chronic pain<sup>1</sup> with 18% of the population experiencing chronic low back pain at any given time.<sup>2</sup> Due to its widespread prevalence, pain constitutes an economic burden to society as well as the individual, as clearly shown by annual direct and indirect expenditures that were recently reported from the Institute of Medicine (IOM). The IOM reported that pain costs the nation between \$560 and \$635 billion each year in both medical treatment and lost productivity.<sup>3</sup> The financial impact of low back pain alone ranges from \$45 billion to \$54 billion per year.<sup>4</sup>

Patients' pain experiences are often examined through self-report measures and behavioral observations. However, health care professionals also need to evaluate the degree to which patients want their pain and related domains to improve. The Patient-Centered Outcomes Questionnaire (PCOQ)<sup>5</sup> was developed to measure the patient-centered expectations and criteria for success regarding treatment for chronic pain.

A study by Robinson and colleagues, found that, based on an 11-point numerical rating scale (NRS) where 0 = not at all important and 10 = most important, patients deemed a mean reduction in their pain of 3.4 points (56%) a successful treatment outcome.<sup>5</sup> In addition, patients considered the following to be meaningful levels of success in treatment: a mean reduction of 3.4 points (57%) in their level of fatigue, 3.6 points (65%) in their level of overall distress, and 4.3 points (68%) in the level of

interference of pain in their lives.<sup>5</sup> Patients' success criteria were shown to require a larger reduction in pain, distress, and fatigue than originally hypothesized, though patients did not expect to reach their own success criteria for the level of interference domain.<sup>5</sup> Similarly, research has shown that, to consider treatment for pain successful, patients' criteria for treatment outcome are relatively high, as compared to healthcare professionals' criteria.<sup>6,7</sup>

Standard clinical assessments typically consist of measurements with subjective cutoff scores, or normative references, also known as a minimal clinically important difference. The minimal clinically important difference has been used in pain studies in order to determine if patients' change throughout treatment; it was found that a 30% change represented a clinically significant change in pain.<sup>8</sup> However, reaching statistical significance (which may represent artificially inflated values based on a large sample size) does not unequivocally signify that patients have experienced a perceived successful degree of change.<sup>5,9</sup> Several variables may influence findings including sample size and degree of variability of improvement across patients i.e., large improvement in some patients, but a deterioration in others.<sup>5,10</sup> The minimal clinically important difference does not incorporate patients' criteria of treatment outcomes that can identify group differences in patients based on which domains they wish to target in treatment. It is evident that patients have different criteria by which they measure the success of their treatment. Therefore, healthcare professionals need to consult with patients to determine how their patients measure success in various domains and to determine how they can most effectively help their patient achieve this success.

A patient-centered approach focuses on patients' needs, views, and expectations and incorporates them into treatment decisions.<sup>11</sup> In patient-centered models, patients have a more active and empowering role in structuring their treatment, since they may have a different definition of success than their providers have. Without patient involvement, success of treating pain is limited and patient suffering increases.<sup>12</sup> With increased suffering, cost will likely rise as well.

This study aimed to first examine if patients who were treated at a multidisciplinary treatment center met their own success criteria in treatment at the three-month follow-up assessment. Based on previous literature<sup>5</sup> it was hypothesized that patients would not fully meet their own success criteria in treatment, as it is believed that they typically require larger reductions across domains in treatment than they will actually attain. Secondly, in addition to investigating patients' actual improvement against their success criteria, the researchers assessed the effect of brief Cognitive Behavioral Therapy (CBT) and opioid treatments on expectations for treatment outcome from the patient perspective. It was anticipated that brief individualized CBT would have a greater influence on non-pain outcome expectations, whereas opioid treatment alone would primarily influence pain outcomes. Thirdly, we hypothesized that those who received brief CBT and opioid treatment would report greater actual success, as measured by the PCOQ, across the four domains, when compared to the opioid only group, which would likely have a similar reduction in pain but lower levels of improvement in the other three domains (negative affect, fatigue, and interference with daily functioning). The relative greater success was hypothesized to be due to the cognitive restructuring aspects of brief CBT and the focus on behavioral pain management techniques as

compared to the opioid only group. Based on previous research, CBT has been successfully used as treatment for chronic low back pain populations.<sup>13</sup> Finally, the fourth aim was to examine the extent to which patients' baseline expectations for treatment outcome predicted actual treatment outcome. Based on previous literature,<sup>14,15</sup> it was hypothesized that there would be a positive correlation between expectation scores and outcome.

## CHAPTER 2 METHODS

### **Participants**

Patients in the present study included 47 adults (20 female and 27 male). All patients were diagnosed with chronic low back pain. Patients were recruited from the University of Florida Chronic Analgesic Management Program (CAMP).

### **Design**

This study is a two group, pre-post design. The post treatment assessments occurred three months after the initial assessment. Inclusionary criteria dictated that patients be between the ages of 18 and 70 and have low back pain as their primary pain site. Additionally, pain must have been present for a minimum of three months. Exclusionary criteria included a history of drug abuse or dependency within the past five years, presence of any medical condition where opioids were contraindicated, or psychosis.

### **Procedure**

The University of Florida Institutional Review Board approved the procedures and protocols of the study. Informed consent was obtained from all participants. Patients were recruited and randomized to one of two conditions. The first condition consisted of brief individualized CBT and opioid medication, while the second condition consisted of opioid medication only. Both conditions were monitored weekly for 10 weeks for side effects.

All patients were on opioids, though the opioid medication varied according to individual prescriptions. Treatment condition assignment was conducted independent of medication usage. In terms of both short and long acting medication usage, no

significant differences were found between the CBT group and the opioid-only group at baseline,  $X^2 (N = 47, df = 1) = 1.52, p > 0.05$  nor at the three month follow up,  $X^2 (N = 47, df = 1) = .195, p > 0.05$ . Patients randomized to the CBT and opioids group participated in brief CBT provided in an individualized format; thus, the length of therapy varied across patients. Individualized CBT was utilized in order to tailor treatment to the patient and target domains that were clinically relevant to the individual. Skills learned in this brief intervention were taught according to individual needs; these included new ways to conceptualize pain (Gate Control Theory), psycho-education, pleasant activity scheduling, and examining the relationship between thoughts, feelings, and behaviors which may have been maintaining or exacerbating the patients' pain. Patients were also taught adaptive coping skills such as activity pacing and a variety of relaxation techniques.

## **Measures**

### **Demographic Questionnaire**

Patients completed a demographic questionnaire inquiring about their age, sex, race/ethnicity, and number of years of formal education attained. Participants were also asked to provide the duration of their pain. This questionnaire was given to participants to complete during their baseline assessment.

### **Patient Centered Outcome Questionnaire**

The PCOQ consists of four domains: (1) Pain, (2) Fatigue, (3) Emotional Distress, and (4) Interference with daily activities that are rated on a 0-100 scale. Each of the four domains is measured on five levels: (1) Usual levels, (2) Desired levels, (3) Treatment outcomes for success, (4) Expectations of treatment, and (5) Importance of improvements. Reliability for the PCOQ ranges from 0.84 to 0.90 ( $P_s < 0.001$ ) for usual

levels of pain, fatigue, distress, and interference. Recently published data regarding PCOQ psychometric properties demonstrated good concurrent validity.<sup>6</sup>

### **Statistical Methods**

All statistical analyses were conducted using IBM® SPSS® (PASW 18) for Windows. For the first aim addressing if patients' met their own success criteria, success criteria scores were calculated by finding the difference between patients' usual levels across domains and corresponding success criteria. In addition, actual change scores from pre- to post-treatment were calculated to see if patients' matched their own success criteria and then descriptive statistics were run. For the second and third aims of the study, repeated measures analysis of variance (ANOVA) under the General Linear Model (GLM), were performed to determine if there were significant differences found in each of the four domains from pre-treatment to post-treatment as well as between the two treatment groups. For the final aim, residualized change scores were used to determine the relationship between baseline expectations for change and actual outcome across the four domains.

## CHAPTER 3 RESULTS

The final sample consisted of 47 adult patients; there were 26 patients that received treatment in the CBT and opioids condition and 21 who received opioid medication only. Descriptive statistics are presented in Table 3-1. To address the first aim of the study, we examined success criteria as defined by patients and then determined if patients met their own criteria. On a 0-100 scale, patients indicated that they considered treatment success with regards to their level of pain to be a mean reduction of 50.91 points in pain; however, on average, patients only reached a reduction of 11.93 points. This finding indicates that patients did not meet their own criteria. In addition, patients reported that their success criteria for overall distress would be a mean reduction of 34.62 points, though they instead experienced a mean 0.43 point increase in their level of emotional distress. In addition, patients reported that they sought a mean reduction of 40.62 points in the level of fatigue they were experiencing, though they had an actual decrease of 3.99 points in the fatigue domain. Lastly, patients indicated that success in their overall level of interference would be a mean reduction of 49.34 points; they experienced an actual mean reduction of 10.04 points. Results of dependent *t*-tests confirmed that these differences were statistically reliable ( $p < .001$ ) indicating that patients did not meet their success criteria for any domain. These results are presented in Table 3-2.

To address the second aim of the study, which examined low back pain patients' change in expectation from pre-treatment to post-treatment, a series of 2 (group) x 2 (time) Repeated Measures ANOVA were performed to assess differences for each of the four PCO domains. Results indicated that there were no significant changes in the

four domains across time, irrespective of group assignment. There were no significant group-by-time interaction effects across the PCO domains. For detailed results see Table 3-3.

For the third aim of the study, the change in usual level of each domain over time (from pre- to post-treatment) across the two treatment groups was examined using a Repeated Measures 2 (group) X 2 (time) ANOVA. For the pain domain, results indicated that there was a significant effect of time indicating that both groups reported a decrease in pain from pre-treatment to post-treatment,  $F(1, 45) = 11.98, p < .001$ . For the interference domain, there was a significant main effect of time,  $F(1, 45) = 5.46, p < .05$ . These results indicate that both groups reported a significant decrease in their interference of daily living activities. There were no significant effects of time for emotional distress or fatigue. There were no significant group by time interactions for any of the analyses. For a complete report of results across PCOQ domains, see Table 3-4.

To determine a relationship between expectations and actual change (Aim 4), residualized change scores were first calculated by regressing pre-treatment scores on post-treatment scores for participants' usual levels across the four domains. Subsequently, correlations between patients' pre-treatment expectations of treatment-induced change and their residualized change scores on usual levels of pain, fatigue, emotional distress, and level of interference were conducted. Results indicated that pre-treatment expectations for change were not significantly correlated with the corresponding change of usual level of pain, fatigue, distress, or level of interference. See Table 3-5 for report of correlations across domains.

Table 3-1. Participant demographics

(N = 47)	Mean	SD	Percentage
Age	48.23	9.891	
Formal education (years)	11.17	4.077	
Duration of pain (months)	119.07	116.966	
Sex			
Female	20		42.6
Male	27		57.4
Race			
Caucasian	38		80.9
African-American	7		14.9
Hispanic/ Latino	2		4.2
Group			
CBT and opioids	26		54.2
Opioids-only	21		43.8
Baseline "Usual" Levels			
Pain	77.19	18.19	
Fatigue	61.53	23.94	
Emotional Distress	48.23	31.72	
Level of Interference	67.45	28.78	
Post Treatment "Usual" Levels			
Pain	65.26	22.88	
Fatigue	57.64	25.87	
Emotional Distress	48.28	28.36	
Level of Interference	57.4	30.18	

Table 3-2. Comparison of patients' success criteria to reduction attained

PCOQ Domain	Patients' Success		<i>t</i>	Cohen's <i>d</i>
	Criteria Mean	Reduction Attained Mean		
Pain	50.91	11.93	10.89*	3.21
Emotional Distress	34.62	-0.43	8.26*	2.44
Fatigue	40.62	3.89	10.25*	3.02
Interference	49.34	10.04	8.91*	2.63

\*  $p < .001$ Note. Scale = 0-100

Table 3-3. Patients' change in expectation from pre-treatment to post-treatment

PCOQ Domain	CBT + Opioids		Opioids		<i>F</i>	$\eta^2$	<i>p</i>
	Pre-Treatment	Post-Treatment	Pre-Treatment	Post-Treatment			
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)			
Pain	28.46 (18.59)	29.04 (20.39)	28.57 (25.50)	37.38 (28.00)			
Time					1.38	0.03	> .05
Group					0.60	0.01	> .05
Time*Group					1.06	0.02	> .05
Fatigue	23.85 (18.18)	20.19 (17.41)	23.10 (25.71)	26.19 (24.23)			
Time					0.01	0.00	> .05
Group					0.26	0.01	> .05
Time*Group					0.94	0.02	> .05
Emotional Distress	20.58 (19.30)	18.46 (17.93)	17.14 (27.18)	22.86 (25.00)			
Time					0.26	0.01	> .05
Group					0.01	0.00	> .05
Time*Group					1.23	0.03	> .05
Interference	21.73 (21.58)	18.85 (18.46)	28.10 (31.36)	25.00 (27.70)			
Time					0.48	0.01	> .05
Group					1.14	0.03	> .05
Time*Group					0.00	0.00	> .05

Table 3-4. Patients' change in usual levels from pre-treatment to post-treatment

PCOQ Domain	CBT + Opioids		Opioids		F	$\eta^2$	p
	Pre-Treatment Mean (SD)	Post-Treatment Mean (SD)	Pre-Treatment Mean (SD)	Post-Treatment Mean (SD)			
Pain	74.73 (18.47)	68.08 (19.19)	80.24 (17.81)	61.76 (26.84)			
Time					11.98**	0.21	<.001
Group					0.01	0.00	> .05
Time*Group					2.65	0.06	> .05
Fatigue	60.96 (22.32)	59.04 (24.78)	62.24 (26.35)	55.90 (27.68)			
Time					0.98	0.02	> .05
Group					0.02	0.00	> .05
Time*Group					0.28	0.01	> .05
Emotional Distress	53.58 (31.42)	53.27 (25.96)	41.62 (31.58)	42.10 (30.57)			
Time					0.00	0.00	> .05
Group					2.31	0.05	> .05
Time*Group					0.01	0.00	> .05
Interference	65.00 (29.16)	57.31 (28.78)	70.48 (28.72)	57.52 (32.54)			
Time					5.46*	0.11	< .05
Group					0.14	0.00	> .05
Time*Group					0.35	0.01	> .05

Note. \* =  $p < .05$ , \*\* =  $p < .001$

Table 3-5. Pre-treatment expectation and treatment change in usual level ratings

	<i>r</i>	<i>p</i>
Change in pain	0.08	> .05
Change in Emotional Distress	0.03	> .05
Change in Fatigue	0.02	> .05
Change in Level of interference	-0.02	> .05

*Note.* *df* = 45

## CHAPTER 4 DISCUSSION

The first aim of the present study examined whether patients met their own treatment success criteria by the end of treatment. Results indicated that, overall, patients did not meet their own success criteria, a finding consistent with previous literature.<sup>5</sup> Consistent with our hypothesis, the amount of change necessary for patients to consider their treatment successful was of much greater magnitude than the change actually achieved with treatment. Patients' treatment-related improvements did not meet their success criteria for any of the four domains examined. In addition, this shows that opioids are not effective in successfully treating chronic low back pain. The failure of treatment to meet patients' success criteria may explain why patients often try numerous therapies and medication approaches; perhaps, they are dissatisfied with current treatment approaches that do not beget improvements corresponding to their own success criteria for treatment

The present study further explored patient-centered assessment and outcomes across four functional domains. The PCOQ was originally designed to measure various domains of functioning in a chronic pain population. This study administered the measure to a chronic low back pain sample in order to examine specific expectations this sample may have had and to determine how expectations may have changed over time. This study sought to examine if chronic low back pain participants' expectations for change within the four domains differed from pre-treatment to post-treatment based on group assignment.

This hypothesis was based on the premise that the constructs of CBT would effect changes in expectations through cognitive restructuring; therefore, it was hypothesized

that the opioid-only group would not experience systematic changes in expectations with regard to level of interference, fatigue, or distress as compared to the brief CBT and opioids group. Contrary to our hypothesis, as well as previous research on the role of expectations<sup>16</sup> there were no significant differences between groups or across time for all other domains. The lack of findings of the role of expectations could be attributed to a power issue due to a small sample size. As seen in Table 3, effect sizes are quite small. Since patients did not meet their own criteria for success it is possible that expectations did not significantly change because patients still had expectation for a reduction in pain and related domains even after treatment had ended; they might have hoped to still experience change. Based on what is implied in the instructions, the PCO may not assess patients' perceptions of the magnitude of improvement achieved at treatment termination, but may reflect how much they will continue to improve following treatment.

This study also aimed to determine how change in usual levels of pain, fatigue, disability, and level of interference varied according to the type of treatment delivered to participants. No differences in usual levels of pain, fatigue, disability, or level of interference were found between the two treatment groups. A main effect of time was found in the pain domain indicating that both treatment groups improved significantly from pre-treatment to post-treatment, though the expected benefit from brief CBT beyond that of the opioid-only treatment was not supported.

Lastly, this study aimed to determine how expectations influence actual change. However, our results did not confirm our original hypothesis that there would be a correlation between baseline expectations and outcome of usual levels of pain, fatigue,

distress, and level of interference. Given the small changes in all domains, relative to patient criteria for success, this may have minimized the expectation and actual change relationship. This sample was particularly chronic, and previous experience with treatments may have limited their expectations for success.

Few patient-centered approaches for the evaluation of expectations and treatment outcome in a chronic pain population have been examined. The PCOQ offers a novel approach to examining chronic low back pain patients' changes in expectation and provides important information to contribute to the pain literature.

Although the study had significant strengths, it is crucial to address some potential limitations. One potential limitations of the study may include the delivery and duration of the CBT. The current study employed standard clinical care, but did not follow a manualized treatment protocol, which may have reduced the effectiveness of the CBT. Future studies may consider providing manualized CBT of longer duration. Future research should investigate the usefulness of CBT as compared to opioids by adding another treatment group where patients receive CBT only, so that results can be more conclusive. Reliability and validity of the PCOQ can be further examined in future studies to better ensure that chronic low back pain patients' domains of functioning are being measured in a meaningful and accurate way. Finally, this study was limited in that it only had a sample size of 47 participants.

## CHAPTER 5 CONCLUSIONS

Results replicated previous findings indicating that patient criteria for success are not met by opioid and CBT enhanced opioid treatment. This study is the most recent to show that current treatments fall considerably short of patients' criteria for success. Future directions for development of chronic pain treatment necessitate the establishment of more effective analgesic strategies, or more targeted interventions aimed at more realistic expectations for current treatments. Patients' expectations at pre-treatment did not predict treatment outcome, likely because the magnitude of change was quite low, and the group may have had low expectations based on the chronicity of their pain. Investigating expectations in individuals with chronic low back pain and how these relate to their treatment outcome is important information that needs to be researched further. The information collected will help inform clinical treatment (e.g., expectations may need to be targeted as part of treatment or addressed more specifically in treatment) with the goal of attaining future improvements that can facilitate a greater degree pain relief and pain related sequelae for chronic low back pain patients.

APPENDIX  
PATIENT CENTERED OUTCOME QUESTIONNAIRE

MANY PEOPLE EXPERIENCE PAIN, FATIGUE (I.E., FEELING TIRED), EMOTIONAL DISTRESS (E.G., WORRIES, FEELING SAD), AND INTERFERENCE WITH DAILY ACTIVITIES (E.G., NOT BEING ABLE TO WORK OR DO HOUSEHOLD CHORES) AS A RESULT OF THEIR MEDICAL CONDITION. WE WOULD LIKE TO UNDERSTAND HOW YOU HAVE BEEN IMPACTED IN EACH OF THESE AREAS. WE WOULD ALSO LIKE TO LEARN MORE ABOUT WHAT YOU WANT YOUR TREATMENT TO DO FOR YOU.

---

FIRST, WE WOULD LIKE TO KNOW YOUR USUAL LEVELS OF PAIN, FATIGUE, EMOTIONAL DISTRESS, AND INTERFERENCE.

On a scale of 0 (*none*) to 10 (*worst imaginable*), please indicate your usual level (during the past week) of ...

pain \_\_\_\_\_

fatigue (or tiredness) \_\_\_\_\_

emotional distress \_\_\_\_\_

interference with daily activities \_\_\_\_\_

---

NOW, WE WOULD LIKE TO LEARN ABOUT YOUR DESIRED LEVELS OF PAIN, FATIGUE, EMOTIONAL DISTRESS, AND INTERFERENCE. IN OTHER WORDS, WE WOULD LIKE TO UNDERSTAND WHAT YOUR IDEAL TREATMENT OUTCOME WOULD BE.

On a scale of 0 (*none*) to 10 (*worst imaginable*), please indicate your desired level of ...

pain \_\_\_\_\_

fatigue (or tiredness) \_\_\_\_\_

emotional distress \_\_\_\_\_

interference with daily activities \_\_\_\_\_

---

PATIENTS UNDERSTANDABLY WANT THEIR TREATMENT TO RESULT IN DESIRED OR IDEAL OUTCOMES LIKE YOU INDICATED ABOVE. UNFORTUNATELY, AVAILABLE TREATMENTS DO NOT ALWAYS PRODUCE DESIRED OUTCOMES. THEREFORE, IT IS IMPORTANT FOR US TO UNDERSTAND WHAT TREATMENT OUTCOMES YOU WOULD CONSIDER SUCCESSFUL.

On a scale of 0 (*none*) to 10 (*worst imaginable*), please indicate the level each of these areas would have to be at for you to consider treatment successful.

pain \_\_\_\_\_

fatigue (or tiredness) \_\_\_\_\_

emotional distress \_\_\_\_\_

interference with daily activities \_\_\_\_\_

---

NOW, WE WOULD LIKE TO KNOW WHAT YOU EXPECT YOUR TREATMENT TO DO FOR YOU.

On a scale of 0 (*none*) to 10 (*worst imaginable*), please indicate the levels you expect following treatment.

pain \_\_\_\_\_

fatigue (or tiredness) \_\_\_\_\_

emotional distress \_\_\_\_\_

interference with daily activities \_\_\_\_\_

---

FINALLY, WE WOULD LIKE TO UNDERSTAND HOW IMPORTANT IT IS FOR YOU TO SEE IMPROVEMENT IN YOUR PAIN, FATIGUE, EMOTIONAL DISTRESS, AND INTERFERENCE FOLLOWING TREATMENT.

On a scale of 0 (*not at all important*) to 10 (*most important*), please indicate how important it is for you to see improvement in your...

pain \_\_\_\_\_

fatigue (or tiredness) \_\_\_\_\_

emotional distress \_\_\_\_\_

interference with daily activities \_\_\_\_\_

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## BIOGRAPHICAL SKETCH

Kristen Sanderson was born and raised in Massachusetts. She attended Assumption College with a major in psychology and minor in French. She graduated in 2002 with a Bachelor of Arts. Following graduation, she continued her education by earning a Master of Arts in counseling psychology from Assumption College in 2006. She is currently residing in Gainesville, FL and is a student in the Clinical and Health Psychology Department at the University of Florida.

Kristen's clinical experience include conducting structured interviews with adults with anxiety and related disorders, psychodiagnostic testing of children, intake interviews for adults with medical and health disorders, and providing Cognitive Behavioral Therapy for adults. Kristen's research interests include investigating outcomes of individuals with chronic pain as well as examining the role of placebo analgesia in treatment outcome. Additionally, Kristen is interested in anxiety and related disorders. Kristen aspires to work in a Veterans Affairs hospital with adults who have psychological and medical difficulties.